

No. 624,146.

Patented May 2, 1899.

F. K. YOUNG.
CARTRIDGE.

(Application filed June 23, 1898.)

(No Model.)

Fig. 1.

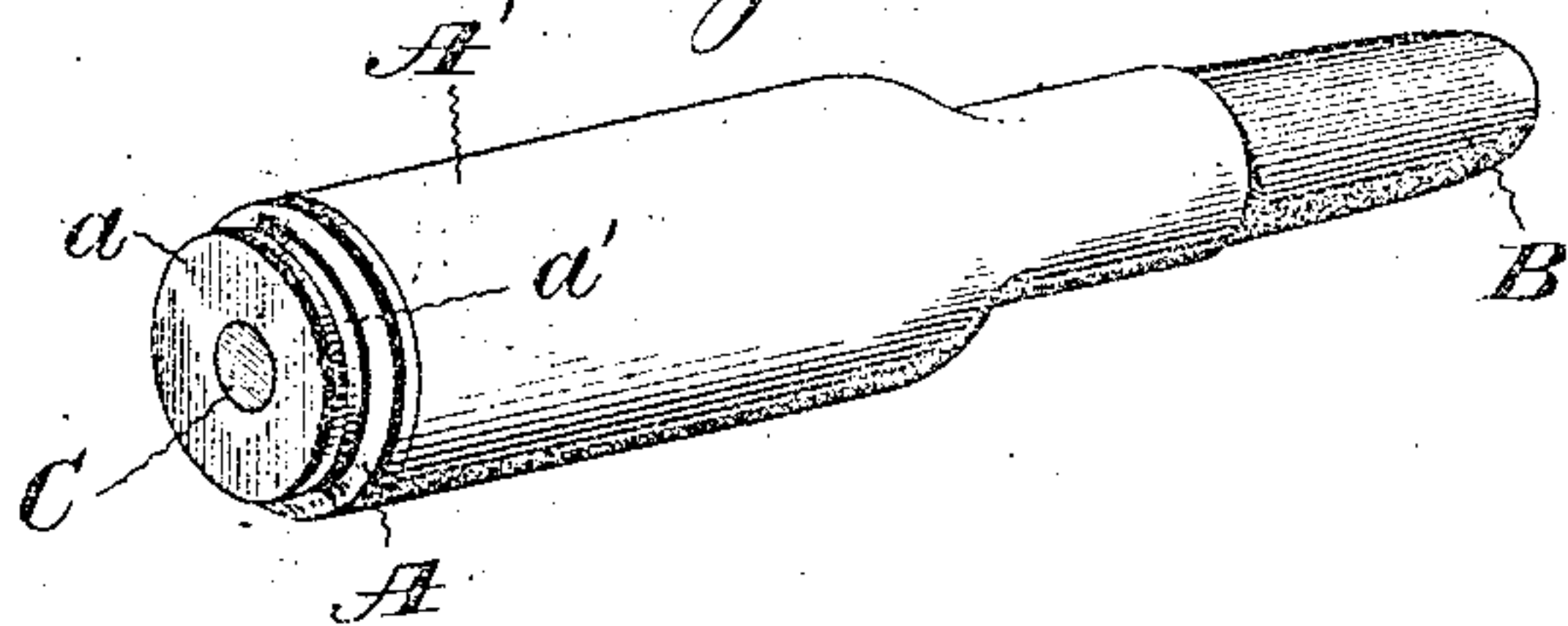


Fig. 2.

