

RESTRICTED

Ordnance Pamphlet No. 127

[3rd. Rev.]

GUNS

UNITED STATES NAVAL GUNS THEIR MARKS AND MODIFICATIONS

GENERAL DESCRIPTION

*This publication is RESTRICTED and will be handled in accordance with
Article 76 United States Naval Regulations, 1920*



April 1942

PREFACE

To avoid confusion or duplication, requests for new Marks or Modifications should be made on the Naval Gun Factory.

The master index for Marks and Modifications of guns is maintained by the Naval Gun Factory.

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December 1916

Third Revision, April 1942

GUNS

UNITED STATES NAVAL GUNS, THEIR MARKS AND MODIFICATIONS

SUMMARY

AUTOMATIC MACHINE RIFLES

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General descrip- tion (page)
1	--	30	-- -- -- --	Colt., .30 cal., using rim cartridge; model of 1898	
1	1	30	-- -- -- --	Mark 1 and 6 mm. Colt modified to use cartridge with a cannellure; model of 1906	
6 mm	--	--	-- -- -- --	Colt	
2	--	30	-- -- -- --	No guns	
2	1	30	-- -- -- --	Benet Mercie gun	
3	--	30	-- -- -- --	Colt	
4	--	30	-- -- -- --	Berther	
5	--	30	-- -- -- --	Marlin	
6	--	30	-- -- -- --	Lewis field	
7	--	30	-- -- -- --	Marlin aircraft	
7	1	30	-- -- -- --	Marlin aircraft; late model	
8	--	30	-- -- -- --	Browning water cooled; model of 1917	
9	--	30	-- -- -- --	Browning aircraft; model of 1918	
9	1	50	-- -- -- --	Browning aircraft; model of 1921	
10	--	30	-- -- -- --	Lewis aircraft	
11	--	30	-- -- -- --	Vickers aircraft	
1.10-INCH GUNS					
1	--	75	1	Alloy steel gun - recoil operated -- -- -- --	15
1	1	75	1	Mark 1 gun barrel threaded for flash hider -- --	15
1	A	75	3-pdr. Mk. 4	Gun barrel modified for assembly - 3 pdr. jacket -- -- -- --	15
2	--	75	2	Alloy steel gun - gas operated -- -- -- --	15
Exp.	--	75	3-pdr. Mk. 4	3-pdr. gun retubed with alloy steel tube -- --	15
A	--	75	-- -- -- --	-- -- -- --	16
B	--	75	-- -- -- --	3-pdr. gun retubed with alloy steel tube and bore chromium plated -- -- -- --	16
37 MM. (1.457-INCH) GUNS, INCLUDES 1-POUNDERS					
	--	40	-- -- -- --	Sponsell -- -- -- --	17
1	--	20	1	Hotchkiss short, light, Mark 1, small case-- --	17
1	1	35	1-1	Hotchkiss light, long, Mark 2 -- -- -- --	17
2	Exp.	40	2 Exp.	Driggs-Shroeder light, Mark 1 -- -- -- --	17
2	--	40	2	Driggs-Shroeder heavy, Mark 1 -- -- -- --	18
2	1	40	2-1	Driggs-Shroeder heavy, Mark 2 -- -- -- --	18
3	--	40	3	Hotchkiss heavy, long, Mark 1 -- -- -- --	18
4	--	50	4	Driggs-Shroeder heavy, long, Mark 2 -- -- -- --	18
5	--	40	5	Hotchkiss heavy, long, Mark 2 -- -- -- --	19
6	--	42.5	6	Maxim-Nordenfelt heavy, automatic, Mark 1; were modified to antiaircraft guns-- -- -- --	19
7	--	30	7	Maxim-Nordenfelt light, automatic, Mark 1; small case -- -- -- --	19
8	--	40	8	Hotchkiss heavy, Mark 3; semiautomatic-- -- --	19
9	--	--	9	Maxim-Nordenfelt light, automatic, Mark 1 -- --	20
10	--	40	5-1	Aeroplane gun -- -- -- --	20
11	--	20	5-1	Line-throwing, smooth bore gun-- -- -- --	20
12	--	40	9	Single-forging gun-- -- -- --	20
12	1	40	-- -- -- --	Gun Mark 12 bored out and retubed -- -- -- --	20
13	--	40	5	Single-forging gun-- -- -- --	21
14	--	--	-- -- -- --	Automatic gun (Baldwin design)-- -- -- --	21
15	--	--	-- -- -- --	Automatic motor gun -- -- -- --	21
16	--	56	10	Single forging gun-- -- -- --	21

3-POUNDER, 1.85-INCH GUNS (47 MM.)

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General description (page)
1	- -	40	1	Hotchkiss rapid fire, Mark 1- - - - -	23
1	1	40	1	Hotchkiss rapid fire, Mark 1; French manufacture-	23
1	2	40	1	Hotchkiss rapid fire, Mark 1- - - - -	23
2	- -	45	2	Driggs-Shroeder rapid fire, Mark 1- - - - -	23
3	- -	45	3	Driggs-Shroeder rapid fire, Mark 2- - - - -	23
4	- -	50	4	Hotchkiss semiautomatic, Mark 4 - - - - -	24
4	1	50	4	Gun, Mark 4, modified to take sight, Mark 10- - -	24
4	2	50	4	Gun, Mark 4, retubed- - - - -	24
4	3	- -	- - - - -	Gun, Mark 4-1, retubed- - - - -	24
5	- -	50	5	Maxim-Nordenfelt semiautomatic, Mark 1- - - - -	24
6	- -	50	6	Maxim-Nordenfelt semiautomatic, Mark 2- - - - -	24
7	- -	45	7	Vicker Sons & Maxim semiautomatic, Mark 3 - - - -	25
8	- -	40	8	Hotchkiss-Armstrong - - - - -	25
9	- -	- -	9	Nordenfelt rapid fire, Mark 1- - - - -	25
10	- -	50	10	Hotchkiss semiautomatic - - - - -	25
10	1	50	10	Similar to Mark 10, except for yoke thread and slide cylinder - - - - -	26
10	2	50	10	Similar to Mark 10, Mod.1, except that yoke is in one piece with jacket- - - - -	26
10	3	- -	- - - - -	Gun Mark 10, retubed with alloy steel tube- - - -	26
10	4	- -	- - - - -	Gun Mark 10-1, retubed with alloy steel tube- - -	26
10	5	- -	- - - - -	Gun Mark 10-2, retubed with alloy steel tube- - -	26
11	- -	50	11	U.S.R.F.G. and P.Co. semiautomatic- - - - -	26
11	1	50	11	Similar to Mark 11, except for diameter of chase and that short locking hoop replaces long locking ring - - - - -	27
12	- -	- -	12	Nordenfelt semiautomatic, Mark 1- - - - -	27
13	- -	40	13	Maxim rapid-fire gun, Mark M - - - - -	27
14	- -	50	14	Driggs-Seabury Ordnance Corporation semiautomatic gun- - - - -	27

6-POUNDER, 2.244-INCH GUNS (57 MM.)

1	- -	40	1	Hotchkiss rapid fire, short, Mark 1 - - - - -	29
1	1	40	2	Same as Mark 1, but of French manufacture; for saluting only- - - - -	29
1	2	40	1-1	French manufacture - - - - -	29
1	3	40	3	Hotchkiss-Armstrong rapid fire- - - - -	29
1	4	40	1	Gun Mark 1 retubed with alloy-steel tube- - - - -	29
2	- -	40	1	Same as Mark 1, except trunnionless and different taper on forward end of jacket - - - - -	30
3	- -	45	1	Hotchkiss rapid fire, long, Mark 1; similar to Mark 2, except for position of sleeve thread and length - - - - -	30
3	1	45	1	Mark 3 retubed with alloy-steel tube - - - - -	30
4	- -	30	4	Driggs-Schroeder rapid fire field gun - - - - -	30
4	1	30	4-1	Same as Mark 4, except has two solid lugs for elevating gear and no strengthening band - - - -	31
5	- -	30	5	Lynch field gun; same as Mark 4-1, except for breech - - - - -	31
6	- -	45	6	Driggs-Schroeder rapid-fire, Mark 1 - - - - -	31
6	1	45	6	Mark 6 retubed with alloy-steel tube- - - - -	31
7	- -	45	2	Hotchkiss rapid-fire, long, Mark 2- - - - -	31
7	1	45	2	Same as Mark 7, except for position of sleeve threads.	32
7	2	45	2	Same as Mark 7, but better material - - - - -	32
7	3	45	2	Hotchkiss Mark 3 - - - - -	32
7	4	45	-	Gun Mark 7 retubed with alloy steel tube- - - - -	32
8	- -	50	6-1	Driggs-Schroeder rapid-fire, Mark 2 - - - - -	32
8	1	50	6-1	Gun, Mark 8, retubed- - - - -	32
9	- -	42	7,7-1	Maxim semiautomatic, Mark 2, gun steel- - - - -	33
9	1	42	7,7-1	Identical with Mark 9, but is built of nickel steel and has muzzle bell- - - - -	33
9	2	- -	7-2	Maxim semiautomatic, Mark 1, foreign manufacture	33
10	- -	42	8	Nordenfelt rapid-fire gun, Mark 2 - - - - -	33
11	- -	50	9	Driggs-Seabury semiautomatic, Mark 1- - - - -	33
11	1	50	9	Rebuilt Mark 11, old jacket but new tube and B2 hoop- - - - -	34
12	- -	- -	- - - - -	Davis nonrecoil gun, with 6-pound projectile- - -	34
13	- -	33	- - - - -	Davis nonrecoil gun, with 9-pound projectile- - -	34

3-INCH GUNS

Mark	Mod.	Lengths (cals)	Breech Mechanism	Remarks	General description (page)
1	- -	21	1	Field gun; piston screwed to gun - - - - -	35
1	1	21	1-1	Similar to Mark 1, but with solid lug for piston rod and two keys on slide surface. - - - - -	35
2	- -	50	- - - - -	Built by American Ordnance Co. - - - - -	35
2	1	50	2-2	Mark 2, fitted with balancing sleeve - - - - -	35
2	2	50	2-2	Gun No. 101- - - - -	36
2	3	50	2-1	Mark 2-1, gun relined- - - - -	36
3	- -	50	3	The locking ring has V threads - - - - -	36
3	1	50	3	Same as Mark 3, except that locking ring has U.S. threads- - - - -	36
3	2	50	3	Same as Mark 3-1, but with longer locking ring - - - - -	36
3	3	50	6	Mark 3, 3-1, and 3-2, fitted with longer locking ring and screw-box liner- - - - -	36
3	4	50	6	Nickel steel; similar to Mark 3-3 from breech to front of slide - - - - -	37
3	5	50	6	Mark 3-3, with cylindrical nickel-steel liner- - - - -	37
3	6	50	6	Mark 3-3, rebuilt, using nickel-steel tube - - - - -	37
3	7	50	6	Mark 3-3, with conical nickel-steel liner- - - - -	37
3	8	50	6	Mark 3-4, with conical nickel-steel liner- - - - -	37
3	9	50	6	Mark 3-6, with conical nickel-steel liner- - - - -	37
4	- -	23.5	4	Bethlehem Steel Co., landing gun - - - - -	38
5	- -	50	5	Driggs-Seabury semiautomatic nickel-steel gun- - - - -	38
5	1	50	5-2	Identical with Mark V, except shoulder for slide stop- - - - -	38
5	2	50	5	Mark 5, with cylindrical nickel-steel liner- - - - -	38
5	3	50	5, 5-2	Mark 5 or 5-1; with conical nickel-steel liner - - - - -	38
6	- -	50	5-1	Similar to Mark 5, except for length of slide and shoulder for slide stop and length of jacket - - - - -	39
6	1	50	5	Mark 6, with shoulder for slide stop coned - - - - -	39
6	2	50	5-1	Mark 6, lined- - - - -	39
6	3	50	5-1	Mark 6, breech cut off - - - - -	39
6	4	50	5-9	Mark 6, breech housing altered - - - - -	39
6	5	50	5-4	Mark 6-4 lined - - - - -	39
6	6	50	- - - - -	Mark 6-4 with outside chromium plated- - - - -	40
6	7	50	- - - - -	Mark 6-4 and 6-6 lined and outside chromium plated - - - - -	40
7	- -	23	7	Ehrhardt landing gun, manufactured by A. & B. Manufacturing Co. - - - - -	40
7	1	23	7	Mark 7 rebuilt, interchangeable with Mark 7- - - - -	40
8	- -	50	8	Proctor S.A. breech mechanism- - - - -	40
9	- -	23	9	Submarine gun S.A. - - - - -	41
9	1	23	- - - - -	Monoblock radially expanded gun- - - - -	41
10	- -	50	5-3	Antiaircraft gun, S.A. - - - - -	41
10	1	50	5-3	Mark 10, with conical nickel-steel liner - - - - -	42
10	2	50	5-3	Mark 10, with breech housing in a separate piece- - - - -	42
10	3	50	5-3	Mark 10-2 lined - - - - -	42
10	4	50	- - - - -	Guns changed to Mark 17 - - - - -	42
10	5	50	- - - - -	Mark 10-2 with copper nickel alloy liner - - - - -	42
11	- -	23.5	11	Bethlehem Steel Co., landing gun - - - - -	42
12	- -	15	13	Bethlehem Steel Co., mountain gun- - - - -	43
13	- -	23	10	Driggs Ordnance Co., boat gun - - - - -	43
14	- -	23.5	12	Poole Engineering & Machine Co., boat gun- - - - -	43
14	1	23.5	- - - - -	Mark 14 with muzzle blast reducer- - - - -	44
15	- -	24	- - - - -	Davis nonrecoil gun - - - - -	44
16	- -	105	2-1	7-inch gun, Mark 2, lined- - - - -	45
17	- -	50	- - - - -	Mark 10 with bore and outside working surfaces chromium plated - - - - -	45
17	1	50	- - - - -	Mark 17 lined and bore and outside working surfaces chromium plated. - - - - -	45
18	- -	50	- - - - -	Copper nickel alloy gun with chromium plated bore - - - - -	45
19	- -	50	- - - - -	Copper nickel alloy monoblock radially expanded gun with chromium plated bore - - - - -	46
20	- -	50	- - - - -	Mark 6 converted to A.A. gun. Rib rifling. - - - - -	46
20	1	50	- - - - -	Mark 6 converted to A.A. gun. Hook rifling. - - - - -	46
20	2	50	- - - - -	Mark 20 or 20, Mod. 1 lined rifling 0 to 1 turn in 25 calibers - - - - -	46
21	- -	50	- - - - -	Alloy steel monoblock radially expanded gun - - - - -	46
21	1	50	- - - - -	Alloy steel monoblock radially expanded gun with outside surface chromium plated - - - - -	46

4-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General descrip- tion (page)
1	- -	40	1	Loose ammunition; all guns converted - - - - -	47
1	1	40	4	Mark 1 converted to use fixed ammunition- - - - -	47
2	- -	39	2	Same as Mark 1, except for position of sleeve thread - - - - -	47
3	- -	40	3	- - - - -	48
3	1	40	3-2	Same as Mark 3, except for sleeve thread and length of chase hoops - - - - -	48
3	2	40	3-1	Same as Mark 3-1, except for size of sleeve thread - - - - -	48
3	3	40	3, 3-1, and 3-2	Same as Mark 3-2, except for position of sleeve thread - - - - -	48
3	4	40	3-2	Marks 3 and 3-1, with conical nickel-steel liner - - - - -	48
3	5	40	3-2	Marks 3-2 and 3-3 with conical nickel-steel liner - - - - -	48
4	- -	40	4 and 4-1	- - - - -	49
4	1	40	4-2	Mark 4, with conical nickel-steel liner - - - - -	49
5	- -	40	3, 3-1, & 3-2	Similar to Mark 4, but has no faceplate and has different slide and yoke stop- - - - -	49
5	1	40	3-2	Mark 5, with conical nickel-steel liner except gun No. 83, which has conical gun-steel liner- - - - -	49
6	- -	40	5, 5-1, 5-2	Same as Mark 5, except for breech mechanism - - - - -	49
6	1	40	5-2	Mark 6, with conical nickel-steel liner - - - - -	49
7	1	50	6-1	Mark 7, with conical nickel-steel liner - - - - -	50
7	2	50	6-Mods.	Mark 7 or 7-1 relined - - - - -	50
7	- -	50	6 and 6-1	- - - - -	50
8	- -	50	7-1	Tube and jacket only, gun steel - - - - -	50
9	- -	50	8	Tube and jacket only, nickel steel; rifling one turn in 31.17 calibers and 0.025 inch deep - - - - -	51
9	1	50	8	Mark 9, with conical nickel-steel liner; rifling one turn in 25 calibers and 0.0375 inch deep - - - - -	51
9	2	50	8	Mark 9, except chase is heavier; rifling as in Mark 9-1 - - - - -	51
9	3	50	8	Mark 9, with short conical nickel-steel liner; rifling as in Mark 9 - - - - -	51
9	4	50	8	Mark 9, with rifling deepened to 0.0375 inch- - - - -	52
9	5	50	8	Mark 9-2, with rifling deepened to 0.05 inch- - - - -	52
9	6	50	8	Mark 9, 9-1, 3, 4, and 8, with conical nickel-steel liner. Rifling one turn in 25 calibers and 0.05 inch deep - - - - -	52
9	7	50	8	Marks 9-2 and 5, with conical alloy-steel liner; rifling one turn in 25 calibers and 0.05 inch deep - - - - -	52
9	8	50	8	Mark 9, with rifling deepened to 0.05 inch- - - - -	52
9	9	50	8-1	Mark 9-5 made left hand - - - - -	53
9	10	50	8	Mark 9-5 with modified rifling- - - - -	53
9	11	50	8	Mark 9-4 or 8 lined or 9-1 or 6 relined with modified rifling - - - - -	53
9	12	50	8	Mark 9-2-5 or 7, relined, rifling uniform twist 1 turn in 32 cal. - - - - -	53
9	13	50	8	Mark 9-9, lined, rifling uniform twist 1 turn in 32 cal. - - - - -	53
9	14	50	8	Mark 9-5 with outside surfaces chromium plated- - - - -	53
9	15	50	8	Mark 9, 9-1, 4, 6, 8 or 11 relined - - - - -	53
9	16	50	8	Mark 9-2, 5, 7, 10 or 12 relined - - - - -	54
9	17	50	8-1	Mark 9-9 or 13 relined (left hand gun for twin mount) - - - - -	54
9	18	50	8-3	Mark 9-11 with slide surface chromium plated- - - - -	54
9	19	50	8-3	Mark 9-12 with slide surface chromium plated- - - - -	54
9	20	50	8-3	Mark 9-5 with slide surface chromium plated - - - - -	54
9	21	50	8-3	Mark 9-16 with slide surface chromium plated- - - - -	54
10	- -	50	9	Antiaircraft, semiautomatic gun - - - - -	55
4.7-INCH GUNS					
1	- -	47	1	Vickers & Sons, small case- - - - -	57
2	- -	42	2	Vickers & Sons, small case- - - - -	57
3	- -	50	3-1	Armstrong, large case - - - - -	57
4	- -	- -	- - - - -	- - - - -	57
Model 1906	- -	27.5	- - - - -	Army gun, purchased for Marines - - - - -	57

5-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General description (page)
1	1	31	2-2	Mark 1 converted to case gun and trunnions cut off	59
2	-	40	2-1	Case - - - - -	59
2	1	40	2-1	Same as Mark 2, except length of chase and chase hoop and position of sleeve thread - - - - -	59
2	2	40	2-2	Same as Mark 2-1, except for diameters of jacket and position of sleeve thread- - - - -	60
2	3	40	2 and 2-1	Same as Mark 2-2, but without cylinder in rear thread - - - - -	60
2	4	40	2-1, 2-2	Same as Mark 2-3, but with muzzle bell- - - - -	60
2	5	35	2-2	Same as Mark 2-4, but with muzzle cut off and new locking hoop - - - - -	60
2	6	40	2-1	Mark 2-4 modified to fit mount Mark 8 and modi- fication. Smaller breech. - - - - -	60
2	7	40	2-2	Mark 2-2, 3, and 4, with conical nickel-steel liner	60
2	8	40	2-2	Mark 2-6, with conical nickel-steel liner - - - -	60
3	-	40	3,3-1, & 3-2	Case - - - - -	61
3	1	40	3,3-2	Mark 3, with front end of jacket and locking hoop tapered - - - - -	61
3	2	40	3-2	Marks 3 and 3-1, with conical nickel-steel liner	61
3	3	25	3-1	Mark 3, cut off; same ballistics as Mark 10 - - -	61
4	-	40	- - - - -	Originally No. 71; since converted to Mark 4-3 -	61
4	1	40	2-1,2-2	Similar to Mark 3, but with groove for yoke and different length in rear of slide cylinder; case	62
4	2	40	2-2	Mark 4-1 rebuilt, using nickel-steel tube and hoops	62
4	3	40	2-2	Mark 4-1, with conical nickel-steel liner - - - -	62
4	4	40	- - - - -	Design for turning down Mark 4-3 to interchange with Mark 2-4 - - - - -	62
5	-	50	4	Bag gun, gun steel - - - - -	62
5	1	50	4-1	Mark 5, with conical nickel-steel liner hooped to muzzle, with gun steel hoop and nickel-steel locking ring - - - - -	63
5	2	50	4-1	Same as Mark 5-1, with special liner- - - - -	63
5	3	50	4-1	Mark 5 rebuilt, with old jacket and C ₁ hoop and new nickel-steel tube, and locking ring and gun steel B ₂ hoop; outside same as Mark 5-1 except for position of locking ring - - - - -	63
6	-	50	4,4-1	Bag gun, nickel steel; uniform twist rifling- - -	63
6	1	50	4,4-1	Gun steel; similar to Mark 6 except for yoke shoulder and slide cylinder; increasing twist rifling- - - - -	63
6	2	50	4-1	Same as Mark 6-1 except with Mark 6 chamber - - -	64
7	Type	51	5 type	Gun No. 357 now modified to Mark 7, Mod. 4 - - -	64
7	-	51	5	Case, separate ammunition - - - - -	64
7	1	51	5	Mark 7, with conical nickel-steel liner, case - -	64
7	2	51	7-1	Mark 7, converted to bag gun by inserting gas- check seat bushing - - - - -	64
7	3	51	7-1	Mark 7, converted to bag gun by inserting a con- ical nickel-steel liner, and changing chamber -	65
7	4	51	7-1	Mark 7 (type), lined and changed to bag gun No. 357 L - - - - -	65
7	5	51	7-1	Mark 7, retubed and converted to bag gun - - - -	65
7	6	51	7-Mods.	Mark 7-3 with uniform twist rifling and modified chamber- - - - -	65
7	7	51	7-Mods.	Mark 7-4, lined with modified chamber and lon- gitudinal clearance at forward shoulder - - - -	65
7	8	51	7-Mods.	Mark 7-5, lined with modified chamber and longi- tudinal clearance at forward shoulder - - - -	65
7	9	51	7-Mods.	Mark 7-6, with liner collar added - - - - -	65
7	10	51	7-Mods.	Mark 7-9, with modified liner collar and liner locking ring - - - - -	66
8	-	51	7, 7-2	Identical with Mark 7, except is a bag gun- - - -	66
8	1	51	7-2	Marks 8 and 9, with conical nickel-steel liner -	66
8	2	51	7-Mods.	Mark 8-1 with uniform twist rifling and modified chamber - - - - -	66
8	3	51	7-Mods.	Mark 8 with zero shrinkage liner and modified chamber	66
8	4	51	7-Mods.	Mark 8-1,2,3, relined modified rifling- - - - -	66
8	5	51	7-Mods.	Mark 8-4 with liner collar added - - - - -	67

5-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General descrip- tion (page)
8	6	51	7-Mods.	Mark 8-5 with modified liner collar and liner locking ring - - - - -	67
8	7	51	7-Mods.	Mark 8-4 with gas check seat liner locking ring bushing - - - - -	67
8	8	51	7-Mods.	Mark 8-4 with modified band seat - - - - -	67
8	9	51	7-Mods.	Mark 8-4 with modified band seat - - - - -	67
8	10	51	7-Mods.	Mark 8-5 with tube and liner locking ring added - - - - -	67
8	A	51	7-Mods.	Mark 14 with modified chamber and shell seat - - - - -	67
9	- -	51	6 exp.	Identical with Mark 8, except with Mark 7 chamber; case gun, originally No. 450, but gun modified to 8-1 - - - - -	68
9	1	51	9	Mark 9 lined - - - - -	68
9	2	51	9	Mark 9-1 with modified chamber band seat - - - - -	68
9	3	51	9	Mark 9-2 with liner collar and locking ring added - - - - -	68
9	4	51	- - - - -	Mark 9 with modified chamber hook rifling - - - - -	68
9	5	50	- - - - -	Same as Gun Mark 9-3 except for tube and liner locking ring - - - - -	68
9	6	50	- - - - -	Mark 9 with modified chamber - uniform twist rifling, 1 turn in 38 cals. - - - - -	68
9	7	50	- - - - -	Mark 9-1 with modified chamber - - - - -	69
10	- -	25	8	Antiaircraft, semiautomatic; radial expansion gun - - - - -	69
10	1	25	11	Antiaircraft, semiautomatic; radial expansion gun - - - - -	69
10	A	- -	- - - - -	Mark 10 retubed, Mark 2, Mod. 2 chamber and chromium plated bore - - - - -	70
10	2	25	11-1	Mark 10-1 with modified breech housing - - - - -	70
10	3	25	11-1	Mark 10-1 with modified breech housing - - - - -	70
10	4	25	11-1	Mark 10-2 with differential cylinder liner added - - - - -	70
10	5	25	11-1	Mark 10-2 with differential cylinder liner added - - - - -	70
10	6	25	11-1	Mark 10-1 with differential cylinder liner added - - - - -	70
11	- -	25	11-1	Mark 10-2 with band seat and bore chromium plated - - - - -	70
11	1	25	11-1	Mark 10-3 with band seat and bore chromium plated - - - - -	71
11	2	25	11-1	Mark 11 with modified band slope and shell centering cylinder - - - - -	71
11	3	25	10-1	Mark 11-1 with modified band slope and shell centering cylinder - - - - -	71
11	4	25	10-1	Same as Mark 11-2 and 3. No guns. - - - - -	71
11	5	25	10-1	Mark 11 with copper nickel alloy liner in differential cylinder - - - - -	71
11	6	25	10-1	Mark 10-2 with copper nickel alloy liner in differential cylinder - - - - -	71
11	7	25	10-1	Mark 10-3 with copper nickel alloy liner in differential cylinder - - - - -	72
11	8	25	- - - - -	Mark 11 with copper nickel alloy liner in differential cylinder - - - - -	72
11	9	- -	- - - - -	Mark 11, Mod. 7 with chamber identical with Gun Mark 13 - - - - -	72
11	10	- -	- - - - -	Mark 11, Mod. 6 with chamber identical with Gun Mark 13 - - - - -	72
12	- -	38	B.Hous.	Monoblock radial expanded case gun - - - - -	72
12	1	38	1 & 1-1 2 & 2-1	Similar to Mark 12 with modified exterior - - - - -	72
13	- -	25	3	Similar to Marks 10 and 11, but with detachable breech housing - - - - -	73
14	- -	51	B.M.	Mark 8-1 to 7 with conical liner and tube and liner locking ring. No guns. - - - - -	73
15	- -	51	7-Mods.	Mark 14 with enlarged chamber - - - - -	73
15	A	51	7-Mods.	Mark 15 with modified chamber - - - - -	73
15	1	51	- - - - -	Has recess at breech for hinge lug - - - - -	73
15	2	51	- - - - -	Mark 7-2 lined, same chamber and rifling as 5" Gun Mark 15 - chromium plated bore - - - - -	74
15	3	51	- - - - -	Mark 7-4 lined, same chamber and rifling as 5" Gun Mark 15 - chromium plated bore - - - - -	74
15	4	51	- - - - -	Mark 7-5 lined, same chamber and rifling as 5" Gun Mark 15 - chromium plated bore - - - - -	74
16	- -	54	- - - - -	Alloy steel, monoblock, radially expanded gun with chromium plated bore. Case gun. - - - - -	74
A	- -	38	9-2	Mark 9 cutoff, modified, chamber & chromium plated bore - - - - -	74
B	- -	38	9-2	Mark A lined with bore, chromium plated - - - - -	75
C	- -	24.4	- - - - -	Mark 13, No. 2236 with muzzle cut off - - - - -	75
D	- -	54	- - - - -	6"/50 cal. Gun Mark 8 lined as 5"/54 cal. bag gun - - - - -	75

6-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General description (page)
No. Mk	--	30	-- -- --	Wire wound; bag gun	77
1	--	30	1	Bag gun	77
2	1	30	4, 4-1	Case; short breech liners of varying length	77
2	2	30	-- -- --	Same as Mark 2-1, but with complete cylindrical liner and outside slightly different; case	78
2	3	30	4-1	Gun Mark 2-1, with balancing hoop; case	78
3	--	30	3	Bag gun	78
3	1	35	3	Same as Mark 3, with longer tube, jacket, and C ₄ hoop	78
3	2	40	3	Bag gun	79
3	3	30	4, 4-1	Mark 3 converted to case gun by inserting chamber liner	79
3	4	30	4, 4-1	Mark 3-3, with trunnions removed and threaded for sleeve	79
3	5	35	4, 4-1	Mark 3-1, converted to case gun by inserting chamber liner	79
3	6	40	4	Mark 3-2, converted to case gun by inserting chamber liner	79
3	7	--	-- -- --	-- -- --	79
3	8	40	4-1	Mark 3-2, converted to case gun by inserting complete liner	80
3	9	30	4	Mark 3-3, converted to case gun by inserting complete liner	80
4	--	40	4	Case; outside similar to Mark 3-2, but trun- nionless and threaded for sleeve, and breech hoop lengthened 0.1 inch	80
4	1	40	Fletcher exp.	Similar to Mark 4, but heavier chase and muz- zle and different position of thread	80
4	2	40	Dashiell	Mark 4-1 with breech cut off 1.8 inches	81
4	3	40	4	Similar to Mark 4-1, but different position of thread and bronze sleeve added	81
4	4	40	4-1	Identical with Mark 4-1, except for raised band near breech, location of thread, and smaller muzzle	81
4	5	40	4-1	Identical with Mark 4-4, except has muzzle bell	81
4	6	--	-- -- --	-- -- --	81
4	7	40	Fletcher exp.	Mark 4-4, bored out for loose ammunition and faceplate and trunnion hoop added; drilled and tapped for pressure gauges, gun No. 154	82
4	8	40	4-1	Mark 4-4, with muzzle liner and separate muz- zle bell	82
4	9	40	4-1	Mark 4-4, rebuilt with nickel-steel tube and gun-steel locking and chase hoop	82
4	10	40	4-1	Mark 4-4, with cylindrical nickel-steel liner, 2-step	82
4	11	40	4-1	Mark 4-4, with cylindrical nickel-steel liner, 1-step	82
4	12	40	4-1	Mark 4-4, with cylindrical nickel-steel liner	82
4	13	40	4-1	Mark 4-5, with cylindrical nickel-steel liner	83
5	--	50	5, 5-1	Case, Armstrong	83
6	Exp.	45	6	Bag gun, No. 197	83
6	--	50	6	Bag gun	83
6	1	50	6-1	Mark 6 rebuilt with nickel-steel tube and hooped to muzzle	84
6	2	50	6-1	Mark 6 hooped to muzzle and lined with cylin- drical nickel-steel liner	84
7	--	40	7-1	Bethlehem Steel Co. case; liner similar to Mark 4-5	84
7	1	40	7-1	Mark 7, with cylindrical nickel-steel liner	84
8	--	50	6, 6-1	Bag gun	85
8	1	50	6, 6-1	Identical with Mark 8, except for chamber	85
8	2	50	6, 6-1	Identical with Mark 8, but has 36 rifling grooves	85
8	3	50	6-1	Marks 8 and 8-1 and 2, with cylindrical nickel-steel liner and new chamber	85
8	4	50	6-1	Marks 8 and 8-1 and 2, with conical nickel- steel liner and chamber as in Mark 8-3	85

6-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General description (page)
9	- -	44	9-1	Bethlehem Steel Co., case - - - - -	86
9	1	44	9-1	Mark 9, lined with a conical alloy-steel liner- -	86
10	- -	45	- - - - -	Vickers Sons & Maxim Co. - - - - -	86
11	- -	50	- - - - -	Vickers Sons & Maxim Co., wire-wound- - - - -	86
12	- -	53	10	With jacket reaching to muzzle- - - - -	86
12	1	53	10,10-2 10-3	Mark 10, with uniform twist rifling - - - - -	87
12	2	53	11	Mark 12-1 with bronze hoops on outside sliding surface- - - - -	87
12	3	53	10-Mods.	Mark 12-1 relined and having liner locking ring and collar - - - - -	87
12	4	53	11	Mark 12-2 relined and having liner locking ring and collar - - - - -	87
12	5	53	10-Mods.	Mark 12-3 with modified band seat and gas check seat liner locking ring - - - - -	87
12	6	53	11	Mark 12-2 fitted with tube and liner locking ring - - - - -	87
12	7	53	10-Mods.	Mark 12-1 fitted with tube and liner locking ring	88
13	- -	- -	- - - - -	- - - - -	88
14	- -	53	10,10-2, 10-3	Monoblock radial expansion gun, heavy - - - - -	88
14	1	53	10-Mods.	Mark 14 with conical nickel steel liner - - - - -	88
15	- -	53	10-1	Monoblock radial expansion gun, light - - - - -	88
16	- -	47	B.Hous. 1&1-1	Monoblock radial expanded case guns - - - - -	88
16	A	47	1&1-1	Same as Mark 16 except rifling - - - - -	89
16	B	- -	- - - - -	Mark 16 with two extractor pockets- - - - -	89
17	- -	47	B.M. 10-7	Monoblock radial expanded bag gun - - - - -	89
18	- -	53	10-Mods.	Mark 12 and 12-1 & 3 relined tube and liner locking ring added and bore chromium plated- - -	89
18	1	53	11	Mark 12-2 & 4 relined with tube and liner locking ring added; bore chromium plated - - - -	89
18	2	53	10-Mods.	Mark 14 lined and bore chromium plated- - - - -	89
A	- -	47	9-3	Mark 8 and 8-4 Cut off and modified for case ammunition.- - - - -	90
B	- -	47	9-3	Mark 8 - cut off and modified for case am- munition - - - - -	90
C	- -	47	6-1	Mark 8-4 modified, relined and renumbered - - - -	90
D	- -	47	9-3	Mark 8 - cut off and modified for case ammunition.- - - - -	90
E	- -	40	9-3	Mark A (47 cal.) with muzzle cut back 42"0 - - -	90

7-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General descrip- tion (page)
1	- -	44	1 exp.	Gun steel, lined with cylindrical gun steel liner	91
2	- -	45	1,1-1,1-2	Nickel steel, hooped to muzzle - - - - -	91
2	1	45	1-1 and -2	Mark 2, with conical nickel-steel liner - - - - -	92
2	2	45	1	Gun No. 2, with cylindrical nickel-steel liner - -	92

