Feb. 29, 1944. G. A. NELSON 2,342,684

SUB-CALIBER ADAPTER

Filed April 27, 1942

Fig. 1.

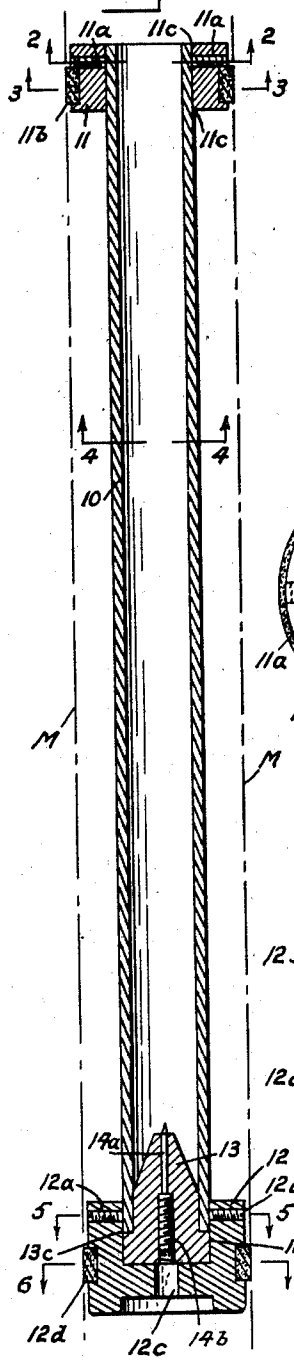


Fig. 2.

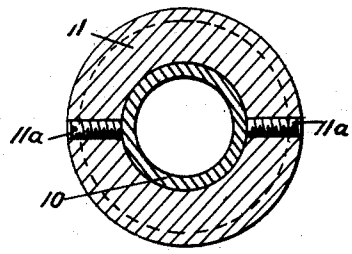


Fig. 3.

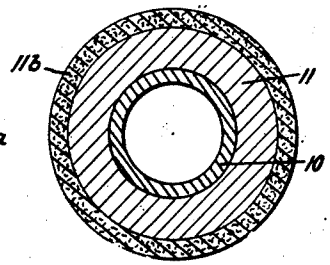


Fig. 4.

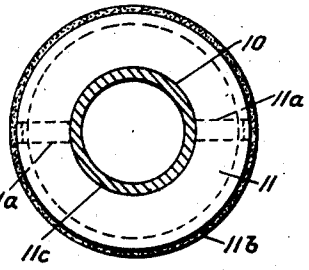


Fig. 5.

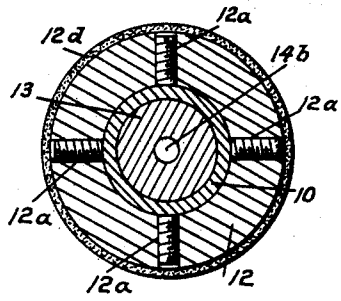


Fig. 6.

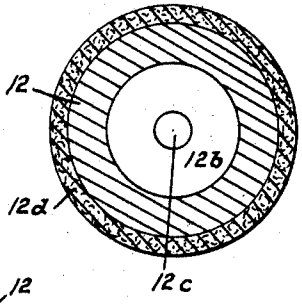


Fig. 7.

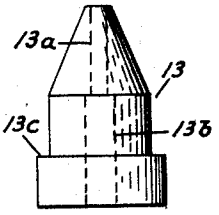
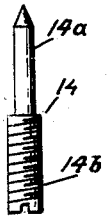


Fig. 8.



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UNITED STATES PATENT OFFICE

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SUBCALIBER ADAPTER

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Application April 27, 1942, Serial No. 440,583

3 Claims. (Cl. 89—29)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a sub-caliber adapter which is insertable in the barrel bore of a gun and more particularly relates to a sub-caliber adapter for a mortar.

An object of this invention is to provide a sub-caliber adapter for a mortar which may be inserted in the barrel of a standard mortar without injury of any kind to the barrel and so as to become part of the standard gun.

Another object of this invention is to provide a sub-caliber adapter for a standard mortar and yet the standard mortar may be aimed, fired, and adjusted in the conventional manner.

Another object of this invention is to provide a sub-caliber adapter for a conventional gun whereby projectiles may be fired from the conventional gun at ranges equal to approximately one-tenth the range of the standard weapon at a corresponding angle of elevation.