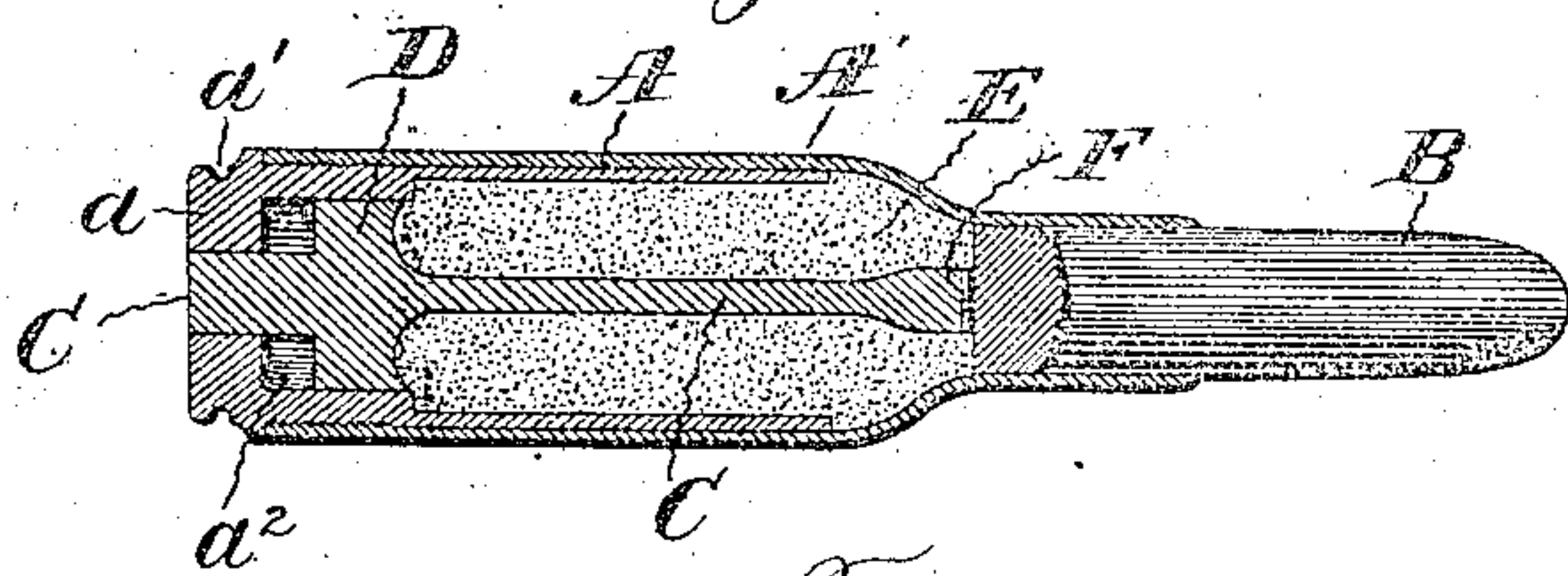


Fig. 3.