8-INCH GUNS

1	- -	30	1	Trunnions; hooped to muzzle - - - - -	93
1	1	30	4	Trunnionless; not hooped to muzzle - - - - -	93
2	1	30	4	Trunnionless; hooped to muzzle - - - - -	93
3	Exp.	30	1-1	Trunnions; hooped to muzzle - - - - -	94
3	- -	35	1-1	Trunnions; not hooped to muzzle - - - - -	94
3	1	35	3	Outside dimensions over chamber and at muzzle same as Mark 3; trunnions interchange with Mark 3, but located differently. - - - - -	94
3	2	35	3	Identical with Mark 3-1, except measurements of tube. - - - - -	94
3	3	40	3	Trunnions interchange with Mark 3, but located differently. - - - - -	95
3	4	35	3	Mark 3, with ring on breech and tapered as on Mark 3-1. - - - - -	95
3	5	35	3-1	Mark 3, with cylindrical nickel-steel liner and trunnion hoop removed, and gun threaded for slide - - - - -	95
4	- -	35	3	Mark 3-1, with trunnion hoop removed and gun threaded for sleeve - - - - -	95
4	1	35	3	Mark 4, shortened 0.66 inch in rear of thread. -	95
4	2	35	3	Similar to Mark 4, except longer jacket and for position for thread. - - - - -	96
4	3	35	3,3-1	Identical with Mark 4, except has two hoops in rear of locking hoop - - - - -	96
4	4	35	3	Identical with Mark 4, but has breech turned down for yoke - - - - -	96
4	5	35	3	Identical with Mark 4-4, but for powder chamber.	96
4	6	35	3	Nickel steel; trunnionless; screw-box liner - - -	96
4	7	35	3	Similar to Mark 4-6, except for position of yoke	97
4	8	35	3	Mark 4-5, rebuilt and hooped to muzzle; no change in breech - - - - -	97
4	9	35	3-1	Mark 4, with cylindrical nickel-steel liner - - -	97
4	10	23	3	Gun No. 62 cut off for experimental purposes - - -	97
4	11	35	3	Mark 4-4, lined with modified chamber - - - - -	97
5	- -	40	5	Not hooped to muzzle - - - - -	98
5	1	45	5	Mark 5, lengthened by inserting heavy nickel- steel liner and hooping muzzle - - - - -	98
5	2	45	5-1	Identical with Mark 5-1, except for gas-check seat - - - - -	98
6	- -	45	5	Hooped to muzzle - - - - -	98
6	1	45	5	Mark 6, with cylindrical nickel-steel liner - - -	99
6	2	45	6	Mark 6, with different gas-check seat - - - - -	99
6	3	45	5	Mark 6, with conical 3-step nickel-steel liner - -	99
6	4	45	6	Mark 6-2, with conical 3-step nickel-steel liner -	99
6	5	45	5	Mark 6-3, with special B, hoop; gun No. 125 - - -	99
6	6	45	5	Mark 6 or 6-3, with conical 2-step nickel-steel liner - - - - -	99
6	7	45	6	Mark 6-2 or 6-4, with conical 2-step nickel-steel liner - - - - -	100
7	- -	23	7	Howitzer mounted on 4-inch carriage - - - - -	100
8	- -	15	8	Howitzer (Vickers Mark 6) - - - - -	100
9	- -	55	9	Nickel and gun-steel gun; hooped to muzzle - - -	101
9	1	55	9	Mark 9; jacket shortened - - - - -	101
9	2	55	9	Mark 9-1, with modified chamber - - - - -	101
9	3	55	9	Mark 9, relined with modified chamber - - - - -	101
9	4	55	9	Mark 9-2, relined - - - - -	101
9	5	55	9	Mark 9-3, relined - - - - -	102
10	- -	55	- - - - -	Similar to Mark 9 but smaller slide diameter - - -	102
11	- -	55	9	Nickel steel 2 piece gun, same outside and inside as Mark 9-2. - - - - -	102
12	- -	55	9-4	2 piece gun radially expanded tube with bore partially chromium plated - - - - -	102

8-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General description (page)
12	1	55	9-4	Mark 12 gun with modified rifling and plated - -	103
12	A	55	9-4	Mark 12 with muzzle bell added- - - - -	103
12	B	55	9-4	Mark 12-1 with experimental muzzle liner added- -	103
13		55	9	Mark 9-2 with bore partially chromium plated - -	103
14		55	9	Mark 9-1 and 2, with small chamber, bore chromium plated - - - - -	103
14	1	55		Mark 14-B No. 345 relined with small chamber- -	103
14	A	55	9	Mark 14 with modified chamber and rifling - - -	104
14	B	55	9	Mark 9-3, relined with modified chamber and rifling - - - - -	104
14	C	55	9	Same as Mark 14 except for chamber - - - - -	104
15		55		Mark 12-1 with Mark 14 chamber and rifling- - -	104
A	1	35	1-Mods.	7"/45 cal. Mark 2 bored out to 8" - - - - -	104
A		35	1-Mods.	Mark A bored out for 8" liner - - - - -	104
B		55	9-1	Mark 9-2 with chamber liner - - - - -	105
C		55	9-1	Mark B with modified chamber liner- - - - -	105
D		35		7"/44 cal. Mark 1 bored out to 8"0 chamber- - liner inserted and muzzle balancing hoop added -	105
9-INCH GUNS					
1		98		14"/50 cal. Gun lengthened to 900"0 and lined with a bore of 9"0 - - - - -	107
10-INCH GUNS					
	- -	18	8-inch B.M. 4	Aerial torpedo gun, experimental- - - - -	109
1	- -	31	1	Hooped to muzzle; attached to carriage by straps	109
1	1	31	1	Identical with Mark 1, except small variations in hoops - - - - -	109
1	2	35	1	Hooped to muzzle; strap recesses same as Mark 1	109
1	3	35	1	Same as Mark 1-2, but different hooping forward of straps- - - - -	110
2	- -	30	4,5,5-1	Hooped to muzzle; attached to carriage by straps	110
2	1	30	5	Identical with Mark 2, except at breech - - - - -	110
2	2	30	5	Converted 8-inch Hurst gun; is the same as Mark 2 for 164.5 inches from breech - - - - -	110
3	- -	40	6	Hooped to muzzle; screw-box liner - - - - -	111
3	1	40	6	Identical with Mark 3, except for chamber - - - -	111
3	2	40	6	Mark 3 and 3-1, with conical nickel-steel liner -	111
12-INCH GUNS					
1	- -	35	5-1	Hooped from muzzle to 6 inches from breech; strap attachment - - - - -	113
1	1	35	3-1	Identical with Mark 1, except hooped to breech	113
1	2	35	4	Mark 1-1, with bands on C3 hoop cut back to balance guns in mount Mark 3-1. - - - - -	113
2	- -	35	5	Outside is identical with Mark 1-1 for 214 inches from breech. Not hooped to muzzle - - -	113
2	1	35	5	Mark 2, with cylindrical nickel-steel liner, different chamber, and locking ring added - - -	114
2	2	35	5	Mark 2 rebuilt; outside dimensions as in Mark 2-1 - - - - -	114
3	- -	40	6	Not hooped to muzzle; slides in carriage in recoil. - - - - -	114
3	1	40	6	Same as Mark 3, but with smaller chamber - - - -	114
3	2	40	6	Same as Mark 3-1, but only one long chase hoop- -	114
3	3	40	6,6-1 and 6-2	Mark 3 and Mark 3-1 and 2, lined with cylin- drical nickel-steel liner hooped to muzzle and locking ring added. - - - - -	115
4	- -	40	6	Outside identical with Mark 3 for 234 inches from breech, but hooped to muzzle. - - - - -	115
4	1	40	6-2	Mark 4 lined with cylindrical nickel-steel liner	115

12-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General description (page)
5	- -	45	6,6-1, & 7	Outside identical with Mark 3 for 234 inches, but hooped to muzzle - - - - -	115
5	1	45	6-1 and 2	Mark 5, with cylindrical nickel-steel liner and different chamber- - - - -	115
5	2	45	6-2	Mark 5, with conical nickel-steel liner and Mark 5-1 chamber - - - - -	116
5	3	45	9	Mark 5-1, changed to suit new breech mechanism -	116
5	4	45	10	Mark 5-1, changed to suit new breech mechanism -	116
5	5	45	6-2	Mark 5, with conical nickel-steel liner, and small chamber - - - - -	116
5	6	45	10	Mark 5-4, rebuilt with small chamber - - - - -	116
5	7	45	6-2	Mark 5 or Mods. 1, 2, or 5, rebuilt with small chamber- - - - -	116
5	8	45	6	Mark 5-1, relined and with small chamber- - - - -	117
5	9	45	6-2	Mark 5-2, 5, and 7, relined with conical two- step liner, small chamber, and uniform-twist rifling. - - - - -	117
5	10	45	6-2	Mark 5-1, 8, relined with small chamber and uniform-twist rifling- - - - -	117
5	11	45	9	Mark 5-3, relined, with small chamber and uni- form-twist rifling - - - - -	117
5	12	45	10	Mark 5-4, relined, with small chamber and uni- form-twist rifling - - - - -	117
5	13	45	10	Mark 5-6, lined with conical two-step liner, small chamber, and uniform-twist rifling - - - - -	117
6	- -	45	7	Outside identical with Mark 3 for 198 inches, but hooped to muzzle - - - - -	118
6	1	45	6-2	Mark 6, with cylindrical nickel-steel liner - - - - -	118
6	2	45	6-2	Mark 6, with conical nickel-steel liner - - - - -	118
6	3	45	6-2	Mark 6, with conical nickel-steel liner and small chamber- - - - -	118
6	4	45	6-2	Mark 6-2, 4, relined with two-step conical liner, small chamber, and uniform-twist rifling - - - - -	118
6	5	45	6-2	Mark 6-1, relined and with small chamber and uniform-twist rifling. - - - - -	119
7	- -	50	8	Built up from cylindrical liner, inserted with- out shrinkage - - - - -	119
7	1	50	8	Mark 7 (type), with conical nickel-steel liner and changed hoops - - - - -	119
7	2	50	8	Mark 7, with conical nickel-steel liner and new locking hoop D3 and locking ring E1 - - - - -	119
7	3	50	9-1	Outside and inside, except gas-check seat, identical with Mark 7-2, but no liner and different designs - - - - -	120
7	4	50	8	Mark 7, lined with conical one-step liner, D2 hoop added, and uniform-twist rifling - - - - -	120
7	5	50	8	Mark 7-1, relined and with uniform-twist rifling - - - - -	120
7	6	50	8	Mark 7-2, relined and with uniform-twist rifling - - - - -	120
7	7	50	9-1	Mark 7-3, one-step liner, uniform twist - - - - -	120
7	8	50	8	Mark 7 lined or 7-4 relined with modified liner -	120
7	9	50	8	Mark 7-2 or 6 relined with locking ring and collar added. - - - - -	121
7	10	50	9-2	Mark 7-2 or 6 relined with modified locking ring and collar- - - - -	121
7	11	50	12	Mark 7-7 with lengthened chamber and 3°-31' band seating slope, down swing B.M. - - - - -	121
7	12	50	12	Mark 7-10 with lengthened chamber and 3°-31' band seating slope, down swing B.M. - - - - -	121
7	13	50	12	Mark 7-8 with 3°-30' band seating slope and down swing B.M. - - - - -	121
7	14	50	12	Mark 7-9 with a 3°-30' band seating slope and down swing B.M. - - - - -	121
8		50	11	Alloy steel gun with uniform twist rifling (1 turn in 25 cal.) and chromium plated bore - -	122
A		49.5		Mark 7-2 with chamber, rifling and bore of a Mark 8 gun. - - - - -	122

13-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General description (page)
1	- -	35	1	Not hooped to muzzle; strap attachment - - - - -	123
1	1	35	1	Mark 1 rebuilt, but same dimensions, except chamber - - - - -	123
1	2	35		Marks 1, 1-1, and 2-1, with cylindrical nickel- steel liner - - - - -	123
2	- -	35	2, 2-1	Not hooped to muzzle, yoke ring on gun - - - - -	123
2	1	35	2-1	Outside like Mark 1 and inside like Mark 2-2- - -	124
2	2	35	2-1	Similar to Mark 2, but with different chamber - -	124
2	3	35	2-1	Marks 2 and 2-2, with the Mark 1-2 liner- - - -	124
14-INCH GUNS					
1	- -	45	1	Part nickel and part gun steel- - - - -	125
1	1	45	2,2-1	Mark 1, with cuttings in breech different - - - -	125
1	2	45	3	Part nickel and part gun steel; Mark 1, with cuttings in breech different. - - - - -	125
1	3	45	3,3-1	Similar to Mark 1-2, but D ₃ hoop replaced by longer hoop and locking rings added- - - - -	125
1	4	45	1	Mark 1, lined with conical liner and new D ₃ hoop and locking rings - - - - -	126
1	5	45	2-1	Mark 1-1, lined with conical liner and new D ₃ hoop and locking rings - - - - -	126
1	6	45	3-1	Mark 1-2, lined with conical liner and new D ₃ hoop and locking rings, and Mark 1-3 with conical liner - - - - -	126
1	7	45	1	Mark 1, modified; uniform-twist rifling - - - - -	126
1	8	45	2,2-1	Mark 1-1, modified; uniform-twist rifling - - - -	126
1	9	45	3,3-1	Mark 1-2, modified; large chamber - - - - -	126
1	10	45	2-1	Mark 1-1, with new D ₃ hoop and locking rings- - -	127
1	11	45	1	Mark 1, modified- - - - -	127
1	12	45	1	Mark 1-4, relined; large chamber- - - - -	127
1	13	45	2,2-1	Mark 1-5, relined; large chamber- - - - -	127
1	14	45	2,2-1	Mark 1-1, modified; large chamber - - - - -	127
2	- -	45	2 Exp.	Originally type gun nickel-steel similar to Mark 1	128
2	1	45	2 (type)	Mark 2, conically lined and with new D ₃ hoop and locking rings - - - - -	128
3	- -	45	3,3-1	Part nickel and part gun steel- - - - -	128
3	1	45	3-1	Mark 1, with conical nickel-steel liner - - - - -	129
3	2	45	3,3-1	Mark 3, lined with conical one-step liner; large chamber - - - - -	129
3	3	45	3-1	Mark 3-1, relined with conical two-step liner; large chamber - - - - -	129
3	4	45	2-3	Same as Mark 3-2 but with side swing B.M. - - - -	129
3	5	45	2-3	Same as Mark 3-3 but with side swing B.M. (No Guns)	129
4	- -	50	4	Nickel-steel gun, conical liner inserted after assembly - - - - -	130
4	1	50	4-1	Mark 4, except no screw-box liner flange, and jacket and C ₁ hoop 4 inches longer - - - - -	130
4	2	50	4	Mark 4, with slightly heavier liner - - - - -	130
4	3	50	4	Mark 4, 4-5, relined with two-step conical liner and uniform-twist rifling - - - - -	130
4	4	50	4-1	Mark 4-1, relined and uniform-twist rifling - - -	131
4	5	50	4	Mark 4, relined with experimental rifling - - - -	131
4	6	50	4	Mark 4-2, relined with uniform-twist rifling - - -	131
4	7	50	4-1	Mark 4-1 relined with two-step conical liner and uniform-twist rifling - - - - -	131
4	8	50	4-Mods.	Mark 4-3 with band seat modified - - - - -	131
4	9	50	4-Mods.	Mark 4-4 with band seat modified - - - - -	131
4	10	50	4-Mods.	Sketch 73318 (No guns) - - - - -	132
4	11	50	4-Mods.	Mark 4-1 with band seat modified- - - - -	132
5	- -	45	2-2	Part nickel and part gun steel; interchanges with Mark 1 - - - - -	132
5	1	45	2-2	Mark 5, relined with two-step liner and large chamber - - - - -	132
5	2	45	3-2	Gun with one-step liner and large chamber - - - -	132
5	3	45	3-9	Mark 5 with B.M. changed from side to down swing	133

14-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General description (page)
6	- -	50	4-1	Mark 4-1, with conical liner and uniform-twist rifling - - - - -	133
7	- -	50	4-Mods.	Mark 4 or 4-3 relined with modified liner and chamber - - - - -	133
7	1	50	4-Mods.	Mark 4-1 or 3 relined with modified liner and chamber - - - - -	133
7	2	50		Chamber with shell centering cylinder - - - - -	133
8	- -	45	3-Mods.	Mark 1-1,3,7,8,9,11 or 14 modified and relined, down swing B.M. - - - - -	133
8	1	45	2-Mods.	Mark 8 with side swing carrier type B.M. - - - - -	134
8	2	45	3-Mods.	Mark 1-4 or 5 relined and modified down swing B.M. - - - - -	134
8	3	45	4-Mods.	Same as 8-2 except it has side swing B.M. - - - - -	134
8	4	45	3-Mods.	Mark 8 relined with modified chamber down swing B.M. - - - - -	134
8	5	45	3-Mods.	Same as 8-4 except for modified chamber - - - - -	134
8	6	45	3-Mods.	Mark 8 with D7 hoop added and modified chamber - - - - -	134
8	7	45	3-Mods.	Mark 8 (No.66L) with D7 hoop added - - - - -	135
8	A	45	3-Mods.	Mark 8 with rifling uniform twist 1/25 - - - - -	135
8	B	45	3-Mods.	Mark 1-7 relined (experimental) - - - - -	135
9		45	3-Mods.	Mark 3, 3-2 or 4 lined and modified with down swing B.M. - - - - -	135
9	1	45	2-Mods.	Same as 9 except it has a side swing B.M. - - - - -	135
9	2	45	2-Mods.	Mark 3-1 relined and modified with side swing B.M. - - - - -	135
10	- -	45	2 or 3	Mark 5 or 5-3 relined, modified with down or side swing B.M. - - - - -	136
10	1	45	2-Mods.	Same as 10 except it has side swing B.M. - - - - -	136
10	2	45	3-Mods.	Mark 5-2 relined, modified chamber down swing B.M. - - - - -	136
11	- -	50	- - - -	Mark 4-8, 7 or C relined with small chamber, uniform twist rifling (1 turn in 25 cal.) and chromium plated bore - - - - -	136
11	1	50	- - - -	Mark 4-1, 4-4, 4-3, 4-11, or 7-1 relined with small chamber, uniform twist rifling (1 turn in 25 cal.) and chromium plated bore - - - - -	136
12	- -	45	- - - -	Mark 8, 8-1, 8-4 and 8-5 relined with heavy liner shrinkages, uniform twist rifling (1 turn in 25 cal.) and chromium plated bore - - - - -	137
12	1	45	- - - -	Mark 8-3 relined with heavy liner shrinkages, uniform twist rifling (1 turn in 25 cal.) and chromium plated bore - - - - -	137
12	2	45	- - - -	Mark 8 and Mods. having short D ₃ Hoop, relined with heavy liner shrinkages, uniform twist rifling (1 turn in 25 cal.), chromium plated bore - - - - -	137
12	3	45	- - - -	Mark 8-B with heavy liner shrinkages, uniform twist rifling (1 turn in 25 cal.), chromium plated bore - - - - -	137
12	4	45	- - - -	Mark 9 relined with heavy liner shrinkages, uniform twist rifling (1 turn in 25 cal.), chromium plated bore - - - - -	137
12	5	45	- - - -	Mark 9-2 relined with heavy liner shrinkages, uniform twist rifling (1 turn in 25 cal.), chromium plated bore - - - - -	138
12	6	45	- - - -	Mark 10 or 10-1 relined with heavy liner shrinkages, uniform twist rifling (1 turn in 25 cal.), chromium plated bore - - - - -	138
12	7	45	- - - -	Mark 10-2 relined with heavy liner shrinkages, uniform twist rifling (1 turn in 25 cal.), chromium plated bore - - - - -	138
A	- -	33	2	13"/35 cal. Gun Mark 2 (no. 33) bored out and lined - - - - -	138
B	- -	50	- - - -	Proposed gun for new construction (no guns) - - - - -	138
C	- -	50	- - - -	Mark 7-2 relined. Rifling R.H. uniform twist 1/25 chromium plated bore - - - - -	138

16-INCH GUNS

Mark	Mod.	Length (cals)	Breech Mechanism	Remarks	General descrip- tion (page)
Type	- -	45	Type	Part nickel and part gun steel - - - - -	139
1	- -	45	1	Heavier than type gun; conically lined- - - - -	139
1	1	45	1	Mark 1, with uniform-twist rifling- - - - -	140
1	2	45	1	Mark 1 with liner locking ring and collar added -	140
1	3	45	1	Same as Mark 1-2 except rifling which is same as Mark 1-1 - - - - -	140
1	4	45	1	Mark 1 with liner locking ring and screw box centering ring added - - - - -	140
1	5	45	1	Mark 1 relined with modified liner and chamber- -	140
1	6	45	1	Mark 1-2 with modified band seat - - - - -	140
1	7	45	1	Mark 1-6 fitted with tube and liner locking ring	141
1	8	45	1	Mark 1-2 fitted with tube and liner locking ring	141
1	9	45	1	Mark 1-4 fitted with tube and liner locking ring	141
1	10	45	1	Mark 1-5 fitted with tube and liner locking ring	141
2	- -	50	1-1	Part nickel and part gun steel; conically lined	141
2	1	50	1-1	Mark 1, with uniform-twist rifling- - - - -	142
3	- -	50	1	Same as Mark 2 except it has a one step conical liner (no guns)- - - - -	142
3	1	50	1-1	Mark 3 with modified rifling - - - - -	142
4	- -	56	2	18"/48 cal. gun Mark 1 lined down to 16" bore - -	142
5	- -	45	1	Mark 1 relined and different design of chamber- -	142
5	1	45	1	Mark 5 relined with tube and liner locking ring added - - - - -	142
5	2	45		Mark 1 and Mods. and Mark 5 and 5-1 relined with a one step alloy steel liner with heavy liner shrinkages. - - - - -	142
5	3	45		Mark C. No. 5L2 redesignated.- - - - -	143
6	- -	45	3	Lightweight gun with bore chromium plated uniform twist rifling (1 turn in 25 cal.) - - - - -	143
6	1	45		Mark 6 with tapped holes at breech end for se- curing hinge lug to gun. - - - - -	143
7	- -	50	4	Alloy steel light weight gun with uniform twist rifling (1 turn in 25 cal.) and chromium plated bore- - - - -	143
8	- -	45		Mark 1 and Mods. and Mark 5 and Mods. relined with a one step alloy steel liner with heavy shrinkages. Has same chamber and rifling as Gun Mark 6 - chromium plated bore - - - - -	143
A	- -	28.8		13"/35 cal. gun Mark 2 bored out and hooped to muzzle - - - - -	144
B	- -	45		No Guns. No drawings. Original design of Gun Mark 6 - - - - -	144
C	- -	45	1	Mark 5 No. 5 relined, modified chamber and B ₄ Muzzle Hook - - - - -	144
D	- -	50		Mark 3, Mod. 1. No. 131 with modified chamber and rifling, a chromium plated bore (Pilot Gun for 16"/50 cal. Gun Mark 7)- - - - -	144
E	- -	45		Type Gun T ₁ lined, chromium plated bore chamber and rifling identical with Gun Mark 6- - - - -	144
18-INCH GUNS					
I	- -	48	1	This gun has been lined down to 16" (no guns) - -	145
A	- -	47		16"/56 Gun Mark 4 with muzzle cut back and re- lined as an 18" Gun. Chromium plated bore and uniform twist rifling (1 turn in 25 cal.) - - -	145

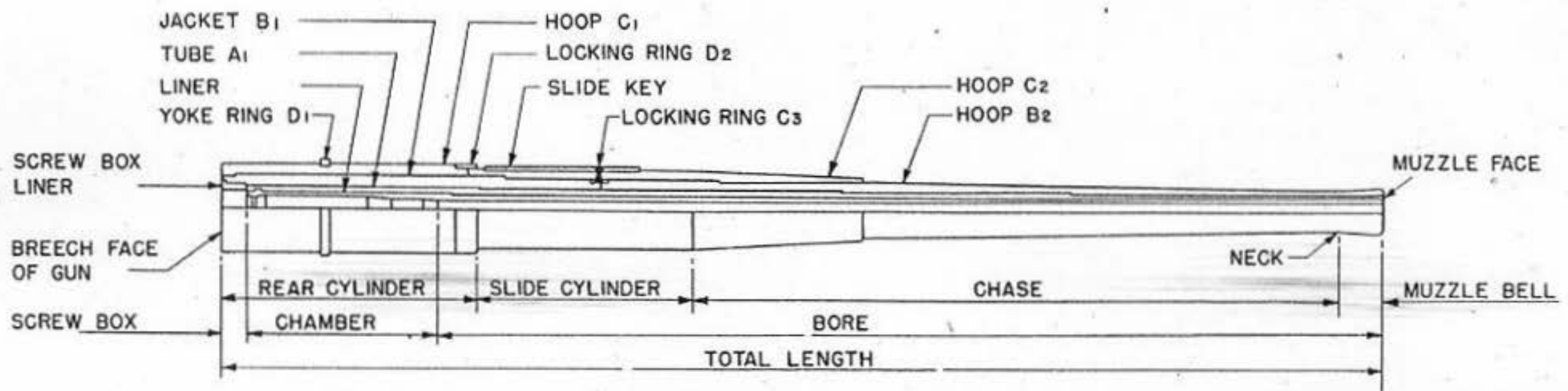


FIG. 1 BUILT-UP GUN

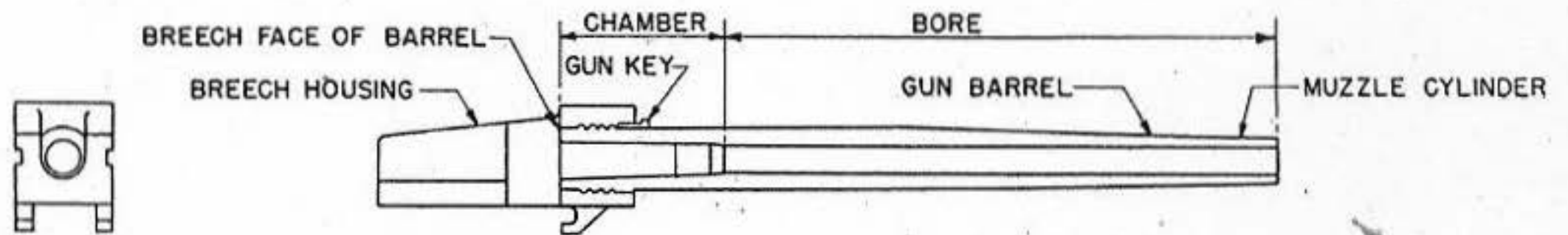


FIG. 2 MONOBLOC GUN BARREL WITH BREECH HOUSING

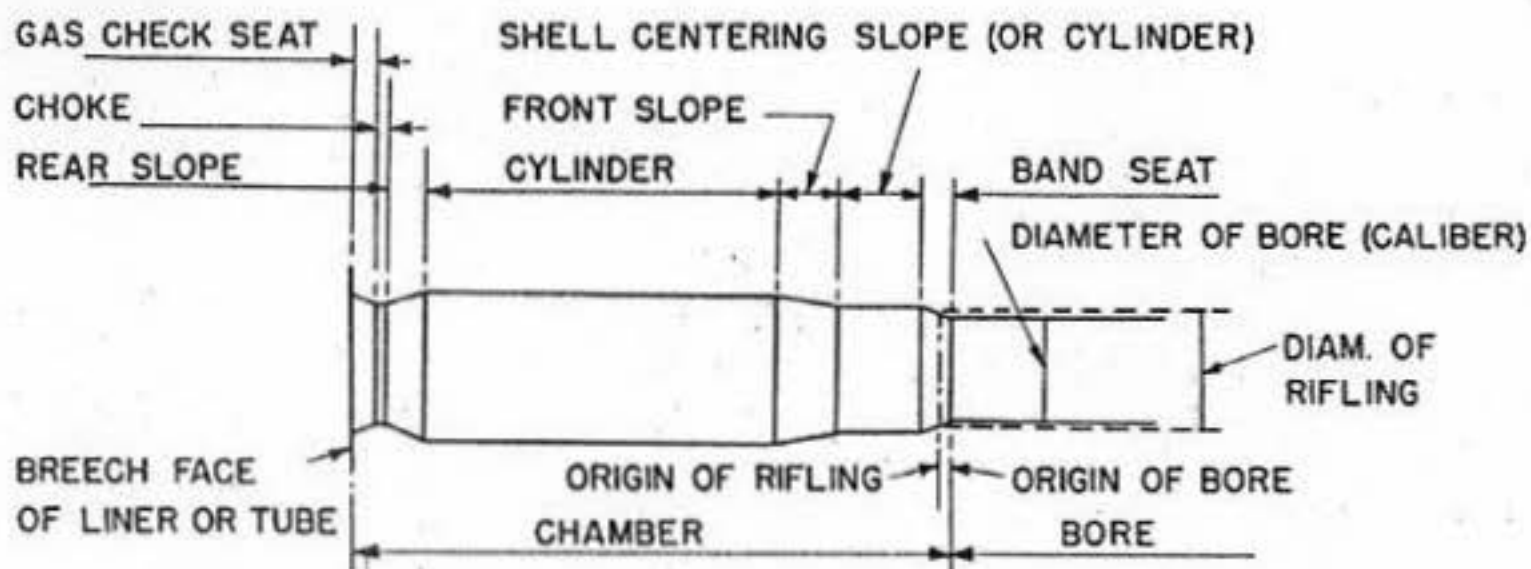


FIG. 3 CHAMBER-BAG AMMUNITION

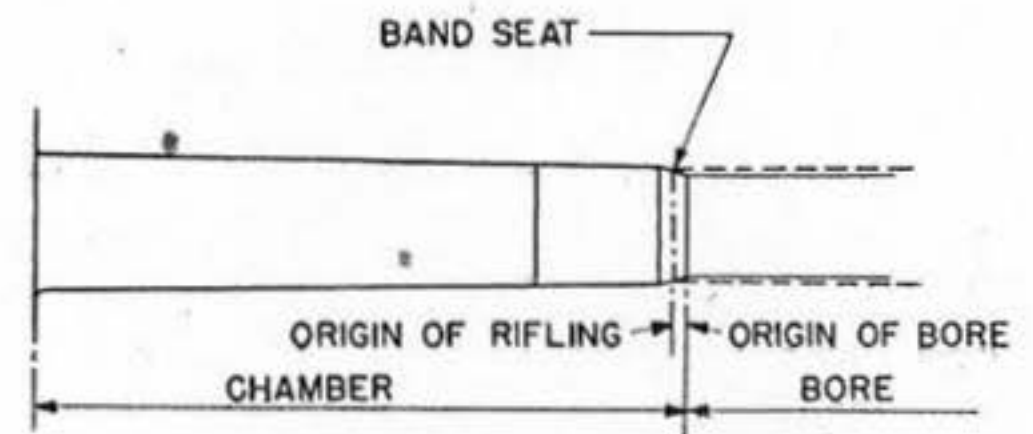


FIG. 4 CHAMBER - CASE AMMUNITION

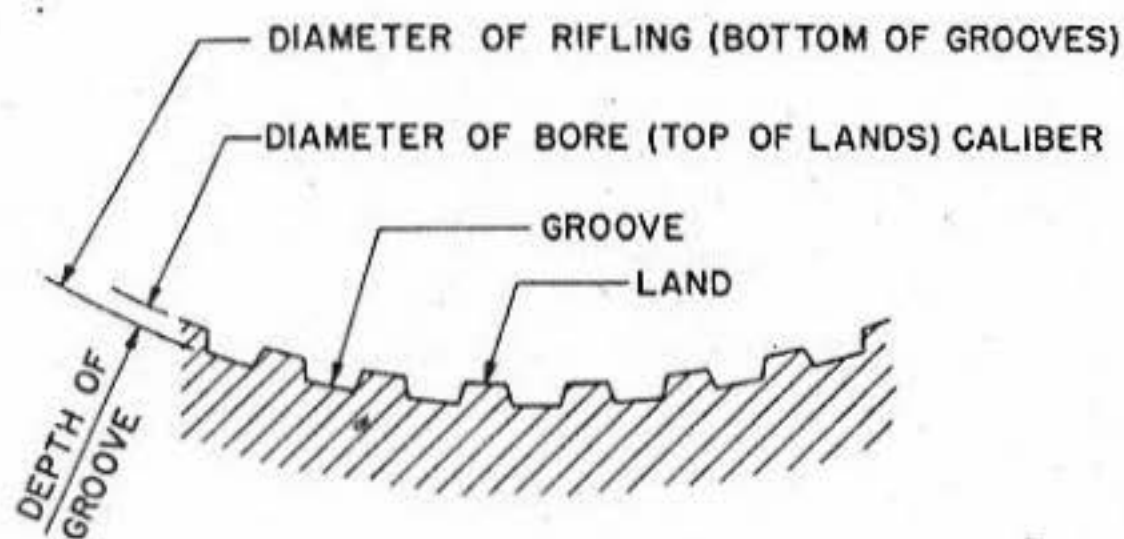


FIG. 5 RIB RIFLING

$$\text{LENGTH IN CALIBERS} = \frac{\text{LENGTH OF BORE PLUS CHAMBER (INCHES)}}{\text{DIAMETER OF BORE (INCHES)}}$$

GENERAL DESCRIPTION

1.10 - INCH GUNS

1.10 INCH GUN, MARK 1

75 CAL.

Drawing 140658. This is an alloy steel single forging, water cooled machine gun. The overall length of barrel is 82 inches. The overall length of gun and housing assembled is 113.55 inches. The barrel is chrome plated, both interior and exterior, except the chamber. Rifling; R.H., uniform twist (1 turn in 30 calibers). 12 lands and 12 grooves. Breech mechanism, Mark 1, recoil operated.

1.10 INCH GUN, MARK 1, MOD. 1

75 CAL.

Drawing 217059. This is gun, Mark 1, with the muzzle end threaded for the attachment of a flash hider.

1.10 INCH GUN, MARK 1, MOD. A

75 CAL.

Sketch 84886. This is gun barrel, Mark 1, modified for assembly in jacket of 3-pounder gun, Mark 4, 3-pounder breech mechanism, Mark B.

1.10 INCH GUN, MARK 2 (EXPERIMENTAL)

75 CAL.

Drawing 150801. This is an alloy steel single forging, gas operated, water-cooled machine gun. The overall length of barrel is 82 inches. It has a 1/8-inch hole drilled through wall of barrel 18 inches from breech face for escape of gas to operate breech mechanism. The overall length of complete assembly is 140.58 inches. Rifling; R.H., uniform twist (1 turn in 30 calibers). 12 lands and 12 grooves, length of rifling 73.30 inches. Breech mechanism, Mark 2.

1.10 INCH EXPERIMENTAL GUN, NO. 1

75 CAL.

Sketch 73643. This is a 3-pounder gun, Mark 4 (No. 176) retubed. Using 3-pounder breech mechanism, Mark 4, with extractors changed to fit 1.10 inch case. Rifling; R.H., uniform twist (1 turn in 30 calibers).

1.10 INCH GUN, MARK A

75 CAL.

Drawing 140661. This is a 3-pounder gun, Mark 4 (No. 176) retubed. Rifling, uniform twist (1 turn in 30 calibers).

1.10 INCH GUN, MARK B

75 CAL.

Drawing 227453. This is a 3-pounder gun, Mark 4 (No. 255) retubed. Rifling, uniform twist (1 turn in 30 calibers). Chromium plated bore for distance of $74\frac{1}{2}$ inches from muzzle.

