No. 701,798. Patented June 3, 1902.

# W. F. COLE.

## FIREARM.

(Application filed June 12, 1901.)

(No Model.)

Fig. 1.

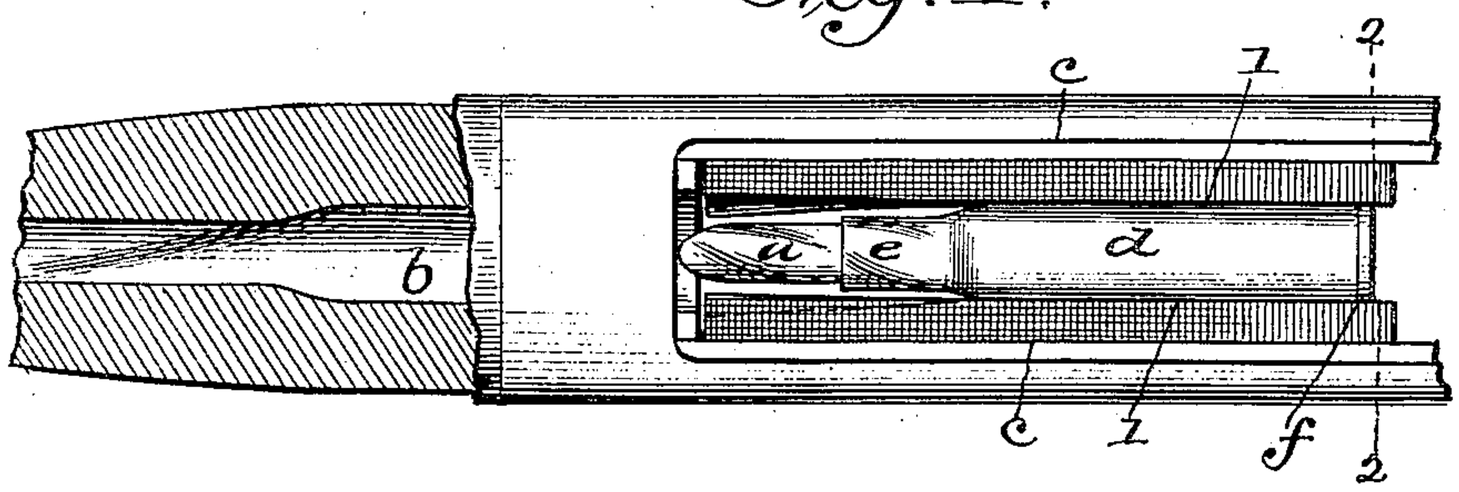



Fig. 2

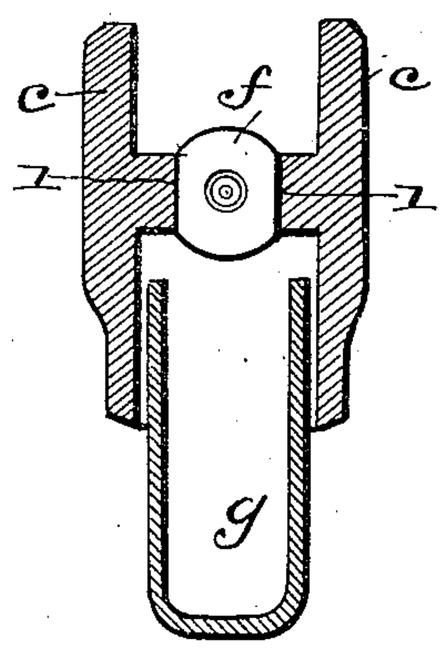



Fig. 3.

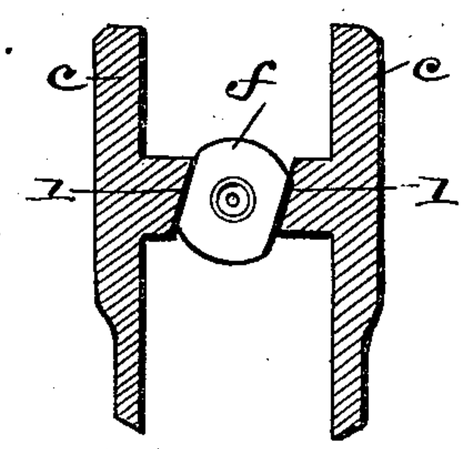
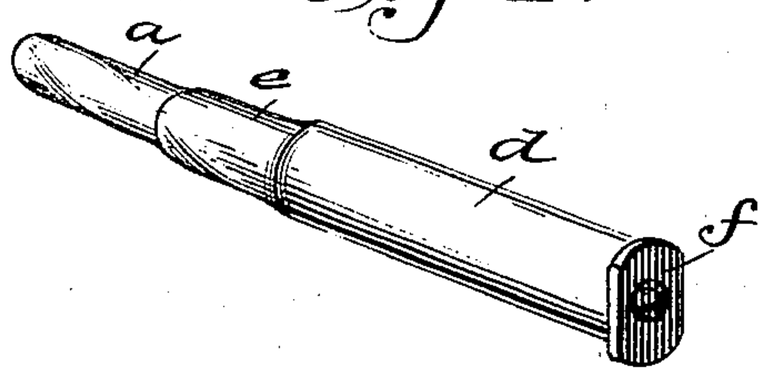



Fig. 4.




WITNESSES:
Jos. A. Ryan
Amos W. Hart

INVENTOR
William F. Cole
BY Munn & Co.
ATTORNEYS

# UNITED STATES PATENT OFFICE.

WILLIAM F. COLE, OF WACO, TEXAS.

