JAMES E. HICKS,
Major, Ord. Dept.,

No. 1774

No. 579

DIRECTIONS FOR USING, MOUNTING AND DISMOUNTING

1.457-INCH SUBCALIBER GUNS

IN THE BORE OF FIELD GUNS AND HOWITZERS

(5 PLATES)

MAY 3, 1917

WASHINGTON
GOVERNMENT PRINTING OFFICE
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THE OFFICIAL NUMBER OF THIS COPY

IS 579

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WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ORDNANCE,
Washington, May 3, 1917.

This manual is published for the information and government of the Regular Army and National Guard of the United States.

By order of the Secretary of War:

WILLIAM CROZIER,
Brigadier General, Chief of Ordnance.

96491—17

DESCRIPTION OF 1.457-INCH SUBCALIBER GUNS, TYPES 3–B AND 4–A.

The type 3–B gun is for use in field and siege guns, is 50 calibers long, and is built up of three parts.

Adapters are provided for use in the 4.7-inch siege guns and 3-inch field guns, and a brass sleeve is shrunk on breech end, which serves as a breech adapter for 3-inch field gun.

A flange is provided at breech end of subcaliber gun which locates it longitudinally in the 3-inch field gun, or the breech adapter when used in a larger gun; and a similar flange is provided on the breech adapter for locating that in the larger gun.

Threaded seats are provided for the center and muzzle supports and the muzzle support is provided with a threaded hole into which screws a rod, which extends to the muzzle and secures the subcaliber gun from displacement when the field gun is elevated.

The type 4–A subcaliber gun is for use in mountain, field, and siege howitzers, is approximately 12 calibers long, and is a one-piece gun. It is provided with a shrunk-on bronze sleeve and muzzle support for use in the 3-inch mountain howitzer, and with breech adapters and muzzle supports for use in the 3.8-inch field howitzer and 4.7 and 6-inch siege howitzers.

The breech adapters have a sliding fit over bronze sleeve, and the muzzle supports are screwed onto a seat on the howitzer.

The gun is retained in the bore of howitzer in the same manner as the type 3–B.

Both types of guns are marked on the breech end with the caliber and type of gun; and are carried, together with the necessary adapters, supports, and tools for fitting it to any type of gun or howitzer, in a chest which is marked with the type of gun or howitzer for which adapters are provided, and with the type of subcaliber gun.

DIRECTIONS FOR USING, MOUNTING, AND DISMOUNTING 1.457-INCH SUBCALIBER GUNS IN THE BORE OF FIELD GUNS AND HOWITZERS.

FIELD GUNS AND HOWITZERS.

DIRECTIONS FOR ASSEMBLING.

Chamber and bore of subcaliber gun and of large gun must be perfectly clean.

Insert subcaliber gun with supports and rear adapter, where these are provided, into bore of large gun, pushing it forward until flange of gun or adapter is seated firmly against tube of large gun.

Care must be exercised that the lug on subcaliber gun or adapter comes opposite corresponding seat in large gun.

Insert securing rod from the muzzle end of large gun and screw it into the hole in muzzle support of subcaliber gun provided for that purpose and draw the subcaliber gun tightly against the tube of large gun.

Then turn thumbscrew in securing rod until rod is locked.

The gun is now ready for firing.

DIRECTIONS FOR DISMOUNTING.

Loosen the thumbscrew in securing rod at muzzle end of large gun.

Unscrew and remove the securing rod, after which subcaliber gun can be pushed back and removed from large gun.

A hand extractor is provided to use on the flange of gun or rear adapter, in case the gun should stick in its seat.

When mounting and dismounting subcaliber gun, care should be taken *not to bruise threads in breech chamber.*

GENERAL DIRECTIONS FOR USE, CARE, AND HANDLING 1.457-INCH SUBCALIBER GUNS.

Insert cartridge, close the breech, and fire as with regular ammunition.

If cartridge case sticks after being fired, use hand extractor to pry under flange of case.

Care should be taken in assembling and dismounting and at all times to prevent the turned surfaces of adapters and supports from coming in contact with any hard substance.