GENERAL DESCRIPTION

37 MM. (1.457-INCH) GUNS, INCLUDES 1-POUNDERS

1-POUNDER (1.457-INCH) SPONSELL GUN

40 CAL.

No drawings. The gun interchanges with 1-pounder gun, Mark 5. Two guns are on hand, No. 1 and No. 2, manufactured by Pratt & Whitney, 1892 and 1893, respectively. The breech-block is of the vertical sliding type and is operated by a crank shaft journaled in the lower part of the block. The crank handle projects to the rear below the axis of the gun when block is in its lowest position. The crank projects in front of the block and the crank pin works in a curved horizontal groove cut in a lug projecting from the gun.

The breech is slotted clear through and the sides are held together by the breechblock, which is dovetailed in the housing. Long cartridge case.

1-POUNDER (1.457-INCH) GUN, MARK 1

20 CAL.

Drawing 13779. This is a Hotchkiss, light, short, Mark 1 gun, consisting of tube and trunnion hoop. The latter is screwed onto the tube. The diameter over the chamber is 3.35 inches, and at muzzle 2.28 inches. The center of trunnions is 9.13 inches from breech; they are 1.77 inches in diameter by 1.65 inches long. The distance between rimbases is 3.937 inches. Total length is 33.15 inches. Breech mechanism, Mark 1. The small cartridge case is used in this gun. These guns have been withdrawn from service.

1-POUNDER (1.457-INCH) GUN, MARK 1, MOD. 1

35 CAL.

No drawings. This is a Hotchkiss, light, long, Mark 2 gun. Breech mechanism, Mark 1, Mod. 1. These guns have been withdrawn from service.

1-POUNDER (1.457-INCH) GUN, MARK 2 (EXP.)

40 CAL.

No drawings. Driggs-Schroeder gun, light, Mark 1. Breech mechanism, Mark 2, experimental. Withdrawn from service.

1-POUNDER (1.457-INCH) GUN, MARK 2

40 CAL.

Drawing 7414. This gun is a Driggs-Schroeder, heavy, Mark 1, and consists of tube, jacket and locking hoop. The diameter over the powder chamber is 3.80 inches and diameter of muzzle is 2.10 inches. The thread for sleeve commences 17.20 inches from breech and is 6 inches long. Diameter at top of thread is 3.65 inches and 3.50 inches at the bottom. Total length of gun is 61.08 inches and length of tube is 58.28 inches. This gun was originally adapted for light ammunition, as shown on drawing, but was rebored to take the heavy ammunition. Breech mechanism, Mark 2.

1-POUNDER (1.457-INCH) GUN, MARK 2, MOD. 1

40 CAL.

No drawing. This gun is a Driggs-Schroeder, heavy, Mark 2. Breech mechanism, Mark 2, Mod. 1.

1-POUNDER (1.457-INCH) GUN, MARK 3

40 CAL.

Drawing 9902. This gun is a Hotchkiss, heavy, long, Mark 1, and consists of tube, jacket, and locking hoop. The diameter over the powder chamber is 3.50 inches and diameter of muzzle is 2.40 inches. The thread for the sleeve commences 15.65 inches from breech and is 6 inches long. Diameter at top of thread is 3.65 inches and 3.50 inches at the bottom; see drawing 13784. Total length of gun is 62 inches and length of tube is 57.98 inches. Breech mechanism, Mark 3. Long cartridge case.

1-POUNDER (1.457-INCH) GUN, MARK 4

50 CAL.

Drawing 13543. This gun is a Driggs-Schroeder, heavy, long, Mark 2, and consists of tube, jacket and locking hoop. The diameter over the powder chamber is 3.80 inches and the smallest diameter of the chase is 2.10 inches; diameter of muzzle bell is 2.50 inches. The thread for sleeve commences 18.086 inches from breech and is 5.4375 inches long. Diameter at top of thread is 3.548 inches and 3.50 inches at the bottom. Total length of gun is 75.986 inches and length of tube is 72.85 inches. Breech mechanism, Mark 4. Long cartridge case.

1-POUNDER (1.457-INCH) GUN, MARK 5

40 CAL.

Drawing 26878. This gun is a Hotchkiss, heavy, long, Mark 2, and is identical with Mark 3, but has a total length of 62.37 inches and breech mechanism, Mark 5. Long cartridge case.

1-POUNDER (1.457-INCH) GUN, MARK 6

42.5 CAL.

Drawing 13948. This is a Maxim-Nordenfelt, heavy, automatic, Mark 1 gun, and consists of a single forging. The center of the trunnions is 1 inch from breech and they have a diameter of 2 inches, length 1 inch, and 4.5 inches between rimbases. The diameter over the chamber is 4.50 inches and at muzzle 2.35 inches. At 6 inches from muzzle the gun is threaded for a length of 1 inch with a diameter of 2.50 inches, to fit barrel nut. Length of barrel is 62 inches. Breech mechanism, Mark 6, automatic, with side feed. These guns were withdrawn from service, but most of them have been remounted as anti-aircraft guns. Heavy ammunition with a long day-tracer projectile is used.

1-POUNDER (1.457-INCH) GUN, MARK 7

30 CAL.

Drawing 18577. This is a Maxim-Nordenfelt, light, automatic, Mark 2 gun, similar in design to the Mark 6. The gun is a single forging, with center of trunnions 1 inch from breech and they have a diameter of 1.75 inches, length 0.75 inch and 4 inches between rimbases. The diameter over the chamber is 4 inches and at muzzle 2.35 inches. At 5.25 inches from muzzle the gun is threaded for a length of 1.04 inches, with a diameter of 2.50 inches, to fit barrel nut. Length of barrel is 43.50 inches. Breech mechanism, Mark 7. These guns have been withdrawn from service. Small cartridge case.

1-POUNDER (1.457-INCH) GUN, MARK 8

40 CAL.

Drawing 23669. This gun is a Hotchkiss, heavy, Mark 3, semiautomatic. This gun is identical with Mark 5, except that breech housing is different. Breech mechanism, Mark 8. Long cartridge case.

1-POUNDER (1.457-INCH) GUN, MARK 9

No drawings. This is a Maxim-Nordenfelt, light, automatic gun, Mark 1. Breech mechanism, Mark 9. The 13 guns of this mark have been withdrawn from service.

1-POUNDER (1.457-INCH) GUN, MARK 10 (AEROPLANE GUN)

40 CAL.

Drawing 51016. This is a single-forging, nickel-steel gun. The diameter over powder chamber is 3 inches, over slide 2.70 inches and a muzzle 2.25 inches. The length of the slide surface is 22.28 inches. The total length of the gun is 62.67 inches. On the underside of the gun and in front of the breech housing is a lug with a 1.75 inch hole for attaching the hydraulic-brake cylinder. Large case. Breech mechanism, Mark 5, Mod. 1.

1-POUNDER (1.457-INCH) GUN, MARK 11 (LINE THROWING GUN)

20 CAL.

Drawing 53386. This gun is a 1.50 inch smooth-bore, single-forging, nickel-steel gun. The diameter over powder chamber is 3.5 inches. It is threaded to fit 1-pounder slide, Mark 1, Mod. 1. The smallest diameter of chase is 3.25 inches. The muzzle bell is 3.40 inches in diameter. The total length of the gun is 33.5 inches. It uses the 1-pounder large case. Breech mechanism, Mark 5, Mod. 1.

1-POUNDER (1.457-INCH) GUN, MARK 12

40 CAL.

Drawing 54608. This is a Driggs, single-forging, alloy-steel gun. The diameter over the powder chamber is 3.5 inches and the diameter of the muzzle is 2.40 inches. The thread for the sleeve commences 17.20 inches from breech and is 5.5 inches long. The diameter of the top of the thread is 3.65 inches and at the bottom 3.5 inches. The total length of the gun is 63.30 inches. The breech mechanism, Mark 9, has a sliding, rotating drop block. Long cartridge case.

1-POUNDER (1.457-INCH) GUN, MARK 12, MOD. 1

40 CAL.

Sketch 9452. This is Mark 12 gun bored out and retubed as a three piece gun consisting of tube, jacket and locking ring.

1-POUNDER (1.457-INCH) GUN, MARK 1

40 CAL.

Drawing 55222. This is a single-forging, alloy-steel gun. The gun is Mark 5 gun, built out of a single forging. Breech mechanism, Mark 5. Long cartridge case.

1-POUNDER (1.457-INCH) GUN, MARK 14

40 CAL.

No drawings. This is an automatic gun (Baldwin design) with flexible mount, manufactured by the Poole Engineering & Machine Co.

1-POUNDER (1.457-INCH) GUN, MARK 15

20 CAL.

Drawing 67345. This is an automatic motor gun (Baldwin design), manufactured by the Poole Engineering & Machine Co.

37 M.M. (1.457-INCH) GUN, MARK 16

56 CAL.

Drawing 37483. This is a single-forging, nickel-steel gun. The outside diameter of the breech end is 5.7 inches for a length of 3.65 inches. From the bottom of this diameter a lug projects for securing the recoil piston rod. Extending rearward from the breech face there are two brackets forged integral with the gun for attaching and supporting the automatic breech mechanism. In front of the 5.7 inch diameter the gun is stepped down to a diameter of 5.4 inches for a length of 1.35 inches. This length is threaded to receive water jacket. At the muzzle end of this thread the gun is stepped down to a diameter of 5.25 inches and then tapered to the 4.25 inch slide diameter in a length of 8 inches. The length of the slide surface is 23 inches. From the muzzle end of the slide surface the gun is reduced by a series of tapers and cylinders to a diameter of 2.4 inches at 6 inches from the muzzle face. The outside diameter at the muzzle face is 3 inches. The diameter of the bore at the muzzle face is 2.3 inches and tapers down to the 1.457-inch bore in a length of 6 inches. Total length of gun, including brackets for breech mechanism, is 107.10 inches. Automatic breech mechanism, Mark 10.

GENERAL DESCRIPTION

3-POUNDER (1.85-INCH) GUNS (47 MM.)

3-POUNDER (1.85-INCH) GUN, MARK 1

40 CAL.

Drawing 13795. This is a Hotchkiss rapid-fire gun, Mark 1, consisting of tube, jacket, and locking hoop. The diameter over the chamber is 6.61 inches and at the muzzle 2.95 inches. The center of trunnions is 23.23 inches from breech. The trunnions are forged in one piece with the jacket and have a diameter of 2.756 inches, length is 2.09 inches, and distance between rim-bases is 6.69 inches. Total length is 80.63 inches and length of tube is 74.055 inches. Breech mechanism, Mark 1.

3-POUNDER (1.85-INCH) GUN, MARK 1, MOD. 1

40 CAL.

No drawings. Hotchkiss rapid-fire gun of French manufacture. Breech mechanism, Mark 1.

3-POUNDER (1.85-INCH) GUN, MARK 1, MOD. 2

40 CAL.

Drawing 57877. This is the Mark 1 gun retubed with an alloy-steel tube. Breech mechanism, Mark 1.

3-POUNDER (1.85-INCH) GUN, MARK 2

45 CAL.

Drawing 7675. This is a Driggs-Schroeder rapid-fire gun, Mark 1, and consists of tube, jacket, locking hoop and trunnion band. The diameter over the chamber is 6.61 inches and at the muzzle 2.95 inches. The trunnion band is screwed on and center of trunnions is 26.80 inches from breech; the diameter is 2.756 inches, length 2.09 inches, and 7.91 inches between rimbases. Total length is 87.95 inches and length of tube is 83.25 inches. Breech mechanism, Mark 2.

3-POUNDER (1.85-INCH) GUN, MARK 3

45 CAL.

No drawings. This is a Driggs-Schroeder rapid-fire gun, Mark 2. The gun is trunnionless. Breech mechanism, Mark 3.

3-POUNDER (1.85-INCH) GUN, MARK 4

50 CAL.

Drawing 17600. This is a Hotchkiss semiautomatic gun, Mark 4, consisting of tube, jacket and locking ring. The diameter over the chamber is 6.60 inches and the smallest diameter of the chase is 2.85 inches. Diameter of muzzle bell is 3.25 inches. Thread for sleeve commences 26.50 inches from breech with a diameter of 6.60 inches at top and 6.25 inches at the bottom of thread. Total length of gun is 99.05 inches and length of tube is 92.50 inches. Breech mechanism, Mark 4.

3-POUNDER (1.85-INCH) GUN, MARK 4, MOD. 1

50 CAL.

Drawing 19895. This is gun, Mark 4, modified to take sight, Mark 10.

3-POUNDER (1.85-INCH) GUN, MARK 4, MOD. 2

50 CAL.

Drawing 17600. This is the Mark 4 gun retubed with alloy steel tube.

3-POUNDER (1.85-INCH) GUN, MARK 4, MOD. 3

50 CAL.

Drawing 17600 is a 3-Pdr. Gun, Mark 4, Mod. 1 retubed with an alloy steel tube.

3-POUNDER (1.85-INCH) GUN, MARK 5

50 CAL.

No drawings. This is Maxim-Nordenfelt semiautomatic gun, Mark 1. Breech mechanism, Mark 5. Guns Nos. 114 to 116 (manufacturer's Nos. 4336, 4340, 4386). The guns are withdrawn from service.

3-POUNDER (1.85-INCH) GUN, MARK 6

50 CAL.

No drawings. This is Maxim-Nordenfelt semiautomatic gun, Mark 2. Breech mechanism, Mark 6. Guns Nos. 117 to 121 (manufacturer's Nos. 4387 to 4391). The guns are withdrawn from service.

3-POUNDER (1.85-INCH) GUN, MARK 7

45 CAL.

Drawing 35459. This is a Vickers Sons & Maxim semi-automatic gun, Mark 3. The gun is a single forging. In front of the slot for breechblock is a lug projecting downward. The rear of the lug serves as a bearing for the operating shaft. The piston rod is screwed into the lug from the front. The diameter over the chamber is 6.55 inches and at the muzzle is 2.785 inches. The slide surface is 5.80 inches in diameter and about 19 inches long. It ends 50.45 inches from muzzle. Total length of gun is 92.35 inches and of bore 84 inches. Breech mechanism, Mark 7.

3-POUNDER (1.85-INCH) GUN, MARK 8

40 CAL.

Drawing 38650. This is also strength-curve drawing. This is a Hotchkiss-Armstrong gun, consisting of tube, jacket and locking hoop. It has trunnions. The diameter over the chamber is 6.614 inches and at muzzle is 2.953 inches. Total length is 80.63 inches and length of tube is 74.055 inches. Breech mechanism, Mark 8.

3-POUNDER (1.85-INCH) GUN, MARK 9

No drawings. This is Nordenfelt rapid-fire gun, Mark 1. It is trunnionless. Breech mechanism, Mark 9. Guns Nos. 1 and 2 (manufacturer's Nos. 4142 and 4172). These guns are withdrawn from service.

3-POUNDER (1.85-INCH) GUN, MARK 10

(Used as line throwing gun on Indianapolis)

50 CAL.

Drawing 22288. This is a Hotchkiss semiautomatic gun, consisting of tube, jacket and locking ring. The diameters over the chamber are 6.91 inches and 6.60 inches. The thread for yoke commences 13.425 inches from breech and is 4.25 inches long; diameter at top of thread is 6.91 inches and at the bottom is 6.60 inches. The slide surface commences 17.675 inches from breech with a diameter of 6.60 inches and is 13.25 inches long. The smallest diameter of the chase is 2.85 inches at 1.366 inches from muzzle; diameter of muzzle bell is 3.25 inches. Total length is 99.075 inches and length of tube is 92.50 inches. Breech mechanism, Mark 10.

3-POUNDER (1.85-INCH) GUN, MARK 10, MOD. 1

50 CAL.

Drawing 24642. This gun is similar to Mark 10, except that the slide surface is 17.25 inches long, and the conical part of the jacket correspondingly shorter.

3-POUNDER (1.85-INCH) GUN, MARK 10, MOD. 2

50 CAL.

Drawing 24495. This gun is the same as Mark 10, Mod. 1, except that the yoke is forged in one piece with the jacket.

3-POUNDER (1.85-INCH) GUN, MARK 10, MOD. 3

50 CAL.

Drawing 22288. This is a 3-Pdr. gun, Mark 10 retubed with an alloy steel tube.

3-POUNDER (1.85-INCH) GUN, MARK 10, MOD. 4

50 CAL.

Drawing 24642. This is a 3-Pdr. gun Mark 10, Mod. 1, retubed with an alloy steel tube.

3-POUNDER (1.85-INCH) GUN, MARK 10, MOD. 5

50 CAL.

Drawing 24495. This is a 3-Pdr. gun Mark 10, Mod. 2, retubed with an alloy steel tube.

3-POUNDER (1.85-INCH) GUN, MARK 11

50 CAL.

Drawing 27357. This is a United States Rapid Fire Gun & Power Co. semiautomatic gun, consisting of tube, jacket and locking ring. The locking ring is 37.70 inches long and is also a balancing hoop. In front of slot in breech housing 7.52 inches from breech are two lugs below the gun, in which the operating shaft is journaled. On bottom of gun, 15 inches from breech, is another lug, to which the piston rod is attached. The outside of gun, over the chamber, tapers from a diameter of 6.70 inches to 6.50 inches. The slide surface commences 19 inches from breech with a diameter of 6.15 inches and has two solid guide keys on the vertical center line of the gun. The smallest diameter of the chase is 2.8425 inches at 1.4476 inches from muzzle. The diameter of the muzzle bell is 3.22 inches. Total length of gun is 99.20 inches and length of tube 92.50 inches. Breech mechanism, Mark 11.

3-POUNDER (1.85-INCH) GUN, MARK 11, MOD. 1

50 CAL.

Drawing 25424. This gun is practically the same as Mark 11, but the locking hoop is 2.25 inches long, the balancing sleeve being omitted. The smallest diameter of the chase is 3.235 inches at 1.563 inches from muzzle; diameter of muzzle bell is 3.50 inches.

3-POUNDER (1.85 INCH) GUN, MARK 12

No drawing. This gun is Nordenfelt semiautomatic, Mark 1 gun. It has breech mechanism, Mark 12. Guns Nos. 1 and 2 (manufacturer's Nos. 4046 and 4047). The guns have been withdrawn from service.

3-POUNDER (1.85-INCH) GUN, MARK 13

40 CAL.

Drawing 17723. This is a Maxim rapid-fire gun, Mark M. On bottom of gun, 5.7813 inches from breech, a lug projects downward to which the piston rod is attached. The diameter over the chamber is 6.45 inches and at muzzle is 2.90 inches. Total length is 77.8125 inches. Breech mechanism, Mark 13. Withdrawn from service.

3-POUNDER (1.85-INCH) GUN, MARK 14

50 CAL.

Drawing 20684. This is a Driggs-Seabury & Ordnance Corporation semiautomatic gun-steel gun, consisting of tube, jacket and locking ring. In front of the slot for the drop block is a lug projecting downward. The rear of the lug serves as bearing for the operating shaft and the piston rod is screwed into the lug from the front. The diameter over the chamber is 6.60 inches and the slide surface commences at 21.49 inches from breech with a diameter of 6.29 inches and is 12.61 inches long. The smallest diameter of the chase is 3.0569 inches at 3.25 inches from muzzle. The diameter of muzzle bell is 3.55 inches. Total length of gun is 99.10 inches and the length of tube is 92.50 inches. Breech mechanism, Mark 14.

GENERAL DESCRIPTION

6-POUNDER (2.244-INCH) GUNS (57 MM.)

6-POUNDER (2.244-INCH) GUN, MARK 1

40 CAL.

Drawing 47779. This is a Hotchkiss rapid-fire gun, short, Mark 1, consisting of tube, jacket and locking hoop. The diameter over the chamber is 8.27 inches and at the muzzle 3.35 inches. The center of trunnions is 24.80 inches from breech. The trunnions are forged in one piece with the jacket and have a diameter of 3.346 inches, length is 2.09 inches and distance between rimbases is 9.25 inches. The gun is hooped to 39 inches from breech. The chase, 58.63 inches long, tapers from a diameter of 4.92 inches to 3.35 inches at muzzle. Total length of gun is 97.63 inches; of tube 89.76 inches. Breech mechanism, Mark 1, drop block.

6-POUNDER (2.244-INCH) GUN, MARK 1, MOD. 1

40 CAL.

No drawings. This gun is the same as Mark 1, but of French manufacture, fitted with Mark 2 breech mechanism. For saluting only.

6-POUNDER (2.244-INCH) GUN, MARK 1, MOD. 2

40 CAL.

No drawings. This gun is of French manufacture. Breech mechanism, Mark 1, Mod. 1.

6-POUNDER (2.244-INCH) GUN, MARK 1, MOD. 3

40 CAL.

No drawings. This is a Hotchkiss-Armstrong rapid-fire gun. Breech mechanism, Mark 3.

6-POUNDER (2.244-INCH) GUN, MARK 1, MOD. 4

40 CAL.

Drawing 47779. This is gun, Mark 1, retubed with an alloy-steel tube. Breech mechanism, Mark 1, drop block.

6-POUNDER (2.244-INCH) GUN, MARK 2

40 CAL.

Drawing 47783. This is a Hotchkiss rapid-fire gun, Mark 1, trunnionless. It consists of tube, jacket and locking ring and is similar to gun, Mark 1. The thread for sleeve begins at 20.50 inches from breech, with a diameter of 8.27 inches at top and 8.07 inches at bottom of thread. The taper on front end of jacket is slightly different in length from that on Mark 1 gun. Breech mechanism, Mark 1, drop block.

6-POUNDER (2.244-INCH) GUN, MARK 3

45 CAL.

Drawing 11608. This is a Hotchkiss rapid-fire gun, Mark 1, long. The gun is similar to Mark 2. The thread for sleeve starts 22.75 inches from breech and is 8 inches long. The gun is hooped up to 38.5 inches from breech. From here the chase tapers in 70.36 inches from a diameter of 4.92 inches to 3.25 inches at the muzzle. Total length of gun is 108.86 inches and of tube 100.98 inches. Breech mechanism, Mark 1.

6-POUNDER (2.244-INCH) GUN, MARK 3, MOD. 1

45 CAL.

Drawing 54947. This is gun, Mark 3, retubed with an alloy-steel tube. Breech mechanism, Mark 1, drop block.

6-POUNDER (2.244-INCH) GUN, MARK 4

30 CAL.

Drawing 6567. This is a Driggs-Schroeder rapid-fire field gun consisting of a single forging, with a trunnion hoop screwed on. The center of trunnions is 22.50 inches from breech. The trunnions are 3 inches in diameter by 2 inches long. The distance between rimbases is 7.25 inches. At 6.85 inches from breech there is an elevating band put on the gun (see drawing 7513). The diameter over the chamber tapers from 7.75 inches over screw box to 6.25 inches in rear of trunnion hoop. The diameter of the muzzle is 3.25 inches, total length is 72 inches, and length of bore is 67.50 inches. There is a strengthening band on breech at the beginning of the bore (see drawing 7415). Breech mechanism, Mark 4, revolving drop block. Guns Nos. 2, 4 and 5. The guns are withdrawn from service.

6-POUNDER (2.244-INCH) GUN, MARK 4, MOD. 1

30 CAL.

Drawing 11637. This gun is the same as Mark 4, except that it is without strengthening band and has two lugs, solid on the gun, to which the elevating arrangement is attached. Breech mechanism, Mark 4, Mod. 1, revolving drop block. Guns Nos. 6 to 11. The guns are withdrawn from service.

6-POUNDER (2.244-INCH) GUN, MARK 5

30 CAL.

Drawing 9813. This is a Lynch field gun and is identical with Mark 4, Mod. 1 except that the square part for breech mechanism is made deeper. Breech mechanism, Mark 5, drop block, operated by rack. Guns Nos. 1 and 3. The guns are withdrawn from service.

6-POUNDER (2.244-INCH) GUN, MARK 6

45 CAL.

Drawing 9659. This is a Driggs-Schroeder rapid-fire gun, Mark 1, consisting of tube, jacket and hoop. The diameter over the chamber is 8.30 inches. The thread for sleeve starts at 25.95 inches from breech with a diameter of 8.27 inches at top and 8.07 inches at bottom of thread. The gun is hooped to 39.25 inches from breech. From there the gun tapers in a length of 68.08 inches from a diameter of 5.20 to 3.54 inches at muzzle. The total length of the gun is 107.33 inches and of the tube 100.98 inches. Breech mechanism, Mark 6, revolving drop block.

6-POUNDER (2.244-INCH) GUN, MARK 6, MOD. 1

45 CAL.

Drawing 54794. This gun is gun, Mark 6, retubed with alloy-steel tube and the B₂ hoop replaced with an alloy-steel hoop. Breech mechanism, Mark 6, revolving drop block.

6-POUNDER (2.244-INCH) GUN, MARK 7

45 CAL.

Drawing 13820. This is a Hotchkiss rapid-fire gun, long, Mark 2, consisting of tube, jacket and locking ring. The diameter over the chamber is 8.27 inches, and the gun is cylindrical for a distance of 11.31 inches from muzzle with a diameter of 3.50 inches. The thread for sleeve is located at 22.75 inches from breech, with a diameter of 8.27 inches at top and 8.07 inches at bottom of thread. Total length of gun is 108.86 inches and length of tube is 100.98 inches. Breech mechanism, Mark 2, drop block.

6-POUNDER (2.244-INCH) GUN, MARK 7, MOD. 1

45 CAL.

Drawing 49894. This is gun, Mark 7, with the threads on jacket located 20.38 inches from breech to balance sight, Mark 15.

6-POUNDER (2.244-INCH) GUN, MARK 7, MOD. 2

45 CAL.

Drawing 53916. This gun is identical with Mark 7 gun except that the tube is made of alloy steel and that the jacket and locking hoop are made of gun steel with a higher prescribed elastic limit than the one prescribed for gun, Mark 7. Breech mechanism, Mark 2, drop block.

6-POUNDER (2.244-INCH) GUN, MARK 7, MOD. 3

45 CAL.

No drawings. These are Hotchkiss Mark 3 guns which were received from the Coast Guard Service and have muzzle bells. Breech mechanism, Mark 2.

6-POUNDER (2.244-INCH) GUN, MARK 7, MOD. 4

45 CAL.

Drawing 217002. This is a 6-Pdr. Gun, Mark 7, retubed with an alloy steel tube and the threads on the jacket are located 20.44 inches from the breech.

6-POUNDER (2.244-INCH) GUN, MARK 8

50 CAL.

Drawing 13705. This is a Driggs-Schroeder rapid-fire gun, Mark 2, consisting of tube, jacket and hoop. The diameter over the chamber is 8.30 inches and the smallest diameter of the chase is 3.30 inches at 1 inch from muzzle. Diameter of muzzle bell is 3.60 inches. The thread for sleeve commences 26.15 inches from breech with a diameter of 8.27 inches at top and 8.07 inches at bottom of thread. Total length of gun is 118.55 inches and length of tube is 112.20 inches. Breech mechanism Mark 6, Mod. 1, revolving drop block.

6-POUNDER (2.244-INCH) GUN, MARK 8, MOD. 1

50 CAL.

Drawing 57879. This is gun, Mark 8, retubed with an alloy steel tube. Breech mechanism, Mark 6, Mod. 1.

6-POUNDER (2.244-INCH) GUN, MARK 9

42 CAL.

Drawing 17145. This is a Maxim semiautomatic gun, Mark 2, consisting of a single forging. In front of slot for breech-block there is a downward projecting lug, the rear of which serves as a bearing for the operating shaft. The piston rod is screwed in from the front. The diameter over the chamber is 8 inches and at muzzle is 3.40 inches. Total length is 103.25 inches and length of the bore is 95 inches. Breech mechanisms, Mark 7 and Mark 7, Mod. 1.

6-POUNDER (2.244-INCH) GUN, MARK 9, MOD. 1

42 CAL.

Drawing 18084. This gun is identical with Mark 9, but is built of nickel steel, and the smallest diameter of the chase is 3.56 inches at 3.62 inches from muzzle. Diameter of muzzle bell is 4.10 inches. Breech mechanisms, Mark 7 and Mark 7, Mod. 1.

6-POUNDER (2.244-INCH) GUN, MARK 9, MOD. 2

No drawings. This is a Maxim semiautomatic gun, Mark 1, of foreign manufacture; only two guns, both withdrawn from service. Breech mechanism, Mark 7, Mod. 2.

6-POUNDER (2.244-INCH) GUN, MARK 10

42 CAL.

Drawing 17854. This is a Nordenfelt rapid-fire gun, Mark 2. The diameter over the chamber is 7 inches and the center of trunnions is 29.525 inches from breech. The trunnions are 3.25 inches in diameter, 2.50 inches in length. The distance between rimbases is 7.25 inches. The diameter of the muzzle is 3.40 inches. The total length is 104.42 inches and length of bore is 95.01 inches. Breech mechanism, Mark 8.

6-POUNDER (2.244-INCH) GUN, MARK 11

50 CAL.

Drawing 25648. This is a Driggs-Seabury semiautomatic gun, Mark 1. The gun is gun steel and consists of tube, jacket and hoop. There is a lug in front of slot for block which serves as a bearing for operating lever. The outside of the gun over the chamber is tapered from 8.50 inches to 8.27 inches in rear of thread for sleeve. The thread for sleeve is located 27 inches from breech with a diameter of 8.27 inches at top and 8.07 inches at bottom of thread. The smallest diameter of the chase is 3.434 inches at 1.77 inches from muzzle; diameter of muzzle bell is 4 inches. Breech mechanism, Mark 9, drop block.

6-POUNDER (2.244-INCH) GUN, MARK 11, MOD. 1

50 CAL.

Drawing 25648. This is identical with Mark 11 except that it has been rebuilt, using the original jacket but a new tube, and B₂ hoop. Breech mechanism, Mark 9, drop block.

6-POUNDER (2.244-INCH) GUN, MARK 12

ABOUT 32 CAL.

Drawing 63488. This is a Davis nonrecoil gun. The front barrel is approximately 6 feet and the rear barrel approximately 4 feet long. The working of the gun is similar to the 3-inch gun, Mark 15.

9-POUNDER (2.244-INCH) GUN, MARK 13

33 CAL.

Drawing 63482. This gun is a Davis nonrecoil. The front barrel is approximately 6 feet long; the rear barrel 4 feet long. The working of this gun is similar to the 3-inch gun, Mark 15. A 9-pound projectile is used.

GENERAL DESCRIPTION

3-INCH GUNS

3-INCH GUN, MARK 1, FIELD GUN

21 CAL.

Drawing 12554. The gun is a single forging with the hydraulic piston screwed directly onto the gun. Total length of gun, 69.60 inches. Length of bore, 64.30 inches. Breech mechanism, Mark 1, Fletcher.

3-INCH GUN, MARK 1, MOD. 1, FIELD GUN

21 CAL.

Drawing 17379. The gun is a single forging designed on same lines as Mark 1, but it has a solid lug for the piston rod. It slides in the cradle and has two keys on the horizontal line through its center. Breech mechanism, Mark 1, Mod. 1, Fletcher.

3-INCH GUN, MARK 2

50 CAL.

Drawing 16885. This gun is built by American Ordnance Co. The gun is turned to 10.20 inches in diameter over the chamber for a length of 65.8 inches from breech. It has a ring for the yoke shrunk on over the chamber. The 10.20 inch diameter of the gun fits the sleeve, and it is provided with two guide keys. The gun consists of tube, jacket, yoke ring, chase hoop and locking hoop. It is hooped to 62 inches from muzzle. Total length, 153.80 inches. The tube is 150 inches long. All the guns of this mark have been modified.

3-INCH GUN, MARK 2, MOD. 1

50 CAL.

Drawing 23129. This gun is Mark 2, provided with a balancing sleeve 34.50 inches long, weighing 150 pounds, screwed onto the locking hoop. Weight added to gun is 142 pounds. Breech mechanism, Mark 2, Mod. 2.

3-INCH GUN, MARK 2, MOD. 2

50 CAL.

Bureau's drawing 27692. This gun consists of tube, jacket, yoke ring and locking ring, the latter being screwed on. Total length, 153.80 inches. The tube is 150 inches long. Diameter over chamber and in slide, 10.20 inches. Smallest diameter of chase is 5 inches and of muzzle bell 5.5 inches. Gun No. 101. Breech mechanism, Mark 2, Mod. 2.

3-INCH GUN, MARK 2, MOD. 3

50 CAL.

Drawing 64213. This is a Mark 2, Mod. 1 gun, lined with a conical nickel-steel liner, breech mechanism, Mark 2, Mod. 2.

3-INCH GUN, MARK 3

50 CAL.

Drawing 16488. The gun consists of tube, jacket, locking ring and face plate. It is hooped to 66.3 inches from muzzle. Total length is 154.30 inches. The tube is 149.70 inches long. The gun is 11 inches in diameter over chamber and 9.5 inches in sleeve. The gun has two solid guide keys on the vertical center line. The locking ring has V threads and its taper is less than that of the jacket. The smallest diameter of chase is 4.507 inches. Breech mechanism, Mark 3, Fletcher. All guns have been modified.

3-INCH GUN, MARK 3, MOD. 1

50 CAL.

Drawing 16488. This gun is Mark 3, but the locking ring has U.S. threads and its outside is conical, conforming to the taper of the jacket. All guns have been modified.

3-INCH GUN, MARK 3, MOD. 2

50 CAL.

Drawing 16488. This gun is Mark 3, Mod. 1 gun, but with the locking ring lengthened from 5 to 15 inches, increasing the weight of the gun 36 pounds. All guns have been modified.

3-INCH GUN, MARK 3, MOD. 3

50 CAL.

Drawing 21376. This gun is Mark 3, Mod. 1, and Mark 3, Mod. 2, with a new locking ring 35 inches long to balance the gun in its mount. These guns have had their breech mechanisms changed to Mark 6 and a screw-box liner inserted, except 269 to 273.

3-INCH GUN, MARK 3, MOD. 4

50 CAL.

Drawing 23223. This gun is made of nickel steel and consists of tube, jacket, locking hoop and face plate. It is hooped to 66.3 inches from muzzle. It is similar to Mark 3, Mod. 3, gun from breech to front end of slides. The front end of jacket and chase hoop taper from 9.5 inches to 7.75 inches in 32 inches. The inside of locking hoop is cylindrical and threaded its whole length. The smallest diameter of the chase is 4.7 inches at 6 inches from muzzle. Breech mechanism, Mark 3, is being replaced by Mark 6 and a screw-box liner inserted.

3-INCH GUN, MARK 3, MOD. 5

50 CAL.

Drawing 38169. This gun is Mark 3, Mod. 3, lined with a cylindrical nickel-steel liner. Breech mechanism, Mark 6.

3-INCH GUN, MARK 3, MOD. 6

50 CAL.

Drawing 38166. This gun is Mark 3, Mod. 3, rebuilt, using nickel-steel tube. Breech mechanism, Mark 6.

3-INCH GUN, MARK 3, MOD. 7

50 CAL.

Drawing 40116. This gun is Mark 3, Mod. 3, lined with a conical nickel-steel liner. Breech mechanism, Mark 6.

3-INCH GUN, MARK 3, MOD. 8

50 CAL.

Drawing 40066. This gun is Mark 3, Mod. 4, lined with a conical nickel-steel liner. Breech mechanism, Mark 6.

