

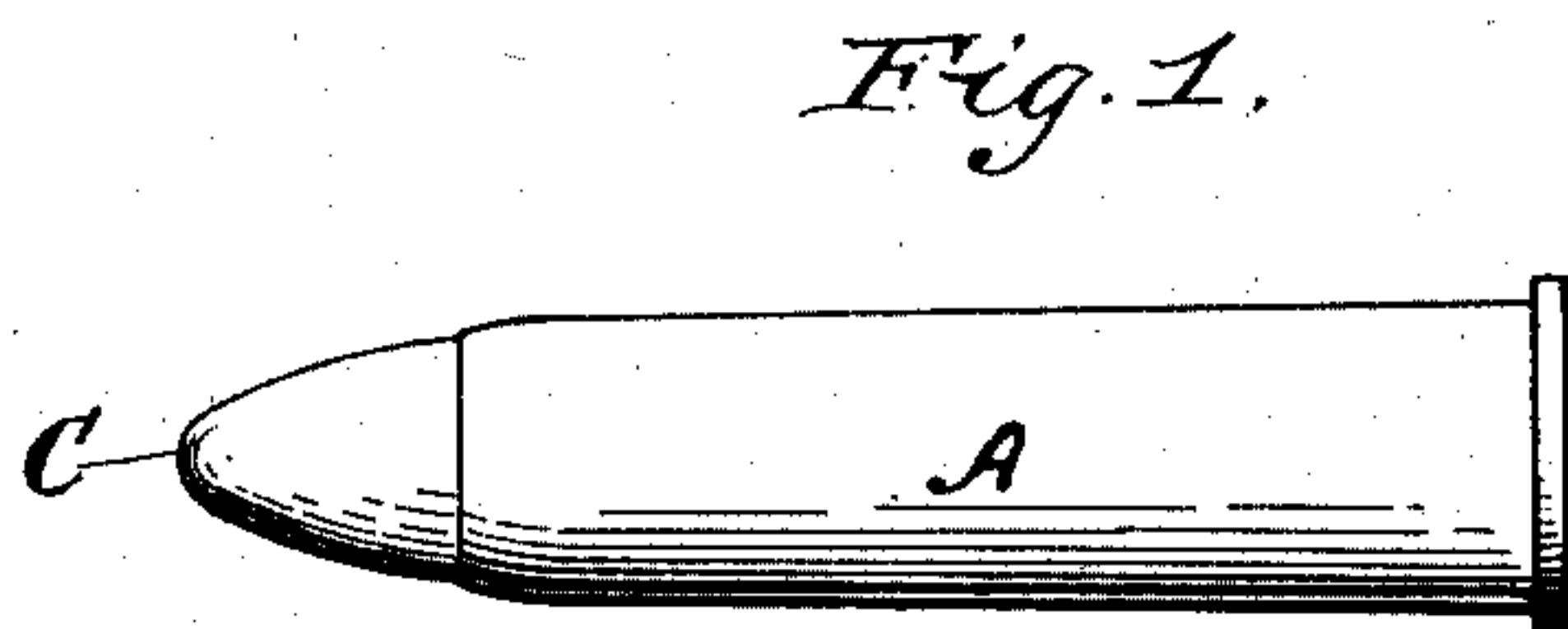
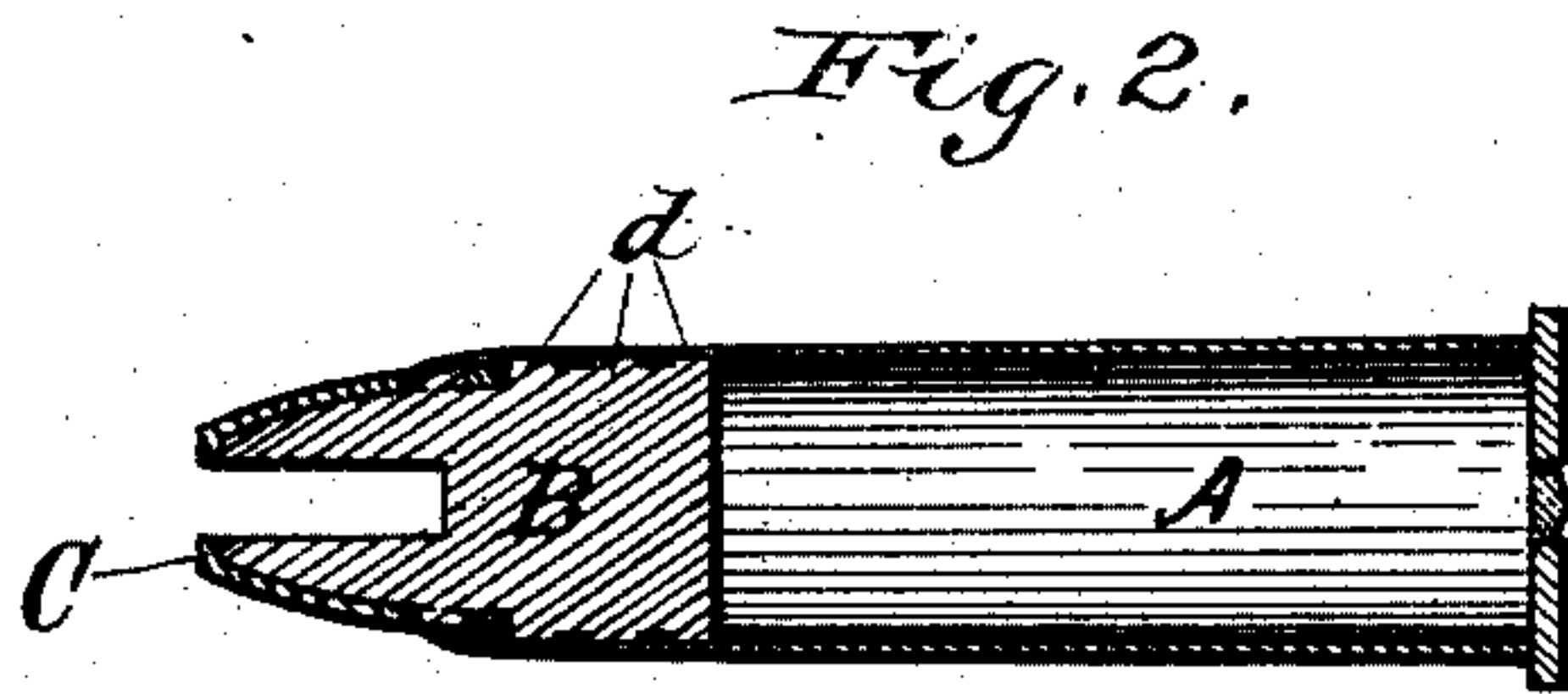