If a burr should appear, it must be filed down smoothly before assembling.

After firing, the bore should be thoroughly sponged with warm soapsuds and be perfectly dried.

It should then be lightly oiled before the gun is returned to its chest.

The cleaning sponge is removed from its rod and should be thoroughly cleaned and dried after use.

Every article belonging to this subcaliber gun and having a place in the storage chest, should be cleaned and promptly returned to its place in chest after using.

USE OF THE RELOADING AND CLEANING OUTFIT AND RESIZING OUTFIT FOR ASSEMBLING, DISASSEMBLING, CLEANING, RESIZING, AND RELOADING THE 1.457-INCH SUBCALIBER CARTRIDGE CASES.

The reloading and cleaning outfit consists of the following parts:

1 storage chest.
1 bushing.
1 case holder stand.
1 case holder.
1 decapping tool.
1 hammer.
1 cleaning brush.
1 saluting powder measure.
1 primer inserting press, large.

The resizing outfit consists of the following parts:

1 vertical resizing press.
1 resizing die holder.
1 subcaliber resizing die.
1 subcaliber push-out rod.

TO ASSEMBLE AND LOAD THE CARTRIDGE CASES.

Care should be taken to see that the cartridge cases are perfectly sound and thoroughly clean and dry before assembling and loading.

The 20-grain percussion primer is used with the subcaliber cartridge case for the 1.457-inch subcaliber guns. (These primers are issued in hermetically sealed tin boxes, 50 per box, which should not be broken open until the primers are to be used, as they deteriorate when exposed to atmospheric influences.) This primer should be a tight fit in the primer seat in the cartridge case, and must be pressed into place with the primer inserting press provided for the purpose and not hammered in. No primer should be used that is not a tight fit in its seat in the cartridge case.

All cartridge cases should be primed just before the insertion of the powder charge and under no circumstances will primers be inserted after the powder charge has been inserted.

Fill saluting powder measure level full with the required amount of saluting powder, pour into the cartridge case, and then shake well down.

TO RESIZE THE CARTRIDGE CASE.

Place the bushing in its seat in the vertical resizing press. After inserting the cartridge case in the resizing die, place the resizing die holder, retaining the resizing die, with the base of the cartridge case upward, upon the bed of the press. Turn the bar of the press so as to force the cartridge case fully home in the resizing die. With the base of the cartridge case downward, insert the spindle of the push-out rod in the mouth of the cartridge case as far as it will enter, now place the resizing die-holder, with the knurled head of the push-out rod upward, beneath the press. The turning of the bar of the press will force the cartridge case out of the resizing die. The cartridge case is now in condition for assembling and reloading.

TO DISASSEMBLE AND CLEAN THE CARTRIDGE CASES.

Immediately after the firing for the day has ceased, the fired-cartridge cases should be turned over to the post ordnance officer, who will take steps to have the fired primer removed from the cartridge cases. Place the base of the cartridge case into the case holder, which is mounted in a seat afforded in the case-holder stand. Insert the decapping tool into the body of the primer, which is seated in the cartridge case, and with the aid of the hammer strike a light blow upon the top of the decapping tool, which thereby removes the fired primer. The cleaning brush is now brought into use, which is furnished for that purpose.

AMMUNITION.

The ammunition issued for these guns consists of a steel smoke shell weighing 1.7 pounds, fixed in a cartridge case.

The cartridge case for the subcaliber gun for mobile artillery guns is the same as the cartridge case for seacoast subcaliber guns, having a length of 5.689 inches. The cartridge case for the subcaliber gun for mobile artillery howitzers is 2.891 inches long and weighs 4 ounces without powder charge.

Each cartridge case has a primer seat in the base to take a 20-grain percussion primer.

The 1.7-pound smoke shell consists of a steel head or point screwed into the body. The copper rotating band is pressed into band seat cut in the body. Between the head and the body is a brass diaphragm closing the cavity in the head. This cavity contains 408 grains of small-arms black powder. A percussion primer of the bridge type is held in the front end of the diaphragm by the primer screw. A hole through the primer screw allows the flame from the primer to pass through and ignite the black-powder charge. The cavity in the body contains the centrifugal percussion plunger and firing pin which fires the primer on impact.