## FIREARM.

SPECIFICATION forming part of Letters Patent No. 701,798, dated June 3, 1902.

Application filed June 12, 1901. Serial No. 64,277. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. COLE, a citizen of the United States, residing at Waco, in the county of McLennan and State of Texas, have made certain new and useful Improvements in Breech-Loading Firearms, of which the following is a specification.

I have obtained Letters Patent No. 671,877, dated April 9, 1901, for a projectile adapted for use in guns having an elliptical and twisted bore, which form has been demonstrated to possess certain important advantages. The said projectile is elliptical in cross-section and has a slight twist.

My present invention consists in providing breech-loading guns with guides adjacent to the breech for insuring insertion of a cartridge in the latter—that is to say, the presentation of the ball-cartridge to the breech in such due position as to avoid jamming of the projectile in the bore.

In the accompanying drawings, Figure 1 is a plan view of a portion of a magazine-firearm provided with my improvement, a ball-cartridge being shown in full lines in due position to be forced into the gun-bore. Fig. 2 is a vertical cross-section on line 2 2 of Fig. 1. Fig. 3 is a like section on line 3 3, save the cartridge is supposed to be advanced. Fig. 4 is a perspective view of a ball-cartridge constructed according to my invention.

My invention is applicable to various types and sizes of breech-loading guns; but I illustrate and describe it as applied to one of the magazine type.

The projectile or plug, as shown in Fig. 4, is elliptical in cross-section and slightly twisted.

It is apparent that if the projectile or plug be presented to the gun breech or bore *b* (see Fig. 1) with the wider axis of its ellipse at an angle to like axis of the bore the projectile *a* will jam and cannot be forced in. To prevent this result, I construct the frame *c* and cartridge proper, *d*, as follows: The reduced end *e* of the cartridge *d* is elliptical and twisted, corresponding to the bore of the gun. Its rim or head *f* is cut away at opposite points, thus forming two flat parallel portions which serve as friction contact-surfaces for rotating and guiding the cartridge *d* when being forced forward into the firing-chamber *b*. The frame *c* is provided interiorly with opposite longitudinal guides *l* for the cartridge *d*, the same being formed by ribs having a slight twist corresponding to the twist of the gun-bore *a*. As shown in Fig. 2, these ribs *l* are located just above the magazine *g* and at a distance apart corresponding nearly to the width of the head *f* of the cartridge between its flat sides. Thus the head *f* is adapted to fit slidably between the ribs, as shown, when in the normal longitudinal alinement with the gun-bore *b* and ready to be forced into the latter by the sliding breech-bolt. If now the bolt be advanced, the cartridge *d* will be rotated as it slides forward, thus insuring the entrance and insertion of the ball or projectile *a*, with its transverse major and minor axes coincident with those of the gun-bore *b*, whereby jamming in the latter is infallibly prevented.

In practice the magazine *g* will be made slightly narrower than usual heretofore in order to insure placing the ball-cartridge in due position therein—that is to say, with the flat sides of its head parallel to the sides of the magazine *g*. Thus as the cartridges are successively raised from the latter into alinement with the gun-bore they pass between the rib-guides *l* of the frame *c*, as shown in Fig. 2. The opposite adjacent faces of the ribs *l* are vertical in the rear portion, (see Fig. 2,) but inclined at a slight angle in their forward portion, as shown in Fig. 3. The cartridge is therefore not rotated in its first advance movement, rotation beginning only when the ball or projectile *a* has passed through the enlarged portion of the firing-chamber and enters the twisted elliptical portion of the bore. In any case it is only necessary to provide guides of such length as insure guiding of the ball or projectile into the gun with the transverse axes of its ellipse coincident with the bore.

It is obvious my invention may be applied under various modified arrangements, such as ordinary mechanical skill and judgment will suggest, to various types of breech-loading guns of various calibers—single-loaders as well as magazines.

In the case of small-arms having magazines

of a certain type—such as the Mauser and Winchester, for example—the cartridge-guides may be formed on the upper edge of the sides of the magazine proper instead of on the frame proper. In fact, I propose any arrangement of guides which shall be adapted to direct an elliptical projectile into an elliptical bore in such manner as will insure its due presentation, and thus prevent jamming.

It is to be understood that the rotation of the cartridge is not sufficient to affect the due engagement with its rim of the extractor on the sliding bolt.

It is to be further understood that while two opposite guiding ribs or surfaces are greatly to be preferred one such rib or surface may be employed, in which case the cartridge would be cut away or flattened on but one side.

What I claim is—

1. The combination with a breech-loading gun having an elliptical bore, of a rearwardly-extended guiding-surface corresponding with the bore substantially as shown and described for the purpose specified.

2. A gun having an elliptical and twisted bore and its breech extension provided with opposite parallel guide-surfaces whose inclination or twist corresponds with that of the bore, whereby a ball-cartridge is guided while being inserted in such manner as to insure coincidence of its transverse axes with those of the bore and its proper insertion into the bore, as specified.

3. A breech-loading-magazine firearm having an elliptical twisted bore and its frame provided interiorly with opposite longitudinal guide-ribs arranged in due alinement with the barrel and their inner sides inclined or twisted corresponding to the bore of the gun, substantially as shown and described.

WILLIAM F. COLE.

Witnesses:
AMOS W. HART,
SOLON C. KEMON.