

E. MARTIN.
Metallic Cartridge.

No. 105,348.

Patented July 12, 1870.

FIG. 5.

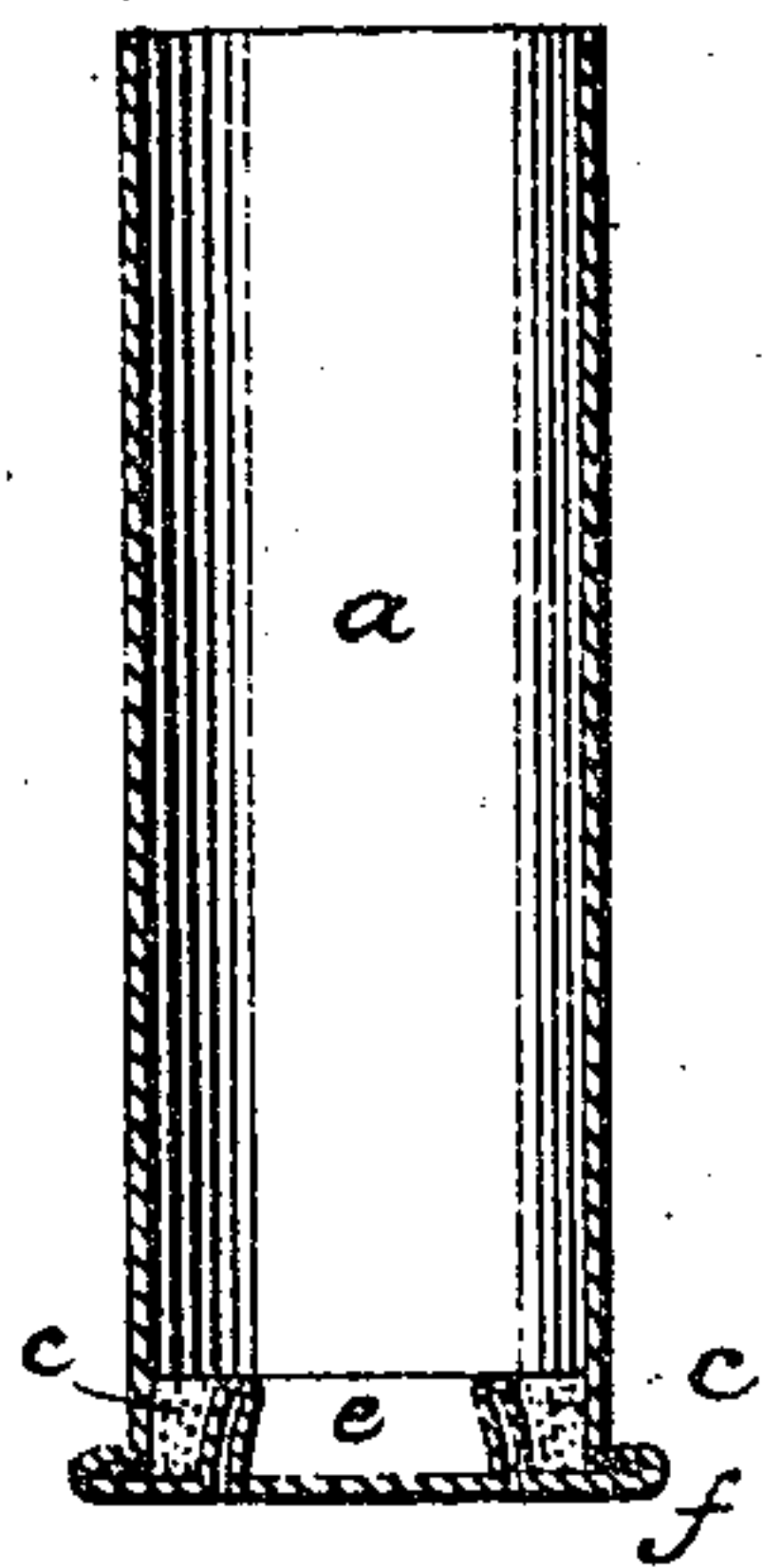


FIG. 2.