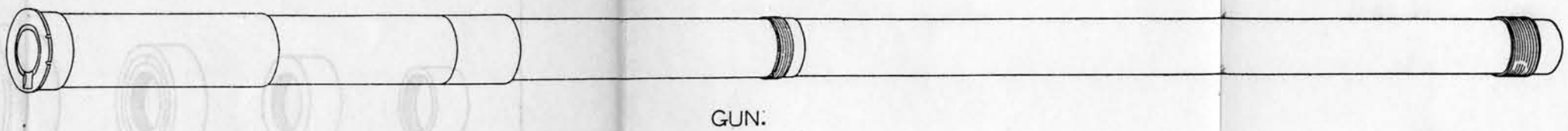
WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ORDNANCE,
Washington, May 3, 1917.

062.1–11.
FORM NO. 1774.
Ed. May 3, 1917—2,000.

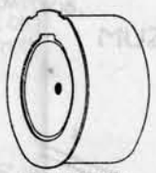
WASHINGTON : GOVERNMENT PRINTING OFFICE : 1917

WATERVLIET ARSENAL.
MAR.22,1917.

1.457IN. SUBCALIBER GUN-TYPE 3B
ADAPTED TO 3INCH FIELD GUNS AND 4.7 GUN.



GUN.



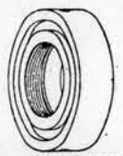
4.7IN.GUNS
REAR ADAPTER.



4.7IN.GUNS
REAR ADAPTER
SET SCREW.



3IN.FIELD GUNS



4.7IN.GUNS

CENTER SUPPORTS.

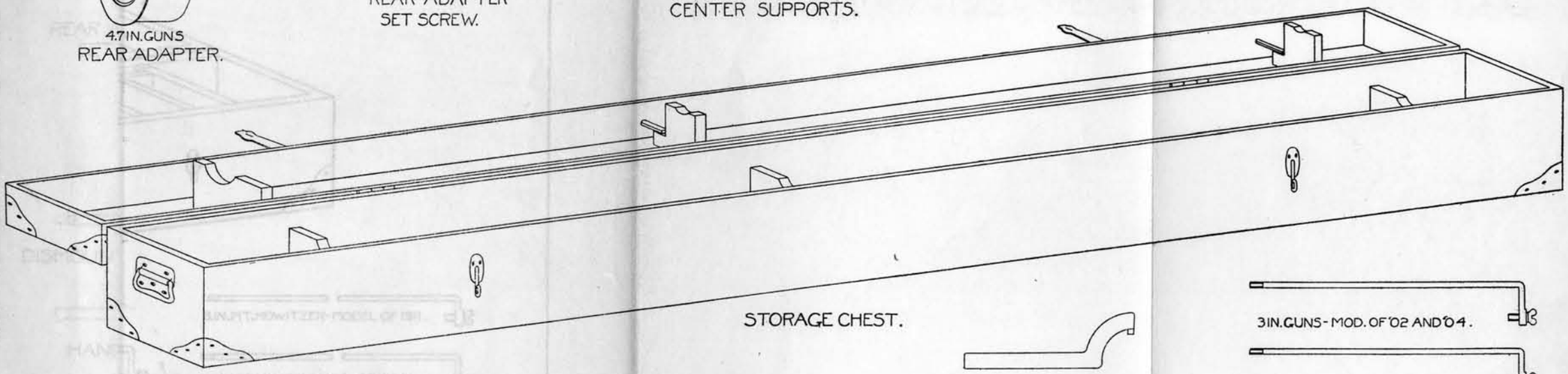


3IN.FIELD GUNS



4.7IN. GUNS

MUZZLE SUPPORTS.

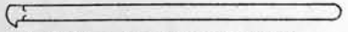


STORAGE CHEST.

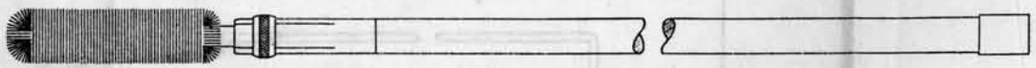
SPANNER WRENCH.