3-INCH GUN, MARK 3, MOD. 9

50 CAL.

Drawing 40116. This gun is Mark 3, Mod. 6, lined with a conical nickel-steel liner, breech mechanism, Mark 6.

3-INCH GUN, MARK 4, LANDING GUN

23.5 CAL.

Drawing 21187. This gun is built by Bethlehem Steel Co., and is a single forging with the two hydraulic cylinders in one piece with the gun. The gun has one straight cone beginning 5.05 inches from breech with a diameter of 7 inches and ending 2.5 inches from muzzle with a diameter of 4.15 inches. Total length of gun is 74.35 inches and length of bore 70.55 inches. Inside diameter of hydraulic cylinders is 2.5 inches. Breech mechanism, Mark 4.

3-INCH GUN, MARK 5

50 CAL.

Drawing 25610. This is Driggs-Seabury Ordnance Corporation semiautomatic nickel-steel gun, consisting of tube, jacket and locking ring. The outside is like gun, Mark 3, Mod. 4, from about 14 inches from breech to end of locking ring. The smallest diameter of the chase is 5 inches at 6 inches from muzzle. The gun has Mark 5 breech mechanism. In front of the slot for the drop block is a lug on the jacket projecting downward. The rear of this lug serves as bearing for the operating lever. The piston rods are screwed into the lug from the front. Total length of gun is 195.35 inches. Length of tube is 149.70 inches. Breech mechanism, Mark 5.

3-INCH GUN, MARK 5, MOD. 1

50 CAL.

Drawing 25610. This gun is identical with Mark 5 except that shoulder for slide stop has been increased from 9.90 inches to 10 inches in diameter. Breech mechanism, Mark 5, Mod. 2.

3-INCH GUN, MARK 5, MOD. 2

50 CAL.

Drawing 66085. This is a Mark 5 gun lined with a cylindrical nickel-steel liner. Breech mechanism, Mark 5.

3-INCH GUN, MARK 5, MOD. 3

50 CAL.

Drawing 41416. This gun is Mark 5 or Mark 5, Mod. 1, lined with a conical nickel-steel liner. Breech mechanisms, Mark 5 and Mark 5, Mod. 2.

3-INCH GUN, MARK 6

50 CAL.

Drawing 30868. This is a Mark 5 gun with the length of the slide increased from 29.43 inches to 37.43 inches and a corresponding decrease in length of the conical part of jacket. The shoulder for slide stop is 11 inches in diameter. The gun is hooped to 66.3 inches from muzzle. Breech mechanism, Mark 5, Mod. 1.

3-INCH GUN, MARK 6, MOD. 1

50 CAL.

Drawing 45991. This gun is Mark 6 with the shoulder for slide coned down to 10 inches in diameter. Breech mechanism, Mark 5.

3-INCH GUN, MARK 6, MOD. 2

50 CAL.

Drawing 63106. This is gun, Mark 6, lined with conical nickel-steel liner. Breech mechanism, Mark 5, Mod. 1.

3-INCH GUN, MARK 6, MOD. 3

50 CAL.

Drawing 66345. This is gun, Mark 6, with breech cut-off and new breech housing screwed on. Breech mechanism, Mark 5, Mod. 1.

3-INCH GUN, MARK 6, MOD. 4

50 CAL.

Drawing 30868. This is gun, Mark 6, with breech housing altered for wet mount. Breech mechanism, Mark 5, Mod. 4.

3-INCH GUN, MARK 6, MOD. 5

50 CAL.

Drawing 63106. This is gun, Mark 6, Mod. 4, lined with conical nickel-steel liner. Breech mechanism, Mark 5, Mod. 4.

3-INCH GUN, MARK 6, MOD. 6

50 CAL.

Drawing 30868. This is Mark 6, Mod. 4 with the slide surface and rear cylinder chromium plated and the other exposed parts painted. For use on submarines. Breech mechanism, Mark 5, Mod. 4.

3-INCH GUN, MARK 6, MOD. 7

50 CAL.

Drawing 63106. This is Gun, Mark 6, Mods. 4 and 6, lined with a conical alloy steel liner. The slide surface and rear cylinder are chromium plated and other exposed parts painted. The breech housing is altered for wet mount.

3-INCH GUN, MARK 7, LANDING GUN

23 CAL.

Drawing 35803. This gun is made of nickel-steel and is a single forging. It is an Ehrhardt gun, manufactured by American-British Manufacturing Co. Three bands are shrunk onto the gun, the bands having projections on their lower sides fitting in the cradle. At the extreme end of the breech is a lug to which the hydraulic cylinder is attached. Total length is 77.9534 inches. Length of bore is 68.9458 inches. Maximum diameter over chamber is 7.6772 inches and the muzzle is 4.2126 inches in diameter. Breech mechanism, Mark 7, Ehrhardt wedge block withdrawn to the side.

3-INCH GUN, MARK 7, MOD. 1, LANDING GUN

23 CAL.

This is Mark 7 gun, rebuilt. It is built up of tube, jacket, locking ring and two bands. It interchanges with Mark 7. Breech mechanism, Mark 7.

3-INCH GUN, MARK 8

50 CAL.

Drawing 33184. This is a nickel-steel gun consisting of tube, jacket and locking ring and is hooped to 42.75 inches from muzzle. Diameter of gun over chamber is 11 inches; diameter of slide part, 9.5 inches, with one solid key on top of gun. The smallest diameter of chase, 6 inches from muzzle, is 5 inches. Total length of gun is 159 inches and length of tube 149.70 inches. Breech mechanism, Mark 8. Proctor semi-automatic, with wedge block withdrawn to the side. Gun No. 1054.

3-INCH GUN, MARK 9, SUBMARINE GUN

23 CAL.

Drawing 47570. This is a semiautomatic gun consisting of a nickel-steel tube and jacket and a bronze sleeve and bronze locking ring. The slide cylinder begins 12.65 inches from the breech and is 20.85 inches long with a diameter of 7.10 inches. The key on top of the slide cylinder is solid with the gun. In front of the slide diameter the gun is reduced to 6.60 inches in diameter to fit the stuffing box in the hatch cover over the gun pit on the submarine. This part is covered by the bronze sleeve. The length of the bronze-covered surface is 29.4 inches including the locking ring which is 3 inches long. In front of the locking ring the gun is stepped down to 5.2 inches and then in 12.5 inches tapered down to the muzzle cylinder 4.4 inches in diameter and 1.50 inches long. Three lugs on the muzzle are for the attachment of a watertight cap. Total length of gun is 77.05 inches, and of tube 69.15 inches. Landing gun fixed ammunition is used. Semiautomatic breech mechanism, Mark 9, drop block. These guns have been withdrawn from service and placed in store. The mounts have been dismantled.

3-INCH GUN, MARK 9, MOD. 1, SUBMARINE GUN

(Bridgeman Gun)

23 CAL.

Drawing 66396. This is a monoblock radially expanded gun having the same inside and outside dimensions as 3-inch gun, Mark 9.

3-INCH GUN, MARK 10, ANTIAIRCRAFT GUN

50 CAL.

Drawing 45115. This is a semiautomatic nickel-steel gun, consisting of tube, jacket and locking ring. The gun is hooped to 60.65 inches from muzzle. The diameter over the chamber is 11 inches. The slide surface commences 48 inches from breech, with a diameter of 9.50 inches, and has one solid key on top of gun. The smallest diameter of the chase is 4.994 inches at 5.45 inches from muzzle. The diameter of muzzle bell is 5.50 inches. In front of the slot for the drop block are two lugs, one projecting downward and one upward. The rear of the lug projecting downward serves as a bearing for the operating lever. The piston rod is fastened into the upward projecting lug. Total length of gun is 159.65 inches. Length of tube is 150 inches. Breech mechanism, Mark 5, Mod. 3, drop block.

3-INCH GUN, MARK 10, MOD. 1, ANTIAIRCRAFT GUN

50 CAL.

Drawing 51124. This is Mark 10, gun, lined with a conical nickel-steel liner. Breech mechanism, Mark 5, Mod. 3, drop block.

3-INCH GUN, MARK 10, MOD. 2, ANTIAIRCRAFT GUN

50 CAL.

Drawing 56413. This is Mark 10 gun with the breech housing in a separate piece, threaded and shrunk onto the jacket. Breech mechanism, Mark 5, Mod. 3, drop block.

3-INCH GUN, MARK 10, MOD. 3

50 CAL.

Drawing 65705. This is gun, Mark 10, Mod. 2, lined with a conical steel liner. Breech mechanism, Mark 5, Mod. 3, drop block.

3-INCH GUN, MARK 10, MOD. 4

50 CAL.

Drawing 56413. These guns have all been changed to Mark 17. No guns.

3-INCH GUN, MARK 10, MOD. 5

50 CAL.

Drawing 65705. This is a Mark 10, Mod. 2 gun with a copper-nickel alloy liner and a cylindrical muzzle.

3-INCH GUN, MARK 11, LANDING GUN

23 CAL.

Drawing 56092. This is a Bethlehem Steel Co. gun. It is made of alloy steel and consists of three parts - tube, jacket and breech housing. The jacket covers the tube to 1 inch from the muzzle. The breech housing is screwed onto the end of the jacket. The diameter over the chamber is 7 inches for a length of 18 inches. From there the gun tapers to 4.7 inches at 5 inches from the muzzle. The muzzle bell is 5 inches in diameter. The tube is 70.5 inches long. Total length of gun is 77.5 inches. On the underside of the gun are guides to fit the cradle. The breech housing has two lugs, one on top and one on bottom, to attach the piston rods that control the recoil system. Breech mechanism, Mark 11, drop block.

3-INCH GUN, MARK 12, MOUNTAIN GUN

15 CAL.

Drawing 56694. This is a Bethlehem Steel Co. gun. It is made of nickel-steel and consists of the gun barrel and the breech housing. The breech housing is screwed and shrunk onto the barrel. The diameter over the breech is 6.2 inches for a length of 5.75 inches. The breech housing stops here. The diameter of the barrel is 5.9 inches, tapering to 3.9 inches at the muzzle. The gun is attached to the carriage by a lug on the breech housing and by another lug on the barrel near the muzzle. Both lugs are on the lower side of the gun. The barrel is 45 inches long. Total length of gun is 48 inches. The chamber is identical with the chamber for Mark 1 gun. Breech mechanism, Mark 13.

3-INCH GUN, MARK 13, BOAT GUN

23 CAL.

Drawing 54831. This is a Driggs Ordnance Co. gun. It is a single-forging, alloy-steel gun. The breech housing is 8 inches square with lugs on top and on the right-hand side. The piston rod screws into the top lug. The side lug serves as bearing for the operating shaft. The gun is 6.65 inches in diameter in front of the housing. The slide surface commences 12.5 inches from face of breech. It is 6.25 inches in diameter and 39 inches long. A key 32.5 inches long is dovetailed in the top surface of the slide diameter. In front of the slide surface the gun tapers toward the muzzle bell. The smallest diameter of the chase is 4.15 inches. The diameter of the muzzle bell is 4.7 inches. The total length of the bore is 69 inches and of gun 75.6 inches. Landing-gun fixed ammunition is used. Semiautomatic breech mechanism, Mark 10, with horizontal sliding block.

3-INCH GUN, MARK 14, BOAT GUN

23.5 CAL.

Drawing 56258. This gun is manufactured by the Poole Engineering & Machine Co. The gun is a one-piece, alloy-steel gun. It has a piston-rod lug on top of the breech. The breech is rectangular with the corners cut off. The rectangular part is 10.25 inches long. In front of the breech the gun is 7.5 inches in diameter for a length of 4.25 inches. At this point the gun is shouldered down to the slide diameter, 6.75 inches, which is 25 inches long. At the forward end of the slide the gun tapers to 5 inches in diameter in a length of 4 inches. It is then cylindrical for a length of 23.5 inches, at which point it is stepped down to a diameter of 4.3 inches. From there it tapers toward the muzzle. The smallest diameter of the chase is 4 inches. The diameter of the muzzle bell is 4.5 inches. The length of the bore is 71 inches and the total length of the gun is 79 inches. The gun uses landing-gun ammunition. Breech mechanism, Mark 12, horizontal sliding block.

3-INCH GUN, MARK 14, MOD. 1

23.5 CAL.

Drawing 217021. This is a 3"/23.5 gun Mark 14 fitted with a muzzle blast reducer and the gun breech drilled for attaching counterweight.

3-INCH GUN, MARK 15, NONRECOIL GUN

24 CAL.

Drawings 56210, 56211, and 56212. This is a Davis non-recoil gun. The gun has two barrels lined up one behind the other when in firing position. The front barrel through which the projectile is propelled has a breech band shrunk on in which interrupted threads are cut. The breech recess is 1.53 inches deep. The front barrel is 75.7 inches long, including the breech band, and the bore is 74.17 inches. It is rifled for a length of 53.22 inches. The rear barrel through which a charge of bird shot is propelled is 45.8 inches long and is smooth bored. Both barrels have small muzzle bells. Below the gun barrel are two lugs in which a rod is journaled. This rod projects to the rear. The rear barrel is mounted in journals located in the upper parts of two links securely fastened to the rod. The rear barrel can revolve and slide back and forth in the journals. The front end of the rear barrel has interrupted screw threads to engage the threads in the screw box when the gun is closed ready to fire.

For opening the gun, the rear barrel is revolved till the interrupted screw threads clear each other. It is then retracted and swung to the side clear of the breech, the supporting rod revolving in its bearings below the front barrel. The rotation and retraction of the rear barrel is limited by a cam slot through which the operating-handle pin passes. The handle pin, on which the handle is mounted, is attached to the wall of the rear barrel. The cam plate is a part of the front link supporting the rear barrel. The operating handle can slide on the handle pin and is held down by an inside helical spring against the cam plate. At the ends of the cam slot counterbores are located, in which the lower end of the handle can drop. The rear barrel is thus locked to the cam plate when the gun is ready to fire and when the rear barrel is retracted ready to be swung aside to clear the breech. The firing pin with its spring is located on top of the front barrel and its point passes through the wall of the gun. The trigger has a safety device, so that two distinct pressures by the hand are required to fire the gun. The gun uses special ammunition.

3-INCH GUN, MARK 16

105 CAL.

Drawing 65781. This is a 7-inch gun, Mark 2, Mod. 1, lined with a conical alloy-steel liner and bored to 3 inches diameter. Breech mechanism, 7-inch, Mark 1, Mod. 3.

3-INCH GUN, MARK 17

50 CAL.

Drawing 156413. This is gun, Mark 10, Mod. 2, having the bore and outside working surfaces chromium plated. For use with wet type mount. Breech mechanism, Mark 5, Mod. 10.

3-INCH GUN, MARK 17, MOD. 1

50 CAL.

Drawing 217000. This is a 3-inch 50 Cal. Mark 17 lined with a conical alloy-steel liner and the bore and working surfaces chromium plated or gun, Mark 10, Mod. 3, with the bore and working surfaces chromium plated.

3-INCH GUN, MARK 18

50 CAL.

Drawing 170134. This is a semiautomatic, copper-nickel alloy gun, consisting of tube, jacket, locking ring and housing. The housing is threaded on to the jacket with a shrink fit. The bore is chromium plated for a distance of 128 inches from the muzzle. The diameter over the powder chamber is 11 inches. This is the slide cylinder and extends forward from face of housing 32.35 inches, then drops to 9.50 inches and extends forward for 27 inches from there tapering to 7.75 inches in 24 inches including locking ring. At this point the diameter drops to 6.65 inches then tapers to 4.80 inches in 54.65 inches and remains at 4.80 inches to muzzle face, a distance of 6 inches. Total length of tube is 150.15 inches; gun is provided with lugs at muzzle end for attaching muzzle cover, Mark 2. Overall length of gun and housing is 159.80 inches. Rifling; uniform twist (1 turn in 32 calibers). Breech mechanism, Mark 14.

3-INCH GUN, MARK 19
50 CAL.

Drawing 199042. This is a semiautomatic copper-nickel alloy monoblock gun, radially expanded. The barrel is secured to the housing by interrupted threads (bayonet joint) and locked in place by a key and slot. The gun is provided with lugs at muzzle end for attaching muzzle cover, Mark 2. Rifling; right hand, uniform twist (1 turn in 32 calibers). Width of lands .150 inches, width of groove .2427 inches, depth of groove .03 inches. 24 lands and 24 grooves. Bore is chromium plated for 128 inches from muzzle. Housing, Mark 1.

3-INCH GUN, MARK 20
50 CAL.

Drawing 30868. This is a 3"/50 gun, Mark 6, converted to antiaircraft gun. Rib rifling increasing twist (0 to 1 turn in 25 calibers).

3-INCH GUN, MARK 20, MOD. 1
50 CAL.

Drawing 30868. This is a 3"/50 gun, Mark 6, converted to antiaircraft gun. Hook rifling uniform twist (1 turn in 25 calibers).

3-INCH GUN, MARK 20, MOD. 2
50 CAL.

Drawing 63106. This is gun, Mark 20, or 20 Mod. 1, lined or 3 inch gun, Mark 6, or 6 Mod. 4, lined and converted to an antiaircraft gun. Increasing twist rifling (0 to 1 turn in 25 calibers).

3-INCH GUN, MARK 21
50 CAL.

Drawing 275279. This is a one piece, radially expanded alloy-steel antiaircraft gun with chromium plated bore and uniform twist rifling (1 turn in 32 calibers). The gun barrel is attached to housing, Mark 2, by interrupted threads (bayonet joint).

3-INCH GUN, MARK 21, MOD. 1
50 CAL.

Drawing 275279. This differs from 3"/50 gun, Mark 21, in that it has chromium plated chamber and exterior working surfaces and muzzle lugs and sealing rib for attaching muzzle cover, Mark 2, for wet mount. Housing, Mark 2, Mod. 1.

GENERAL DESCRIPTION

4-INCH GUNS

4-INCH GUN, MARK 1

40 CAL.

Drawing 7064. This is a gun-steel gun, consisting of tube, jacket and two hoops. It is hooped to 50 inches from muzzle. Diameter over chamber is 13 inches. Thread for sleeve commences 41.45 inches from breech and is 20 inches long, with diameters 12.32 inches and 12.02 inches. Diameter of muzzle is 6 inches. Length of gun is 164 inches and of the tube 160 inches. Loose ammunition. All guns have been converted to fixed ammunition. Breech mechanism, Mark 1. No guns in service.

4-INCH GUN, MARK 1, MOD. 1

40 CAL.

Drawing 15315. This is gun, Mark 1, converted to fixed ammunition by inserting a chamber liner, screw-box liner and faceplate. Guns Nos. 1, 3 and 6 are 163.75 inches long, with tube 157.5 inches long. Gun No. 2 is 159.75 inches long, with tube 153.5 inches long. Faceplate, 2.25 inches thick is included in length of gun. Breech mechanism, Mark 4, Fletcher. The guns of this mark have been condemned.

4-INCH GUN, MARK 2

39 CAL.

Gun No. 4, drawing 5882. This gun is practically the same as Mark 1, but with thread for sleeve commencing at 44.75 inches from breech and cut away 3.50 inches each side of center of trunnions. Breech mechanism, Mark 2, Driggs-Seabury.

Gun No. 5, drawing 7093. This gun is the same as gun No. 4, but has a continuous thread commencing at 41.45 inches from breech.

Guns Nos. 4 and 5 have been provided with a balancing sleeve about 13 inches long. Both guns are condemned.

4-INCH GUN, MARK 3

40 CAL.

Drawing 8995. This is a gun-steel gun, consisting of tube jacket and two hoops. It is hooped from breech to 50 inches from muzzle. The diameter over the chamber is 13 inches. Thread for sleeve begins 41.45 inches from the breech and 20 inches long, with diameters 12.32 inches at top and 12.02 inches at bottom of thread. Total length is 164 inches and length of tube is 160 inches. Breech mechanism, Mark 3, Dashiell.

4-INCH GUN, MARK 3, MOD. 1

40 CAL.

Drawing 7284. This gun is the same as Mark 3, but with thread for sleeve starting 40.60 inches from breech and is hooped to 52.50 inches from muzzle. Breech mechanism, Mark 3, Mod. 1 and Mark 3, Mod. 2, Dashiell.

4-INCH GUN, MARK 3, MOD. 2

40 CAL.

Drawing 8542. This gun is the same as Mark 3, Mod. 1, but thread for sleeve has an outside diameter of 12.72 inches and a diameter of 12.42 inches at bottom of thread. Breech mechanism, Mark 3, Mod. 1, Dashiell.

4-INCH GUN, MARK 3, MOD. 3

40 CAL.

Drawing 8480. This gun is the same as gun, Mark 3, but the thread for sleeve has an outside diameter of 12.72 inches and a diameter of 12.42 inches at bottom of thread. Breech mechanisms, Mark 3, and Mark 3, Mods. 1 and 2.

4-INCH GUN, MARK 3, MOD. 4

40 CAL.

Drawing 40074. This gun is Mark 3, or Mark 3, Mod. 1, lined with a conical nickel-steel liner. Breech mechanism, Mark 3, Mod. 2.

4-INCH GUN, MARK 3, MOD. 5

40 CAL.

Drawing 41016. This is gun, Mark 3, Mod. 2 or 3, lined with a conical nickel-steel liner. Breech mechanism, Mark 3, Mod. 2.

4-INCH GUN, MARK 4

40 CAL.

Drawing 12667. This gun consists of tube, jacket and two hoops. It is hooped to 50 inches from muzzle. It has a shoulder for yoke 16.25 inches from breech. The slide surface is 12.50 inches in diameter, commencing 42 inches from breech, and has two solid guide keys, which are on the vertical center line of the gun. Length of gun, including faceplate, is 166.25 inches, and length of tube is 160 inches. It has breech mechanisms, Mark 4 and Mark 4, Mods. 1 and 2, Fletcher.

4-INCH GUN, MARK 4, MOD. 1

40 CAL.

Drawing 39659. This is gun, Mark 4, lined with a conical nickel-steel liner. Breech mechanism, Mark 4, Mod. 2.

4-INCH GUN, MARK 5

40 CAL.

Drawing 12498. This gun is practically the same as Mark 4, but has no faceplate, and yoke stop is 14 inches from breech. Slide commences 39.75 inches from breech. Length of gun 164 inches, and length of tube 160 inches. Breech mechanisms, Mark 3 and Mark 3, Mods. 1 and 2, Dashiell.

4-INCH GUN, MARK 5, MOD. 1

40 CAL.

Drawing 36322. This is gun, Mark 5, lined with a conical nickel-steel liner, except gun No. 83, which has a conical gun-steel liner. Breech mechanism, Mark 3, Mod. 2.

4-INCH GUN, MARK 6

40 CAL.

Drawing 13041. This gun is the same as Mark 5, but with breech mechanisms, Mark 5 and 5, Mods. 1 and 2, Dashiell. Guns Nos. 282 to 291 have muzzle bells. The smallest diameter of the chase is 6.24 inches at 8 inches from muzzle.

4-INCH GUN, MARK 6, MOD. 1

40 CAL.

Drawing 39302. This is gun, Mark 6, lined with conical nickel-steel liner. Breech mechanism, Mark 5, Mod. 2.

4-INCH GUN, MARK 7

50 CAL.

Drawing 19777. This gun is made of gun-steel and consists of tube, jacket, hoop and locking ring. The gun has a screw-box liner and is hooped to 74 inches from muzzle. Total length is 204.50 inches. The tube is 200 inches long. The gun is 16 inches in diameter over the chamber and has a yoke stop 9.5 inches from breech. Slide commences 46.50 inches from breech and has a diameter of 14.5 inches. Gun Nos. 213 to 254, 257 to 281, and 321 to 326 have two solid guide keys on vertical center line of gun. Guns Nos. 315 to 320 and 327 to 338 have two keyways cut on vertical center line of gun. Smallest diameter of chase is 6.354 inches at 10.50 inches from muzzle. Breech mechanisms, Mark 6 and Mark 6, Mod. 1, Fletcher.

4-INCH GUN, MARK 7, MOD. 1

50 CAL.

Drawing 41121. This is gun, Mark 7, lined with a conical nickel-steel liner. Breech mechanism, Mark 6, Mod. 1.

4-INCH GUN, MARK 7, MOD. 2

50 CAL.

Drawing 152908. This is gun, Mark 7, lined, or Mark 7, mod. 1 relined, with a conical nickel-steel liner having a shoulder at 2.5 inches from its breech end and longitudinal clearance at the forward shoulders. Breech Mechanism, Mark 6, Mod. 1.

4-INCH GUN, MARK 8

50 CAL.

Drawing 45831. This is a gun-steel gun consisting of tube and jacket. The gun has a screw-box liner and is hooped to the muzzle and has a total length of 206.53 inches. The tube is 200 inches long and the jacket is 206.28 inches long. The gun is 16 inches in diameter over the chamber and has a yoke stop 7 inches from breech. Slide commences 47.50 inches from breech, with a diameter of 14.50 inches, and has two solid guide keys on the vertical center line of gun. Smallest diameter of chase is 6.50 inches at 9.25 inches from muzzle. Breech mechanism, Mark 7, Mod. 1, Bethlehem Steel Co.

4-INCH GUN, MARK 9

50 CAL.

Drawing 38528. This is a nickel-steel gun, consisting of tube and jacket. The gun has a screw-box liner and is hooped to the muzzle. The diameter of the gun in rear of the yoke stop is 16 inches. The yoke stop is located 12.125 inches from breech. In front of the yoke stop the gun tapers from 16 inches to 14.50 inches at slide stop. The slide surface is 13 inches in diameter, commences 45.53 inches from breech, and is 64 inches long. The slide surface has one solid guide key on top of gun. The smallest diameter of the chase is 7 inches at 9.10 inches from muzzle. The total length of gun is 206.53 inches, and the tube is 200 inches long. Breech mechanism, Mark 8. The rifling is right-hand, with twist increasing from zero at the origin of the rifling to one turn in 31.17 calibers at the muzzle. There are 30 grooves 0.025 inch deep. Gun No. 475 has special rifling. Twist zero turn at origin of rifling and (1 turn in 25 calibers) at muzzle, 30 grooves 0.025 inch deep. (See file 4427/1863, Bureau's letter 26755/15 (D1) of Apr. 19, 1915.)

4-INCH GUN, MARK 9, MOD. 1

50 CAL.

Drawing 47818. This is gun, Mark 9, lined with a conical nickel-steel liner. The rifling is a semicubic parabola with a final twist of (1 turn in 25 calibers). There are 30 grooves 0.0375 inch deep. Breech mechanism, Mark 8.

4-INCH GUN, MARK 9, MOD. 2

50 CAL.

Drawing 47784. This gun is identical with gun, Mark 9, from the breech to the end of the slide. The chase is 11.15 inches in diameter at front end of slide. The smallest diameter of the chase is 7.1 inches and this diameter is continued for 2.5 inches and goes to 9.1 inches from the muzzle. The outside diameters of the tube are from 0.2 inch to 0.7 inch larger than on the tube for gun, Mark 9, except over the chamber, where the diameter 9 inches is retained. The tube was made larger to improve the design when lined. The rifling is the same as in gun, Mark 9, Mod. 1. Breech mechanism, Mark 8. Gun No. 475. This gun has been converted to Mark 9, Mod. 6.

4-INCH GUN, MARK 9, MOD. 3

50 CAL.

Drawing 49823. This is gun, Mark 9, with a conical nickel-steel liner 80.44 inches long inserted without shrinkage. Breech mechanism, Mark 8.

4-INCH GUN, MARK 9, MOD. 4

50 CAL.

Drawing 38528. This is gun, Mark 9, with the rifling grooves deepened from 0.025 inch to 0.0375 inch. Breech mechanism, Mark 8.

4-INCH GUN, MARK 9, MOD. 5

50 CAL.

Drawing 54977. This is gun, Mark 9, Mod. 2, with the rifling grooves deepened to 0.05 inch and the shell centering cylinder bored out to 4.144 inches. Breech mechanism, Mark 8, When this gun is used in wet-type mount, the breech mechanism is modified to a Mark 8, Mod. 2. Gun No. 3376 has special rifling, uniform twist, (1 turn in 25 calibers) at origin of rifling; the lands are brought to a sharp point to receive engraved projectile, sketch 10305.

4-INCH GUN, MARK 9, MOD. 6

50 CAL.

Drawing 55296. This gun is Mark 9 and Mark 9, Mods. 1, 3, 4 and 8, lined with a conical alloy-steel liner. The rifling is right-hand, with twist increasing from zero at the origin of the rifling to 1 turn in 25 calibers at muzzle. There are 30 grooves 0.05 inches deep. The shell centering cylinder is 4.144 inches in diameter. Breech mechanism, Mark 8.

4-INCH GUN, MARK 9, MOD. 7

50 CAL.

Drawing 55297. This is gun, Mark 9, Mods. 2 and 5, lined with a conical alloy-steel liner. The rifling is the same as in gun, Mark 9, Mod. 6. The diameter of the shell centering cylinder is 4.144 inches. Breech mechanism, Mark 8.

4-INCH GUN, MARK 9, MOD. 8

50 CAL.

Drawing 57649. This is gun, Mark 9, or Mark 9, Mod. 4, with the rifling grooves deepened to 0.05 inches and the shell centering cylinder bored out to 4.144 inches. Breech mechanism, Mark 8.

4- INCH GUN, MARK 9, MOD. 9

50 CAL.

Drawing 54977. This gun, Mark 9, Mod. 5, turned 180° and fitted with breech mechanism, Mark 8, Mod. 1. Left hand gun for twin mount.

4-INCH GUN, MARK 9, MOD. 10

50 CAL.

Drawing 54977. This is gun, Mark 9, Mod. 5 with uniform twist rifling (1 turn in 32 calibers).

4-INCH GUN, MARK 9, MOD. 11

50 CAL.

Drawing 55296. This is gun, Mark 9, Mod. 4 or 8, lined, or Mark 9, Mod. 1 or 6, relined, having uniform twist rifling, (1 turn in 32 calibers).

4-INCH GUN, MARK 9, MOD. 12

50 CAL.

Drawing 55297. This is gun, Mark 9, Mod. 2 or 5, lined, or Mark 9, Mod. 7, relined, having uniform twist rifling, (1 turn in 32 calibers).

4-INCH GUN, MARK 9, MOD. 13

50 CAL.

Drawing 55297. This is gun, Mark 9, Mod. 9, lined, having uniform twist rifling, (1 turn in 32 calibers).

4-INCH GUN, MARK 9, MOD. 14

50 CAL.

Drawing 54977. This is gun, Mark 9, Mod. 5, with the breech face and the outside up to the including yoke stop ring, the slide surface and 6V0 of muzzle end chromium plated.

4-INCH GUN, MARK 9, MOD. 15

50 CAL.

Drawing 152912. This is gun, Mark 9; Mark 9, Mod. 4 or 8, lined or Mark 9, Mod. 1, 6 or 11, relined with a conical nickel-steel liner having a shoulder at 2.5 inches from the breech end and longitudinal clearance at the forward shoulders. Uniform twist rifling, (1 turn in 32 calibers). Breech Mechanism, Mark 8.

4-INCH GUN, MARK 9, MOD. 16

50 CAL.

Drawing 152916. This is gun, Mark 9, Mod. 2, 5 or 10, lined, or Mark 9, Mod. 7 or 12, relined with a liner identical with that used in gun, Mark 9, Mod. 15. Breech Mechanism, Mark 8.

4-INCH GUN, MARK 9, MOD. 17

50 CAL.

Drawing 152916. This is gun, Mark 9, Mod. 9, lined, or Mark 9, Mod. 13, relined and is identical with Mark 9, Mod. 16 except that it is turned through 180° and fitted with breech mechanism, Mark 8, Mod. 1. Left hand gun for twin mount.

4-INCH GUN, MARK 9, MOD. 18

50 CAL.

Drawing 55296. This is gun, Mark 9, Mod. 11 with the slide surface chromium plated and the other exposed parts painted. For use on submarines. Breech Mechanism, Mark 8, Mod. 3.

4-INCH GUN, MARK 9, MOD. 19

50 CAL.

Drawing 55297. This is gun, Mark 9, Mod. 12 with the slide surface chromium plated and the other exposed parts painted. For use on submarines. Breech mechanism, Mark 8, Mod. 3.

4-INCH GUN, MARK 9, MOD. 20

50 CAL.

Drawing 54977. This is gun, Mark 9, Mod. 5 with the slide surface chromium plated and the other exposed parts painted. For use on submarines. Breech Mechanism, Mark 8, Mod. 3.

4-INCH GUN, MARK 9, MOD. 21

Drawing 152916. This is gun, Mark 9, Mod. 16 with the slide surface chromium plated and other exposed surfaces painted.

4-INCH GUN, MARK 10, ANTIAIRCRAFT GUN

50 CAL.

Drawing 47926. This gun is made of nickel-steel and consists of tube, jacket, chase hoop and locking ring. The gun has drop-lock mechanism and is hooped to the muzzle. It is 211 inches long. The tube is 200.1 inches long on the sides and 200 inches long on top and bottom. The jacket is 48.5 inches long and the chase hoop 174.5 inches long. The gun is 16 inches in diameter over the chamber and has a lug with cap projecting upward for attaching the hydraulic cylinder. The slide surface is 14 inches in diameter, commences 50.5 inches from breech, and is 42.5 inches long. The slide surface has one inserted key on bottom of gun. The smallest diameter of chase is 7.10 inches for a length of 2.5 inches beginning at 11.5 inches and ending at 9 inches from muzzle. The muzzle bell is 7.75 inches in diameter. Breech mechanism, Mark 9, drop block.

GENERAL DESCRIPTION

4.7-INCH GUNS

4.7-INCH GUN, MARK 1

47 CAL.

No drawings. This gun is manufactured by Vickers & Sons. Breech mechanism, Mark 1, guns Nos. 1 and 2. Small case. Washington Navy Yard sketch No. 8657 shows the case. Surveyed and condemned.

4.7-INCH GUN, MARK 2

42 CAL.

No drawings. This gun is a Vickers & Sons. Welin gun. Breech mechanism, Mark 2, gun No. 3. Small case. Surveyed and condemned.

4.7-INCH GUN, MARK 3

50 CAL.

Drawing 38096 is also strength curve. This is an Armstrong gun consisting of tube, jacket and four hoops, and is hooped from breech to muzzle. The diameter over the chamber is 15.50 inches; the smallest diameter of the chase is 6.75 inches, and the diameter of muzzle bell is 7.70 inches. The total length of gun is 236.20 inches and the length of tube is 231.10 inches. Breech mechanism, Mark 3, guns Nos. 4 to 11. Large case. Surveyed and condemned.

4.7-INCH GUN, MARK 4

No drawings. Guns Nos. 12 and 13. Surveyed and condemned.

4.7-INCH GUN, MODEL 1906, M. I.

27.5 CAL.

Drawing 67343. This gun, which consists of a tube, jacket and locking hoop, is an Army gun purchased for the use of the marines. There is a band shrunk on the gun near the muzzle and having projections on its lower side which fit in the cradle. The jacket and locking ring also have projections on their lower side for fitting in the cradle. The lug for the piston rod is integral with the jacket. Total length, 134.92 inches; length of bore, 129.42 inches. Rifling is right-handed with twist, increasing from one turn in 50 calibers at origin of rifling to one turn in 25 calibers at 14.9 inches from the muzzle; from this point to the muzzle the twist is uniform.