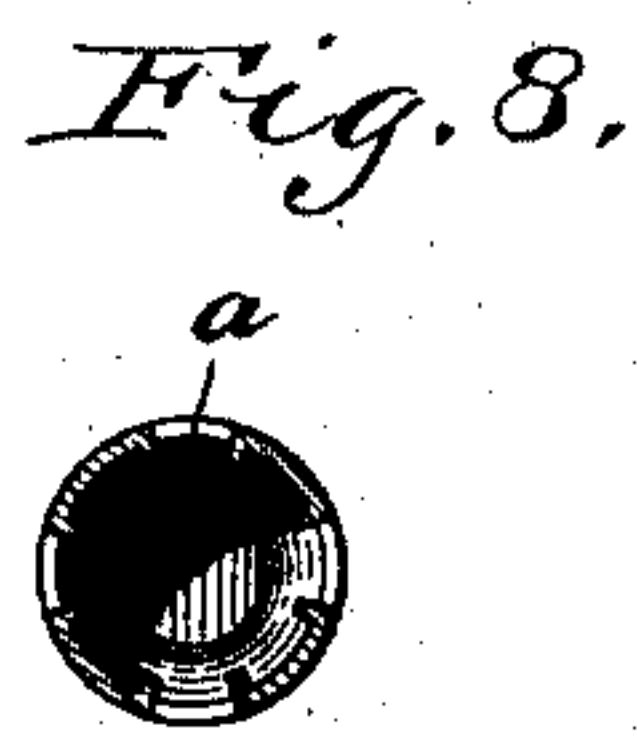
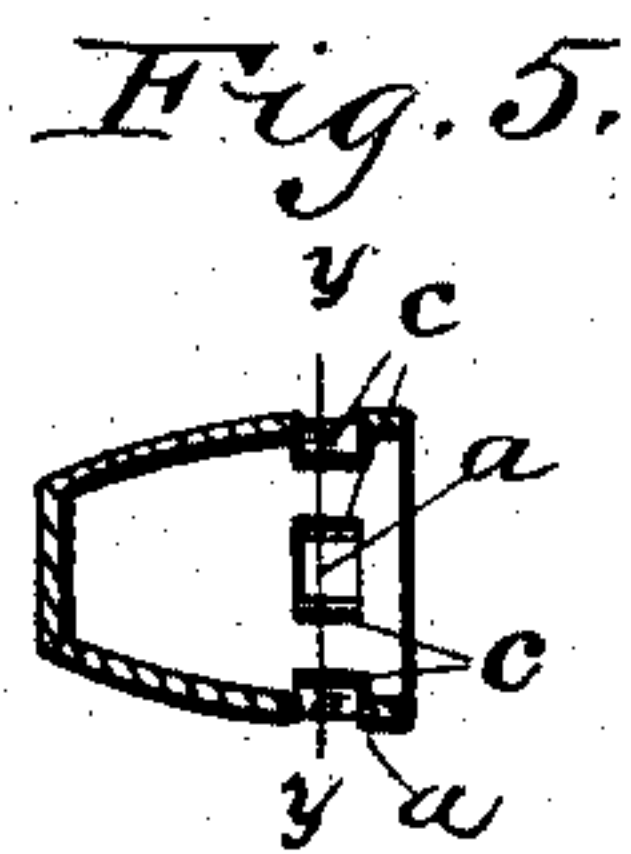
