

(No Model.)

H. CARR.

PROJECTILE.

No. 245,994.

Patented Aug. 23, 1881.

Fig. 1

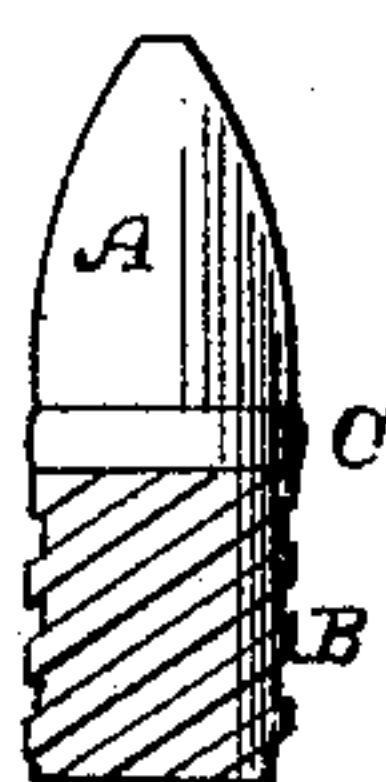


Fig. 3.

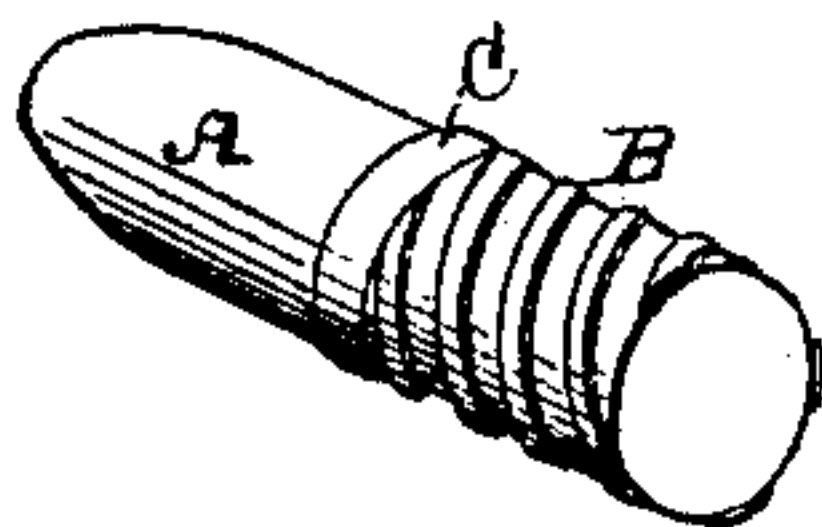


Fig. 2

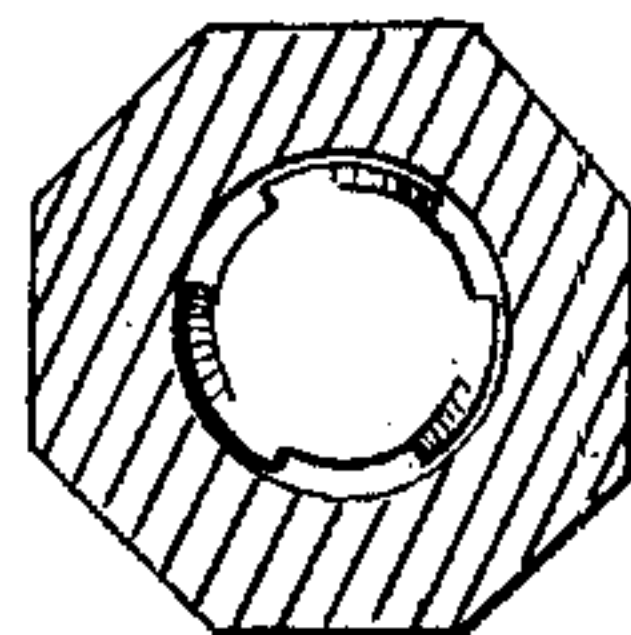
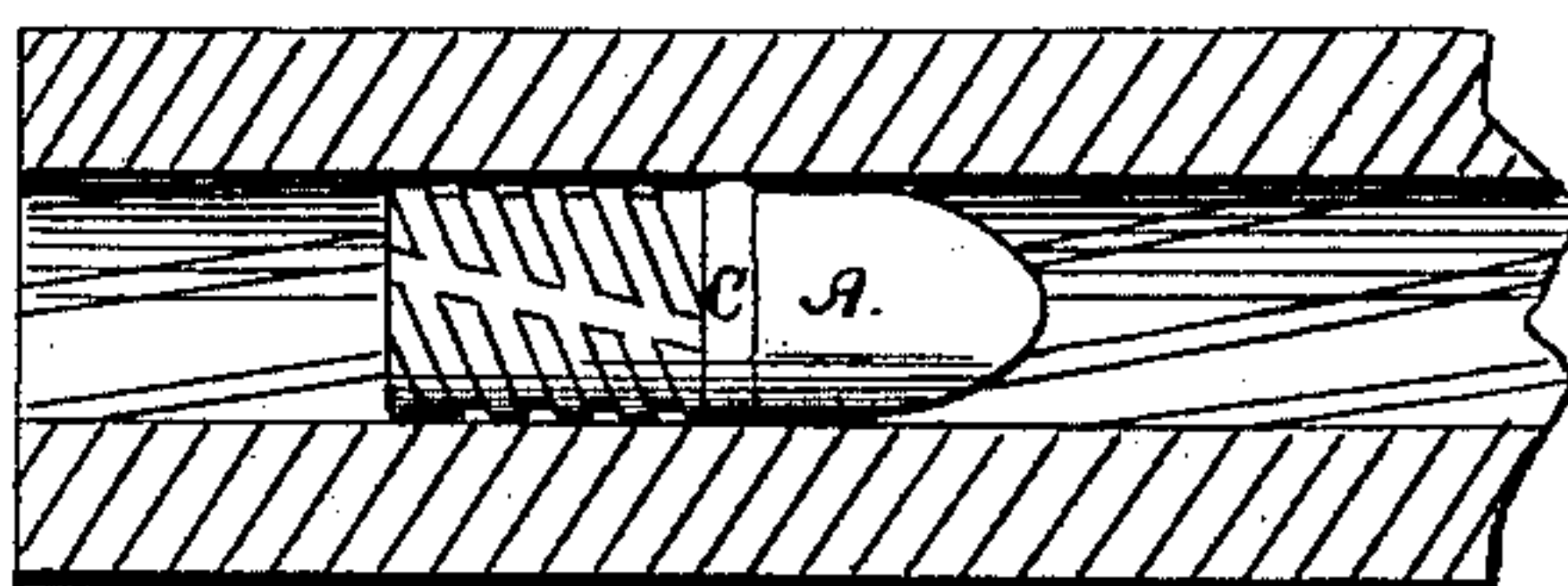