GENERAL DESCRIPTION

5-INCH GUNS

5-INCH GUN, MARK 1, MOD. 1

31 CAL.

The original gun, Mark 1, drawing 1941, had trunnions and used loose ammunition. A liner was inserted in breech end, changing the gun to fixed ammunition. (See drawing 16047.) The trunnions were cut off and a sleeve threaded on gun (see drawing 16525) belonging to mount Mark 10. The gun consists of liner, tube, jacket and nine hoops. The hooping begins 3.5 inches from breech and stops 59.5 inches from muzzle. The diameter of breech over chamber is 18 inches and at muzzle 7.5 inches. There is no muzzle bell. Total length of gun is 159.97 inches and of tube 153.97 inches. Breech mechanism, Mark 2, Mod. 2, Dashiell. Guns Nos. 1 and 2. The guns are condemned. (See Washington Navy Yard file 18717/6 and the Bureau's first indorsement 23440/5(D) of July 23, 1910.)

5-INCH GUN, MARK 2

40 CAL.

Drawing 9869. This is a gun-steel gun, consisting of tube, jacket and two hoops. The gun is hooped to 68.5 inches from muzzle. The thread for sleeve commences 55.5 inches from breech and continues for 24 inches with diameters 15.5 and 15.9 inches. The diameter of gun over chamber is 16.50 inches and of muzzle 7.10 inches. The chase begins 100.5 inches from muzzle. Total length of gun is 206 inches, of the tube 200 inches. Breech mechanism, Mark 2, Mod. 1, Dashiell. Case. Guns Nos. 3 and 4.

5-INCH GUN, MARK 2, MOD. 1

40 CAL.

Drawing 7219. The gun is practically the same as Mark 2, but is hooped to 66 inches from muzzle. The thread for sleeve commences 58.50 inches from breech and the chase commences 98 inches from muzzle. Breech mechanism, Mark 2, Mod. 1. Case. Gun No. 5.

5-INCH GUN, MARK 2, MOD. 2

40 CAL.

Drawing 9384. This gun is the same as Mark 1, Mod. 1, except that the jacket is cylindrical with a diameter of 15.50 inches for a length of 2.75 inches in rear of thread for sleeve and that the thread for the sleeve commences 55.75 inches from face of breech. Case. Guns Nos. 6 and 7. Breech mechanism, Mark 2, Mod. 2.

5-INCH GUN, MARK 2, MOD. 3

40 CAL.

Drawing 9112. The gun is identical with Mark 2, Mod. 2, but without any cylinder in rear of thread for sleeve. Case. Breech mechanisms, Mark 2, and Mark 2, Mods. 1 and 2.

5-INCH GUN, MARK 2, MOD. 4

40 CAL.

Drawing 9837. This is gun, Mark 2, Mod. 3, with a muzzle bell 8.4 inches in diameter. Case. Breech mechanism, Mark 2, Mods. 1 and 2.

5-INCH GUN, MARK 2, MOD. 5

35 CAL.

Drawing 21902. This is gun, Mark 2, Mod. 4, with 25 inches cut off from muzzle and a new locking hoop put on. The locking hoop extends over the whole length of the chase hoop to balance the gun. Case. Gun No. 39. Breech mechanism, Mark 2, Mod. 2.

5-INCH GUN, MARK 2, MOD. 6

40 CAL.

Drawing 26940. These guns are Mark 2, Mod. 4, modified to fit mount Mark 8 and modification. The breech has been turned down to 16.25 inches for a distance of 13.435 inches and the front part of thread for sleeve cut away, reducing the length to 21.15 inches. Case. Breech mechanism, Mark 2, Mod. 1.

5-INCH GUN, MARK 2, MOD. 7

40 CAL.

Drawing 39628. This is gun, Mark 2, Mods. 2, 3 and 4, lined with a conical nickel-steel liner. Breech mechanism, Mark 2, Mod. 2.

5-INCH GUN, MARK 2, MOD. 8

40 CAL.

Drawing 39631. This is gun, Mark 2, Mod. 6, lined with a conical nickel-steel liner. Breech mechanism, Mark 2, Mod. 2.

5-INCH GUN, MARK 3,

40 CAL.

Drawing 12622. The gun consists of tube, jacket and two hoops. The gun is hooped to 66 inches from muzzle. It has a shoulder for yoke 15.935 inches from face of breech. Diameter of gun over chamber is 16.50 inches. Slide surface commences 55.90 inches from breech, extending for a length of 23.5 inches, with a diameter of 15.98 inches. The gun has two solid guide keys, one on top and one on bottom of the slide surface. Front end of jacket is cylindrical, with a diameter of 15.5 inches. The smaller diameter of chase is 7.24 inches at 3.50 inches from muzzle. Diameter of muzzle bell is 8.40 inches. Total length of gun, including faceplate, is 208.38 inches and length of tube is 200 inches. Breech mechanisms, Mark 3, Mods. 1 and 2. Fletcher. Faceplate is 2.75 inches thick. Case.

5-INCH GUN, MARK 3, MOD. 1

40 CAL.

Drawing 13918. This gun is Mark 3 with front end of jacket and locking hoop tapering from diameter 15.98 to 15.50 inches. Case. Outlines of the two guns are shown on shrinkage sheet, drawing 13679. Breech mechanism, Mark 3, Mod. 2,

5-INCH GUN, MARK 3, MOD. 2

40 CAL.

Drawing 39806. These are guns, Mark 3 and Mark 3, Mod. 1, lined with conical nickel-steel liners. Breech mechanism, Mark 3, Mod. 2.

5-INCH GUN, MARK 3, MOD. 3

25 CAL.

Drawing 96113. This is gun, Mark 3 cutoff 75.19 inches from muzzle and given the inside characteristics of the 5-inch 25 caliber gun Mark 10. Breech mechanism, Mark 3, Mod. 1. Gun No. 104. Gun ruptured at Proving Ground. Scrapped.

5-INCH GUN, MARK 4

40 CAL.

Drawing 11641. This was gun No. 71, which has been converted to Mark 4, Mod. 3 (see Washington Navy Yard file 21925/12 and Bureau's fifth indorsement 24191/5 (D), of September 18, 1911). No guns in service.

5-INCH GUN, MARK 4, MOD. 1

40 CAL.

Drawing 12621. This gun is practically the same as Mark 3, but a groove for yoke is cut 8.685 inches from breech, 4.5 inches wide and 16.42 inches in diameter. The slide surface commences 53.15 inches from breech. Total length of gun is 206 inches and of tube 200 inches. Breech mechanism, Mark 2, Mods. 1 and 2. Case.

5-INCH GUN, MARK 4, MOD. 2

40 CAL.

Drawing 35891. This is gun, Mark 4, Mod. 1 rebuilt using nickel-steel tube and hoops. All outside and inside dimensions of gun are identical with Mark 4, Mod. 1. Guns Nos. 73 and 79. Breech mechanism, Mark 2, Mod. 2.

5-INCH GUN, MARK 4, MOD. 3

40 CAL.

Drawing 38342. This is gun, Mark 4, Mod. 1, lined with a conical nickel-steel liner. Breech mechanism, Mark 2, Mod. 2. Case.

5-INCH GUN, MARK 4, MOD. 4

40 CAL.

Drawing 47535. This is gun, Mark 4, Mod. 3, designed to be turned down and threaded to interchange with guns, Mark 2, Mod. 4, but no guns were ever so modified.

5-INCH GUN, MARK 5

50 CAL.

Drawing 16257. This is a gun-steel gun consisting of tube, jacket and one hoop. It is fitted with a screw-box liner. The gun is hooped to 66.75 inches from muzzle. The gun has a shoulder for yoke 28.40 inches from breech. Diameter of gun over chamber is 20.5 inches. The slide surface commences 52.90 inches from breech and is 40 inches long by 16 inches in diameter, with two guide keys, one on top and one on bottom of gun. The smallest diameter of chase is 7.747 inches at 11.5 inches from muzzle. Muzzle bell is 9 inches in diameter. Total length of gun is 255.65 inches and of tube 250 inches. Breech mechanism, Mark 4, Vickers with Welin block. Loose ammunition.

5-INCH GUN, MARK 5, MOD. 1

50 CAL.

Drawing 40130. This is gun, Mark 5, lined with a conical nickel-steel liner and with a nickel-steel locking ring and a gun-steel chase hoop added extending to the muzzle. Breech mechanism, Mark 4, Mod. 1.

5-INCH GUN, MARK 5, MOD. 2

50 CAL.

Drawing 47562. This is the same as Mark 5, Mod. 1, except that it has a slightly different liner. Gun No. 280. Breech mechanism, Mark 4, Mod. 1.

5-INCH GUN, MARK 5, MOD. 3

50 CAL.

Drawing 49910. This is gun, Mark 5, rebuilt. The old parts are the jacket and C₁ hoop, of gun-steel, and the new parts nickel-steel tube and locking ring and gun-steel B₂ hoop. The outside is the same as Mark 5, Mod. 1, except for the position of the locking ring. Gun No. 245. Breech mechanism, Mark 4, Mod. 1.

5-INCH GUN, MARK 6

50 CAL.

Drawing 36936. The gun is built of nickel-steel and consists of tube, jacket and one hoop. The gun has a screw-box liner and is hooped to the muzzle. The shoulder for the yoke is located 30.2 inches from breech. Diameter over chamber is 20.5 inches. Slide surface commences 54.7 inches from breech and is 43.2 inches long by 16 inches in diameter, with two guide keys let in on top and bottom. The smallest diameter of chase is 8.1 inches and of muzzle bell 9 inches. Total length of gun is 255.65 inches and of tube 250 inches. The gun is rifled with 30 grooves of uniform twist. The chamber is a modification of the chamber for gun, Mark 5. Loose ammunition. Breech mechanisms, Mark 4 and Mark 4, Mod. 1.

5-INCH GUN, MARK 6, MOD. 1

50 CAL.

Drawing 37227. The gun is built of plain gun-steel and is similar to Mark 6, except that shoulder for yoke is located 29.8 inches from breech and that slide surface commences 54.3 inches from breech and is 43.6 inches long. The chamber is the same as for Mark 5 gun. Rifling 20 grooves and semicubic parabolic twist, increasing from zero to 1 turn in 25 calibers. Loose ammunition. Breech mechanisms, Mark 4 and Mark 4, Mod. 1.

5-INCH GUN, MARK 6, MOD. 2

50 CAL.

Drawing 37277. The gun is the same as Mark 6, Mod. 1, except that the chamber is the same as for gun, Mark 6. Breech mechanism, Mark 4, Mod. 1

5-INCH TYPE GUN, MARK 7

51 CAL.

Drawing 41843. This gun consists of tube, jacket, hoop, locking ring, chamber liner and yoke-stop ring. The gun has a screw-box liner and is hooped to the muzzle. The gun was rebuilt to interchange with guns Mark 7. The breech mechanism Mark 5 type has been brought up to date, and is practically the same as breech mechanism Mark 5. Gun No. 357 has this mark, but has been changed to Mark 7, Mod. 4.

5-INCH GUN, MARK 7

51 CAL.

Bureau's drawing 31461. The gun is built of nickel-steel and consists of tube, jacket and two hoops. The gun has a screw-box liner and is hooped to the muzzle. The shoulder for the yoke is 14 inches from breech. Diameter over chamber is 21 inches. Slide surface commences 57.9 inches from breech and is 40 inches long by 16 inches in diameter with two guide keys let in on top and bottom. The smallest diameter of chase is 8.1 inches and of muzzle bell 9 inches. Total length of gun is 260.65 inches and of tube 253.95 inches. Case, but separate ammunition. Breech mechanism, Mark 5. All guns have been converted to bag guns.

5-INCH GUN, MARK 7, MOD. 1

51 CAL.

Drawing 39105. The gun is Mark 7, lined with a conical nickel-steel liner. Breech mechanism, Mark 5. No guns.

5-INCH GUN, MARK 7, MOD. 2

51 CAL.

Drawing 47631. This is gun, Mark 7, changed to a bag gun by inserting a gas-check seat bushing and using breech mechanism, Mark 7, Mods. 1, 4 and 6.

5-INCH GUN, MARK 7, MOD. 3

51 CAL.

Drawing 47617. This is gun, Mark 7, Modified by the insertion of a conical nickel-steel liner, and converted to a bag gun by changing the chamber and using breech mechanism, Mark 7, Mods. 1, 4 and 6.

5-INCH GUN, MARK 7, MOD. 4

51 CAL.

Drawing 48331. This is gun No. 357-L (Mark 7 type) modified by the insertion of a conical nickel-steel liner and changed to a bag gun. Breech mechanism, Mark 7, Mod. 1.

5-INCH GUN, MARK 7, MOD. 5

51 CAL.

Drawing 53248. This is gun, Mark 7, retubed and converted to a bag gun. Breech mechanism, Mark 7, Mod. 1.

5-INCH GUN, MARK 7, MOD. 6

51 CAL.

Drawing 133146. This is gun, Mark 7, Mod. 2, lined or gun, Mark 7, Mod. 3, relined with a conical liner having longitudinal clearance at forward shoulder, a modified chamber and uniform twist rifling (1 turn in 35 calibers).

5-INCH GUN, MARK 7, MOD. 7

51 CAL.

Drawing 48331. The gun, Mark 7, Mod. 7 is the gun, Mark 7, Mod. 4, lined the same as gun, Mark 7, Mod. 6

5-INCH GUN, MARK 7, MOD. 8

51 CAL.

Drawing 133149. The gun, Mark 7, Mod. 8 is the gun, Mark 7, Mod. 5, lined the same as gun Mark 7, Mod. 6.

5-INCH GUN, MARK 7, MOD. 9

51 CAL.

Drawing 144054. The gun, Mark 7, Mod. 9 is the gun, Mark 7, Mod. 6 with liner collar added.

5-INCH GUN, MARK 7, MOD. 10

51 CAL.

Drawing 152953. This is gun, Mark 7, Mod. 9 with the liner collar shortened and a liner locking ring installed.

5-INCH GUN, MARK 8

51 CAL.

Drawing 35906. The gun consists of tube and jacket of nickel-steel and C₁ hoop and locking ring of gun-steel. It is hooped to the muzzle and has a screw-box liner. The gun is identical with gun, Mark 7, except for arrangement of screw-box liner and chamber. The shoulder for yoke is 14.6 inches from breech. Total length of gun is 261.25 inches and of tube 253.95 inches. Breech mechanisms, Mark 7 and Mark 7, Mod. 2. Loose ammunition.

5-INCH GUN, MARK 8, MOD. 1

51 CAL.

Drawing 45795. This is gun, Mark 8, lined with a conical nickel-steel liner. Breech mechanisms, Mark 7, Mods. 2, 3 and 5. Loose ammunition. Gun No. 450 was originally designated as a Mark 9 gun case, breech mechanism, Mark 6, experimental but subsequently was lined to a Mark 8, Mod. 1 bag gun and Mark 8, Mod. 2 breech mechanism.

5-INCH GUN, MARK 8, MOD. 2

51 CAL.

Drawing 133560. The gun, Mark 8, Mod. 2 is the gun, Mark 8, Mod. 1 with uniform twist rifling and modified chamber.

5-INCH GUN, MARK 8, MOD. 3

51 CAL.

Drawing 45795. The gun, Mark 8, Mod. 3 is Mark 8 gun with fitted liner, zero shrinkage. Chamber modified the same as Mark 8, Mod. 2.

5-INCH GUN, MARK 8, MOD. 4

51 CAL.

Drawing 133563. Gun, Mark 8, Mod. 4 is gun, Mark 8, lined or 8, Mods. 1, 2 or 3, relined having longitudinal clearance at the forward liner shoulder and having a modified chamber and uniform twist rifling (1 turn in 35 calibers).

5-INCH GUN, MARK 8, MOD. 5

51 CAL.

Drawing 152902. Gun, Mark 8, Mod. 5 is gun, Mark 8, Mod. 4 with liner collar added.

5-INCH GUN, MARK 8, MOD. 6

51 CAL.

Drawing 152949. This is gun, Mark 8, Mod. 5 with liner collar shortened and a liner locking ring installed.

5-INCH GUN, MARK 8, MOD. 7

51 CAL.

Drawing 161113. This is gun, Mark 8, Mod. 4 having a gas check seat liner locking ring bushing installed.

5-INCH GUN, MARK 8, MOD. 8

51 CAL.

Drawing 178476. This is gun, Mark 8, Mod. 4 with modified band seat (Gun #1317LW). This gun has been relined as a Mark 15 gun. (No guns.)

5-INCH GUN, MARK 8, MOD. 9

51 CAL.

Drawing 178458. This is gun, Mark 8, Mod. 4 with a modified band slope (Gun #755L). This gun has been relined as a Mark 15 gun. (No guns.)

5-INCH GUN, MARK 8, MOD. 10

51 CAL.

Drawing 182745. This is gun, Mark 8, Mod. 5 with tube and liner locking ring added.

5-INCH GUN, MARK 8, MOD. A

51 CAL.

Drawing 179183. This is 5"/51 caliber gun, Mark 14 having an enlarged chamber and modified shell seating slope. One gun No. 513.

5-INCH GUN, MARK 9

51 CAL.

Drawing 37395. This gun is identical with gun, Mark 8 except that the screw-box liner is different and that the gun has the same chamber as gun, Mark 7. Breech mechanism, Mark 9. Case. Wet type.

5-INCH GUN, MARK 9, MOD. 1

51 CAL.

Drawing 67056. This is gun, Mark 9, lined with a conical nickel-steel liner. Breech mechanism, Mark 9.

5-INCH GUN, MARK 9, MOD. 2

51 CAL.

Drawing 133572. Gun, Mark 9, Mod. 2 is Mark 9, lined or Mark 9, Mod. 1, relined and having the band seat modified so as to be similar to Mark 8, Mod. 4 and the uniform twist rifling changed to one turn in 35 calibers.

5-INCH GUN, MARK 9, MOD. 3

51 CAL.

Drawing 152905. Gun, Mark 9, Mod. 3 is gun, Mark 9, Mod. 2 with liner collar and locking ring added.

5-INCH GUN, MARK 9, MOD. 4

51 CAL.

Drawing 217010. This is a 5"/51 caliber gun, Mark 9 with modified chamber and increasing twist hook rifling.

5-INCH GUN, MARK 9, MOD. 5

51 CAL.

Drawing 217012. This is identical with 5-inch gun, Mark 9, Mod. 3 except that a tube and liner locking ring is installed at the breech end of the liner.

5-INCH GUN, MARK 9, MOD. 6

51 CAL.

Drawing 217015. This is a 5"/51 caliber gun, Mark 9 with a modified chamber and uniform twist rifling (1 turn in 35 calibers).

5-INCH GUN, MARK 9, MOD. 7

51 CAL.

Drawing 217017. This is a 5"/51 caliber gun, Mark 9, Mod. 1 with a modified chamber and uniform twist rifling (1 turn in 30 calibers).

5-INCH GUN, MARK 10

25 CAL.

(Antiaircraft)

Drawing 67041. This is a semiautomatic nickel-steel gun and consists of a radially expanded gun barrel and a screwed and shrunk-on breech housing. Starting at its breech face the outside diameter of the barrel is 11 inches for a distance of 70 inches except for a length of 5.33 inches, starting at 7.67 inches from the breech face. This length is threaded for screwing on the breech housing. From the muzzle end of the 11-inch diameter the barrel tapers to a diameter of 9.1 inches in a length of 14.25 inches and from this point tapers to a diameter of 7.3 inches at the muzzle. The total length of the barrel is 125.25 inches. The rifling is right-hand, with uniform twist (one turn in 25 calibers). There are 45 grooves 0.05 inch deep. Overall length of gun is 136.25 inches. Breech mechanism, Mark 8. Case. Gun No. 1717.

5-INCH GUN, MARK 10, MOD. 1

25 CAL.

(Antiaircraft)

Drawing 116000. This is a semiautomatic nickel-steel gun and consists of a radially expanded gun barrel and a breech housing. Starting at its breech face, the outside diameter of the barrel is 11 inches for a distance of 57.75 inches except for a length of 6.75 inches starting at 6 inches from the breech face. This length is threaded for screwing on the breech housing. From the muzzle end of the 11-inch diameter the gun tapers to 9.10 inches diameter in a length of 26.25 inches. From this point the gun tapers to a diameter of 7.9 inches at the muzzle. The total length of the barrel is 125 inches. The rifling is right hand, with uniform twist of one turn in 25 calibers. There are 45 grooves 0.05 inch deep. The breech housing is screwed on and keyed to the gun barrel. Overall length of gun is 157.25 inches. Breech mechanism, Mark 11. Case.

5-INCH GUN, MARK 10, MOD. 2

25 CAL.

Drawing 133762. Gun, Mark 10, Mod. 2 is gun, Mark 10, Mod. 1 having modified breech housing. Part of the left cheek is cut away to facilitate loading. Breech mechanism, Mark 11, Mod. 1.

5-INCH GUN, MARK 10, MOD. 3

25 CAL.

Drawing 133762. Gun, Mark 10, Mod. 3 is gun Mark 10, Mod. 1 having the breech housing modified on existing guns to agree as near as possible to the Mark 10, Mod. 2 breech housing. Breech mechanism, Mark 11 or Mark 11, Mod. 1.

5-INCH GUN, MARK 10, MOD. 4

25 CAL.

Drawing 133762. This is gun, Mark 10, Mod. 2 with a liner inserted in differential cylinder housing as per sketch 73121.

5-INCH GUN, MARK 10, MOD. 5

25 CAL.

Drawing 133762. This is gun, Mark 10, Mod. 2 with a liner inserted in differential cylinder housing in accordance with drawing 165569 and 165572.

5-INCH GUN, MARK 10, MOD. 6

25 CAL.

Drawing 116000. This is gun, Mark 10, Mod. 1, modified with differential cylinder liner.

5-INCH GUN, MARK 10, MOD. A

25 CAL.

Drawing 217070. This gun, Mark 10, No. 1717 retubed. The chamber is identical with that of gun, Mark 11, Mods. 2 and 3 and the bore is chromium plated. Rifling uniform twist (1 turn to 25 calibers).

5-INCH GUN, MARK 11

25 CAL.

Drawing 142690. Gun, Mark 11 is identical with gun Mark 10, Mod. 2 except that the band seat and rifled bore of the gun barrel are chromium plated. Breech mechanism, Mark 11, Mod. 1.

5-INCH GUN, MARK 11, MOD. 1

25 CAL.

Drawing 142690. This gun is identical with gun, Mark 10, Mod. 3 except the band seat and the rifled bore are chromium plated. Breech mechanism, Mark 11, Mod. 1.

5-INCH GUN, MARK 11, MOD. 2

25 CAL.

Drawing 161052. This is gun, Mark 10, Mod. 2 or Mark 11 with shell centering cylinder enlarged from 5.14 inches to 5.16 inches and band slope increased from .60 inches to .68 inches in length. Band seat and rifled bore, chromium plated.

5-INCH GUN, MARK 11, MOD. 3

25 CAL.

Drawing 161052. This is gun, Mark 10, Mod. 3 or Mark 11, Mod. 1 with shell centering cylinder enlarged from 5.14 inch to 5.16 inch and band slope increased from .60 inch to .68 inch in length. Band seat and rifled bore, chromium plated.

5-INCH GUN, MARK 11, MOD. 4

25 CAL.

Drawing 116001 - cancelled. This gun was originally intended for Army manufacture. Was similar to guns, Mark 11, Mods. 2 and 3. None in service.

5-INCH GUN, MARK 11, MOD. 5

25 CAL.

Drawing 142690. This is gun, Mark 11, with nickel-copper alloy (monel metal) liner inserted in the differential cylinder of breech housing.

5-INCH GUN, MARK 11, MOD. 6

25 CAL.

Drawing 161052. This is gun, Mark 11, Mod. 2 with copper-nickel alloy (monel metal) liner inserted in the differential cylinder of breech housing.

5-INCH GUN, MARK 11, MOD. 7

25 CAL.

Drawing 161052. This is gun, Mark 11, Mod. 3 with copper-nickel alloy (monel metal) liner inserted in differential cylinder of breech housing.

5-INCH GUN, MARK 11, MOD. 8

25 CAL.

Drawing 142690. This is a 5"/25 caliber gun, Mark 11, with nickel-copper alloy liner (dr. 165569 and 165572) inserted in differential cylinder of breech housing.

5-INCH GUN, MARK 11, MOD. 9

25 CAL.

Drawing 217066. This is gun, Mark 11, Mod. 7 with chamber and bore identical with gun Mark 13.

5-INCH GUN, MARK 11, MOD. 10

25 CAL.

Drawing 217066. This gun, Mark 11, Mod. 6 with chamber and bore identical with gun Mark 13.

5-INCH GUN, MARK 12

38 CAL.

Drawing 161051. This is a monoblock radial expanded gun secured to the housing by interrupted threads (bayonet joint) and short keyway in top of barrel. Barrels are interchangeable in single long Mark 1 and Mark 1, Mod. 1 housings. The band seat and rifled bore are chromium plated. The rifling is right hand uniform twist, uniform width (1 turn in 30 calibers). There are 45 lands and 45 grooves. Total length of gun is 190 inches. The powder chamber is 5.70 inches in diameter at breech end tapering to 5.40 inches in 28.65 inches, then tapers to 5 inches in 5.50 inches.

5-INCH GUN, MARK 12, MOD. 1

38 CAL.

Drawing 170039. This is a semiautomatic dual purpose gun of the same general design as the Mark 12 except the 12.35 inch diameter is increased in length from 26.75 inch to 32.25 inch and has a long keyway cut in top of gun. It is interchangeable in the Mark 1 and Mark 1, Mod. 1 single long housing and the Mark 2 and Mark 2, Mod. 1 left and right twin housings.

5-INCH GUN, MARK 13

25 CAL.

Drawing 170075. This gun differs from the Mark 10 and Mark 11 guns in that instead of having the breech housing screwed and shrunk on, it has an interrupted thread (bayonet joint) interchangeable gun barrel and breech housing. Barrels and housings, separate units and carry separate marks. Gun barrels, Mark 13 and breech housings, Mark 3. The chamber differs from the Mark 10 and Mark 11 guns in that the band slope is 2.18 inches in length instead of .60 inch to .68 inch. Band seat and rifled bore are chrome plated.

5-INCH GUN, MARK 14

51 CAL.

Drawing 179009. This is gun, Mark 8 and Mods. 1 to 7, lined with a conical nickel-steel liner. Having a liner collar; a tube and liner locking ring at breech end and a modified chamber. Rifling; uniform twist (one turn in 35 calibers). (No guns.) Chromium plated bore.

5-INCH GUN, MARK 15

51 CAL.

Drawing 182700. This is gun, Mark 14 with enlarged chamber, or gun, Mark 8 and Mods. 1 to 7 lined with a conical nickel steel liner. Having a liner collar; a tube and liner locking ring and a modified chamber. The bore is chrome plated for a distance of 220 inches from muzzle. Rifling is uniform twist (one turn in 35 calibers).

5-INCH GUN, MARK 15, MOD. A

51 CAL.

Drawing 182700. This is the same as the 5"/51 caliber gun Mark 15, except for the shape and total length of chamber. The chamber has the same volume and band seat slope as 5"/51 caliber gun, Mark 8, Mod. 4 and in addition a shell centering cylinder in the rear of the band seating slope.

5-INCH GUN, MARK 15, MOD. 1

51 CAL.

Drawing 182700. This has recess in side at breech end for receiving hinge lug. Except as noted this gun is the same as gun, Mark 15.

5-INCH GUN, MARK 15, MOD. 2

51 CAL.

Drawing 275105. This is a 5"/51 caliber gun, Mark 7, Mod. 2, lined or Mark 7, Mods. 3, 6 or 9, relined with alloy steel liner having an integral collar and longitudinal clearances at the forward shoulders. It has a tube and liner locking ring, the same chamber and rifling as gun, Mark 15 and chromium plated bore.

5-INCH GUN, MARK 15, MOD. 3

51 CAL.

Drawing 275115. This is a 5"/51 caliber gun, Mark 7, Mod. 4, relined with an alloy steel liner having an integral collar and longitudinal clearance at the forward shoulder. It has a tube and liner locking ring, the same chamber and rifling as gun, Mark 15 and chromium plated bore.

5-INCH GUN, MARK 15, MOD. 4

51 CAL.

Drawing 275133. This is a 5"/51 caliber gun, Mark 7, Mod. 5, lined with an alloy steel liner having an integral collar and longitudinal clearance at the forward shoulders. It has a tube and liner locking ring, the same chamber and rifling as gun, Mark 15, and chromium plated bore.

5-INCH GUN, MARK 16

54 CAL.

Drawing 273226. This is an alloy steel monoblock radially expanded gun secured to the housing by interrupted threads and key on top of barrel. The band seat and rifling are chromium plated. The rifling is right hand uniform twist (one turn in 25 calibers) with 45 grooves and 45 lands. The total length of the gun barrel is 270 inches.

5-INCH GUN, MARK A

38 CAL.

Drawing 159248. This is 5"/50 caliber gun, Mark 9, cut off and modified, not relined. The bore is chromium plated for a distance of 164.5 inches from muzzle. Rifling; R.H. uniform twist (1 turn in 30 calibers). Breech mechanism, Mark 9, Mod. 2. This gun was No. 947 - changed to Mark B. No guns.

5-INCH GUN, MARK B

38 CAL.

Drawing 179113. This is 5"/38 caliber gun, Mark A, lined. Bore is chromium plated for a distance of 164.5 inches from muzzle. Rifling; R.H. uniform twist (1 turn in 30 calibers). One gun No. 947.

5-INCH GUN, MARK C

24.4 CAL.

Drawing 227536. This is a 5"/25 caliber gun, Mark 13, No. 2236 with the muzzle cut off.

5-INCH GUN, MARK D, No. 3175

54 CAL.

Drawing 273291. This is 6"/50 caliber gun, Mark 8, No. 400 lined as a 5-inch bag gun and with the muzzle cut back 24.35 inches. It has the same ballistic properties as 5"/54 caliber gun, Mark 16.

GENERAL DESCRIPTION

6-INCH GUNS

6-INCH WIRE-WOUND GUN

30 CAL.

Drawing 9735. The gun consists of tube, jacket, hoop, trunnion hoop and four locking rings. The gun is wire-wound on the outside from 5.8 inches from breech to the 9-inch wide hoop and from hoop to 50.5 inches from muzzle. The wire has no covering. The trunnions are 7 inches in diameter by 6 inches long, 25.5 inches between rimbases and located 64.8 inches from breech. The diameter over chamber is 20.7 inches and of muzzle 9.75 inches. Total length of gun is 190.53 inches and of tube 181.94 inches. Loose ammunition.

6-INCH GUN, MARK 1

30 CAL.

Drawing 8157. The gun consists of tube, jacket, 16 hoops and one elevating band. It is hooped from 5.32 inches from breech to 76.38 inches from muzzle. The trunnions are 7 inches in diameter by 5.75 inches long, 25.5 inches between rimbases and located 62.82 inches from breech. The elevating band is located 26 inches in rear of the trunnions. The diameter over chamber is 21.5 inches and smallest diameter of chase 9.45 inches. A muzzle bell is screwed onto the gun. Total length of gun is 189.7 inches and of tube 180 inches. Loose ammunition. Breech mechanism, Mark 1. Gun No. 1 for Dolphin. The gun is condemned.

6-INCH GUN, MARK 2

No guns.

6-INCH GUN, MARK 2, MOD. 1

30 CAL.

Drawing 13293. The gun consists of tube, jacket, 10 hoops and chamber liner. The gun is hooped from 4.37 inches from breech to 71.26 inches from muzzle. A sleeve is threaded on gun. The shoulder for yoke is located 14.5 inches from breech. Diameter over chamber is 21.5 inches and of muzzle 9.32 inches. The guns are lined at breech to varying depth. Total length of gun 193.53 inches and of tube 184.53 inches. Case. Breech mechanisms, Mark 4 and Mark 4, Mod. 1. Fletcher.

6-INCH GUN, MARK 2, MOD. 2

30 CAL.

Drawing 23228. This gun is the same as Mark 2, Mod. 1 but with a cylindrical liner the whole length of the gun. The threads under sleeve have been cut away and the diameter made 20.5 inches, commencing 44.65 inches from breech and extending for a length of 32.72 inches. There are two guide keys. Gun No. 9. This gun has been condemned.

6-INCH GUN, MARK 2, MOD. 3

30 CAL.

Drawing 27478. This is gun, Mark 2, Mod. 1, provided with a balancing hoop 50.75 inches long, screwed onto the front chase hoop. Gun No. 6. Breech mechanism, Mark 4, Mod. 1. The gun is condemned.

6-INCH GUN, MARK 3

30 CAL.

Drawing 5306. The gun consists of tube, jacket and 10 hoops and is hooped from muzzle to 4 inches from breech. The gun has trunnions with diameter 7 inches, length 6 inches, and 24 inches between rimbases. The trunnions are located 69.66 inches from breech. Center of elevating band is 24 inches in rear of trunnions. The diameter over chamber is 20.5 inches and of muzzle 10.8 inches. Total length of gun is 196 inches and of tube 187.41 inches. Loose ammunition. Breech mechanism, Mark 3.

6-INCH GUN, MARK 3, MOD. 1

35 CAL.

Drawing 6542. The gun consists of tube, jacket and 10 hoops. This gun is Mark 3 gun with jacket and C₄ hoop (new nomenclature) lengthened 6 inches, locating the trunnions 75.56 inches from breech and with tube projecting 24 inches in front of hooping. Diameter of muzzle is 9.25 inches. Total length of gun is 226 inches and of tube 217.41 inches. Loose ammunition. Breech mechanism, Mark 3. Guns Nos. 126, 129 and 132. The guns are condemned.

6-INCH GUN, MARK 3, MOD. 2

40 CAL.

Drawing 7224. The gun consists of tube, jacket and eight hoops. The gun is hooped to 4 inches from breech and 59 inches from muzzle. The trunnions are 7 inches in diameter by 6 inches long, 24 inches between rimbases and located 82.5 inches from breech. The diameter over chamber is 21 inches and of muzzle 9.1 inches. Total length of gun is 256 inches and of tube 247.41 inches. Loose ammunition. Breech mechanism, Mark 3. Guns Nos. 120 and 128. The guns are condemned.

6-INCH GUN, MARK 3, MOD. 3

30 CAL.

Drawing 13886. This is gun, Mark 3, with a chamber liner 39.1 inches long, changing the gun to fixed ammunition, and using breech mechanisms, Mark 4 and Mark 4, Mod. 1. Fletcher. Length of gun is 196 inches and of tube 187 inches. Gun No. 125 has a liner 79 inches long. (See drawing 13947.) Dashiell breech mechanism experimental No. 2. (See dr. no. 14090.)

6-INCH GUN, MARK 3, MOD. 4

30 CAL.

Drawing 17271. This gun is gun, Mark 3, Mod. 3, with the trunnions removed and threaded for sleeve. The thread commences 48.45 inches from breech and continues for 23.66 inches. Diameters of thread are 20 inches and 20.5 inches. Breech mechanisms, Mark 4 and Mark 4, Mod. 1.

6-INCH GUN, MARK 3, MOD. 5

35 CAL.

Drawing 18380. This is gun, Mark 3, Mod. 1, with a chamber liner changing the gun to fixed ammunition. Length of tube is 217 inches. Breech mechanisms, Mark 4 and Mark 4, Mod. 1. Fletcher. Guns Nos. 88, 130 and 131. The guns are condemned.