DISMOUNTING PIN.



HAND EXTRACTOR.



CLEANING SPONGE.

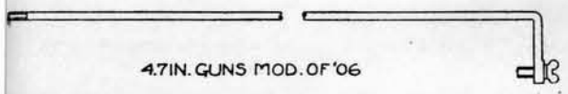
SPONGE ROD.



SCREWDRIVER.

3IN.GUNS-MOD. OF'02 AND'04.

3IN. GUNS-MOD. OF'05 AND'16.



4.7IN. GUNS MOD. OF'06

SECURING RODS.

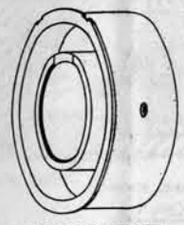
36-16-28.

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WATERVLIET ARSENAL.
MAR.22,1917.

1.457 IN. SUBCALIBER GUN - TYPE 4A.

ADAPTED TO THE FOLLOWING HOWITZERS:- 3IN.MOUNTAIN-, 3.8INCH, 4.7INCH, AND 6INCH & BETHLEHEM 6INCH.



6 IN. HOWITZER MODEL OF 1908 OR BETH. MODEL.

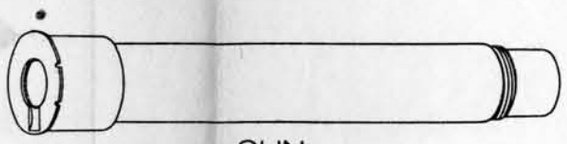


4.7 IN. HOWITZER.

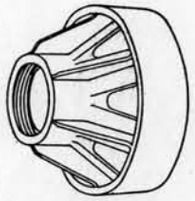


3.8 IN. HOWITZER.

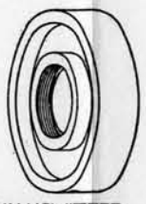
REAR ADAPTERS.



GUN.



6 IN. HOWITZER BETHLEHEM MODEL.



6 IN. HOWITZER. MODEL OF 1908.

FRONT ADAPTER.



4.7 IN. HOWITZER.



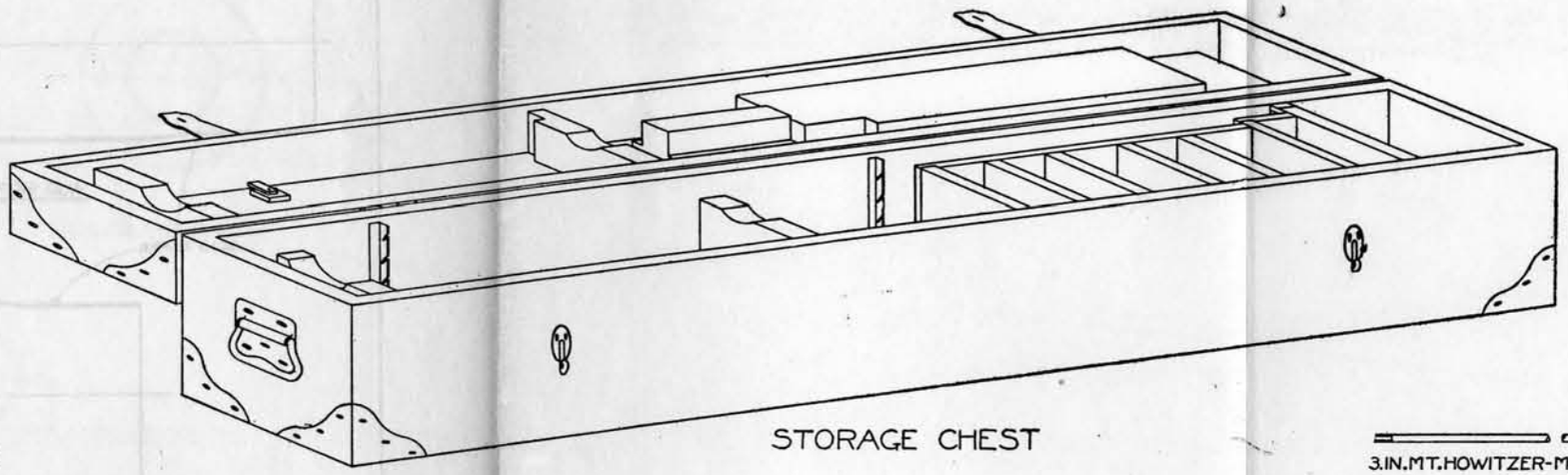
3.8 IN. HOWITZER.