Another object of this invention is to provide a sub-caliber adapter in a standard mortar so as to stimulate interest, provide adequate fundamental training and give actual gun drill to the personnel of the standard mortar at low cost.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawing in which:

Figure 1 is a longitudinal section taken through the center of a preferred embodiment of my invention and shows in dotted lines M the barrel bore of a conventional mortar.

Figures 2, 3, 4, 5 and 6 are sectional views taken substantially on corresponding lines of Fig. 1.

Figure 7 is a side elevation of the firing pin plug shown in the assembly in Fig. 1.

Figure 8 is a side elevation of the firing pin of the assembly shown in Fig. 1.

The sub-caliber adapter comprises the following essential elements: tube 10, muzzle collar 11 having the leather ring buffer 11*b* thereon, base cap 12 having leather buffer ring 12*d* thereon, firing pin plug 13, and firing pin 14. The outside diameters of muzzle collar 11 and base cap 12 with corresponding buffers 11*b*, 12*d* thereon are substantially equal to the inside bore diameter of a standard mortar. Tube 10 has a length substantially equal to the length of the barrel of the standard mortar. The muzzle collar 11 and base cap 12 thus snugly and resiliently abut the inner bore of the standard gun and preferably those parts are made of or lined with leather or other similar resilient material. The bottom end of the adapter in Fig. 1 is assembled in the following manner: firing pin plug 13 is inserted in the base cap hollow portion 12*b* with shoulder 13*c* in abutting relationship to the end of tube 10, and set screws 12*a* engage tube 10 whereby the firing pin plug is retained in the base cap hollow portion 12*b*. The firing pin plug 13 as shown in Fig. 7 has an axially extending hole 13*a* for the reception of pointed portion 14*a* of firing pin 14 and also a screw threaded portion 13*b* for engagement with a corresponding screw threaded portion 14*b* of the firing pin. The firing pin 14 is conveniently inserted in the firing pin plug 13 through axially extending hole 12*c* in the base cap 12, and, of course, the firing pin may be conveniently removed through hole 12*c* without disassembling the firing pin plug from tube 10.

The upper end of the sub-caliber adapter shown in Fig. 1 is assembled by inserting tube 10 in corresponding hollow portion 11*c* of the muzzle collar 11 and then fastening the tube in place by means similar to set screws 11*a*.

It is seen that the pointed portion of firing pin 14 projects through and is partially protected by snugly fitting firing pin plug 13 so that when a mortar projectile which may be similar to the one described in my copending application, Serial No. 440,584, filed April 27, 1942, is dropped into tube 10 the primer of the projectile is detonated upon striking pin 14.

Also, it is noted that the base cap 12 and muzzle collar 11 are made substantially resilient by the resilient rings 12*d*, 11*b*, respectively, but it is understood that means other than of ring-shaped structure may be employed and the muzzle collar 11 and base cap 12 may be of resilient material such as leather.

I claim:

1. A sub-caliber adapter for a standard gun, comprising a tube having a length substantially that of the gun barrel, a base cap mounted on one end of the tube and a muzzle collar on the other, each being provided exteriorly with packing means for engagement with the inner periphery of the barrel, a firing pin plug having a shoulder, said base cap having a central recess in which the plug is seated, said tube having its adjacent end seated in the base of the cap recess in abutting relationship to the firing pin plug shoulder, means carried by the base cap for locking the tube to the cap, a firing pin carried by the plug, the plug having a portion partially sur-

rounding the firing pin and in protective relation thereto.

2. A sub-caliber adapter for a standard gun, comprising a tube having a length substantially that of the gun barrel, a muzzle collar mounted on one end of the tube and snugly engaging the inner periphery of the barrel, a base cap mounted on the other end of the tube and provided exteriorly with packing means for engagement with the inner periphery of the barrel, a firing pin plug having a shoulder, said base cap having a central recess in which the plug is seated, said tube having its adjacent end seated in the base cap recess in abutting relationship to the firing pin plug shoulder, means carried by the base cap for locking the tube to the cap, and a firing pin carried by the plug.

3. The invention as claimed in claim 1 characterized in that there is an axial opening in the base of the cap for insertion and removal of the firing pin.

GLEN A. NELSON.