No. 896,021. PATENTED AUG. 11, 1908.

G. H. HOXIE.

PROJECTILE.

APPLICATION FILED JAN. 12, 1907.

Fig. 3.

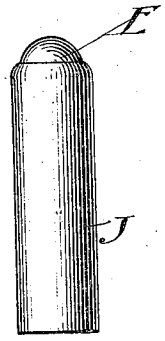


Fig. 4.

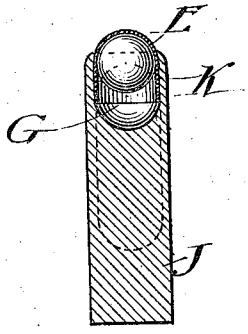


Fig. 1.

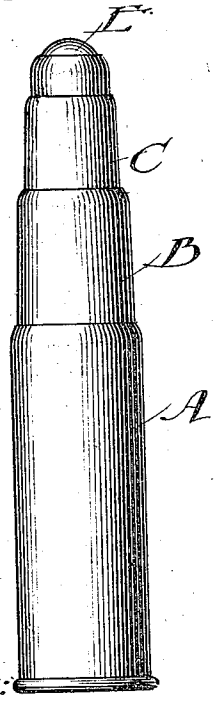
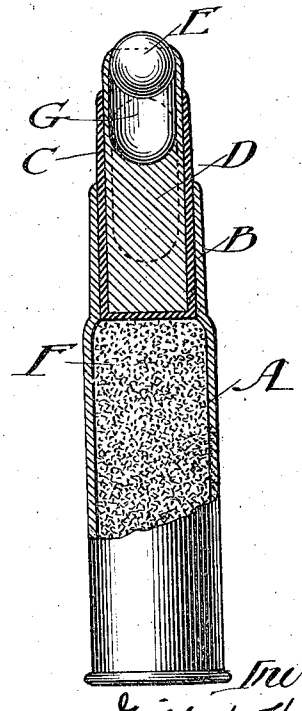


Fig. 2.



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UNITED STATES PATENT OFFICE.

GILBERT H. HOXIE, OF CHICAGO, ILLINOIS, ASSIGNOR TO HOXIE COMPANY, A CORPORATION OF WEST VIRGINIA.

PROJECTILE.

No. 896,021. Specification of Letters Patent. Patented Aug. 11, 1908.

Application filed January 12, 1907. Serial No. 351,992.

To all whom it may concern:

Be it known that I, GILBERT H. HOXIE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Projectiles, of which the following is a specification.

My invention relates to projectiles and is illustrated in the accompanying drawings.

Figure 1 is a side elevation, Fig. 2 a cross section of a projectile containing my improvement as applied in connection with a jacket, and Figs. 3 and 4 are similar views of the same as applied to a non-jacketed projectile.

Like parts are indicated by the same letter in all the figures.

Referring first to the projectile in which the jacketed structure is employed, A is the cylindrical part containing the charge of powder, B the forwardly projecting end thereof, C the jacket, D the filling material and E the impact part.

F is the powder which fills the cylindrical part A, G is a pocket back of the impact part E. The forward part only of the projectile is shown in Figs. 3 and 4 and for the jacket and filling I substiture the body portion J. A slight filling material or film K is employed in this form of projectile.

This projectile consists primarily of the impact part, and a projectile having a pocket, and a filling or securing material which hold them together. As a generic term for this latter substance I call it a binder, as it binds the two parts together. It also serves the purpose of a lubricant. A projectile along the lines of this invention, though, of course, in structure it may greatly depart from the details here shown, seems to operate somewhat like a compound punch. It is found to have great penetrating power. It may be that this increased penetrating power of my projectile is due to the fact that it operates as a compound punch. The impact part first encountering the object aimed at and then retreats into its pocket to give the outer portion opportunity to act as a hollow punch and then follow with a blow like that of the plunger of a compound punch.

The relation between the impact part and the body of the projectile should be such that the follow punch blow can be effectively given immediately after the hollow punch blow is given and therefore the pocket should be of such depth as to bring the impact part, when it has reached the limit of its inward excursion, but a short distance back of the hollow punch portion. In such case, therefore, the filling may be reduced to a minimum having hardly any other office than that of holding the impact part in position on the cylindrical portion of the projectile. Hence this filling part is called a binder for it performs that office in every form of the device. Where the body is to be formed of relatively soft material with a hard inclosing jacket, the structure of Figs. 1 and 2 is applicable. Where the entire body is of homogeneous material the structure of Figs. 4 and 5 may be used. Should the removal of the material to form the pocket unbalance the projectile, some or all of the part indicated by dotted lines in Figs. 2 and 4 may be removed and material of a greater weight be substituted to compensate for the material removed to make the pocket.

To accomplish the whole purpose of this invention the impact part should be so placed and the part should be so proportioned that the impact part can with comparative ease and little resistance retreat into its pocket.

This invention is applicable to projectiles of any size. The filling material or any other suitable material may, if desired, be carried over the outer edge of the impact part so as to serve as a lubricant and the same material may also serve as a lubricant within the pocket so as to permit the impact part to pass freely into its pocket and assist it in passing through the material.

When a projectile of this general type is directed against, for example, a steel sheet, it appears that the impact part first strikes the sheet, and then retreats into its pocket. The projecting tubular edge of the body, whether it be incased in the jacket or not, then strikes the sheet and dents it and then the impact part follows up the blow and punches out the disk which has first been marked by the forward tubular portion of the projectile.

The shell or jacket is at the forward end, preferably furnished with a knife-like or sharpened edge the better to break, indent or cut the material. As previously explained the dotted lines in Figs. 2 and 3 in-

dicate that more dense material can be substituted if necessary back of the cavity or pocket. The pocket is made preferably of such shape as to snugly fit the rear part of the impact piece so that when it is received into the pocket it is in condition to deliver a powerful blow. On the other hand, the forward end of the impact part is preferably, as shown, rounded or brought to a relatively small impact point so as to deliver a blow in the middle of the indented or fractured piece.

I claim:

A projectile comprising an effectively exposed impact part, a cylindrical-like body portion open at the forward end and having a pocket for the impact part of such depth as to permit the impact part to retreat slightly inside the cylindrical part, and a lubricant material within the pocket.

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