

E. GAUPILLAT.  
PRIMERS FOR CARTRIDGES.

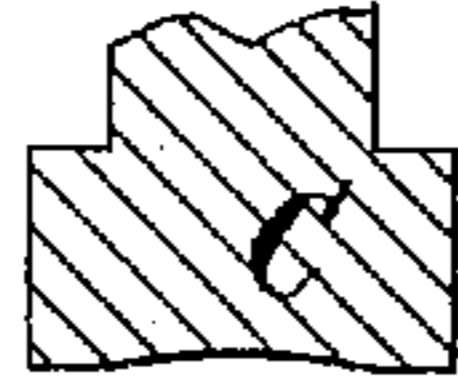
No. 174,625.

Patented March 14, 1876.

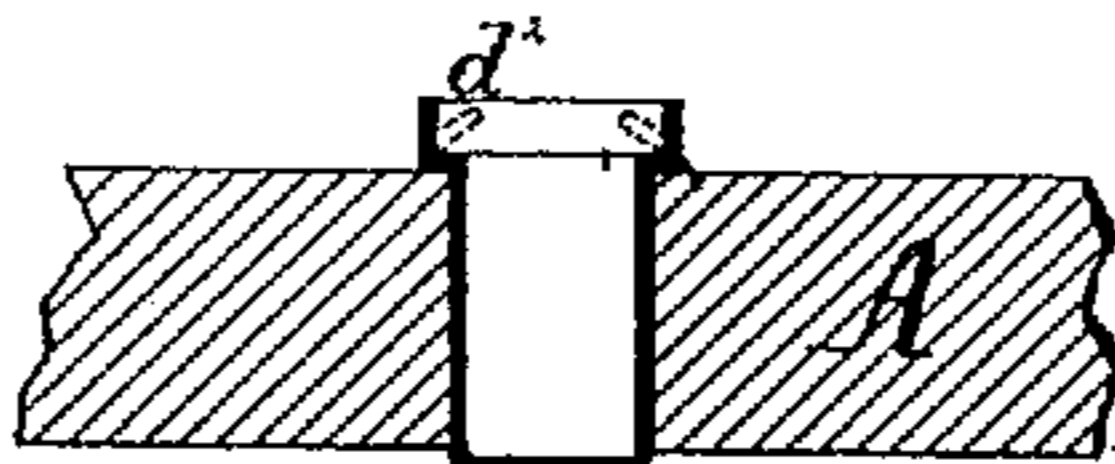
*Fig: 2.*

*Fig: 3.*

*Fig: 1.*

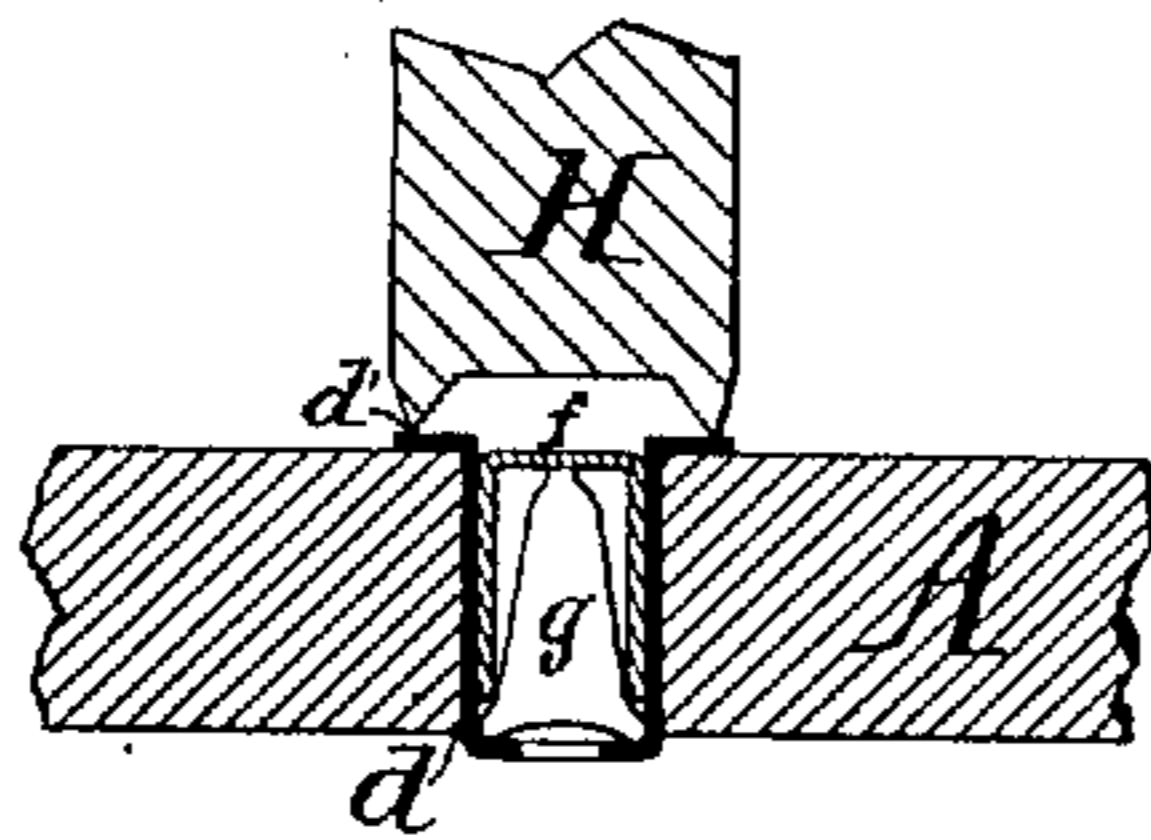


*Fig: 4.*



*Fig: 5.*

*Fig: 6.*



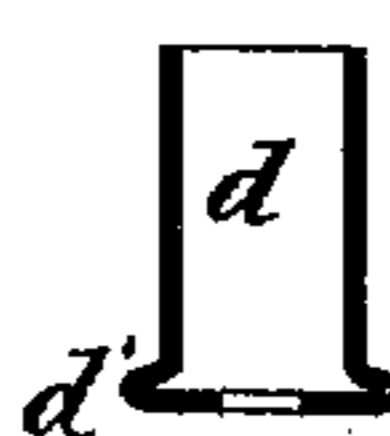
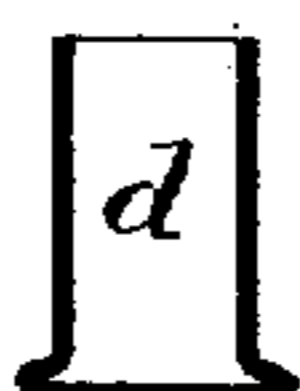
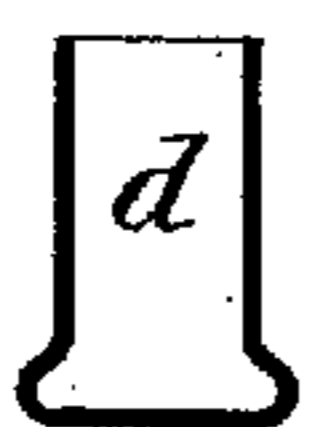
*Fig: 7.*

*Fig: 8.*

*Fig: 9.*

*Fig: 10.*

*Fig: 11.*



*Witnesses:*

*Henry Gontner*  
*C. C. Stetson.*

*Inventor:*

*E. Gaupillat*  
*by his attorney*  
*C. C. Stetson*

# UNITED STATES PATENT OFFICE

ERNEST GAUPILLAT, OF PARIS, FRANCE.

## IMPROVEMENT IN PRIMERS FOR CARTRIDGES.

Specification forming part of Letters Patent No. 174,625, dated March 14, 1876; application filed November 22, 1875.

*To all whom it may concern:*

Be it known that I, ERNEST GAUPILLAT, of Paris, France, have invented certain Improvements Relating to Primers for Cartridges, of which the following is a specification:

This is the same as was set forth in my addition of August 8, 1870. The invention is practicable for all styles of center-fire cartridges.

I confine a percussion capsule and an anvil firmly within an inclosing flanged cup, and compress inward the inclosing-cup so as to firmly retain the contents.

My invention avoids the inconvenience, and sometimes serious mischief, which results from the separation of the parts in the act of firing, or at other times.

The following is a description of what I consider the best means of carrying out the invention:

The accompanying drawings form a part of this specification.