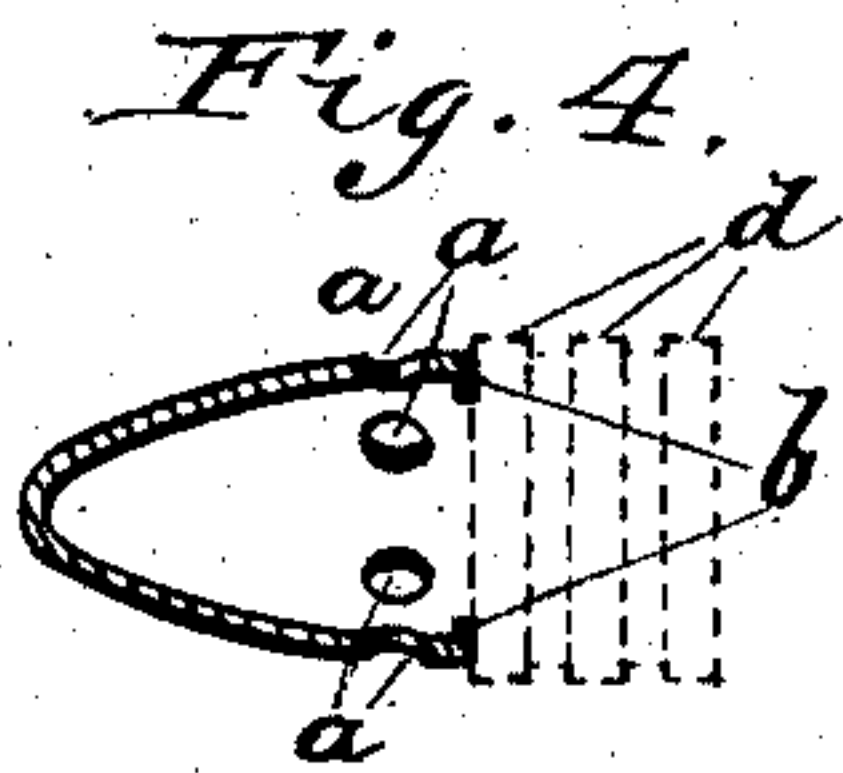
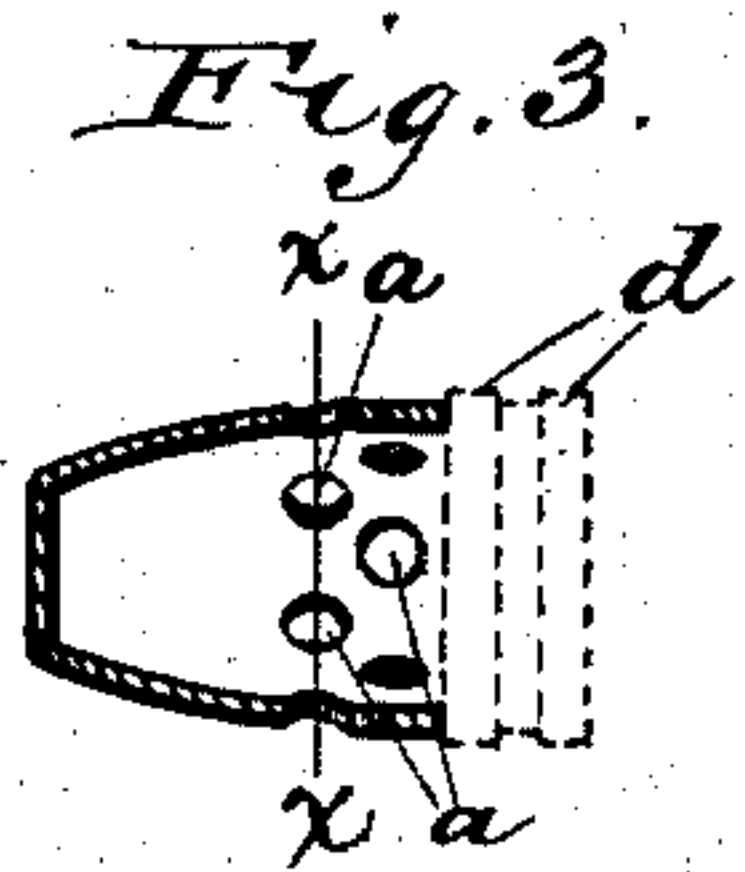
(No Model.)