6-INCH GUN, MARK 3, MOD. 6

40 CAL.

Drawing 18381. This is gun, Mark 3, Mod. 2, with a chamber liner 39.1 inches long inserted, changing the gun to fixed ammunition. Length of tube 247 inches. Breech mechanism, Mark 4. Fletcher. Gun No. 127.

6-INCH GUN, MARK 3, MOD. 7

No drawings. No guns.

6-INCH GUN, MARK 3, MOD. 8

40 CAL.

Drawing 25388. This is gun, Mark 3, Mod. 2, lined its whole length with a gun-steel liner and changed to fixed ammunition. The trunnion hoop has been removed and gun is threaded for sleeve. The thread commences 56.579 inches from breech and continues for 27.421 inches. The diameters of threads are 20.5 inches and 21 inches. Shoulder for yoke is located 26.429 inches from breech and diameter of yoke seat is 20.625 inches. Length of gun is 256.25 inches and of tube 247.25 inches. Breech mechanism, Mark 4, Mod. 1. Fletcher. Gun No. 121.

6-INCH GUN, MARK 3, MOD. 9

30 CAL.

Drawing 36727. This is a gun, Mark 3, Mod. 3, with the liner extending through the whole length of the bore. Gun No. 95. Breech mechanism, Mark 4.

6-INCH GUN, MARK 4

40 CAL.

Drawing 12779. This is a gun-steel gun consisting of tube, jacket and seven hoops. The outside of gun is similar to gun, Mark 3, Mod. 2, but with breech hoop lengthened 0.1 inch, trunnion hoop removed and threaded for sleeve. Diameters of thread are 20.5 inches and 21 inches. The thread commences 61 inches from face of breech and is 28.5 inches long, the last 3.9 inches being on a bronze sleeve attached to the locking hoop. The length of the gun is 256.1 inches and of the tube 247.1 inches. Case. Breech mechanism, Mark 4. Fletcher. Guns Nos. 133 and 134. The guns are condemned.

6-INCH GUN, MARK 4, MOD. 1

40 CAL.

Drawing 12386. The gun consists of tube, jacket and four hoops and is hooped from breech to 61.5 inches from muzzle. The gun is similar to gun, Mark 4, but the chase hooping and projecting part of tube are heavier. Diameters of thread for sleeve are 20.5 inches and 21 inches. The thread commences 57.41 inches from face to breech. Diameter over powder chamber is 21 inches and of muzzle 9.1 inches. Length of gun is 256.41 inches and of tube 247.41 inches. Case. Breech mechanism, Fletcher, experimental drawing 11189. Gun No. 135. The gun is condemned.

6-INCH GUN, MARK 4, MOD. 2

40 CAL.

Drawing 12822. This gun is Mark 4, Mod. 1, with the breech cutoff 1.8 inches. Length of gun is 254.61 inches and of tube 247.41 inches. Case. Breech mechanism, Dashiell drawing 10185. Gun No. 136. The gun is condemned.

6-INCH GUN, MARK 4, MOD. 3

40 CAL.

Drawing 12809. The gun is similar to Mark 4, Mod. 1, but the thread for sleeve commences 64.01 inches from breech and is 28.5 inches long, the last 5.1 inches being on a bronze sleeve attached to the locking hoop. Breech mechanism, Mark 4. Fletcher. Guns Nos. 137, 138, 139 and 140. The guns are condemned.

6-INCH GUN, MARK 4, MOD. 4

40 CAL.

Drawing 12967. This gun is identical with gun, Mark 4, Mod. 1, except that a raised band 21.5 inches in diameter and 2.5 inches wide is turned 28.55 inches from breech and that the thread for sleeve commences 58.7 inches from breech and is 31.25 inches long, the last 4.04 inches being turned on the locking ring, which latter has been slightly changed to suit. Diameter of muzzle 9 inches. Breech mechanism, Mark 4, Mod. 1. Case.

6-INCH GUN, MARK 4, MOD. 5

40 CAL.

Drawing 20816. This gun is identical with gun, Mark 4, Mod. 4, except that the tube has been provided with a muzzle bell 10.5 inches in diameter. Smallest diameter of chase is 9.38 inches, 11.7 inches from muzzle. Case. Breech mechanism, Mark 4, Mod. 1.

6-INCH GUN, MARK 4, MOD. 6

No drawings and no guns.

6-INCH GUN, MARK 4, MOD. 7

40 CAL.

Drawing 14337. This gun was built as a Mark 4, Mod. 4, gun but the chamber has been bored out for loose ammunition and a face plate 1.83 inches thick added. A trunnion hoop was screwed on the gun and through the sides, holes were drilled and tapped to receive pressure gauges. (See dr. no. 16859.) Breech mechanism is Fletcher, experimental. Gun No. 154.

6-INCH GUN, MARK 4, MOD. 8

40 CAL.

Drawing 19214. This gun is a Mark 4, Mod. 4, gun with a muzzle liner 30 inches long and a bell screwed onto the muzzle. Gun No. 161. The gun is condemned. Case. Breech mechanism, Mark 4, Mod. 1.

6-INCH GUN, MARK 4, MOD. 9

40 CAL.

Drawing 12967. This gun is Mark 4, Mod. 4, rebuilt, using a nickel-steel tube and gun-steel locking hoop and chase hoop. Guns Nos. 166, 185 and 191. Breech mechanism, Mark 4, Mod. 1. Case.

6-INCH GUN, MARK 4, MOD. 10

40 CAL.

Drawing 27846. This is gun, Mark 4, Mod. 4, lined with a two-step, nickel-steel cylindrical liner. Gun No. 149. Breech mechanism, Mark 4, Mod. 1. Case.

6-INCH GUN, MARK 4, MOD. 11

40 CAL.

Drawing 27243. This is gun, Mark 4, Mod. 4, lined with a one-step, nickel-steel cylindrical liner. Guns Nos. 157, 173 and 174. Breech mechanism, Mark 4, Mod. 1. Case.

6-INCH GUN, MARK 4, MOD. 12

40 CAL.

Drawing 40719. This is gun, Mark 4, Mods. 4 and 9, lined with a cylindrical nickel-steel liner. Breech mechanism, Mark 4, Mod. 1. Case.

6-INCH GUN, MARK 4, MOD. 13

40 CAL.

Drawing 40718. This gun is Mark 4, Mod. 5, lined with a cylindrical nickel-steel liner. Case. Breech mechanism, Mark 4, Mod. 1.

6-INCH GUN, MARK 5

50 CAL.

Drawing 38098 is also strength curve. This is an Armstrong gun hooped from breech to muzzle. The diameter over chamber is 23.3 inches and 22 inches. The smallest diameter of chase is 9 inches in rear of the muzzle bell. Lug for piston rod is in one with the gun. Total length of gun is 309.25 inches and of tube 300 inches. Case. Breech mechanisms, Mark 5 and Mark 5, Mod. 1.

6-INCH GUN, MARK 6, EXPERIMENTAL

45 CAL.

Drawing 15435. The guns consist of tube, jacket, four hoops and locking ring. It has a screw-box liner and is hooped from breech to 61.33 inches from muzzle. Shoulder for yoke is 19.5 inches from breech. Diameter over chamber is 24 inches. Diameter over screw box is 21.50 inches. The slide commences 56.5 inches from breech with a diameter of 21.75 inches and continues for a length of 53.428 inches and has two solid guide keys on vertical center line of gun. Smallest diameter of chase is 9.2 inches and of muzzle bell 10.5 inches. Total length of gun is 276.258 inches and of tube 270 inches. Loose ammunition. Breech mechanism, Mark 6, Welin block. Gun No. 197 (condemned).

6-INCH GUN, MARK 6

50 CAL.

Drawing 17908. This is a gun-steel gun consisting of tube, jacket, three hoops and a locking ring. It has a screw-box liner and is hooped from breech to 78.5 inches from muzzle. Shoulder for yoke is 24 inches from breech. Diameter over chamber, 24 inches. Slide commences 61 inches from breech and is 21.75 inches in diameter and 56 inches long with two set-in guide keys on vertical center line of gun. Smallest diameter of chase is 9.243 inches at 12.50 inches from muzzle. Muzzle bell is 10.5 inches in diameter. Total length of gun is 300 inches and of tube 293.742 inches. Loose ammunition. Breech mechanism, Mark 6, Welin block.

6-INCH GUN, MARK 6, MOD. 1

50 CAL.

Drawing 36930. The gun consists of gun-steel jacket, C₁ and C₂ hoops and nickel-steel tube B₂, C₃, and D₁ hoops. This gun is Mark 6 rebuilt and hooped to the muzzle. The gun interchanges with Mark 8 and Mark 8 modified guns by counterboring the yoke and adding a stop ring in front on the gun shoulder as shown on sketch 4027. It interchanges with gun, Mark 6, as shown on sketch 4317. Breech mechanism, Mark 6, Mod. 1. Loose ammunition.

6-INCH GUN, MARK 6, MOD. 2

50 CAL.

Drawing 36980. This is gun, Mark 6, hooped to the muzzle with a gun-steel chase hoop and lined with a cylindrical nickel-steel liner. A nickel-steel locking ring is added at rear of the new chase hoop. The outside of the gun is identical with Mark 6, Mod. 1. Total length of gun is 300.20 inches, of liner 293.942 inches and of tube 293.742 inches. The gun interchanges with Mark 8 and Mark 8 modified guns under same conditions as for Mark 6, Mod. 1. (See sk.no. 4027.) It interchanges with gun, Mark 6, under same conditions as for Mark 6, Mod. 1. (See sk.no. 4317.) Breech mechanism, Mark 6, Mod. 1. Loose ammunition.

6-INCH GUN, MARK 7

40 CAL.

Drawing 19141. This is a gun-steel gun consisting of tube, jacket and three hoops. The gun is built by the Bethlehem Steel Co. and its lines follow closely the Mark 4, Mod. 5. The yoke is screwed on the gun, the threads beginning 22.45 inches from breech and continuing for 5 inches. The thread for sleeve commences 57.6 inches from breech and is 31.25 inches long. Length of gun is 254.11 inches and of tube 247.41 inches. Case. Breech mechanism, Mark 7, Mod. 1, Bethlehem eccentric thread on block.

6-INCH GUN, MARK 7, MOD. 1

40 CAL.

Drawing 41252. This is Mark 7 gun, lined with a cylindrical nickel-steel liner. Breech mechanism, Mark 7, Mod. 1. Case.

6-INCH GUN, MARK 8

50 CAL.

Drawing 41913. This is a nickel-steel gun consisting of tube, jacket, three hoops and locking ring. It has a screw-box liner and is hooped from breech to muzzle. Shoulder for yoke is located 27.75 inches from breech. The chamber has 8.08 inches inside and 24 inches outside diameter; 64.75 inches from breech the gun is turned to a diameter of 21.75 inches for a length of 52.25 inches. This slide surface has two guide keys on the vertical center line. Smallest diameter of chase is 10 inches, located 12.20 inches from muzzle. The number of rifling grooves is 24. Total length of gun is 300.20 inches and of tube 293.942 inches. Loose ammunition. Breech mechanisms, Mark 6 and Mark 6, Mod. 1.

6-INCH GUN, MARK 8, MOD. 1

50 CAL.

Drawing 18387. This gun is identical with Mark 8, except that the chamber is 8 inches in diameter and that the front end of the chamber differs from the one used in gun, Mark 8. Breech mechanisms, Mark 6 and Mark 6, Mod. 1. Twenty-four rifling grooves. Loose ammunition.

6-INCH GUN, MARK 8, MOD. 2

50 CAL.

Drawing 41913. The gun is identical with Mark 8, except that it has 36 rifling grooves. Breech mechanisms, Mark 6 and Mark 6, Mod. 1. Drawing 29499 shows gun No. 561, which has the chase hoop in two parts and the tube stepped to suit, the original hoop having sand splits. Drawing 27622 shows gun No. 486, which has the jacket in two parts, the original jacket having sand splits. Loose ammunition.

6-INCH GUN, MARK 8, MOD. 3

50 CAL.

Drawing 35897. This gun is Mark 8 and Mark 8, Mods. 1 and 2, lined with a cylindrical nickel-steel liner with a new chamber. Thirty-six rifling grooves. Loose ammunition.

6-INCH GUN, MARK 8, MOD. 4

50 CAL.

Drawing 37406. This gun is Mark 8, and Mark 8, Mods. 1 and 2, lined with a conical nickel-steel liner with same chamber as in Mark 8, Mod. 3. Thirty-six rifling grooves. Loose ammunition.

6-INCH GUN, MARK 9

44 CAL.

Drawing 25050. This is a gun-steel gun consisting of tube, jacket and three hoops, and is hooped from breech to muzzle. It is built by the Bethlehem Steel Co. The diameters over the chamber are 22.5 inches and 22 inches. The yoke is screwed on the gun from the front. The thread for yoke commences 25 inches from breech and is 5 inches long. The slide commences 59 inches from breech and is 19.5 inches in diameter, 56 inches long, and has two guide keys on the horizontal line. The smallest diameter of the chase is 9.75 inches at 6.80 inches from muzzle. Total length of gun is 270 inches and of tube 263.3 inches. Case. Breech mechanism, Mark 9, Mod. 1. Bethlehem spiral block. Twenty-four rifling grooves.

6-INCH GUN, MARK 9, MOD. 1

44 CAL.

Drawing 54985. This is gun, Mark 9, lined with a one-step, conical, alloy-steel liner. A liner locking ring is installed after proof. There are 36 rifling grooves. Case. Breech mechanism, Mark 9, Mod. 1. Bethlehem spiral block.

6-INCH GUN, MARK 10

45 CAL.

No drawing. Vickers Sons & Maxim Co., gun No. 1015a, Navy No. 523.

6-INCH GUN, MARK 11

50 CAL.

No drawing. Vickers Sons & Maxim Co., wire-wound gun No. 1070a, Navy No. 524.

6-INCH GUN, MARK 12

53 CAL.

Drawing 53254. This gun is built part of nickel-steel and part of gun-steel. The liner, tube, jacket and locking ring are of nickel-steel and the C₁ and C₂ hoops of gun-steel. The jacket reaches from breech to muzzle. The gun is provided with a screw-box liner. Shoulder for yoke is located 28 inches from breech. The diameter of the chamber is 7.5 inches and the outside diameter of the breech is 24.5 inches. At 72 inches from the breech, the gun is turned down to a diameter of 22.2 inches for a length of 60 inches. This slide surface has a key inserted on bottom. From the slide diameter the gun tapers down to 17 inches in a length of 47 inches at the end of the C₁ hoop. In front of the C₁ hoop the gun steps down to 15.6 inches in diameter and in length of 126 inches tapers down to 10.25 inches. This latter diameter continues for 8 inches, after which the

muzzle bell commences. The muzzle bell is 10.70 inches in diameter. The conical liner is inserted in the built-up gun. Total length of gun 325 inches and of tube and liner 318 inches. Rib rifling with 36 grooves of uniform width. The rifling curve is a semicubic parabola with final twist 1 turn in 25 calibers. Loose ammunition. Breech mechanisms, Mark 10; Mark 10, Mod. 2; or Mark 10, Mod. 3.

6-INCH GUN, MARK 12, MOD. 1

53 CAL.

Drawing 53254. This gun is identical with gun, Mark 12 except that it has uniform twist rifling (1 turn in 35 calibers), 48 grooves of uniform width. Breech mechanisms, Mark 10; Mark 10, Mod. 2; or Mark 10, Mod. 3.

6-INCH GUN, MARK 12, MOD. 2

53 CAL.

Drawing 119600. This gun is the same as gun, Mark 12, Mod. 1 except holes on breech face for attaching breech mechanism and bronze hoops added on outside sliding surfaces. Breech mechanism, Mark 11, watertight for submarine.

6-INCH GUN, MARK 12, MOD. 3

53 CAL.

Drawing 152926. This is gun, Mark 12, Mod. 1 relined and with the band seat modified to a $3\frac{1}{2}^\circ$ slope and having a liner locking ring and locking collar. Breech mechanisms, Mark 10; Mark 10, Mod. 2 or Mark 10, Mod. 3.

6-INCH GUN, MARK 12, MOD. 4

53 CAL.

Drawing 152930. This is gun, Mark 12, Mod. 2 relined, with the band seat modified to a $3\frac{1}{2}^\circ$ slope and having a liner locking ring and locking collar.

6-INCH GUN, MARK 12, MOD. 5

53 CAL.

Drawing 179048. This is gun, Mark 12, Mod. 3, No. 750 with a modified band seat and gas check seat liner locking ring.

6-INCH GUN, MARK 12, MOD. 6

53 CAL.

Drawing 119600. This is gun, Mark 12, Mod. 2, fitted with a tube and liner locking ring.

6-INCH GUN, MARK 12, MOD. 7

53 CAL.

Drawing 53254. This is gun, Mark 12, Mod. 1, fitted with a tube and liner locking ring.

6-INCH GUN, MARK 13

No drawings. No guns. This mark was originally assigned to a depth charge gun which now is called Depth Charge Projector, Mark 2.

6-INCH GUN, MARK 14

53 CAL.

Drawing 66970. This is a monoblock radially-expanded gun having the same inside and outside dimensions as the 6-inch gun, Mark 12, Mod. 1. Uniform twist rifling (1 turn in 35 calibers), 48 grooves of uniform width. Breech mechanisms, Mark 10; Mark 10, Mod. 2; and Mark 10, Mod. 3.

6-INCH GUN, MARK 14, MOD. 1

53 CAL.

Drawing 118342. This is gun, Mark 14, lined with a conical nickel-steel liner. The liner has the same dimensions and shrinkages as the liner used for gun, Mark 12, Mod. 3. No guns.

6-INCH GUN, MARK 15

53 CAL.

Drawing 67016. This is a light monoblock radially-expanded gun with the same ballistic qualities as gun, Mark 14. No guns. Breech mechanism, Mark 10, Mod. 1.

6-INCH GUN, MARK 16

47 CAL.

Drawing 170067. This is a monoblock radially-expanded alloy-steel gun using case ammunition. The barrel is secured to the housing by interrupted threads (bayonet joint). The diameter at face of housing is 17.995 inches and at muzzle is 9.50 inches. The overall length of barrel is 282.25 inches. A section 20.25 inches from the breech face and extending toward the muzzle for a distance of 25.50 inches is zinc spray coated. The bore is chromium plated for a distance of 246.00 inches from muzzle. The barrel is interchangeable in Mark 1 or Mark 1, Mod. 1 housing. Rifling is right hand uniform twist (1 turn in 25 calibers). The chamber is 39.10 inches long and tapers from a diameter of 7.25 inches to 6.75 inches.

6-INCH GUN, MARK 16, MOD. A

47 CAL.

Drawing 170067. This is the same as the Mark 16 gun except the rifling which is right hand uniform twist (1 turn in 30 calibers). Three guns Nos. 840, 841 and 842.

6-INCH GUN, MARK 16, MOD. B

47 CAL.

Drawing 217041. This is gun, Mark 16, with two extractor pockets milled on the breech face for use with experimental extractor.

6-INCH GUN, MARK 17

47 CAL.

Drawing 170068. This gun is similar to the Mark 16 except that it is a bag gun and has a key 39 inches long fitted on the slide diameter 64 inches from breech face. The total length of rifling is 240.24 inches. The bore is chrome plated for a distance of 246 inches from muzzle. This barrel is assembled with Mark 2 housing and Mark 10, Mod. 7 breech mechanism.

6-INCH GUN, MARK 18

53 CAL.

Drawing 179173. This is Mark 12 and Mark 12, Mods. 1 or 3 relined with tube and liner locking ring added and bore chromium plated.

6-INCH GUN, MARK 18, MOD. 1

53 CAL.

(Wet Type)

Drawing 179179. This is gun, Mark 12, Mods. 2 or 4 relined with tube and liner locking ring added and bore chromium plated.

6-INCH GUN, MARK 18, MOD. 2

53 CAL.

Drawing 118342. This is gun, Mark 14 (monoblock) lined and the bore chromium plated.

6-INCH GUN, MARK A

47 CAL.

Drawing 170066. This is a 6-inch 50 caliber gun, Mark 8 and Mark 8, Mod. 4 modified, to use case ammunition, relined and renumbered. The bore is chromium plated for a distance of 246.0 inches from muzzle. Rifling right hand uniform twist (1 turn in 35 calibers). Breech mechanism, Mark 9, Mod. 3. Three guns Nos. 900, 910 and 916.

6-INCH GUN, MARK B

47 CAL.

Drawing 170066. This is a 6-inch 50 caliber gun, Mark 8 modified, to use case ammunition, relined and renumbered. The bore is chromium plated for a distance of 246.0 inches from the muzzle. Rifling right hand uniform twist (1 turn in 30 calibers). Breech mechanism, Mark 9, Mod. 3. Three guns Nos. 917, 918 and 919.

6-INCH GUN, MARK C

47 CAL.

Drawing 170090. This is a 6-inch 50 caliber gun, Mark 8, Mod. 4 No. 496. Modified, relined and renumbered. The bore is chromium plated for a distance of 246.0 inches from the muzzle. Rifling right hand uniform twist (1 turn in 35 calibers). Breech mechanism, Mark 6, Mod. 1, No. 496. One gun No. 909, bag gun.

6-INCH GUN, MARK D

47 CAL.

Drawing 170066. This is a 6-inch 50 caliber gun, Mark 8 modified to use case ammunition, relined and renumbered. The bore is chromium plated for a distance of 246.0 inches from muzzle. Rifling right hand uniform twist (1 turn in 25 calibers). Breech mechanism, Mark 9, Mod. 3. Three guns Nos. 980, 981 and 982.

6-INCH GUN, MARK E

40 CAL.

Drawing 217050. This is a 6-inch 47 caliber gun, Mark A with muzzle cut back 42.0 inches. The bore is chromium plated for a distance of 204.0 inches from the muzzle.

GENERAL DESCRIPTION

7-INCH GUNS

7-INCH GUN, MARK 1

44 CAL.

Drawing 36691. This is a gun-steel gun consisting of liner, tube, jacket, three hoops and locking ring. It has a screw-box liner and is hooped from breech to 47.5 inches from muzzle. The diameter over the chamber is 29 inches and the yoke stop is 19.5 inches from breech. The slide commences 66 inches from breech with a diameter of 25.50 inches and is 55 inches long with set-in keys on top and bottom of gun. The smallest diameter of chase is 11.80 inches at 13.25 inches from muzzle. The diameter of muzzle bell is 12.875 inches. Total length of gun is 315.25 inches, of liner 306.50 inches and of tube 306.25 inches. Gun No. 1. Breech mechanism, Mark 1, experimental. The gun has been lined with a cylindrical nickel-steel liner.

7-INCH GUN, MARK 2

45 CAL.

Drawing 36692. This is a nickel-steel gun consisting of tube, jacket, three hoops, locking ring and screw-box liner. The gun is hooped from breech to muzzle. The diameter over the chamber is 29 inches and the yoke stop is 19.50 inches from breech. The slide surface commences 66 inches from breech and is 55 inches long with a diameter of 25.5 inches. It has one guide key set in on top of gun. The smallest diameter of chase is 11.25 inches at 12.25 inches from muzzle. The diameter of muzzle bell is 13 inches. Total length of gun is 323 inches and length of tube is 314.25 inches. Breech mechanisms, Mark 1 and Mark 1, Mods. 1 and 2.

7-INCH GUNS, NOS. 2 AND 3

45 CAL.

Drawing 20342. These guns differ from other Mark 2 guns in the diameter of the second step from breech end of tube which is 13.25 inches instead of 12.75 inches. Gun No. 2 has been modified to Mark 2, Mod. 2.

7-INCH GUN, MARK 2, MOD. 1

45 CAL.

Drawing 41253. This gun is gun, Mark 2, lined with a conical nickel-steel liner. Breech mechanism, Mark 1, Mods. 1 and 2.

7-INCH GUN, MARK 2, MOD. 2

45 CAL.

Drawing 41558. This gun is gun, No. 2, lined with a cylindrical nickel-steel liner. Breech mechanism, Mark 1.

GENERAL DESCRIPTION

8-INCH GUNS

8-INCH GUN, MARK 1

30 CAL.

Drawing 10724. The gun consists of tube, jacket and 19 hoops and is hooped from muzzle to 3.39 inches from breech. The gun has trunnions with diameter 10 inches, length 8 inches, 33.8 inches between rimbases and located 87.80 inches from breech. The center of elevating band is located 37 inches in rear of center of gun trunnions. The diameter over chamber is 30 inches and at muzzle 14.5 inches. Total length of gun is 257.99 inches and length of tube 244.77 inches. Guns Nos. 2 and 4. Gun No. 4 has a chamber 1 inch longer than gun No. 2. Breech mechanism, Mark 1. The guns surveyed and condemned.

8-INCH GUN, MARK 1, MOD. 1

30 CAL.

Drawing 13735. The gun consists of tube, jacket and 13 hoops and it is hooped from breech end to 69.24 inches from muzzle. Diameter over chamber is 30 inches. At 68 inches from breech the gun is threaded for sleeve for a length of 12 inches. Diameters of thread, 29.80 inches and 29.30 inches. Shoulder for yoke is 13.11 inches from breech. Diameter of muzzle is 12.50 inches. Total length of gun is 254.61 inches and of tube 242.83 inches. Breech mechanism, Mark 4. Guns Nos. 1 and 3. The guns surveyed and condemned.

8-INCH GUN, MARK 2

No drawings. No guns.

8-INCH GUN, MARK 2, MOD. 1

30 CAL.

Drawing 15730. This is a gun-steel gun consisting of tube, jacket and 19 hoops and is hooped from muzzle to 4.27 inches from breech. On the end of the breech one ring is fastened by screws (see dr. no. 15955) making the diameter of breech 29.50 inches up to shoulder for yoke, which is 13.11 inches from breech. At 77.19 inches from breech the gun is threaded for a length of 12 inches to receive a sleeve. Diameters of thread are 29.80 inches and 29.30 inches. Diameter over chamber is 30 inches and at muzzle 14.50 inches. Total length of gun is 255.60 inches and length of tube is 243.82 inches. Breech mechanism, Mark 4. Guns Nos. 5, 6 and 8. Gun No. 7 has been modified to 10-inch aerial torpedo gun. Guns surveyed and condemned.

8-INCH GUN, MARK 3, EXPERIMENTAL

30 CAL.

Drawing 6605. The gun consists of tube, jacket and 11 hoops and is hooped from muzzle to 4 inches from breech. The gun has trunnions with diameter 9.5 inches and length 8 inches, 33.8 inches between rimbases and located 90.6 inches from breech. The diameter over chamber is 28.75 inches and of muzzle 14.50 inches. Total length of gun is 261 inches and length of tube 251.50 inches. Breech mechanism, Mark 1, Mod. 1. Gun No. 15. The gun has been surveyed and condemned.

8-INCH GUN, MARK 3

35 CAL.

Drawing 6153. This is a gun-steel gun consisting of tube, jacket and 11 hoops. The gun is hooped to 4 inches from breech and 43.5 inches from muzzle. The gun has trunnions with diameter 9.5 inches, length 8 inches, and 33.8 inches between rimbases. The trunnions are located 97 inches from breech, except guns Nos. 16, 19, 20 and 21, which have the trunnions located 96.63 inches from breech. The center of the elevating band is located 32 inches in rear of trunnions. The diameter over chamber is 28.75 inches and of muzzle 12.50 inches. Total length of gun is 304.5 inches and of tube 295 inches. Breech mechanism, Mark 1, Mod. 1. Guns surveyed and condemned.

8-INCH GUN, MARK 3, MOD. 1

35 CAL.

Drawing 8971. The gun consists of tube, jacket and eight hoops and is hooped to 29.5 inches from muzzle. Trunnions interchange with Mark 3, but are located 101.60 inches from breech. Diameter over chamber and at muzzle, total length of gun and of tube are the same as for Mark 3. Breech mechanism, Mark 3. Guns Nos. 34, 36, and 37. Guns surveyed and condemned.

8-INCH GUN, MARK 3, MOD. 2

35 CAL.

Drawing 10821. The gun is identical with Mark 3, Mod. 1 but has the tube stepped differently under the chase hoops. Breech mechanism, Mark 3. Gun No. 35. Surveyed and condemned.

8-INCH GUN, MARK 3, MOD. 3

40 CAL.

Drawing 8983. The gun consists of tube, jacket and eight hoops and is hooped from breech to 39.5 inches from muzzle. Trunnions interchange with Mark 3 and are located 117 inches from breech. The diameter over chamber is 28.75 inches and of muzzle 12 inches. Total length of gun is 344.50 inches and of tube 335 inches. Breech mechanism, Mark 3. Gun No. 51. The gun has been surveyed and condemned.

8-INCH GUN, MARK 3, MOD. 4

35 CAL.

Drawing 23216. This is a Mark 3 gun with a ring shrunk on the end of the breech and the breech made tapered as on guns, Mark 3, Mods. 1, 2 and 3. A small balancing hoop is screwed onto the front chase hoop. Breech mechanism, Mark 3. Gun No. 9. Surveyed and condemned.

8-INCH GUN, MARK 3, MOD. 5

35 CAL.

Drawing 38641. This gun is Mark 3 lined with a cylindrical, nickel-steel, two-step liner. The trunnion hoop and elevating band have been removed and the threads that were under the trunnion hoop continued to the rear far enough to allow the gun to screw into a slide which is cast in one with the recoil cylinder. Breech mechanism, Mark 3, Mod. 1. Surveyed and condemned.

8-INCH GUN, MARK 4

35 CAL.

Drawing 10781. This is gun, Mark 3, Mod. 1 with the trunnion hoop removed and gun threaded for sleeve. The thread commences 77.1 inches from breech and its diameters are 28.75 inches and 28.25 inches. The rear chase hoop is longer and the middle chase hoop is shorter than on gun, Mark 3, Mod. 1. Breech mechanism, Mark 3. Surveyed and condemned.

8-INCH GUN, MARK 4, MOD. 1

35 CAL.

Drawing 11992. This gun is Mark 4 shortened 0.66 inch in rear of threaded part of gun, making the total length of gun 303.84 inches and of tube 294.34 inches. Breech mechanism, Mark 3. Gun No. 27. Surveyed and condemned.

8-INCH GUN, MARK 4, MOD. 2

35 CAL.

Drawing 10783. This gun is similar to Mark 4 but has longer jacket and locking hoop, making the hooped part of chase stronger. The thread for sleeve commences 81 inches from breech. Breech mechanism, Mark 3. Guns Nos. 32 and 48. Surveyed and condemned.

8-INCH GUN, MARK 4, MOD. 3

35 CAL.

Drawing 12378. This gun is identical with Mark 4 but has only two hoops in rear of locking hoop, whereas gun, Mark 4, has three. Breech mechanisms, Mark 3 and Mark 3, Mod. 1. Surveyed and condemned.

8-INCH GUN, MARK 4, MOD. 4

35 CAL.

Drawing 13508. This gun is identical with Mark 4 but has the breech end turned down to 28 inches in diameter to a point 16.25 inches from face of breech for making a shoulder for yoke. Breech mechanism, Mark 3. Surveyed and condemned.

8-INCH GUN, MARK 4, MOD. 5

35 CAL.

Drawing 15869. This gun is identical with Mark 4, Mod. 4 but for the shape of the front of the powder chamber. Breech mechanism, Mark 3. Surveyed and condemned.

8-INCH GUN, MARK 4, MOD. 6

35 CAL.

Drawing 23014. This is a nickel-steel gun consisting of tube, jacket, one hoop and screw box liner with flange. The gun is hooped from breech to 43.25 inches from muzzle. The chamber is similar to the one in gun, Mark IV, Mod. 5, but about 1.4 inches shorter. The gun is threaded for sleeve. The thread commences 72.5 inches from breech and its diameters are 28.75 inches and 28.25 inches. The diameter over chamber is 28.75 inches and at muzzle 12.5 inches. Total length of gun is 296.625 inches and of tube 287.125 inches. Diameter of seat for yoke is 28 inches and its shoulder is located 12.875 inches from breech. The screw box liner flange is 0.75 inch thick. Breech mechanism, Mark 3. Gun No. 83. Surveyed and condemned.

8-INCH GUN, MARK 4, MOD. 7

35 CAL.

Drawing 38360. This is a nickel-steel gun. It is similar to Mark 4, Mod. 6. Shoulder for yoke is 16.25 inches from breech, and the seat is 27.99 inches in diameter. The gun is hooped from breech to 44.5 inches from muzzle. Diameter of muzzle 12.40 inches. Total length of gun 297.92 inches and of tube 288.42 inches. Breech mechanism, Mark 3. Gun No. 52. Surveyed and condemned.

8-INCH GUN, MARK 4, MOD. 8

35 CAL.

Gun No. 61. Drawing 28652, dated 1907, is also strength curve. The gun, No. 61, consists of a heavy liner, part of tube, jacket, six hoops and one locking ring. The parts are of gun-steel. It is hooped from breech to muzzle. From the breech to 29.5 inches from the muzzle the outside of the gun is identical with gun, Mark 4, Mod. 4, except at the breech end of the muzzle hoop the locking ring has been added. Smallest diameter of chase, 14.5 inches from muzzle, is 13.26 inches. Total length of gun is 304.75 inches and of liner 295.25 inches. Surveyed and condemned.

8-INCH GUN, MARK 4, MOD. 9

35 CAL.

Drawing 40088. This is gun, Mark 4, lined with a cylindrical nickel-steel liner. Breech mechanism, Mark 3, Mod. 1. Surveyed and condemned.

8-INCH HOWITZER, MARK 4, MOD. 10.

23 CAL.

Drawing 55246. This is gun, Mark 4, Mod. 8, No. 62, cut off to a length of 193.5 inches. The howitzer has been used for experimental work in connection with high-explosive shells. Breech mechanism, Mark 3. Surveyed and condemned.

8-INCH GUN, MARK 4, MOD. 11

35 CAL.

Drawing 199070. This is gun, Mark 4, Mod. 4, lined and having a modified chamber on gun. Plate Battery N.P.G.

8-INCH GUN, MARK 5

40 CAL.

Drawing 17749. This is a gun-steel gun, consisting of tube, jacket, three hoops and one locking ring. It is hooped from breech to 56 inches from muzzle. The shoulder for yoke is 19 inches from breech and the seat is 32.25 inches in diameter. The diameter over chamber is 33 inches. The gun is turned for slide 29.5 inches in diameter, commencing 75 inches from breech and is provided with two keys. Diameter of smallest part of chase, 14 inches from muzzle is 13.172 inches and of muzzle bell 14.5 inches. Total length of gun is 343 inches and of tube 334 inches. Breech mechanism, Mark 5.

8-INCH GUN, MARK 5, MOD. 1

45 CAL.

Drawing 37275. A heavy nickel-steel liner has been inserted in Mark 5 gun lengthening the gun to 45 calibers. A gun-steel chase hoop has been added, hooping the gun to the muzzle and a gun-steel locking ring covers its joint with the B₂ hoop. Total length 369 inches. The liner 360 inches long. The gun is interchangeable with gun Mark 6 under conditions shown on sketch 4032. Breech mechanism, Mark 5.

