

H. W. STARKWEATHER.
MUSHROOMING BULLET.
APPLICATION FILED FEB. 6, 1913.

1,063,748.

Patented June 3, 1913.

Fig. 1.

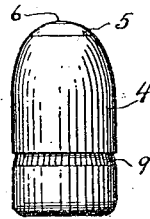


Fig. 3.

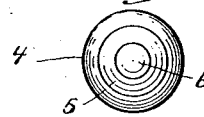


Fig. 4.

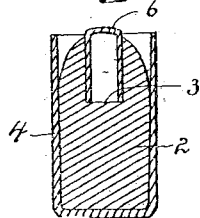
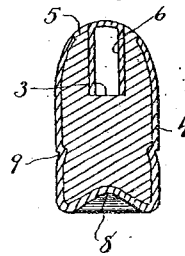


Fig. 2.



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HENRY W. STARKWEATHER, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO WINCHESTER REPEATING ARMS CO., OF NEW HAVEN, CONNECTICUT, A CORPORATION.

MUSHROOMING BULLET.

1,063,748.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY W. STARKWEATHER, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Mushrooming Bullets; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Figure 1 a view in side elevation of a mushrooming-bullet constructed in accordance with my invention. Fig. 2 a view thereof in central longitudinal section. Fig. 3 an end view thereof. Fig. 4 a view in central longitudinal section of the slug and jacket assembled preparatory to being closed together.

In the manufacture of that class of bullets known to the trade as mushrooming bullets, it is desirable on the one hand that the soft-metal slug of the bullet shall be exposed in order to facilitate mushrooming, and desirable, on the other hand, that the drawn sheet-metal jacket of the bullet shall inclose the soft-metal slug so that bullets will not be deformed in handling, nor when functioning in the magazine of the gun.

The object of my present invention is to combine the advantages of full-jacketed and semi-jacketed bullets and to produce a bullet which will readily mushroom, and yet which will not be deformed in handling.

With these ends in view, my invention consists in a mushrooming bullet having a soft-metal slug formed in its nose with a concentric cavity, a sheet-metal jacket inclosing the slug except for an annular space surrounding the said cavity therein, and a hollow sheet metal cap inserted into the said cavity so as to close the outer end thereof.

In carrying out my invention as herein shown, I employ a short cylindrical slug 2 of lead or equivalent soft-metal having a relatively deep, concentric cylindrical cavity 3 in its forward end. This slug is inserted into a drawn-sheet metal jacket 4 of relatively hard metal, the side walls of which are slightly tapered as shown, though this

is not necessary. The said slug 2 and jacket 4 when combined as shown in Fig. 2, are subjected to an assembling operation in which the open end of the jacket is closed down upon the rounded forward end of the slug, the jacket and slug being proportioned in length so that the edge of the jacket will leave that portion of the slug immediately surrounding the cavity 3 thereof exposed in the form of a ring or annulus 5. The cavity 3 in the slug 2 is provided for facilitating the mushrooming of the bullet. To prevent this cavity from accumulating dirt and also from filling with air and impeding the progress of the bullet in its flight, and also to prevent the exposed portion of the slug from being mutilated or deformed, I insert a relatively soft-metal cylindrical cap 6 into the cavity 3, the outer end of the cap being made sufficiently crowning to conform to the general curvature of the outer end of the slug and jacket so as to result in a symmetrical curve for the nose or point of the bullet. The said cap 6 is made a trifle longer, as shown in Fig. 4, than the depth of the cavity 3 so that when the bullet is assembled and the slug is slightly elongated by the pressure of the assembling operation, it will flow outward to the end of the cap as shown in Fig. 2.

When my improved bullet impinges upon the object fired at, the crowning outer end of the cap is the first portion of the bullet to make contact with the object. This portion of the said cap then crushes in and permits the entire outer end of the bullet to flatten or mushroom.

During the assembling operation a conical cavity 8 is formed in the butt-end of the bullet to assist in crowding the soft metal slug 2 to a bearing in the jacket 4 at both ends thereof. The jacket is also formed with a concentric groove 9 which permits it to be seated in the outer end of the cartridge shell (not shown) in the usual manner.

I am aware that it has been proposed to form a concentric cavity in the nose of the soft metal slug of a mushrooming bullet and to construct the jacket of the bullet so as to expose a portion of the slug around the said concavity. I am also aware that it is old to locate a cap in a concentric cavity

formed in the nose of the slug of a mushrooming bullet the jacket of which covers only a portion of the base of the bullet.

I claim:—

- 5 In a mushrooming bullet, the combination with a soft-metal slug having a concentric cavity in its outer end, of a jacket constructed in length with respect to the length of the slug so as to leave a concentric annular portion of the nose of the slug ex-
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posed, and a cap inserted into the cavity in the slug and surrounded by the said exposed annular portion of the slug.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

HENRY W. STARKWEATHER.

Witnesses:

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