

A. W. MELANDER.
LUBRICATING PROJECTILE.
APPLICATION FILED JAN. 31, 1912.

1,039,774.

Patented Oct. 1, 1912.

Fig. 1.

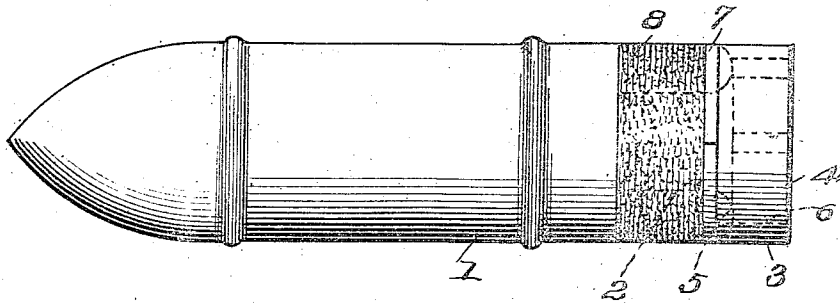


Fig. 2.

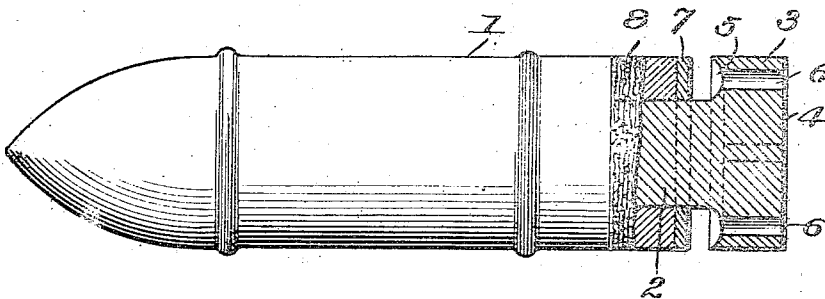
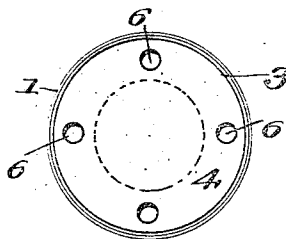


Fig. 3.



Witnesses
Edmond W. Speer
Joanna M. Fallon

Inventor
A. W. Melander

By

H. W. Melander

Attorney

UNITED STATES PATENT OFFICE.

AUGUST W. MELANDER, OF SAN FRANCISCO, CALIFORNIA.

LUBRICATING-PROJECTILE

1,039,774.

Specification of Letters Patent.

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Application filed January 31, 1912. Serial No. 674,603.

To all whom it may concern:

Be it known that I, AUGUST W. MELANDER, citizen of Sweden, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Lubricating-Projectiles, of which the following is a specification.

This invention relates to lubricating projectiles, and has for its object to provide a simple structure adapted to promptly and efficiently lubricate the bore and rifling of a gun at the time that the projectile is ejected when the gun is fired.

The subject matter of the present invention is an improvement over the structure shown in my prior application for patent for lubricating projectile filed in the Patent Office August 10, 1911, Serial No. 643,304.

This improvement has for its object the same as that set forth in my prior application, but the structural arrangement of the present device is such that the lubricant is more efficiently and more promptly applied to the rifling of the gun as the projectile moves through the same. And the invention has for a further object to generally improve this class of devices and to render them more useful and commercially desirable.

For a full understanding of the invention reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a side elevation of the projectile; Fig. 2 is a similar view with parts in section; Fig. 3 is a rear end view of the same.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawing by the same reference characters.

The projectile 1 is of the usual configuration and is provided with a reduced shank 2 having at its rear end a disk 3 which is approximately of the same diameter as that of the projectile 1. This disk may be made integral with the shank 2 and projectile 1 or may be in the form of a separate piece screw threaded or otherwise attached to the said shank. The rear face 4 of the disk 3 is flat and lies at a right angle to the long dimension of the projectile 1 and shank 2 while the forward face 5 of the said disk is concaved. Openings 6 pass transversely through the disk 3 and open at the forward

and rear faces of the same. These openings are located beyond the diameter of the shank 2 and their forward ends are located at the deeper part of the concavity in the forward face 5 of the shank. A plate 7 is slidably mounted upon the shank 2 between the rear end of the projectile 1 and the forward face of the disk 3. This plate is approximately of the same diameter as the projectile 1. The plate 7 is made of relatively thin metal and is plane or flat at both faces. A packing 8 is located upon the shank 2 between the rear end of the projectile 1 and the forward face of the plate 7. This packing is adapted to contain a hard lubricant, as for instance, viscous oil, graphite or plumbago. Normally the rear face of the plate 7 is in contact with the edge of the forward face 5 of the disk 3.

When the projectile is inserted in the breech of a gun, and the gun is fired, the gases behind the disk 3 have ample surface to expand against to project the projectile 1 promptly through the bore of the gun. At the same time the expanding gases pass through the openings 6 and enter the concavity of the forward face 5 of the disk 3 behind the plate 7. By reason of the concavity of the forward face 6 of the disk 3 the pressure of the gas is distributed over the entire surface of the rear face of the plate 7 and the said plate 7 is moved in a forward direction along the shank 2, thereby compressing the packing 8 and squeezing the lubricant out of the packing at the edge thereof. This lubricant is deposited upon the bore or rifling of the gun and consequently the interior of the gun is lubricated at each firing, and after one projectile has been passed through the gun the gun will remain in condition for subsequent firing without requiring attention of an operator to apply lubricant to the bore or rifling thereof.

It will be apparent that by varying the diameter of the openings 6 in the disk 3 that more or less gas pressure may be admitted behind the plate 7 and therefore by such variation the packing 8 when compressed may be caused to exude more or less lubricant, as will be desired.

Having thus described the invention, what is claimed as new is:

1. A projectile provided with a reduced shank, a disk carried by the shank and spaced from the projectile and being approxi-

ately of the same diameter as the projectile, said disk having openings which are located beyond the periphery of the shank, and a lubricating member carried upon the shank between the projectile and the disk.

2. A projectile having a reduced shank, a disk carried by the shank and provided with openings located beyond the periphery of the shank, a lubricating member mounted upon the shank between the projectile and the disk, and a plate slidably mounted upon the shank between the lubricating member and the disk.

3. A projectile having a reduced shank, a disk carried by the shank and having openings located beyond the periphery of the shank and provided with a forward concaved face, and a lubricating member

mounted upon the shank between the disk and the projectile.

4. A projectile having a reduced shank, a disk carried by the shank and provided with openings located beyond the periphery of the shank, said disk having a forward concaved face, a lubricating member located upon the shank between the projectile and the disk, and a plate slidably mounted upon the shank between the lubricating member and the disk.

In testimony whereof, I affix my signature in presence of two witnesses.

AUGUST W. MELANDER. [L. S.]

Witnesses:

HUGO LANGPAAP,
CHARLES S. WELLS.