8-INCH GUN, MARK 5, MOD. 2

45 CAL.

Drawing 37275. This gun is identical with Mark V, Mod. 1 but has breech mechanism, Mark 5, Mod. 1 and gas-check seat to suit. Guns Nos. 86 and 87.

8-INCH GUN, MARK 6

45 CAL.

Drawing 19897. The gun is of nickel-steel and consists of tube, jacket, three hoops and locking ring. It is hooped from breech to muzzle. The shoulder for yoke is 19 inches from breech and the seat is 32.75 inches in diameter. A locking ring is screwed on the gun in rear of the yoke. The diameter over powder chamber is 33.5 inches. The gun is turned for slide 29.5 inches in diameter, commencing 75 inches from breech and has one key. Diameter of smallest part of chase, 14.5 inches from muzzle is 12.8 inches and of muzzle bell 14.5 inches. Total length of gun is 369 inches and of tube 360 inches. Breech mechanism, Mark 5.

8-INCH GUN, MARK 6, MOD. 1

45 CAL.

Drawing 33720. This gun is Mark 6, lined with a cylindrical nickel-steel liner. Gun No. 201. Breech mechanism, Mark 5.

8-INCH GUN, MARK 6, MOD. 2

45 CAL.

Drawing 19897. This is Mark 6, with breech mechanism, Mark 6.

8-INCH GUN, MARK 6, MOD. 3

45 CAL.

Drawing 38160. This gun is Mark 6, lined with a conical nickel-steel liner. Breech mechanism, Mark 5. A liner locking ring is installed after proof.

8-INCH GUN, MARK 6, MOD. 4

45 CAL.

Drawing 38160. This is gun, Mark 6, Mod. 2, lined with a conical nickel-steel liner. Breech mechanism, Mark 6. A liner locking ring is installed after proof.

8-INCH GUN, MARK 6, MOD. 5

45 CAL.

Drawing 38160. This is gun, Mark 6, Mod. 3, rebuilt with hoops B₂, C₂ and D₁, new. Gun No. 125 L. Breech mechanism, Mark 5.

8-INCH GUN, MARK 6, MOD. 6

45 CAL.

Drawing 67039. This is gun, Mark 6, lined with a two-step conical liner, or gun, Mark 6, Mod. 3, relined with the step on the liner nearest the muzzle eliminated. Breech mechanism, Mark V.

8-INCH GUN, MARK 6, MOD. 7

45 CAL.

Drawing 67037. This is gun, Mark 6, Mod. 2, lined with a two-step conical liner or gun, Mark 6, Mod. 4, relined with the step on the liner nearest the muzzle eliminated. Breech mechanism, Mark 6.

8-INCH HOWITZER, MARK 7

23 CAL.

Drawing 55494. This is a single-forging, alloy-steel howitzer. It is 16 inches in diameter over the breech, 13 inches in diameter over the slide and 12.95 inches in diameter over the chase. The bore is 182 inches long and the total length is 190 inches. It is designed to interchange with the 4-inch guns, Mark 9, and modifications in the 4-inch mounts, Mark 12, Mods. 1 and 2. Breech mechanism, Mark 7.

8-INCH GUN, MARK 8

15 CAL. HOWITZER MODEL 1917,
VICKERS, MARK 6

Drawing 60818. This gun is made of (British) "F" steel and consists of a tube and jacket. The gun has a screw-box liner screwed into the jacket and is hooped to the muzzle. Two guide rings are shrunk on the gun, which have projections on their lower sides for fitting in the cradle. At the extreme end of the breech a ring is screwed and shrunk on the gun, which has projections on its lower side for attaching the piston rod. The hinge lugs are cast on the right-hand side for supporting the carrier with breechblock. Total length of gun is 127.6 inches; length of bore, 120.5 inches; maximum diameter over chamber, 19.25 inches; diameter in rear of muzzle bell, 12 inches. The rifling is of the rib type having a uniform twist of (1 turn in 15 calibers), right-hand. There are 48 grooves, 0.06 inch deep. Breech mechanism, Mark 8.

8-INCH GUN, MARK 9

55 CAL.

Drawing 96174. This is a part nickel and part gun-steel gun consisting of liner, tube, jacket, four hoops and three locking rings. Hoops C₁, C₂ and D₃ are of gun-steel; the balance of parts are nickel-steel. The gun is hooped to the muzzle. A shoulder for the yoke is located 27 inches from the face of the breech. This shoulder is obtained by a set in the yoke ring which is in halves and set in an annular groove having a diameter of 32.5 inches. The outside diameter of the yoke ring when assembled is 34.75 inches. The outside diameter of the gun is 33.5 inches for a distance of 190 inches from the breech face; this surface has an annular groove 1.05 inches from the breech face for securing the hinge lug; it also has two keys set in--the yoke key on the bottom and the slide key on top of the gun. From the muzzle end of the 190-inch surface the gun tapers in three successive slopes from a diameter of 33.5 inches to a diameter of 13.5 inches at the muzzle cylinder, after which the muzzle bell commences, its large diameter being 14.5 inches. Total length of gun is 449 inches; the tube and liner are 440 inches long. This gun is so constructed that it may be removed from the turret through the gun ports without dismantling the turret. Breech mechanism, Mark 9.

8-INCH GUN, MARK 9, MOD. 1

55 CAL.

Drawing 116415. This gun is similar to gun, Mark 9, except that the jacket has been shortened and put on the gun from the breech end, thereby locking the tube. Breech mechanism, Mark 9.

8-INCH GUN, MARK 9, MOD. 2

55 CAL.

Drawing 133145. This is gun, Mark 9, Mod. 1, with a modified chamber.

8-INCH GUN, MARK 9, MOD. 3

55 CAL.

Drawing 96174. This is gun, Mark 9, No. 345, relined and having a modified chamber the same as gun, Mark 9, Mod. 2.

8-INCH GUN, MARK 9, MOD. 4

55 CAL.

Drawing 133145. This is gun, Mark 9, Mod. 2, relined. Rifling; R.H., uniform twist (1 turn in 30 calibers).

8-INCH GUN, MARK 9, MOD. 5

55 CAL.

Drawing 96174. This is gun, Mark 9, Mod. 3, relined. Rifling; R.H., uniform twist (1 turn in 30 calibers).

8-INCH GUN, MARK 10

55 CAL.

Drawing 114072. This is also strength curve. This is a part nickel and part gun-steel gun similar to gun, Mark 9, but has the yoke stop integral with the gun and the outside diameter of the gun is reduced to 29.5 inches at the slide surface. No guns.

8-INCH GUN, MARK 11

55 CAL.

Drawing 133128. This is a nickel-steel two-piece gun having the same outside and inside dimensions as gun, Mark 9, Mod. 2. The two pieces are assembled with zero shrinkage and then radially expanded as a one-piece forging.

8-INCH GUN, MARK 12

55 CAL.

Drawing 144050. This is a two-piece gun consisting of a radially expanded tube and a shrunk on jacket. The jacket extends from the breech face forward a distance of 260 inches. The yoke ring is the same design and is positioned the same as on gun, Mark 9. Its inner diameter is 25 inches and the outer diameter is 27.25 inches. The outside diameter of the gun is 26 inches for a distance of 190 inches from the breech face; from this point it tapers to a diameter of 19 inches at the muzzle end of the jacket. Forward of the jacket the tube is cylindrical for a distance of 21.75 inches having a diameter of 15.90 inches. From this cylinder the tube tapers for 118.25 inches to intersect the muzzle cylinder. The muzzle cylinder is 12.50 inches diameter and 49.0 inches long. The total length of the gun is 449 inches; the tube is 440 inches long and the depth of screw-box is 9 inches. The gun is removable through the gun port without dismantling the turret. The bore is partially chromium plated. The plating extends for a distance of 84.0 inches starting at the muzzle and a distance of 84.0 inches starting from the band seat and extending toward the muzzle. Rifling is uniform twist (1 turn in 35 calibers). Breech Mechanism, Mark 9, Mod. 4.

8-INCH GUN, MARK 12, MOD. 1

55 CAL.

Drawing 144050. This is gun, Mark 12, having the bore chromium plated for a distance of 381.0 inches from the muzzle. Rifling; R.H., uniform twist (1 turn in 25 calibers).

8-INCH GUN, MARK 12, MOD. A

55 CAL.

Drawing 179196. This is Mark 12 gun with a muzzle bell. Rifling; R.H., uniform twist (1 turn in 25 calibers).

8-INCH GUN, MARK 12, MOD. B

55 CAL.

Drawing 182884. This is Mark 12, Mod. 1 gun having an experimental muzzle liner added.

8-INCH GUN, MARK 13

55 CAL.

Drawing 133145. This is gun, Mark 9, Mod. 2, having the bore partially chromium plated. The plating extends for a distance of 84 inches starting at the muzzle and for a distance of 84 inches starting with the band seat and extending muzzleward.

8-INCH GUN, MARK 14

55 CAL.

Drawing 170094. This is gun, Mark 9, Mods. 1 and 2 relined with a small chamber and bore chromium plated for a distance of 381.0 inches from muzzle. Rifling; R.H., uniform twist (1 turn in 25 calibers).

8-INCH GUN, MARK 14, MOD. 1

55 CAL.

Drawing 227528. This is an 8-inch 55 cal. gun No. 345L3, Mark 14, Mod. B, relined with an alloy-steel liner and having a small chamber, chromium plated bore and uniform twist rifling (1 turn in 25 calibers).

8-INCH GUN, MARK 14, MOD. A

55 CAL.

Drawing 170094. This is the same as the 8-inch 55 cal. Mark 14 Gun except the chamber which is identical with that of the 8-inch 55 cal. Mark 12 and the rifling which is R.H., uniform twist (1 turn in 30 calibers).

8-INCH GUN, MARK 14, MOD. B

55 CAL.

(Gun No. 345L)

Drawing 96174. This is a Mark 9, Mod. 3 Gun relined and having a modified chamber. Rifling; R.H., uniform twist (1 turn in 30 calibers).

8-INCH GUN, MARK 14, MOD. C

55 CAL.

Drawing 170094. This is gun, Mark 9, Mods. 1 and 2, relined with a chamber identical with that of gun, Mark 12 and bore chromium plated for a distance of 381.0 inches from muzzle. Rifling; R.H., uniform twist (1 turn in 25 calibers). No guns.

8-INCH GUN, MARK 15

55 CAL.

Drawing 275184. This is gun, Mark 12, Mod. 1, with a chamber identical with that of Gun, Mark 14.

8-INCH GUN, MARK A

35 CAL.

Drawing 160964. This is a 7-inch 45 cal. gun, Mark 2 bored out to an 8-inch bore diameter and provided with a chamber liner and muzzle balancing hoop. Rifling; R.H. uniform twist (1 turn in 25 calibers).

8-INCH GUN, MARK A, MOD. 1

35 CAL.

Drawing 199139. This is an 8-inch 35 cal. gun, Mark A, bored out to provide for an 8-inch liner.

8-INCH GUN, MARK B

55 CAL.

Drawing 182823. This is an 8-inch 55 cal. gun, Mark 9, Mod. 2, with chamber liner inserted to decrease chamber volume. Rifling; R.H., uniform twist (1 turn in 35 calibers). Gun No. 493. This gun has been changed to Mark C. No guns.

8-INCH GUN, MARK C

55 CAL.

Drawing 204118. This is an 8-inch 55 cal. gun, Mark B, No. 493 having a modified chamber liner.

8-INCH GUN, MARK D

35 CAL.

Drawing 217069. This is a 7-inch 44 cal. gun, No. 1, bored out to 8.0 inches with chamber liner inserted to give proper chamber volume and a muzzle balancing hoop. Rifling; R.H., uniform twist (1 turn in 25 calibers).

GENERAL DESCRIPTION

9-INCH GUNS

9-INCH GUN, MARK 1

98 CAL.

Drawing 64052. This is a 14"/50 caliber gun lengthened to 900 inches by the addition of a B₃ hoop of alloy steel to the muzzle. B₃ hoop is secured to gun by means of a threaded locking ring. The gun is lined with an alloy steel liner with a bore of 9 inches.

GENERAL DESCRIPTION

10-INCH GUNS

10-INCH AERIAL TORPEDO GUN, EXPERIMENTAL

18 CAL.

Drawing 55091. This gun was originally 8-inch gun, Mark 2, Mod. 1, No. 7. It was cut off, the chamber bushed to fit a 6-inch cartridge case and the bore enlarged to 10 inches in diameter for experimental firings with aerial torpedoes. Total length of gun is 189.33 inches. Eight-inch breech mechanism, Mark 4. Surveyed and condemned.

10-INCH GUN, MARK 1

31 CAL.

Drawing 9144. This is a gun-steel gun consisting of tube, jacket and 15 hoops and is hooped from 5.91 inches from breech to muzzle. The diameter over the chamber is 40 inches. The gun is attached to the carriage by straps, shoulder for rear strap is 94.66 inches from breech and the diameters of recesses for straps are 38 inches, 37.50 inches and 37 inches. Diameter of muzzle is 17.50 inches. Total length of gun is 329.10 inches and length of tube is 312.84 inches. Breech mechanism, Mark 1. Gun No. 1. Surveyed and condemned.

10-INCH GUN, MARK 1, MOD. 1

31 CAL.

Drawing 9147. This gun is identical with gun, Mark 1, except that the diameter of the jacket is 29.75 inches under A and B hoops and small variations in dimensions of hoops. Breech mechanism, Mark 1. Gun No. 2. Surveyed and condemned.

10-INCH GUN, MARK 1, MOD. 2

35 CAL.

Drawing 9150. The gun consists of tube, jacket and 14 hoops and is hooped from 5.91 inches from breech to muzzle. The diameter over the chamber is 40 inches. The gun is attached to the carriage by straps, the location with respect to the breech and the dimensions for recesses being the same as for gun, Mark 1. Diameter of muzzle is 16.57 inches. Total length of gun is 365.50 inches and length of tube is 349.34 inches. The chamber is the same as gun, Mark 1. Breech mechanism, Mark 1. Gun No. 3. Surveyed and condemned.

10-INCH GUN, MARK 1, MOD. 3

35 CAL.

Drawing 9153. This gun is the same as Mark 1, Mod. 2, but with different hooping in front of straps. The tube has different diameter. Breech mechanism, Mark 1. Gun No. 4. Surveyed and condemned.

10-INCH GUN, MARK 2

30 CAL.

Drawing 7276. This is a gun-steel gun consisting of tube, jacket and 11 hoops. The gun is hooped from 6 inches from breech to muzzle. The diameter over the chamber is 39 inches. The gun is attached to the carriage by straps, shoulder for rear strap is 94.66 inches from breech and the diameter for recesses for straps is 37 inches. Diameter of muzzle is 17.25 inches. Total length of gun is 329.10 inches and length of tube is 312.84 inches. Breech mechanisms, Mark 4, Mark 5 and Mark 5, Mod. 1. Surveyed and condemned.

10-INCH GUN, MARK 2, MOD. 1

30 CAL.

Drawing 9493. This gun is identical with Mark 2, but is hooped to breech. Breech mechanism, Mark 5. Surveyed and condemned.

10-INCH GUN, MARK 2, MOD. 2

30 CAL.

Drawing 12837. This is gun, No. 26, converted from an 8-inch Hurst gun. It consists of tube, jacket and eight hoops, and is hooped from breech to 68.59 inches from muzzle. From breech for a length of 164.5 inches the outside of the gun is identical with gun, Mark 2, Mod. 1. Breech mechanism, Mark 5. Surveyed and condemned.

10-INCH GUN, MARK 3

40 CAL.

Drawing 20192. This is a nickel-steel gun, consisting of tube, jacket, four hoops and screw-box liner. The gun is hooped from breech to muzzle. The diameter over the chamber is 42 inches. The yoke stop is located 29 inches from face of breech. The slide commences 94 inches from breech with a diameter of 38 inches and has one key set in on top of gun. The smallest diameter of chase is 16.20 inches at 13.75 inches from muzzle. Diameter of muzzle bell is 17.25 inches. Total length of gun is 413 inches and length of tube is 400 inches. Breech mechanism, Mark 6.

10-INCH GUN, MARK 3, MOD. 1

40 CAL.

Drawing 20192. This gun is similar to gun, Mark 3, but the front part of the chamber is different. Breech mechanism, Mark 6.

10-INCH GUN, MARK 3, MOD. 2

40 CAL.

Drawing 38504. This is gun, Mark 3, or Mark 3, Mod. 1, lined with a conical nickel-steel liner. Breech mechanism, Mark 6.

GENERAL DESCRIPTION

12-INCH GUNS

12-INCH GUN, MARK 1

35 CAL.

Drawing 7221. The gun consists of tube, jacket, 10 hoops and one locking ring and is hooped from muzzle to 6 inches from breech face. The gun is attached to the carriage by means of straps. The first shoulder for the straps is located 131 inches from breech. The diameter over chamber is 45 inches and diameter under straps 42.5 inches. The muzzle is without bell and is 20 inches in diameter. Total length of gun is 441 inches. The tube is 425 inches long. Breech mechanism, Mark 5, Mod. 1. Guns Nos. 1 and 2. Surveyed and condemned.

12-INCH GUN, MARK 1, MOD. 1

35 CAL.

Drawing 9490. The gun is similar to gun, Mark 1, but is hooped to the face of the breech. The diameter of breech end is 40 inches, increasing to 45 inches, 16 inches from breech. Breech mechanism, Mark 3, Mod. 1. Guns Nos. 3 and 4. Surveyed and condemned.

12-INCH GUN, MARK 1, MOD. 2

35 CAL.

Drawing 45165. This is gun, Mark 1, Mod. 1, with 1.46 inches cut from rear faces of strap bands on hoop C3, in order to balance in mount, Mark 3, Mod. 1. Breech mechanism, Mark 4. Guns Nos. 5 to 8, inclusive. Surveyed and condemned.

12-INCH GUN, MARK 2

35 CAL.

Drawing 10811. The gun consists of tube, jacket, seven hoops and one locking ring and is hooped from breech to 73.5 inches from muzzle. The outside of the gun is identical with Mark 1, Mod. 1, from face of breech to 214 inches from breech. The muzzle is without bell and is 19 inches in diameter. The total length of gun is 441 inches. The tube is 424.32 inches long. Breech mechanism, Mark 5. Surveyed and condemned.

12-INCH GUN, MARK 2, MOD. 1

35 CAL.

Drawing 39515. This is gun, Mark 2, lined with a cylindrical nickel-steel liner, with the band seat in the chamber changed and a nickel-steel C₆ locking ring at the joint between the B₂ and B₃ hoops added. Gun No. 9L is shown on drawing 49927.

12-INCH GUN, MARK 2, MOD. 2

35 CAL.

Drawing 40126. This gun is Mark 2, rebuilt. The gun was cut off 155 inches from muzzle and a heavy cylindrical nickel steel liner inserted. Three new gun-steel hoops were shrunk on, making the outside and inside dimensions of the gun identical with Mark 2, Mod. 1. Two screwed nickel-steel locking rings were added to lock the outside joints on the chase. Breech mechanism, Mark 5. Gun No. 14. Surveyed and condemned.

12-INCH GUN, MARK 3

40 CAL.

Drawing 23771. The gun consists of tube, jacket and eight hoops and is hooped from breech to 83 inches from muzzle. The gun is built up of four layers over the chamber, the fourth layer commencing 10 inches from breech. Diameter over chamber is 48.5 inches. In recoiling the gun slides in the mount; 100 inches from face of breech the gun is 42 inches in diameter. This slide surface is 98 inches long and has one guide key. There are two chase hoops. The smallest diameter of chase, 17.5 inches from muzzle, is 19.245 inches. Total length of gun is 493 inches. The tube is 480 inches long. Breech mechanism, Mark 6. All guns have been modified. Surveyed and condemned.

12-INCH GUN, MARK 3, MOD. 1

40 CAL.

Drawing 23770. This gun is the same as Mark 3, but has a smaller chamber. All guns have been modified to Mark 3, Mod. 3. Surveyed and condemned.

12-INCH GUN, MARK 3, MOD. 2

40 CAL.

Drawing 17541. This gun is the same as Mark 3, Mod. 1, but with only one long chase hoop. Gun No. 41 with the chase broken off; all other guns modified to Mark 3, Mod. 3. Surveyed and condemned.

12-INCH GUN, MARK 3, MOD. 3

40 CAL.

Drawing 29931. This gun is Mark 3 and Mark 3, Mods. 1 and 2, hooped to the muzzle with a gun-steel chase hoop and lined with a cylindrical nickel-steel liner; a nickel-steel locking ring covers the joint at the rear end of the new chase hoop. Breech mechanisms, Mark 6 and Mark 6, Mods. 1 and 2. The chambers of various guns differ somewhat and the shrinkage of Nos. 27 and 28 are different from the standard.

12-INCH GUN, MARK 4

40 CAL.

Drawing 20343. This gun consists of tube, jacket and seven hoops. It is hooped to the muzzle. From the breech for a length of 234 inches the outside of the gun is identical with gun, Mark 3. The smallest diameter of chase is 20.27 inches, 17.75 inches from muzzle. Total length of gun is 493.25 inches and length of tube is 480.25 inches. Breech mechanism, Mark 6. Surveyed and condemned.

12-INCH GUN, MARK 4, MOD. 1

40 CAL.

Drawing 45305. This is gun, Mark 4, lined with a cylindrical nickel-steel liner. Breech mechanism, Mark 6, Mod. 2. Surveyed and condemned.

12-INCH GUN, MARK 5

45 CAL.

Drawing 20344. This gun is built of nickel-steel and consists of tube, jacket, six hoops and one locking ring. It is hooped to the muzzle. From the breech for a length of 234 inches the outside of the gun is identical with guns, Mark 3 and Mark 4. The smallest diameter of the chase is 17.40 inches, located 17.75 inches from muzzle. The chase hoop is in one piece. Total length of gun is 553 inches and length of tube 540 inches. Breech mechanism, Mark 6; Mark 6, Mod. 1 and Mark 7. All guns have been modified.

12-INCH GUN, MARK 5, MOD. 1

45 CAL.

Drawing 37031. This gun is Mark 5 lined with a cylindrical nickel-steel liner. The powder chamber is different from the one used in gun, Mark 5. Breech mechanisms, Mark 6, Mods. 1 and 2. Guns Nos. 62, 65 and 66 have one layer of 0.125-inch wire (winding tension 50,000 pounds per square inch), under hoop D₁ and No. 62 has a similar layer under hoop C₄. Drawing 38443.

12-INCH GUN, MARK 5, MOD. 2

45 CAL.

Drawing 38331. This is gun, Mark 5, lined with a conical nickel-steel liner and having the same chamber as Mark 5, Mod. 1. Breech mechanism, Mark 6, Mod. 2. Liner locking rings are to be inserted when guns are available.

12-INCH GUN, MARK 5, MOD. 3

45 CAL.

Drawing 40299. This is gun, Mark 5, Mod. 1, changed to suit breech mechanism, Mark 9. Guns Nos. 90 and 91.

12-INCH GUN, MARK 5, MOD. 4

45 CAL.

Drawing 40300. This is gun, Mark 5, Mod. 1, changed to suit breech mechanism, Mark 10. Gun No. 93.

12-INCH GUN, MARK 5, MOD. 5

45 CAL.

Drawing 45299. This is gun, Mark 5, lined with a conical nickel-steel liner and having a small chamber. Breech mechanism, Mark 6, Mod. 2.

12-INCH GUN, MARK 5, MOD. 6

45 CAL.

Drawing 54813. This is gun, Mark 5, Mod. 4, rebuilt with new tube, chase hoop B₂ and locking hoops C₄ and D₂. All new parts are made of alloy-steel. The chamber is made of the same size as is used in gun, Mark 5, Mod. 5. Breech mechanism, Mark 10, Holmstrom. Gun No. 92.

12-INCH GUN, MARK 5, MOD. 7

45 CAL.

Drawing 54813. This is gun, Mark 5 or Mark 5, Mods. 1, 2 or 5, rebuilt with new tube, chase hoop B₂ and locking hoops C₄ and D₂. All new parts are made of alloy-steel. The chamber is made of the same size as is used in gun, Mark 5, Mod. 5. Breech mechanism, Mark 6, Mod. 2.

12-INCH GUN, MARK 5, MOD. 8

45 CAL.

Drawing 60659. This is gun, Mark 5, Mod. 1, relined and having a small chamber. Breech mechanism, Mark 6, Mod. 2.

12-INCH GUN, MARK 5, MOD. 9

45 CAL.

Drawing 67033. This is gun, Mark 5, Mods. 2, 5 and 7, relined, with the step on the liner nearest the muzzle eliminated. The rifling is right handed with a uniform twist of one turn in 32 calibers, 96 grooves of uniform width. Breech mechanism, Mark 6, Mod. 2.

12-INCH GUN, MARK 5, MOD. 10

45 CAL.

Drawing 67097. This is gun, Mark 5, Mods. 1 and 8, relined and having a uniform twist rifling of one turn in 32 calibers, 96 grooves of uniform width. Breech mechanism, Mark 6, Mod. 2.

12-INCH GUN, MARK 5, MOD. 11

45 CAL.

Drawing 67091. This is gun, Mark 5, Mod. 3, relined and having a small chamber. Uniform twist rifling, 96 grooves of uniform width. Breech mechanism, Mark 9.

12-INCH GUN, MARK 5, MOD. 12

45 CAL.

Drawing 67098. This is gun, Mark 5, Mod. 4, relined and having a small chamber. Uniform twist rifling, 96 grooves of uniform width. Breech mechanism, Mark 10.

12-INCH GUN, MARK 5, MOD. 13

45 CAL.

Drawing 96111. This is gun, Mark 5, Mod. 6, lined with a two-step conical liner and having uniform twist rifling, 96 grooves of uniform width. Breech mechanism, Mark 10.

12-INCH GUN, MARK 6

45 CAL.

Drawing 32264. Nickel-steel gun consisting of tube, jacket, screw-box liner, seven hoops and one locking ring. It is hooped to the muzzle. From the breech for a length of 198 inches the outside of the gun is identical with guns, Mark 3, Mark 4 and Mark 5. From here on the gun is made with two tapers until the smallest diameter of the chase, 18 inches, is reached, 17.75 inches from muzzle. Total length of gun is 553 inches and of tube 540 inches. Breech mechanism, Mark 7. All guns have been modified.

12-INCH GUN, MARK 6, MOD. 1

45 CAL.

Drawing 40705. This is gun, Mark 6, lined with a cylindrical nickel-steel liner. Breech mechanism, Mark 6, Mod. 2. Gun No. 178.

12-INCH GUN, MARK 6, MOD. 2

45 CAL.

Drawing 40767. This is gun, Mark 6, lined with a conical nickel-steel liner. Breech mechanism, Mark 6, Mod. 2. Liner locking rings will be added when the guns are available.

12-INCH GUN, MARK 6, MOD. 3

45 CAL.

Drawing 45303. This is gun, Mark 6, lined with a conical nickel-steel liner and having a small chamber. Breech mechanism, Mark 6; Mod. 2. Liner locking rings will be added when the guns are available.

12-INCH GUN, MARK 6, MOD. 4

45 CAL.

Drawing 67036. This is gun, Mark 6, Mods. 2 and 3, relined, with the step on the liner nearest the muzzle eliminated, having uniform twist rifling of one turn in 32 calibers, 96 grooves of uniform width. Breech mechanism, Mark 6, Mod. 2.

12-INCH GUN, MARK 6, MOD. 5

45 CAL.

Drawing 96130. This is gun, Mark 6, Mod. 1, relined and having a small chamber, uniform twist rifling, 96 grooves of uniform width. Locking ring added on chase. Breech mechanism, Mark 6, Mod. 2.

12-INCH GUN, MARK 7

50 CAL.

Drawing 32900. Nickel-steel gun consisting of cylindrical liner, tube, jacket and eight hoops. The gun has a screw-box liner and is hooped from breech to muzzle. The gun is built up from the cylindrical liner, the latter being inserted in the tube without shrinkage before the jacket and hoops are shrunk on. The screw-box liner is screwed into C1 and D1 hoops. The seat for the yoke is 43 inches in diameter. The diameter over the chamber is 44 inches. The slide surface commences 110 inches from the face of the breech and is 40 inches in diameter and 93 inches long, with one guide key on top of gun. The chase is made in two tapers, the smallest diameter is 19 inches and is located 18.25 inches from muzzle, which is 21 inches in diameter. Total length of gun is 607.25 inches and of liner 594.25 inches. Breech mechanism, Mark 8.

12-INCH GUN, MARK 7, MOD. 1

50 CAL.

Drawing 41961. This is a nickel-steel gun consisting of conical liner, tube, jacket, eight hoops and one locking ring. It has a screw-box liner and is hooped to the muzzle. This is the Mark 7 type gun. The original gun (drawing 32395) was the same as Mark 7 without the liner and with short C3 and E3 hoops. The gun has been modified by removing the old D3 hoop and part of C2 and C3 hoops, shrinking on a new long D3 hoop, locking D2 and D3 hoops together with a screw locking ring E1 and inserting a conical liner. Breech mechanism, Mark 8. Gun No. 180L.

12-INCH GUN, MARK 7, MOD. 2

50 CAL.

Drawing 45271. This is gun, Mark 7, with a conical liner inserted and with new locking hoop D3 and new locking ring E1. Liner locking rings will be inserted when guns are available. Breech mechanism, Mark 8.

12-INCH GUN, MARK 7, MOD. 3

50 CAL.

Drawing 45151. This is a nickel-steel gun consisting of tube, jacket, five hoops, one locking ring and screw-box liner. The outside and inside of the gun are identical with Mark 7, Mod. 2, except the gas-check seat. Breech mechanism, Mark 9, Mod. 1.

12-INCH GUN, MARK 7, MOD. 4

50 CAL.

Drawing 67095. This is gun, Mark 7, lined with a conical one step liner having uniform twist rifling and with new D₃ hoop and a new locking ring E₁. Breech mechanism, Mark 8.

12-INCH GUN, MARK 7, MOD. 5

50 CAL.

Drawing 96163. This is gun, Mark 7, Mod. 1, relined and having uniform twist rifling of one turn in 32 calibers, 96 grooves of uniform width. Breech mechanism, Mark 8. Gun No. 180L2. When this gun is relined to No. 180L3, the design of the liner will be changed to be identical with gun, Mark 7, Mod. 9. Drawings made and filed in vault until needed.

12-INCH GUN, MARK 7, MOD. 6

50 CAL.

Drawing 96183. This is gun, Mark 7, Mod. 2, relined with uniform twist rifling. Breech mechanism, Mark 8.

12-INCH GUN, MARK 7, MOD. 7

50 CAL.

Drawing 100593. This is gun, Mark 7, Mod. 3, lined with a one-step conical liner and having uniform twist rifling and liner and tube locking ring at breech end of liner. Breech mechanism, Mark 9, Mod. 1.

12-INCH GUN, MARK 7, MOD. 8

50 CAL.

Drawing 119608. Gun, Mark 7, Mod. 8 is gun, Mark 7, lined or Mark 7, Mod. 4, relined with a one-step conical liner having a liner and tube locking ring and liner locking collar at breech end of liner. Uniform twist rifling. Breech mechanism, Mark 8.

12-INCH GUN, MARK 7, MOD. 9
50 CAL.

Drawing 119612. Gun, Mark 7, Mod. 9 is gun, Mark 7, Mod. 2 or 6, relined with locking ring and collar added at breech end of liner the same as Mark 7, Mod. 8. Uniform twist rifling. Breech mechanism, Mark 8.

12-INCH GUN, MARK 7, MOD. 10
50 CAL.

Drawing 119646. This is gun, Mark 7, Mod. 2 or 6, relined, having longitudinal clearance at liner shoulders and locking collar and locking ring at breech end of liner. Uniform twist rifling. Breech mechanism changed from Mark 8 to Mark 9, Mod. 2.

12-INCH GUN, MARK 7, MOD. 11
50 CAL.

Drawing 217028. This is a Mark 7, Mod. 7 gun modified by lengthening the chamber and providing a 3°-30' band seating slope. Guns are fitted with a down swing breech mechanism. New slide keyway is milled on the gun. Breech mechanism, Mark 12.

12-INCH GUN, MARK 7, MOD. 12
50 CAL.

Drawing 217031. This is a 12-inch gun, Mark 7, Mod. 10, modified by lengthening the chamber and providing a 3°-30' band seating slope. Guns are fitted with a down swing breech mechanism. New slide keyway is milled on gun. Breech mechanism, Mark 12.

12-INCH GUN, MARK 7, MOD. 13
50 CAL.

Drawing 217034. This is a 12-inch gun, Mark 7, Mod. 8, with a modified 3°-30' band seating slope and gas-check seat. Guns fitted with down swing breech mechanism. New slide keyway is milled on the gun. Breech mechanism, Mark 12.

12-INCH GUN, MARK 7, MOD. 14
50 CAL.

Drawing 217037. This is a 12-inch gun, Mark 7, Mod. 9, with a modified 3°-30' band seating slope and gas-check seat. Guns fitted with down swing breech mechanisms. New slide keyway is milled on the gun. Breech mechanism, Mark 12.

12-INCH GUN, MARK 8

50 CAL.

Drawing 273140. 12-inch, Mark 8 is an alloy-steel gun consisting of a liner, tube jacket and three hoops. The maximum diameter outside 38 inches, total length is 612 inches. The tube is 600 inches long. The rifling is uniform twist of 1 turn in 25 calibers, 72 grooves and 72 lands. The bore is chromium plated for a distance of 518 inches from muzzle. Down swing breech mechanism, Mark 11.

12-INCH GUN, MARK A

49.5 CAL.

Drawing 284442. This is a Mark 7, Mod. 2 gun with the chamber, rifling and bore of a Mark 8 gun. Breech mechanism, Mark 8. This is a pilot gun for gun, Mark 8.

GENERAL DESCRIPTION

13-INCH GUNS

13-INCH GUN, MARK 1

35 CAL.

Drawing 9081. The gun is built of gun-steel and consists of tube, jacket, nine hoops and two screw locking rings. It is hooped from breech to 60 inches from muzzle and fastened to the carriage with straps. Diameter over chamber is 49 inches, under straps 46.5 inches, and of muzzle 21 inches. Total length of gun is 479.1 inches and of tube 460.6 inches. Breech mechanism, Mark 1. Surveyed and condemned.

13-INCH GUN, MARK 1, MOD. 1

35 CAL.

Drawing 29901. This is Mark 1 rebuilt. The only parts of the old gun that were kept are jacket and four breech hoops. The other parts are new and made of gun-steel. The gun is the same as Mark 1 but with slightly different powder chamber. Gun No. 2. Breech mechanism, Mark 1. Surveyed and condemned.

13-INCH GUN, MARK 1, MOD. 2

35 CAL.

Drawing 38181. This is gun, Mark 1; Mark 1, Mod. 1, and Mark 2, Mod. 1, lined with a cylindrical nickel-steel liner. Total length of gun is 479.2 inches and of liner 460.7 inches. Surveyed and condemned.

13-INCH GUN, MARK 2

35 CAL.

Drawing 38378. The gun is built of gun-steel and consists of tube, jacket, nine hoops and two locking rings and is hooped from breech to 60 inches from muzzle. The chamber is the same as for guns, Mark 1. The shoulder for the yoke seat is 18.5 inches from breech and the diameter of the seat is 48 inches. slide cylinder is 49 inches, and of muzzle 21 inches. Guns Nos. 13, 15 to 18 and 20 have a short B₂ hoop and long B₃ hoop; guns Nos. 14, 19 and 21 to 25 have a long B₂ hoop and short B₃ hoop. Total length of gun is 479.1 inches and of the tube 460.6 inches. Breech mechanisms, Mark 2 and Mark 2, Mod. 1. Gun No. 13 is lined from drawing 38379 and guns 18 and 19 from drawing 38480 with cylindrical liners. Surveyed and condemned.