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

HOWARD CARR, OF SAN FRANCISCO, CALIFORNIA.

PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 245,994, dated August 23, 1881.

Application filed November 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, HOWARD CARR, of the city and county of San Francisco, State of California, have invented an Improved Projectile; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in projectiles for guns; and it consists in a novel formation of a projectile having the cannelures or grooves formed around its base in spiral lines, which extend to a point near the center of the bullet, where they disappear in a rib on the rear part of the smooth portion of the bullet, which smooth portion continues from that point to the apex.

The object of this invention is to provide an opening or openings around the base of the bullet, by which the pressure of the gas will be exerted toward the axis around the rear portion of the bullet when the explosion of the powder charge takes place, and thus prevent such an upsetting of the bullet as to cause too great friction within the barrel of the gun. It also serves to distribute the lubricant thoroughly over the space occupied by the cannelures or grooves upon the bullet and within the barrel.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a view of my projectile. Fig. 2 is the end view in the barrel of the rifle. Fig. 3 is a view of a bullet. Fig. 4 is a longitudinal section of a rifle with the bullet.

A is the front portion of my projectile, which may have any suitably-shaped point, this not being any part of my invention.

In the ordinary construction of bullets the cannelures encircle the bullet from the base to a point in its length determined by the particular pattern of the ball, but usually near its center of length, in the form of alternate rings and depressions, the rings having such an elevation as to be forced into the grooves of the rifle, and thus have such a bearing upon the lands that the propulsion of the bullet through the barrel will give it the required rotation upon its axis to steady its flight. The grooves or depressions on the ball are made deep enough to hold the necessary quantity of lubricant to

prevent too much friction and the leading of the barrel. In this form of bullet the base forms the first rim of the cannelures, and receives the full impact of the charge within the gun, thus upsetting the bullet and forcing it into the grooves of the rifle. The amount of this upsetting depends upon the softness or hardness of the metal of which the bullet is composed and the quantity of the powder used; but it is liable to vary with the best precautions, and the friction of the bullet through the barrel will thus vary its flight.

In my invention I form the cannelures B in spirals or screw-threads, of two, three, or more to the inch, these spirals beginning at a ring or cylindrical base, C, of the smooth front portion, A, of the bullet, and extending around the rear portion until they reach the base, where it will be seen, as in Fig. 2, that each groove between the raised portion of the cannelures opens into the powder-chamber behind the bullet, while the raised portions of the cannelures cross the rifling of the gun at an angle and fit into it, so that the bullet will be rotated upon its axis as it leaves the gun.

By this construction it will be seen that each of the grooves of the cannelures forms a continuous passage around the bullet from its base to the ring C, and when the explosion of the powder charge takes place within the gun the pressure of the gas upon the lubricant which fills the grooves, or the pressure of the gas itself, if there is no lubricant, will extend along these passages, so as to act upon the ring C (which fits the gun snugly) and impel the bullet forward from that point, as well as from its base, and will also exert a centripetal pressure upon the bullet, thus relieving the sudden forward force of the explosion, and dividing it so that it does not act entirely upon the base, and the bullet will therefore be so much upset. The spiral rings and grooves form a screw of short pitch, but having the same direction with the grooves of the rifle, and, while the pitch is too short to influence the rotation of the bullet, the cannelures are continuous, and when in motion there will be less resistance to the forward motion than when the cannelures are plain rings. This gives the bullet a lower trajectory than

the usual form, and also decreases the windage or side drift in shooting at long ranges. There is also less recoil, on account of the lessened friction within the barrel, and the lubricant
5 will be thoroughly distributed throughout the cannelures by the explosion of the charge.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

10 A projectile for guns having alternateridges and depressions passing spirally around it from the base where the depressions are open to a point, C, where the bullet is enlarged so as to

fit the barrel tightly and prevent the escape of gas, whereby the force of the explosion is di- 15
vided between the base of the projectile and the ring C, and also exerts a pressure toward the axis, substantially as herein described.

In witness whereof I have hereunto set my
hand. 20

HOWARD CARR.

Witnesses:

GEO. H. STRONG,
J. H. BLOOD.