3 IN. MT. HOWITZER.

MUZZLE SUPPORTS.

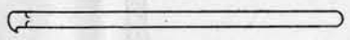
REAR ADAPTER SET SCREW.



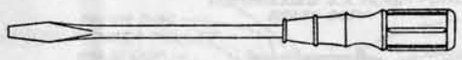
STORAGE CHEST



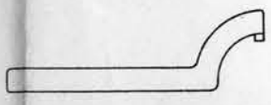
DISMOUNTING PIN.



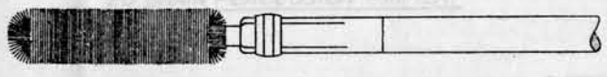
HAND EXTRACTOR.



SCREWDRIVER.



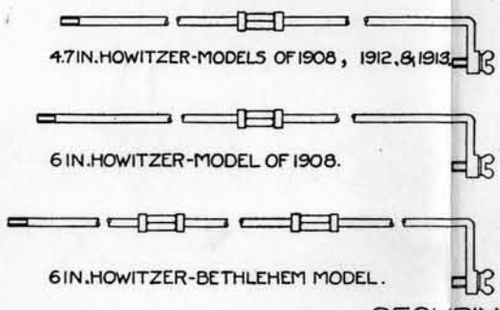
SPANNER WRENCH.

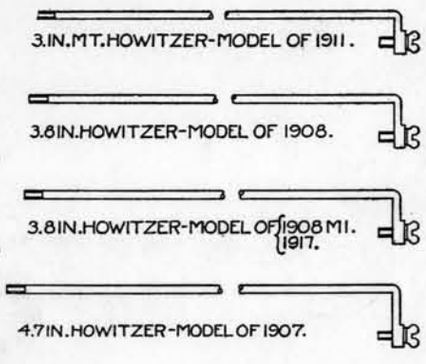


CLEANING SPONGE.



SPONGE ROD.

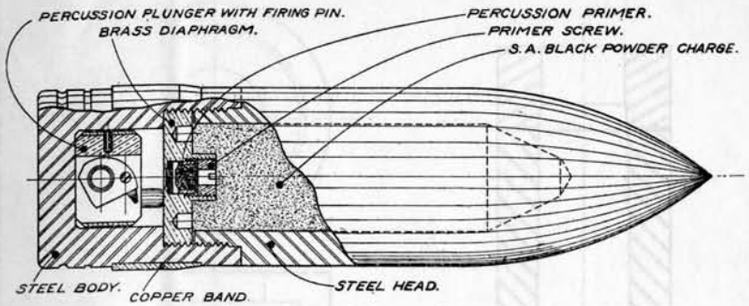




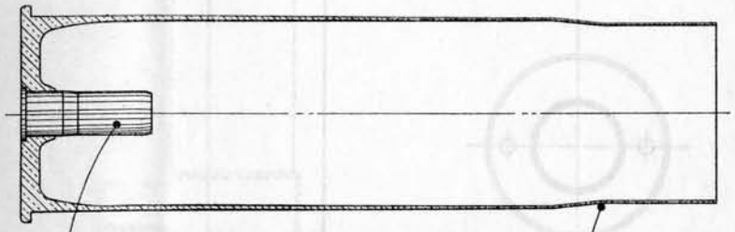
SECURING RODS.

36-16-29.