Figure 1 is a section through the exterior cup, in the form in which it is readily procurable in the trade. Figs. 2, 3, and 4 represent one series of changes to which I subject it. Figs. 5 and 6 represent another series of changes. Fig. 7 represents a different form of the original capsule. Figs. 8, 9, 10, and 11 represent the successful changes of form and condition to which I subject this. Figs. 4, 6, and 11 represent the finished articles which result from the several modifications of the treatment. They differ from each other in some points; but they each have the novel features and qualities of my invention, and I esteem them each practicable and useful forms of my invention.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to Figs. 1, 2, 3, and 4, Fig. 1 represents the material for the exterior cup, simply struck into an ordinary cylindrical form.  $d$   $d^1$ , Fig. 2, represent the same after it has been wrought by one or more operations into a different form, B representing one of the principal means employed in the operation. It will be understood that one or more holes are produced in the closed end of this cup. In Fig. 3, A represents a fixed plate or bed, in which the cup is supported after being properly supplied with the anvil  $g$  and capsule

$f$ , which are omitted in the figure, and C is a forming-die, having a concave lower face, adapted to incline inward the upper edges  $d^2$ , as indicated in dotted lines.

One more operation, holding it in the same or a similar holder, A, and subjecting it to the action of a flat-faced die, produces the finished form shown in Fig. 4, in which  $d^1$  represents an external flange to aid in holding the primer in place in the cartridge, and  $d^2$  an internal flange, which firmly holds the contents within the primer.

The complete primer thus produced is ready to be inserted and held in the ordinary or any suitable manner in any of the various forms of cartridges.

Figs. 5 and 6 represent a modification. Fig. 5 represents the external cup  $d$  with its upper portion  $d^1$  simply flanged outward.

The anvil  $g$  and percussion-capsule  $f$  being inserted, it is supported in a holder, A, and is subjected to the action of a peculiarly-formed tool, H, which separates any surplus metal from the exterior of the rim, if there is too much there, and crowds inward the material inclosed within the line of division. It leaves the primer with a sufficient turned-out flange,  $d^1$ , and also with a sufficient drawn-in portion,  $d^2$ , to serve as an internal flange, and firmly retain the capsule  $f$  and anvil  $g$ .

Referring to Figs. 7, 8, 9, 10, and 11, which show another modification, Fig. 7 represents the exterior cup  $d$  as formed with its closed end semi-spherical instead of flat. Fig. 8 represents the same after having been partially upset in suitable dies, flattening and enlarging the inclosed end. Fig. 9 represents the same after the treatment has been carried still further, producing thin flanges, differing in position and mode of manufacture from the flanges or external projections  $d^1$   $d^2$  in the preceding figures, but corresponding in function therewith—that is to say, it is the external flange which aids to hold the primer in position in the cartridge. Fig. 10 shows the same cup with a considerable opening punched in the center of its closed end, to allow the point of the firing-hammer or firing-pin (not represented) to strike freely through, and impinge directly upon the center of the inclosed percussion-capsule  $f$ . Into a cup,  $d$   $d^1$ , thus prepared, is placed

the percussion-capsule *f*, with its open end upward. Into the interior of the latter is next placed the anvil *g*, with its point downward, and then the whole being properly held is subjected to compression by a punch corresponding in form to C, Fig. 3, which draws inward the upper edge of the exterior cup *d*, and thus clinches it by forming an internal flange, *d*<sup>2</sup>, adapted to retain the percussion-capsule and the anvil.

Many other modifications may be made in the forms by any good mechanic without departing entirely from the principles of the invention.

Although I have only referred to cartridges, my improved primer may be useful in the fuses of projectiles, and in any position where a percussion-cap, closed or nearly closed at both

ends, can be made available. I can close the joints in my primer by shellac or other ordinary means, and thus make it water-proof when desired.

I claim as my invention—

The exterior cup *d d*<sup>1</sup> *d*<sup>2</sup>, in combination with an inclosed percussion-capsule, *f*, and anvil *g*, the part *d*<sup>2</sup> serving as an internal flange to retain the contents of the primer, and the part *d*<sup>1</sup> serving as an external flange to aid in holding the primer in place, as herein set forth.

In testimony whereof I have hereunto set my hand this 12th day of May, 1875, in the presence of two subscribing witnesses.

E. GAUPILLAT.

Witnesses:

B. B. HOTCHKISS,

TH. FAVARGER.