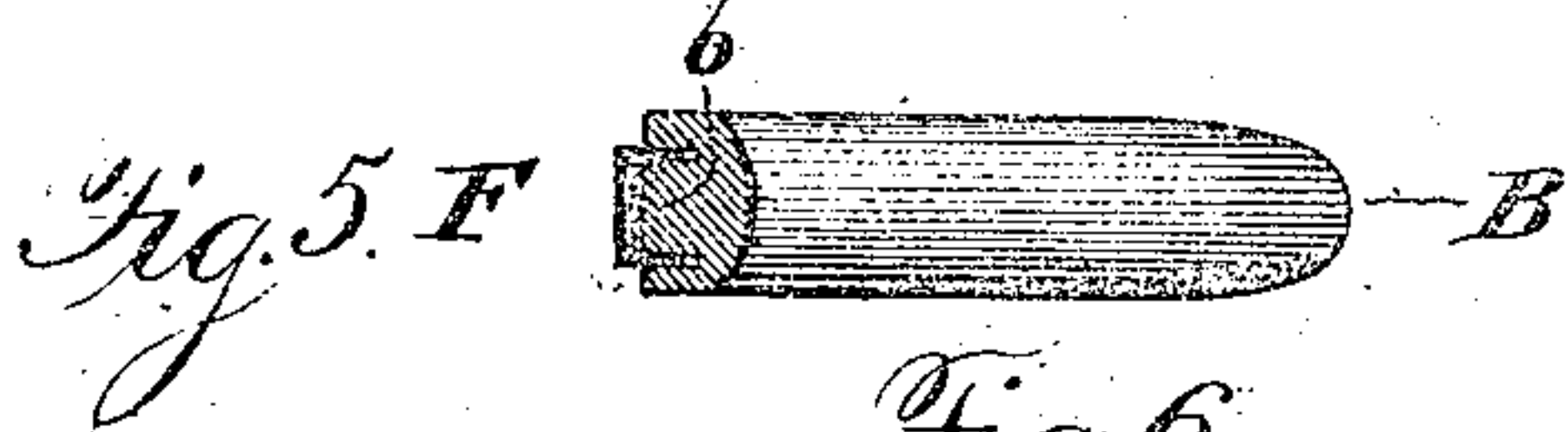
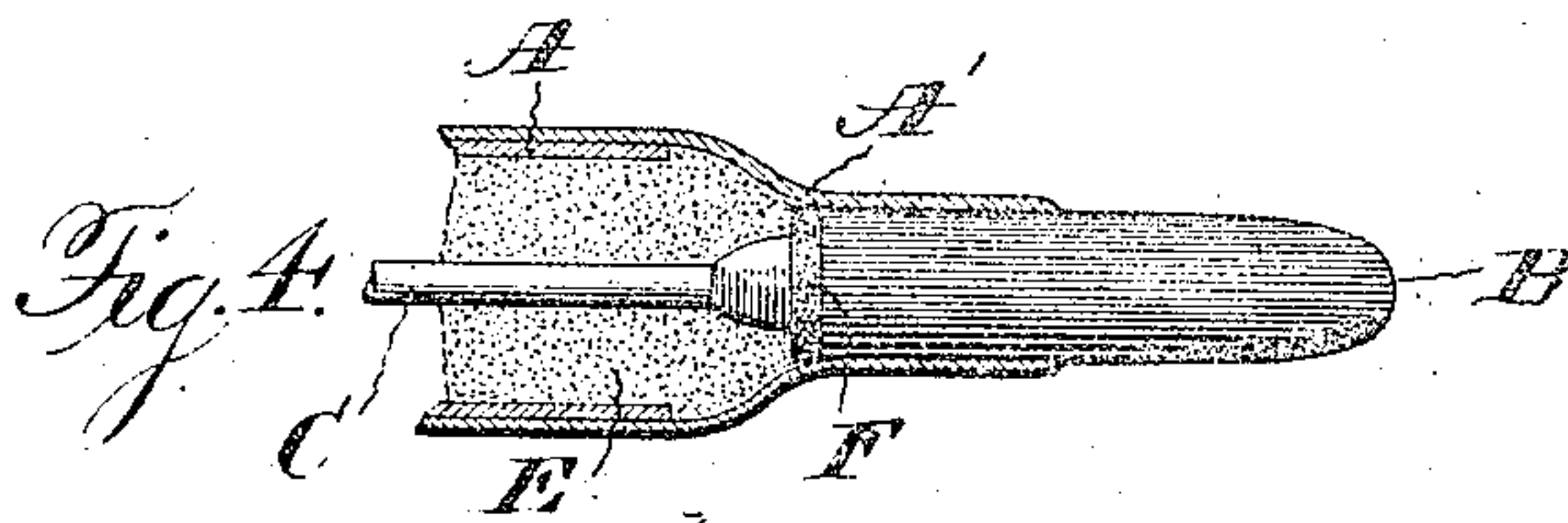
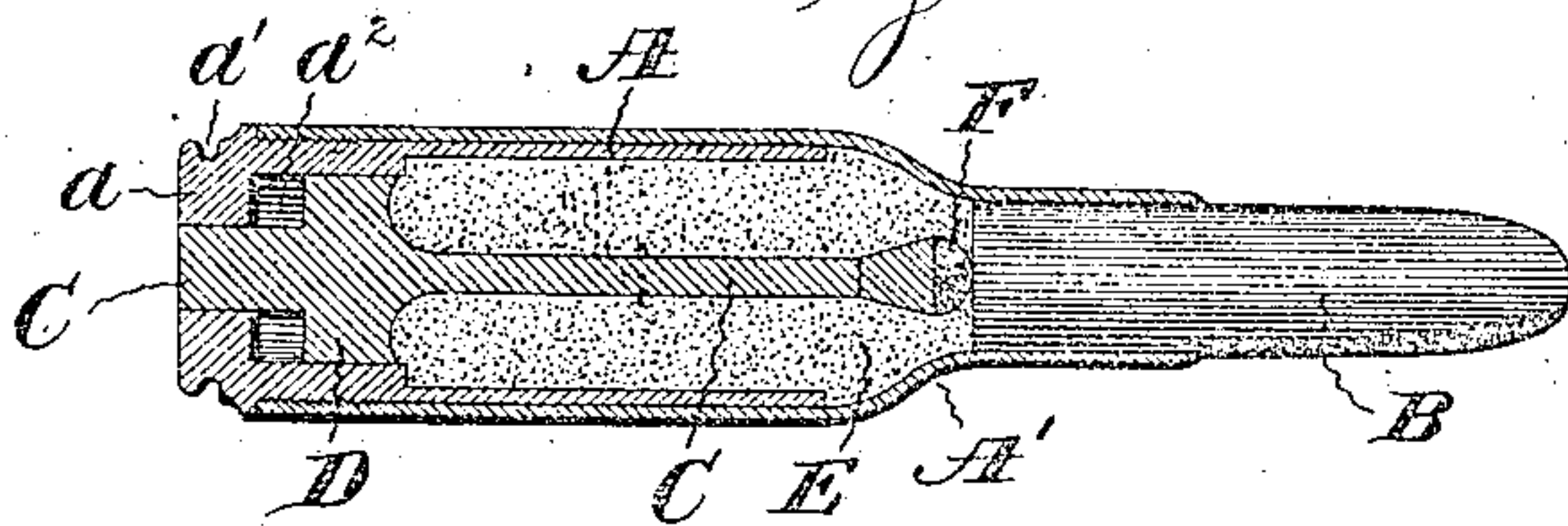
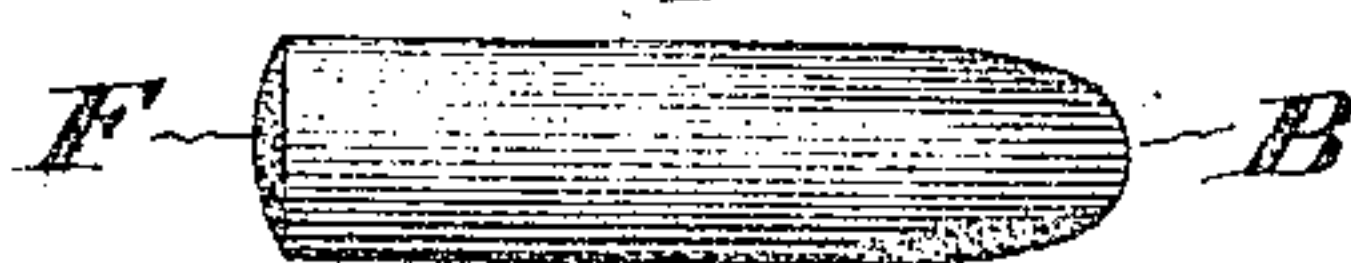