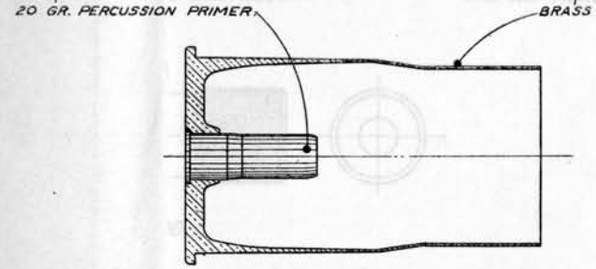
AMMUNITION



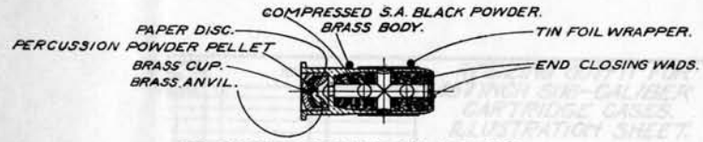
1.7 PD'R. STEEL SMOKE SHELL.



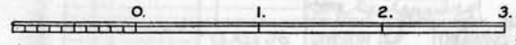
CARTRIDGE CASE FOR GUN.



CARTRIDGE CASE FOR HOWITZER.

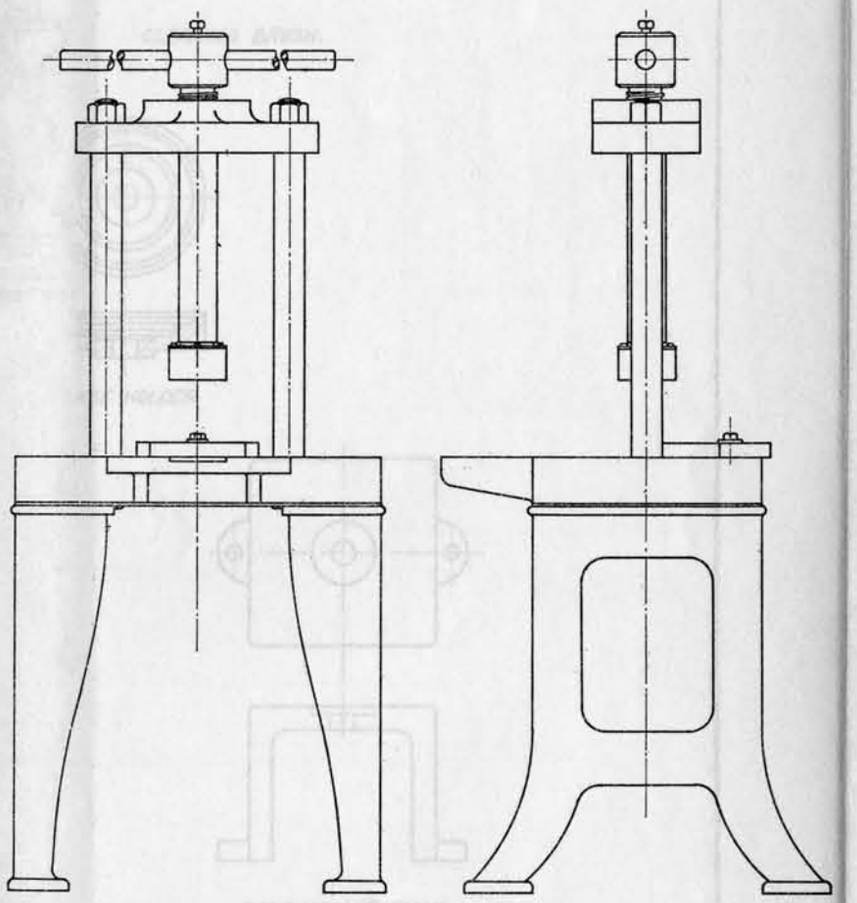


20 GRAIN PERCUSSION PRIMER.

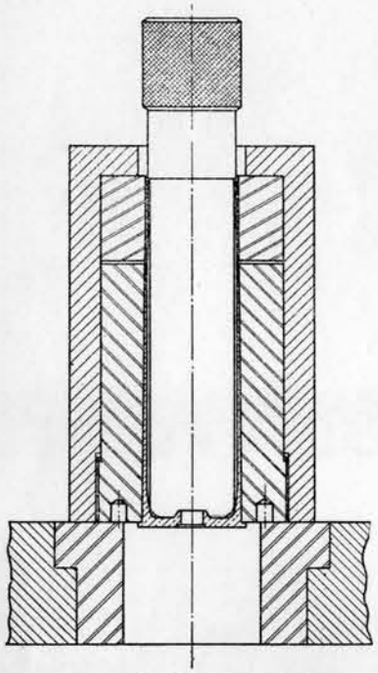


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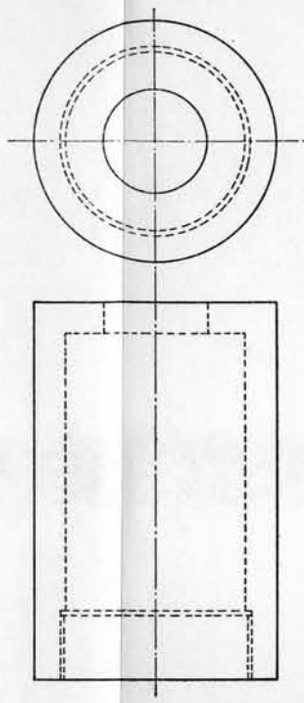