M. E. GREGG.

PROJECTILE.

No. 376,302.

Patented Jan. 10, 1888.



WITNESSES

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UNITED STATES PATENT OFFICE.

MYRON E. GREGG, OF WASHINGTON, DISTRICT OF COLUMBIA.

PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 376,302, dated January 10, 1888.

Application filed October 6, 1887. Serial No. 251,607. (No model.)

To all whom it may concern:

Be it known that I, MYRON E. GREGG, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Projectiles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to the class of projectiles for small-arms wherein the cartridge is formed with a metallic shell or case containing the charge and bullet, with the primer inserted in the closed end, and is designed to more perfectly adapt such ammunition for use in repeating-guns having a tubular magazine in which the cartridges rest with their ends in contact, and are ejected by means of a coiled spring. Its object is to overcome or remedy certain defects found to exist in such projectiles as now constructed when used in magazine-guns, whereby their efficiency is destroyed or greatly impaired, and at the same time to preserve all advantages possessed by such projectiles, among which is their extreme ductility, enabling them to fit and follow the grooves in the barrel. It is found that the soft metal of which the bullet is composed renders it liable, when in the tubular magazine, to become bruised, shortened, upset, and enlarged by contact with the cartridge in front from the shocks occasioned by firing heavy charges, ejection into the carrier for transmission to the firing-chamber, by much handling, and by constant motion when carried on horseback, so that their shape is impaired, their flight rendered irregular, and their manipulation by the gun uncertain.

My invention consists in providing a cap or shell of copper, brass, steel, or other suitable metal or substance harder than the bullet to inclose its point or forward exposed end and extending back a sufficient distance to enable it to be secured firmly in place and to afford a smooth and durable surface to that part of the projectile outside of the cartridge-casing, while its base remains unchanged and adapted by reason of the soft metal of which it is com-

posed to fit and follow the grooves of the barrel.