Fig. 6.



Witnesses:
Jesse Hutchinson.
Henry C. Hazard.

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Franklin K. Young, by
Prindle & Russell, his attys.

UNITED STATES PATENT OFFICE.

FRANKLIN K. YOUNG, OF BOSTON, MASSACHUSETTS.

CARTRIDGE.

SPECIFICATION forming part of Letters Patent No. 624,146, dated May 2, 1899.

Application filed June 23, 1898. Serial No. 684,250. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN K. YOUNG, of Boston, in the county of Suffolk, and in the State of Massachusetts, have invented certain
5 new and useful Improvements in Cartridges; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

10 Figure 1 is a perspective view of a cartridge embodying my invention; Fig. 2, a view thereof, partly in central longitudinal section and partly in elevation; Fig. 3, a similar view of another form of cartridge embodying my invention; Fig. 4, a like view of the forward
15 portion of another form of my cartridge; Fig. 5, a detail view, partly in section and partly in side elevation, of a form of bullet which can be used in my cartridge; and Fig. 6, a
20 side elevation of another form of bullet.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is the provision of a cartridge constructed for use more especially with automatic guns; and to this end
25 said invention consists in the cartridge having the construction substantially as herein-after specified.

The cartridge forming the subject-matter
30 of this patent was devised for use with my automatic gun which forms the subject-matter of my application for patent, Serial No. 659,502, filed November 22, 1897, and while in describing my cartridge herein I shall refer
35 to the gun shown in said application it is to be understood that I do not restrict myself to its use with such gun or, in fact, to any particular construction of gun.