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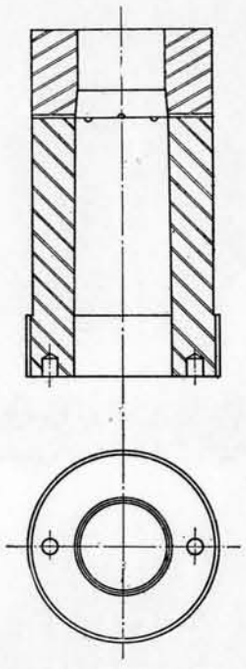
VERTICAL RESIZING PRESS.



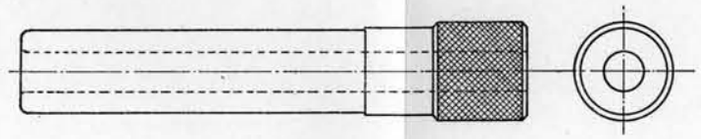
ASSEMBLED VIEW OF SUB-CAL RESIZING DIE & HOLDER, ETC.



RESIZING DIE HOLDER.



SUB-CAL. RESIZING DIE.



SUB-CAL. PUSH OUT ROD.

DR'G. PERTAINS TO CLASS	DIV.	REVISIONS				

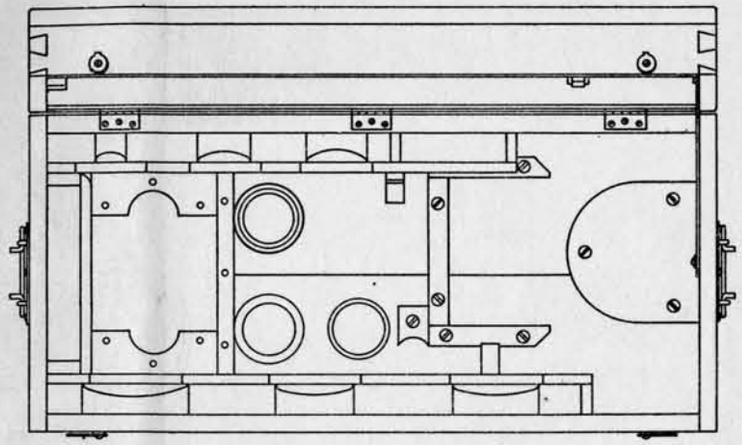
RESIZING OUTFIT FOR 1.457 INCH SUB-CALIBER CARTRIDGE CASES. ILLUSTRATION SHEET.

FRANKFORD ARSENAL, U. S. A. NOV. 1, 1916.