13-INCH GUN, MARK 2, MOD. 1

35 CAL.

Drawing 38187. The outside is like Mark 1 and the inside like Mark 2, Mod. 2. Gun No. 35. When lined this gun becomes Mark 1, Mod. 2. Breech mechanism, Mark 2, Mod. 1. Surveyed and condemned.

13-INCH GUN, MARK 2, MOD. 2

35 CAL.

Drawing 38377. The gun is similar to Mark 2, but the front end of the powder chamber has a different shape. Breech mechanism, Mark 2, Mod. 1. Surveyed and condemned.

13-INCH GUN, MARK 2, MOD. 3

35 CAL.

Drawing 38182. This is gun, Mark 2 and Mark 2, Mod. 2, lined with a cylindrical nickel-steel liner. The liner is identical with the one used for gun, Mark 1, Mod. 2. Breech mechanism, Mark 2, Mod. 1. Surveyed and condemned.

GENERAL DESCRIPTION

14-INCH GUNS

14-INCH GUN, MARK 1

45 CAL.

Drawing 40746. This is a part nickel and part gun-steel gun consisting of tube, jacket, eight hoops and screw-box liner and is hooped from breech to muzzle. The screw-box liner is screwed into D₁ and C₁ hoops and has a flange 4 inches thick and 46 inches in diameter. The yoke stop is 30 inches from face of breech. The diameter over the chambers is 46 inches. The slide surface commences 105.50 inches from breech with a diameter of 42 inches and is 101.5 inches long, with one key set in on top of gun. The chase is made up of two tapers and the smallest diameter is 21.5 inches at 24 inches from the muzzle. Diameter of muzzle bell is 24 inches. Total length of gun is 642.45 inches and length of tube is 628.45 inches. Breech mechanism, Mark 1. No guns.

14-INCH GUN, MARK 1, MOD. 1

45 CAL.

Drawing 40763. This is gun, Mark 1, with breech mechanisms, Mark 2 and Mark 2, Mod. 1, side swing.

14-INCH GUN, MARK 1, MOD. 2

45 CAL.

Drawing 40764. This is gun, Mark 1, with breech mechanism, Mark 3, down swing. No guns.

14-INCH GUN, MARK 1, MOD. 3

45 CAL.

Drawing 46760. This is gun, Mark 1, Mod. 2, modified by replacing the short D₃ hoop by a longer hoop and locking the latter to the D₂ hoop by screwing on the locking ring E₁. The three joints on the gun under the D₃ hoop are closed by three locking rings in halves, before the long D₃ hoop is shrunk on. The slide cylinder, 42 inches in diameter, has been lengthened to 109.7 inches. Breech mechanisms, Mark 3 and Mark 3, Mod. 1, down swing.

14-INCH GUN, MARK 1, MOD. 4
45 CAL.

Drawing 46903. This is gun, Mark 1, Modified by making a new D₃ hoop and adding locking rings as for Mark 1, Mod. 3, and in addition by inserting a 3-step conical nickel-steel liner. Breech mechanism, Mark 1, side swing.

14-INCH GUN, MARK 1, MOD. 5
45 CAL.

Drawing 46907. This is gun, Mark 1, Mod. 1, modified by making the same changes as in the case of Mark 1, Mod. 4. Breech mechanisms, Mark 2 and Mark 2, Mod. 1, side swing.

14-INCH GUN, MARK 1, MOD. 6
45 CAL.

Drawing 45122. This is gun, Mark 1, Mod. 2, modified by making the same changes as in the case of Mark 1, Mod. 4 or by modifying gun, Mark 1, Mod. 3, by inserting a conical nickel-steel liner. Breech mechanisms, Mark 3 and Mark 3, Mod. 1, down swing. No guns.

14-INCH GUN, MARK 1, MOD. 7
45 CAL.

Drawing 67029. This is gun, Mark 1, modified by making a new D₃ hoop and adding locking rings as for the Mark 1, Mod. 3, and in addition by inserting a one-step conical gun-steel liner. The rifling is right handed with a uniform twist of one turn in 32 calibers, 112 grooves of uniform width. Breech mechanism, Mark 1, side swing.

14-INCH GUN, MARK 1, MOD. 8
45 CAL.

Drawing 67051. This is gun, Mark 1, Mod. 1, lined with a one-step conical liner and having a new D₃ hoop. It is also the Mark 1, Mod. 10 gun, lined, uniform twist rifling. Breech mechanism, Mark 2 and Mark 2, Mod. 1, side swing.

14-INCH GUN, MARK 1, MOD. 9
45 CAL.

Drawing 67050. This is gun, Mark 1, Mod. 2, lined with a one-step conical nickel-steel liner and having a new D₃ hoop. It is also the Mark 1, Mod. 3 gun, lined. Uniform twist rifling and large chamber. Breech mechanism, Mark 3 and Mark 3, Mod. 1, down swing.

14-INCH GUN, MARK 1, MOD. 10

45 CAL.

Drawing 67084. This is gun, Mark 1, Mod. 1, modified by making a new D₃ hoop and adding locking rings, the same as in the case of gun, Mark 1, Mod. 3. Breech mechanism, Mark 2, Mod. 1. No guns.

14-INCH GUN, MARK 1, MOD. 11

45 CAL.

Drawing 96117. This is gun, Mark 1, modified by making the same changes as for gun, Mark 1, Mod. 7, except that the rifling is a semicubic parabola having a twist increasing from one turn in 50 calibers at the origin of the rifling to one turn in 32 calibers in a distance of 518 inches, 84 grooves narrowing toward the muzzle. Breech mechanism, Mark 1, side swing.

14-INCH GUN, MARK 1, MOD. 12

45 CAL.

Drawing 96132. This is gun, Mark 1, Mod. 4, relined, with step on liner nearest the muzzle eliminated and having uniform twist rifling of one turn in 32 calibers and large chamber. Breech mechanism, Mark 1, side swing. No guns.

14-INCH GUN, MARK 1, MOD. 13

45 CAL.

Drawing 96144. This is gun, Mark 1, Mod. 5, relined, with the step on the liner nearest the muzzle eliminated. Uniform twist rifling and large chamber. Breech mechanism, Mark 2 and Mark 2, Mod. 1, side swing. No guns.

14-INCH GUN, MARK 1, MOD. 14

45 CAL.

Drawing 116900. This is gun, Mark 1, Mod. 1, modified by making the same changes as in the case of the Mark 1, Mod. 7. The liner is of nickel-steel having uniform twist rifling and large chamber. Breech mechanism, Mark 2; Mark 2, Mod. 1 or Mark 2, Mod. 4, side swing.

14-INCH GUN, MARK 2

45 CAL.

Drawing 41620. This is the 14-inch type gun. It is a nickel-steel gun similar to gun, Mark 1, but has the yoke stop 30.04 inches from breech and the slide surface is 98.03 inches long. The gun has short C₃ and D₃ hoops. Breech mechanism, Mark 2 (experimental), gun No. 1. The gun has been modified to Mark 2, Mod. 1. No guns.

14-INCH GUN, MARK 2, MOD. 1

45 CAL.

Drawing 46911. This is gun, Mark 2, modified by replacing the short D₃ hoop by a longer hoop and locking the latter to the D₃ hoop by screwing on the locking ring E₁. The three joints on the gun under the D₃ hoop are closed by three locking rings in halves, before the long D₃ hoop is shrunk on. The slide cylinder, 42 inches in diameter, has been lengthened to 109.73 inches. A conical nickel-steel liner of same dimensions as for guns, Mark 1, Mods. 4, 5 and 6, has been inserted. Total length of gun 642.49 inches, of tube 628.45 inches, and of liner 628.49 inches. The liner projects 0.04 inch in the screw-box so that the gas-check and mushroom will interchange with breech mechanism, Mark 2. Breech mechanism, Mark 2 (type), gun No. 1-L. This gun has been relined with a conical steel liner having uniform twist rifling and a large chamber. It carries a new breech mechanism, Mark 2, Mod. 1, side swing. The gun is now No. 1-L2, and blew up May 6, 1924. No guns.

14-INCH GUN, MARK 3

45 CAL.

Drawing 45132. This is a part nickel and part gun-steel gun, consisting of tube, jacket, eight hoops, three locking rings and screw-box liner and is hooped from breech to muzzle. The screw-box liner is screwed into C₁ hoop and has a flange 4 inches thick and 46 inches in diameter. The yoke stop is 30 inches from face of breech. The diameter over the chamber is 46 inches. The slide surface commences 105.50 inches from breech with a diameter of 42 inches and is 115 inches long, with one key set in on top of gun. The smallest diameter of the chase is 21.50 inches at 23 inches from muzzle and the diameter of the muzzle bell is 23.40 inches. Total length of gun is 642.45 inches and length of tube is 628.45 inches. Breech mechanisms, Mark 3 and Mark 3, Mod. 1, down swing.

14-INCH GUN, MARK 3, MOD. 1

45 CAL.

Drawing 51108. This is gun, Mark 3 lined with a 3-step conical nickel-steel liner. Breech mechanisms, Mark 3 and Mark 3, Mod. 1.

14-INCH GUN, MARK 3, MOD. 2

45 CAL.

Drawing 67057. This is gun, Mark 3, lined with a one-step conical nickel-steel liner having uniform twist rifling and large chamber. Breech mechanism, Mark 3, and Mark 3, Mod. 1, 3 or 4, down swing.

14-INCH GUN, MARK 3, MOD. 3

45 CAL.

Drawing 96165. This is gun, Mark 3, Mod. 1, relined with a nickel-steel liner having the step nearest the muzzle eliminated; uniform twist rifling and large chamber. Breech mechanism, Mark 3, Mod. 1, drop block. No guns. Gun 76 was to have been relined thus but breech mechanism changed to side swing and called Mark 3, Mod. 5.

14-INCH GUN, MARK 3, MOD. 4

45 CAL.

Drawing 119639. This gun is the same as Mark 3, Mod. 2 but having side swing. Breech mechanism Mark 2, Mod. 3.

14-INCH GUN, MARK 3, MOD. 5

45 CAL.

This gun is the same as Mark 3, Mod. 3 but having side swing. Breech mechanism Mark 2, Mod. 3. Gun 76L when relined. No guns.

14-INCH GUN, MARK 4

50 CAL.

Drawing 48097. This is a nickel-steel gun. It consists of liner, tube, jacket, three hoops and two locking rings. The liner is inserted last. The screw-box liner is screwed into the jacket and has a separate flange 4 inches thick screwed onto it. The yoke stop is 42.5 inches from breech. The diameter over chamber is 48 inches. The slide cylinder commences 120 inches from breech, has a diameter of 44 inches and is 132 inches long, with one key set in on top of gun. The front end of C₂ hoop tapers in two successive slopes from a diameter of 44 inches and 31.80 inches in a length of 162 inches. In front of the C₂ hoop the chase is 28.80 inches in diameter, tapering in two successive slopes to 22.20 inches in a length of 255.75 inches. The 22.20 inch diameter is continued for 27 inches, after which the muzzle bell commences, its largest diameter being 23.4 inches. The total length of the gun is 714 inches and of the tube and liner 700 inches. Rifling is right handed with twist increasing from one turn in 50 calibers at the origin of the rifling to one turn in 32 calibers at a distance of 574 inches from origin of rifling. From this point to the muzzle the twist is uniform (one turn in 32 calibers). Breech mechanism, Mark 4, down swing.

14-INCH GUN, MARK 4, MOD. 1

50 CAL.

Drawing 50238. This is gun, Mark 4, with the 4-inch flange on the screw-box liner omitted and the jacket and C₁ hoop lengthened corresponding amount. Breech mechanism, Mark 4, Mod. 1.

14-INCH GUN, MARK 4, MOD. 2

50 CAL.

This is gun, Mark 4, except that the liner is heavier. Gun No. 100. Scrapped. No guns.

14-INCH GUN, MARK 4, MOD. 3

50 CAL.

Drawing 67026. This is gun, Mark 4, or Mark 4, Mod. 5, relined, with the step on the liner nearest the muzzle eliminated and having uniform twist rifling. Breech mechanism, Mark 4, down swing.

14-INCH GUN, MARK 4, MOD. 4

50 CAL.

Drawing 67027. This is gun, Mark 4, Mod. 1, relined, with the step on the liner nearest the muzzle eliminated and having uniform twist rifling. Breech mechanism, Mark 4, Mod. 1, down swing.

14-INCH GUN, MARK 4, MOD. 5

50 CAL.

Drawing 67090. This is gun, Mark 4, relined and with rifling uniform twist and grooves 0.14 inches deep. The chamber was modified to suit the deep rifling grooves. Gun No. 89 was modified. On test some of the bands were ripped out for several feet. The gun was relined as a Mark 4, Mod. 3, gun. Breech mechanism, Mark 4, down swing. No guns.

14-INCH GUN, MARK 4, MOD. 6

50 CAL.

Drawing 96156. This is gun, Mark 4, Mod. 2, relined and having uniform twist rifling. Breech mechanism, Mark 4, down swing.

14-INCH GUN, MARK 4, MOD. 7

50 CAL.

Drawing 69157. This is gun, Mark 4, Mod. 1, relined and having the step on the liner nearest the muzzle eliminated and having increasing twist rifling. No guns. Breech mechanism, Mark 4, Mod. 1.

14-INCH GUN, MARK 4, MOD. 8

50 CAL.

Drawing 133590. This is gun, Mark 4, Mod. 3 with band seat modified.

14-INCH GUN, MARK 4, MOD. 9

50 CAL.

Drawing 133582. This is gun, Mark 4, Mod. 4 with the band seat modified.

14-INCH GUN, MARK 5, MOD. 3

45 CAL.

Drawing 133584. This is gun, Mark 5, with the breech mechanism changed from side swing to down swing. Breech mechanism, Mark 3, Mod. 9.

14-INCH GUN, MARK 6

50 CAL.

Drawing 66311. This gun is identical with gun, Mark 4, Mod. 1, except that it has a one-step conical liner and uniform twist rifling. Breech mechanism, Mark 4, Mod. 1, down swing. No guns.

14-INCH GUN, MARK 7

50 CAL.

Drawing 142666. This is gun, Mark 4, relined with the step on the liner nearest the muzzle eliminated or Mark 4, Mod. 3, relined, having uniform twist rifling and a different design of chamber. Breech mechanism, Mark 4, Mod. 3.

14-INCH GUN, MARK 7, MOD. 1

50 CAL.

Drawing 142668. This is gun, Mark 4, Mod. 1, relined with the step on the liner nearest the muzzle eliminated or Mark 4, Mod. 3, relined, having uniform twist rifling and different design of chamber. Breech mechanism, Mark 4, Mod. 3.

14-INCH GUN, MARK 7, MOD. 2

50 CAL.

Drawing 204039. This is gun, Mark 7, No. 110-L2 relined with a chamber having a shell centering cylinder of 14.80 inches diameter and 15.45 inches long. Gun converted to 14-inch gun Mark C.

14-INCH GUN, MARK 8

45 CAL.

Drawing 152932. This is gun, Mark 1, Mods. 1, 3, 7, 8, 9, 11 or 14 lined or relined with a one step conical liner having a liner collar and locking ring at the breech end. Also having a large chamber with a $3\frac{1}{2}^\circ$ band seat slope, uniform twist rifling (one turn in 32 calibers) and a down swing, carrier type breech mechanism. When guns are converted from Mark 1, Mod. 1 to Mark 8, new D3 hoop and locking rings D4, D5, D6 and E1 are added.

14-INCH GUN, MARK 8, MOD. 1

45 CAL.

Drawing 152940. Gun, Mark 8, Mod. 1, is identical with Mark 8 except that it has a side swing, carrier type breech mechanism.

14-INCH GUN, MARK 8, MOD. 2

45 CAL.

Drawing 152960. Gun, Mark 8, Mod. 2, is gun, Mark 1, Mod. 4 or 5 relined with the step on liner nearest the muzzle eliminated and having a liner collar and locking ring added at the breech end. Also having a large chamber with a $3\frac{1}{2}^\circ$ band seat slope, uniform twist rifling (one turn in 32 calibers) and a down swing, carrier type breech mechanism.

14-INCH GUN, MARK 8, MOD. 3

45 CAL.

Drawing 152942. Gun, Mark 8, Mod. 3, is identical with Mark 8, Mod. 2 except that it has a side swing, carrier type breech mechanism.

14-INCH GUN, MARK 8, MOD. 4

45 CAL.

Drawing 204030. This is gun, Mark 8, converted from gun, Mark 1, Mods. 1, 7, 8, 9 or 11, relined, having a modified chamber with projectile centering cylinder, a 4 degree seating slope and a down swing breech mechanism. Rifling; R.H., uniform twist (1 turn in 32 calibers).

14-INCH GUN, MARK 8, MOD. 5

45 CAL.

Drawing 204031. This is gun, Mark 1, Mod. 7, relined and in all respects similar to the Mark 8, Mod. 4 except a slightly different shaped chamber (one gun No. 30L2).

14-INCH GUN, MARK 8, MOD. 6

45 CAL.

Drawing 204001. This is gun, Mark 8, converted from gun, Mark 1, Mod. 3 with D₇ hoop added and having chamber same as gun, Mark 8, Mod. 4.

14-INCH GUN, MARK 8, MOD. 7

45 CAL.

Drawing 204001. This is gun, Mark 8, (No. 66L) with D₇ hoop added.

14-INCH GUN, MARK 8, MOD. A

45 CAL.

Drawing 152932. This gun is the same in all respects as 14"/45 Cal. Gun, Mark 8, except that the rifling is R.H., uniform twist (1 turn in 25 calibers).

14-INCH GUN, MARK 8, MOD. B

45 CAL.

Drawing 204013. This is gun, Mark 1, Mod. 7 relined. The new liner has special tapers and shrinkages and a modified chamber. Rifling; R.H., uniform twist (1 turn in 32 calibers). (Gun No. 20L.)

14-INCH GUN, MARK 9

45 CAL.

Drawing 152934. This is gun, Mark 3 or Mark 3, Mod. 2 or 4 lined with a one step conical liner having liner collar and locking ring at the breech end. Also having a large chamber with a $3\frac{1}{2}^\circ$ band seat slope, uniform twist rifling (one turn in 32 calibers) and a down swing, carrier type breech mechanism.

14-INCH GUN, MARK 9, MOD. 1

45 CAL.

Drawing 152962. Gun, Mark 9, Mod. 1, is identical with Mark 9 except that it has a side swing, carrier type breech mechanism.

14-INCH GUN, MARK 9, MOD. 2

45 CAL.

Drawing 152965. Gun, Mark 9, Mod. 2 is a gun, Mark 3, Mod. 1 relined with the step on liner nearest the muzzle eliminated and having a liner collar and locking ring added at the breech end. Also having a large chamber with a $3\frac{1}{2}^\circ$ band seat slope, uniform twist rifling (one turn in 32 calibers) and either a down swing or side swing, carrier type breech mechanism. Gun No. 76-L.

14-INCH GUN, MARK 10

45 CAL.

Drawing 152937. This is gun, Mark 5 or Mark 5, Mod. 3 relined, with the step on the liner nearest the muzzle eliminated and having a liner collar and locking ring added at the breech end. Also having a large chamber with a $3\frac{1}{2}^\circ$ band seat slope, uniform twist rifling (one turn in 32 calibers) and a down swing, carrier type breech mechanism.

14-INCH GUN, MARK 10, MOD. 1

45 CAL.

Drawing 152945. Gun, Mark 10, Mod. 1, is identical with Mark 10 except that it has a side swing, carrier type breech mechanism.

14-INCH GUN, MARK 10, MOD. 2

45 CAL.

Drawing 152947. Gun, Mark 10, Mod. 2, is gun Mark 5, Mod. 2 relined with the chamber modified to have a $3\frac{1}{2}^\circ$ band seat slope. Down swing, carrier type breech mechanism.

14-INCH GUN, MARK 11

50 CAL.

Drawing 227462. This is 14"/50 Cal. gun, Mark 4, Mod. 8, Mark 7 or Mark C relined, having an alloy-steel liner with a small chamber, shell centering cone, single slope band seat, tube locking ring, uniform twist rifling (1 turn in 25 calibers) and a chromium plated bore. In addition gun, Mark 4, Mod. 8 and Mark 7 are modified by adding a tube locking ring.

14-INCH GUN, MARK 11, MOD. 1

50 CAL.

Drawing 227463. This is 14-inch gun, Mark 4, Mod. 1, Mark 4, Mod. 4, Mark 4, Mod. 9, Mark 4, Mod. 11 or Mark 7, Mod. 1, relined, having an alloy-steel liner with a small chamber, shell centering cone, single slope band seat, tube locking ring, uniform twist rifling (1 turn in 25 calibers) and a chrome plated bore. In addition gun, Mark 4, Mod. 1, is modified by removing the front step on the liner.

14-INCH GUN, MARK 12

45 CAL.

Drawing 227592. This is 14-inch gun, Mark 8 and Mark 8, Mods. 1, 4 and 5 which have not been converted from 14-inch gun, Mark 1, Mod. 3 (having short D3 hoop), relined with heavy liner shrinkages. This gun has the same chamber as 14-inch gun, Mark 8, Mod. 4, uniform twist rifling (1 turn in 25 calibers) and a chromium plated bore.

14-INCH GUN, MARK 12, MOD. 1

45 CAL.

Drawing 227596. This is 14-inch gun Mark 8, Mod. 3, relined with heavy liner shrinkages. This gun has the same chamber as 14-inch gun, Mark 8, Mod. 4, uniform twist rifling (1 turn in 25 calibers) and a chromium plated bore.

14-INCH GUN, MARK 12, MOD. 2

45 CAL.

Drawing 227600. This is 14-inch gun, Mark 8 and Mods. which were previously converted from 14-inch gun, Mark 1, Mod. 3 (having short D3 hoop), relined with heavy liner shrinkage. This gun has the same chamber as 14-inch gun, Mark 8, Mod. 4, uniform twist rifling (1 turn in 25 calibers) and a chromium plated bore.

14-INCH GUN, MARK 12, MOD. 3

45 CAL.

Drawing 227604. This is 14-inch gun, No. 20L2. This was 14-inch gun, Mark 8, Mod. B No. 20L, relined with heavy liner shrinkages, having the same chamber as 14-inch gun, Mark 8, Mod. 4. Uniform twist rifling (1 turn in 25 calibers) and a chromium plated bore.

14-INCH GUN, MARK 12, MOD. 4

45 CAL.

Drawing 227608. This is 14-inch Mark 9 gun, relined with heavy liner shrinkages and having the same chamber as 14-inch gun, Mark 8, Mod. 4. Uniform twist rifling (1 turn in 25 calibers) and a chromium plated bore.

14-INCH GUN, MARK 12, MOD. 5

45 CAL.

Drawing 267737. This is 14-inch gun, Mark 9, Mod. 2, relined with heavy liner shrinkages and having the same chamber as 14-inch gun, Mark 8, Mod. 4, uniform twist rifling (1 turn in 25 calibers) and a chromium plated bore.

14-INCH GUN, MARK 12, MOD. 6

45 CAL.

Drawing 267741. This is 14-inch gun, Mark 10 or Mark 10, Mod. 1, relined with heavy liner shrinkages and having the same chamber as 14-inch gun, Mark 8, Mod. 4, uniform twist rifling (1 turn in 25 calibers) and a chromium plated bore.

14-INCH GUN, MARK 12, MOD. 7

45 CAL.

Drawing 267745. This is 14-inch gun, Mark 10, Mod. 2, relined with heavy liner shrinkages and having the same chamber as 14-inch gun, Mark 8, Mod. 4, uniform twist rifling (1 turn in 25 calibers) and a chromium plated bore.

14-INCH GUN, MARK A

33 CAL.

Drawing 67082. This is 13-inch, 35 caliber gun, Mark 2, (No. 33) bored out and lined. Rifling; 84 lands and 84 grooves. R.H., uniform twist (1 turn in 25 calibers).

14-INCH GUN, MARK B

50 CAL.

Sketch 81388. This is a proposed 50 caliber gun for new construction. No guns.

14-INCH GUN, MARK C

50 CAL.

Drawing 204039. This is 14-inch, 50 caliber gun, Mark 7, Mod. 2, relined with chromium plated bore. Rifling; R.H., uniform twist (1 turn in 25 calibers), 92 lands and 92 grooves. Gun No. 110.

GENERAL DESCRIPTION

16-INCH GUNS

16-INCH TYPE GUN

45 CAL.

Drawing 40467. This is a part nickel-steel and part gun-steel gun consisting of tube, jacket, seven hoops and two locking rings. The tube, jacket and B hoops are of nickel-steel; the other parts of gun-steel. The gun is hooped to the muzzle. The screw box liner screws into the C₁ hoop and has a flange 4.5 inches thick of same diameter as the gun. The yoke shoulder is located 35 inches from face of breech. The diameter of the gun over the chamber is 53 inches. The slide surface commences 121 inches from face of breech with a diameter of 48 inches and is 135 inches long, with one key set in on top of gun. The smallest diameter of the chase is 24 inches and the diameter of the muzzle bell is 26 inches. The total length of the gun is 735 inches and of the tube 720 inches. The breech mechanism is 16-inch type. Gun No. 1.

16-INCH GUN, MARK 1

45 CAL.

Drawing 53601. This gun is a part nickel-steel and part gun-steel gun, consisting of liner, tube, jacket, seven hoops and four locking rings. The liner, tube, jacket B₂, B₃ and D₁ hoops and locking ring E₁ are of nickel steel; the other parts are of gun-steel. The gun is hooped to the muzzle. The shoulder for yoke is located 44.5 inches from face of breech. The diameter of the gun over the chamber is 53.5 inches. The slide surface commences 131 inches from face of breech with a diameter of 49 inches and is 150 inches long, with one key set in on top of gun. The smallest diameter of the chase is 25.3 inches and the muzzle bell is 26.5 inches. The total length of the gun is 736 inches and of tube and liner 720 inches. The rifling is right handed, with an increasing twist of one turn in 50 calibers at the origin of the rifling to one turn in 32 calibers at a distance of 592 inches from the origin of the rifling. From this point to the muzzle the twist is uniform (one turn in 32 calibers). Breech mechanism, Mark 1, down swing.

16-INCH GUN, MARK 1, MOD. 1

45 CAL.

Drawing 53601. This gun is identical with gun, Mark 1, except the rifling is right handed with uniform twist (1 turn in 32 calibers) and having a different profile of groove. Breech mechanism, Mark 1, down swing.

16-INCH GUN, MARK 1, MOD. 2

45 CAL.

Drawing 119641. 16-inch gun, Mark 1, Mod. 2, is the same as Mark 1 except it has a liner locking ring and collar and longitudinal clearance at liner shoulders.

16-INCH GUN, MARK 1, MOD. 3

45 CAL.

Drawing 119641. 16-inch gun, Mark 1, Mod. 3, is identical with Mark 1, Mod. 2 except the rifling is right handed with uniform twist, the same as Mark 1, Mod. 1.

16-INCH GUN, MARK 1, MOD. 4

45 CAL.

Drawing 53601. This is gun, Mark 1, with a liner locking ring and screw-box centering ring added.

16-INCH GUN, MARK 1, MOD. 5

45 CAL.

Drawing 133586. This is gun, Mark 1, relined with a heavier conical liner having a liner locking ring and locking collar, increasing twist rifling and clearances between liner and tube shoulders.

16-INCH GUN, MARK 1, MOD. 6

45 CAL.

Drawing 152924. This is gun, Mark 1, Mod. 2, having the band seat remachined to $3\frac{1}{4}^{\circ}$ slope starting at the 16.72-inch diameter and extending muzzleward 5.90 inches. Gun No. 33..

16-INCH GUN, MARK 1, MOD. 7

45 CAL.

Drawing 152924. This is gun, Mark 1, Mod. 6, fitted with tube and liner locking ring.

16-INCH GUN, MARK 1, MOD. 8

45 CAL.

Drawing 119641. This is gun, Mark 1, Mod. 2, fitted with tube and liner locking ring.

16-INCH GUN, MARK 1, MOD. 9

45 CAL.

Drawing 53601. This is gun, Mark 1, Mod. 4, fitted with tube and liner locking ring.

16-INCH GUN, MARK 1, MOD. 10

45 CAL.

Drawing 133586. This is gun, Mark 1, Mod. 5, fitted with tube and liner locking ring.

16-INCH GUN, MARK 2

50 CAL.

Drawing 53602. The gun is similar to Mark 1 and consists of liner, tube, jacket, seven hoops and four locking rings. The liner, tube, jacket B₂, B₃ and D₁ hoops and locking ring E₁ are of nickel-steel; the other parts are of gun-steel. The gun is hooped to the muzzle. The shoulder for yoke is located 44.5 inches from face of breech. The diameter of the gun over the chamber is 56.5 inches. The slide surface commences 143 inches from face of breech with a diameter of 52 inches and is 159 inches long, with one key set in top of gun. The smallest diameter of the chase is 25.3 inches and the diameter of the muzzle bell is 26.5 inches. The total length of the gun is 816 inches and of the liner and tube 800 inches. The rifling is right handed, with an increasing twist of one turn in 50 calibers at the origin of rifling to one turn in 32 calibers at a distance of 640 inches from the origin of rifling. From this point to the muzzle the twist is uniform (1 turn in 32 calibers). Breech mechanism, Mark 1, Mod. 1, down swing.

16-INCH GUN, MARK 2, MOD. 1

50 CAL.

Drawing 53602. This gun is identical with gun, Mark 2, except the rifling is right handed, with uniform twist (1 turn in 32 calibers) and having a different profile of groove. Breech mechanism, Mark 1, Mod. 1.

16-INCH GUN, MARK 3

50 CAL.

Drawing 66272. This gun is the same as Mark 2 except that it has a one step conical liner. No guns.

16-INCH GUN, MARK 3, MOD. 1

50 CAL.

Drawing 66272. This gun is identical with gun, Mark 3, except the rifling is of uniform twist (1 turn in 32 calibers) and having a different profile of groove. Breech mechanism, Mark 1, Mod. 1. No guns.

16-INCH GUN, MARK 4

56 CAL.

Drawing 96146. This is 18-inch 48 cal. gun, Mark 1, lined down to 16-inch bore diameter; rifling, 96 lands and 96 grooves, R.H., uniform twist (1 turn in 35 calibers).

16-INCH GUN, MARK 5

45 CAL.

Drawing 142691. This is gun, Mark 1, relined and having a different design of chamber. Increasing twist rifling.

16-INCH GUN, MARK 5, MOD. 1

45 CAL.

Drawing 179124. This is gun, Mark 5, relined and having tube and liner locking ring added.

16-INCH GUN, MARK 5, MOD. 2

45 CAL.

Drawing 227580. This is 16-inch gun, Mark 1, Mods. 7, 8, 9 and 10, Mark 5 or Mark 5, Mod. 1, relined with a one step alloy-steel liner, heavy liner shrinkages and a tube and liner locking ring. It has the same chamber as gun, Mark 5, and increasing twist rifling (1 turn in 50 calibers to 1 turn in 32 calibers).

16-INCH GUN, MARK 5, MOD. 3

45 CAL.

Drawing 204007. This is 16-inch 45 cal. gun, Mark C, No. 5L2, redesignated. The gun has a chamber identical with that of the Mark 6 gun, rifling identical with the Mark 5 gun and a B₄ hoop at the muzzle.

16-INCH GUN, MARK 6

45 CAL.

Drawing 204093. This light weight gun consists of liner, tube, jacket, 3 hoops, 2 locking rings, a liner locking ring and a yoke ring. The overall length of gun is 736 inches. The bore is chromium plated for a distance of 625 inches from muzzle. The rifling is uniform twist (1 turn in 25 calibers). The gun is removable from gun port without dismantling turret. Breech Mechanism, Mark 3.

16-INCH GUN, MARK 6, MOD. 1

45 CAL.

Drawing 204093. This is 16" gun, Mark 6, with tapped holes at breech end for securing hinge lug to gun.

16-INCH GUN, MARK 7

50 CAL.

Drawing 227539. This light weight Gun consists of liner tube, jacket, 3 hoops, 2 locking rings, a liner locking ring and a yoke ring. The overall length 816.0 inches. The bore is chromium plated for a distance of 690.0 inches from muzzle. The rifling is uniform twist (1 turn in 25 caliber), 96 grooves, 96 lands. The gun is removable from the gun port without dismantling turret. Breech Mechanism, Mark 4.

16-INCH GUN, MARK 8

45 CAL.

Drawing 227564. This is 16" gun, Mark 1, Mods. 7, 8, 9 and 10, Mark 5 or Mark 5, Mod. 1, relined with a one-step alloy-steel liner, heavy liner shrinkages and a tube and liner locking ring. It has a Mark 6 chamber, uniform twist rifling (1 turn in 25 calibers) and a chromium plated bore.

16-INCH GUN, MARK A

28.8 CAL.

Drawing 66965. This is 13-inch gun, Mark 2 (No. 23) bored out and hooped to the muzzle. Rifling; R.H., uniform twist, 96 lands and 96 grooves (1 turn in 20 calibers).

16-INCH GUN, MARK B

45 CAL.

This gun changed to Mark 6. No Gun.

16-INCH GUN, MARK C

45 CAL.

Drawing 204007. This is gun, Mark 5 (No. 5-L) relined, having a modified chamber, a tube and liner locking ring and a B₄ hoop added at muzzle.

16-INCH GUN, MARK D

50 CAL.

Drawing 227576. This is 16-inch gun, Mark 3, Mod. 1 (No. 131) with liner shrinkage increased and having a tube and liner locking ring. The chamber and uniform twist rifling (1 turn in 25 calibers) are the same as for 16-inch 50 Cal. gun, Mark 7. Bore is chromium plated for a distance of 690.0 inches from the muzzle. Pilot Gun for 16-inch 50 Cal. gun, Mark 7.

16-INCH GUN, MARK E

45 CAL.

Drawing 301043. This is type Gun T1 lined with an alloy-steel liner. The bore is chromium plated and the chamber and rifling are the same as for 16-inch 45 Cal. gun, Mark 6.

GENERAL DESCRIPTION

18-INCH GUNS

18-INCH GUN, MARK 1

48 CAL.

Drawing 66907. This gun consists of liner, tube, jacket 9 hoops, 6 locking rings and a yoke ring. Overall length of gun, 884 inches. Rifling; right hand, uniform twist (1 turn in 32 calibers), 108 grooves and 108 lands, uniform width. Gun converted to 16-inch 56 calibers.

18-INCH GUN, MARK A

47 CAL.

Drawing 275016. This is 16-inch, 56 caliber gun, Mark 4, No. 201 (originally designed as 18-inch, 48 caliber gun, Mark 1), relined as an 18-inch gun with the muzzle cut back to 47 calibers. It has a chromium plated bore and uniform twist rifling (1 turn in 25 calibers).

NAVY DEPARTMENT
BUREAU OF ORDNANCE
April 1942

W. H. P. BLANDY,
Chief of Bureau.