In the embodiments of my invention illustrated herein the shell is shown as made in
40 two parts A and A', the former being a hollow cylinder with one end open and the other end forming the cartridge base or head a , and the part A' a hollow cylinder inclosing and
45 closely fitting the other and provided at one end with interior screw-thread to engage exterior thread on the end of the part A near the base or head a . The other end of the
50 outer part A' is contracted in diameter, beginning at the open end of the inner part A, and has secured within it the bullet or projectile B. Within the base a is formed an

annular groove a' for engagement by an extractor.

Placed centrally within the cartridge is a
55 longitudinally-movable rod or plunger C, whose rear end passes through a central opening in the base or head a and which has an annular enlargement that forms a head or
60 piston D, fitting and movable in an axial direction within a cylindrical passage a^2 , formed in the inner shell part near the base or head a . The charge of powder or other explosive E is placed between the piston and the rear
65 end of the bullet, and it is fired by means of a primer F, that is exploded by the front end of the plunger C, which reaches to a point in the front part of the charge. As shown in
70 Fig. 2, the primer, being in the form of a cap, is placed over the front end of the plunger, so that by the forward movement of the latter it will be struck against the rear end or
base of the bullet. Instead of being placed
upon the plunger end such a form of primer
can, as shown in Fig. 5, be applied to the bul-
75 let by being placed upon an anvil b , formed in the base thereof. In Figs. 3 and 6 the primer is shown in the form of a pellet, which in the former case is shown attached to the end
80 of the plunger and in the latter case to the end of the bullet. As shown in Fig. 4, the primer consists of a percussion-disk resting against the base of the bullet.

When the firing-pin of the gun strikes the
85 rear exposed end of the plunger C, the forward movement thus given to the latter will cause the firing of the primer and ignite the charge of explosive. The pressure of the gases generated by the ignition of the charge acting on the piston D will then force the
90 plunger rearward, and the latter being in engagement with the firing-pin of the gun will carry said pin rearward and produce the operation of the breech mechanism, as fully
95 set forth in my said application, Serial No. 659,502, to which reference is made for the description of the construction and operation of my gun.

It is to be understood that the cartridge can
be of any desired type, and the shell can be
100 made in the usual or any desired way; but I prefer the two-part construction shown; because it enables the easy provision of the piston-passage a^2 and the most convenient priming

and loading of the cartridge. It is also desirable as it results in a shell that is good, strong, and durable and capable of being reloaded and used repeatedly without injury.

5 When fired in a gun, the pressure of the gases of explosion expands the inner part against the walls of the outer part, so that there can be no leakage of gas rearward and outward between the two.

10 While I have shown and described my cartridge as arranged to be fired by a primer ignited by the forward end of the plunger within the cartridge, I do not limit myself to the use of such an arrangement, but contemplate, when desired, employing other means
15 for igniting the explosive charge.

Having thus described my invention, what I claim is—

1. A cartridge having a passage in its rear
20 part, and an interior plunger having a head made movable in such passage, and exposed directly on the forward or inner side to the rearward pressure of the gases of explosion within the cartridge, substantially as and for
25 the purpose described.

2. A cartridge having a base with an opening therethrough, and an enlarged interior passage connected with such opening, and a movable plunger adapted to be engaged by
30 the firing-pin of a gun in which the cartridge is used, and having a portion fitting in and closing the enlarged passage, with its forward

or inner side exposed to pressure of gases of explosion within the cartridge, so that such pressure will move the plunger rearward or
35 outward when the cartridge is fired, substantially as and for the purpose described.

3. A cartridge having a base with an opening, with both ends unclosed, and an interior passage connecting with such opening, but
40 made larger than the same, and a plunger having a part movable in the opening in the base, and having a head movable in the passage, substantially as and for the purpose described.

4. In a cartridge, in combination with a shell having a base with an opening through
45 it, and an enlarged passage at the inner end of the opening, an igniting-plunger having a part to move in the opening and a head fitting
50 in the passage, a projectile held in the shell, and an igniter or primer between the end of the igniting-plunger and the projectile, adapted to be exploded against the base of the projectile by forward movement of the igniting-
55 plunger, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of June, A. D. 1898.

FRANKLIN K. YOUNG.

Witnesses:

GRACE I. FULLER,
WM. D. FORBES.