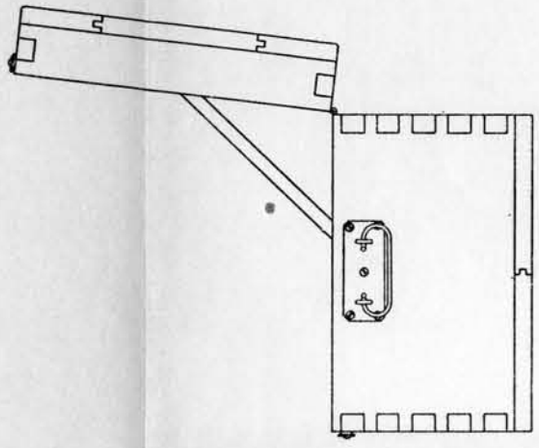
SUBMITTED:	A.G.S.	A.G.S.	E.J.D.
H.W. Rutherford, CAPTAIN, ORDNANCE DEPARTMENT U.S.A.			APPROVED BY ORDER OF THE CHIEF OF ORDNANCE
EXAMINED: Hoyt Taylor, LT. COL. ORDNANCE DEPARTMENT U.S.A.		LT. COL. ORDNANCE DEPARTMENT U.S.A.	

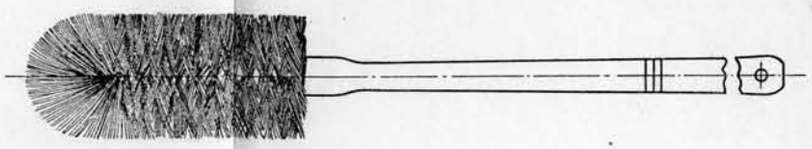
CLASS 36	DIVISION 26	DRAWING 3	FILE

96491—17

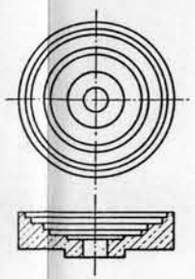


STORAGE CHEST.

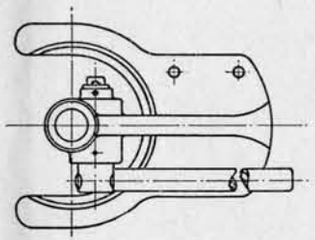


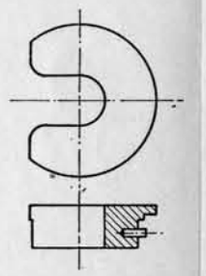


CLEANING BRUSH.

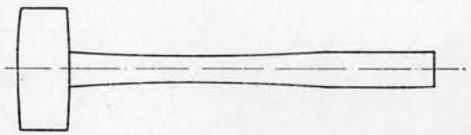


CASE HOLDER.

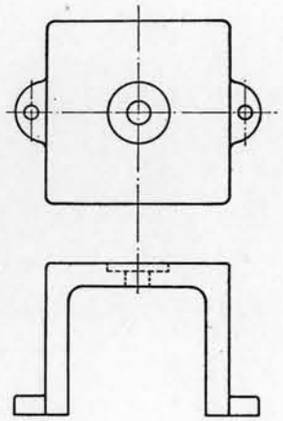




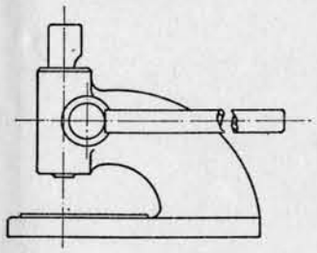
BUSHING.



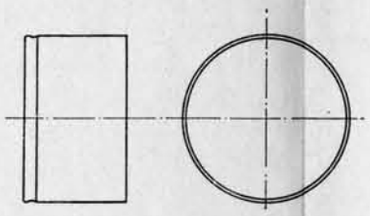
HAMMER



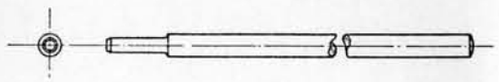
CASE HOLDER STAND.



PRIMER INSERTING PRESS, LARGE.



SALUTING POWDER MEASURE.



DECAPPING TOOL.

DRG. PERTAINS TO CLASS	DIV.	REVISIONS			

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SUBMITTED: H. W. Catlin Jr. CAPTAIN, ORDNANCE DEPARTMENT, U.S.A.

EXAMINED: Boghardt LT. COL. ORDNANCE DEPARTMENT, U.S.A.

A.G.S.	A.G.S.	J.P.M.	E.J.B.
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