In the drawings, Figure 1 represents a completed cartridge having its bullet provided with my cap or shell inclosing its outer or exposed end. Fig. 2 is a longitudinal vertical section of a cartridge provided with a bullet having a longitudinal recess in its point and generally known as the "express" bullet, and having its exposed surface inclosed or covered by my cap or shell. Fig. 3 is a detail showing my cap in vertical section and its relation to the bullet, the base of which is shown in dotted lines. Fig. 4 is a similar view representing my cap pointed as formed for use in rim-fire cartridges. Fig. 5 is a longitudinal vertical section of my cap, showing a modification in the form of the perforations in its base for securing it to the bullet. Fig. 6 is a cross section of Fig. 3 through the line *x x*. Fig. 7 is a bottom or plan view of the under side of the cap, Fig. 4, showing an inwardly-projecting annular flange for securing it to the bullet. Fig. 8 is a cross-section of Fig. 5 through the line *y y*, showing inwardly-projecting lugs formed by the perforations around the base.

Referring more particularly to the drawings, A represents the case of the cartridge, B the bullet, and C the cap or shell inclosing the outer end of the bullet, which cap is preferably secured to the bullet by means of perforations *a*, arranged around its base, into or through which the lead is forced in molding or swaging the bullet, or the lower edge of the cap may be turned inward, forming the flange *b*, as shown in Figs. 4 and 7, or inwardly-projecting lugs *c* may be formed on the inside of the perforations, as shown in Figs. 5 and 8.

My bullet is formed by first placing the shell within the bottom of the mold or die and then casting or swaging the bullet therein, causing the lead to fill the perforations or to surround and embrace the lugs or flange.

The form of cap shown in Fig. 2 is that designed for use on what are known as "express" bullets, and is open or perforated at its outer end to correspond with the recess in the bullet, and serves to protect the front hollow point of the bullet instead of the copper tube usually employed for the purpose.

The greatest diameter of my cap or shell is

designed to equal the inside diameter of the bore of the gun, and the lead flanges d of the bullet are of a slightly-increased diameter to engage the grooves of the barrel.

5 It will be observed that the cap or shell only covers that portion of the bullet forward of the flanges d , leaving the base, having the annular flanges which are to fit the grooves of the barrel, exposed, as shown in Fig. 3. This
10 base fits within the case A of the cartridge, as shown in Fig. 2, and the annular grooves between the flanges contain the lubricant.

I am aware that a projectile has been formed by first making a conical shell of copper or
15 other metal and then forcing into the base of same a body of lead or other soft metal, thereby covering the entire outer surface; also, that a bullet has been formed having its outer point and its base covered with a casing of
20 harder metal, leaving a portion of its center bare, whereby the soft metal of which its body is composed is prevented from contact with the barrel. I am also aware that a compound projectile has been used composed of a core
25 of soft metal and an outer covering - shell of harder metal, the former being cast or melted into the latter; but I do not claim either of these constructions.

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

1. In a projectile for small-arms, the com-

bination, with the soft-metal bullet, of a cap or shell composed of a harder substance whose diameter equals the bore of the barrel, surrounding and inclosing that portion of the projectile forward of its base, which is of a slightly-increased diameter to engage the grooves of the barrel, substantially as and for the purpose described. 35

2. In a projectile for small-arms, the combination, with a soft-metal bullet having a base of slightly-increased diameter provided with annular flanges to engage the grooves of the barrel, of a cap or shell of harder metal covering the portion forward of the flanges on the base and provided with perforations, lugs, or flanges for uniting and firmly securing it on the bullet, substantially as and for the purpose described. 40

3. The combination, in a projectile for small-arms, of a soft-metal bullet, a cap or shell inclosing the outer end of same and secured to it at a point above and near its base by suitable means, as shown, and the cartridge-case A, inclosing the base of the bullet and of the cap, all constructed substantially as and for the purpose described. 45

In testimony whereof I affix my signature in presence of two witnesses. 50

MYRON E. GREGG.

Witnesses:

CHARLES W. HANDY,
JACOB G. COHEN.