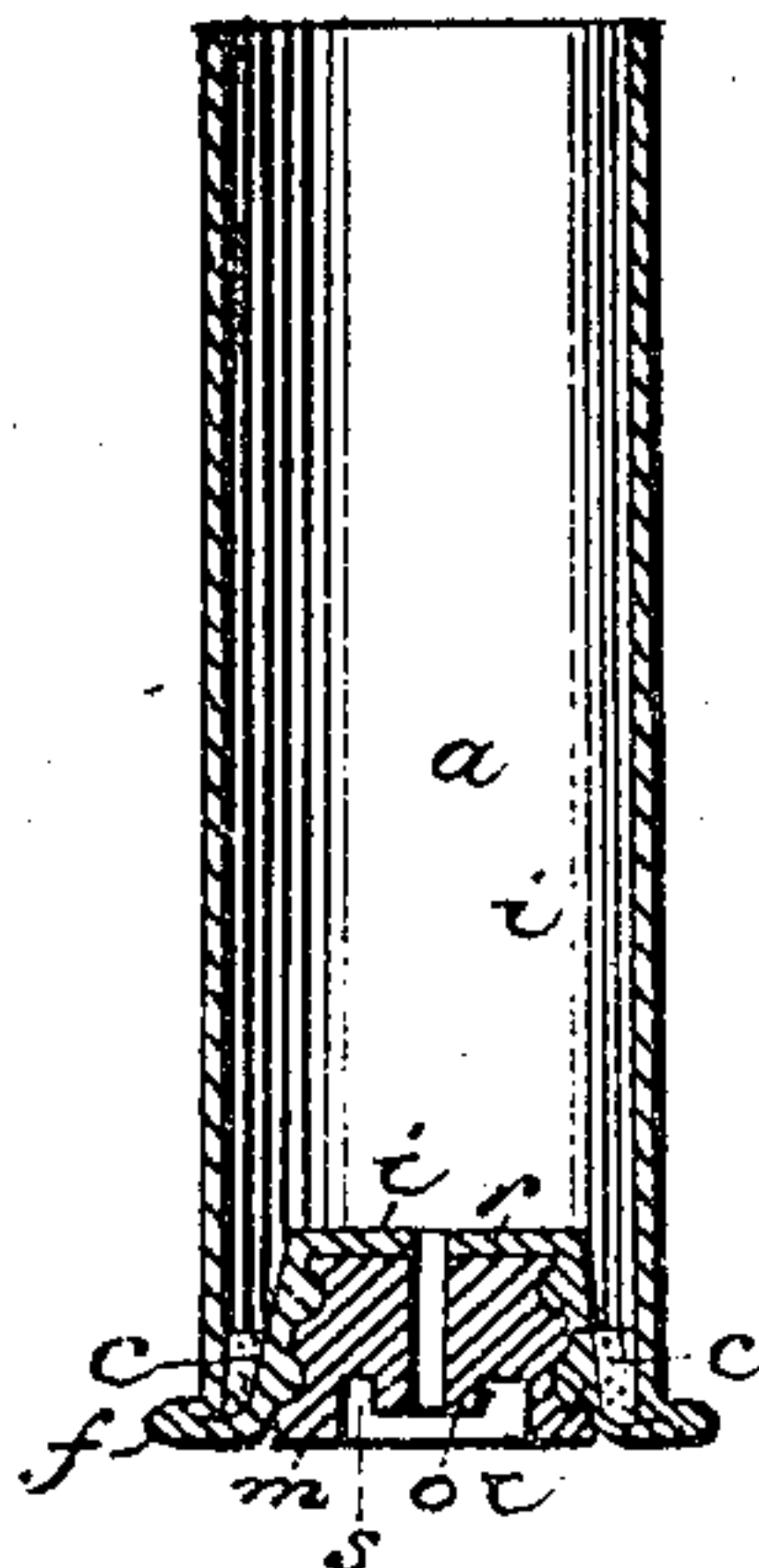


FIG. 5.

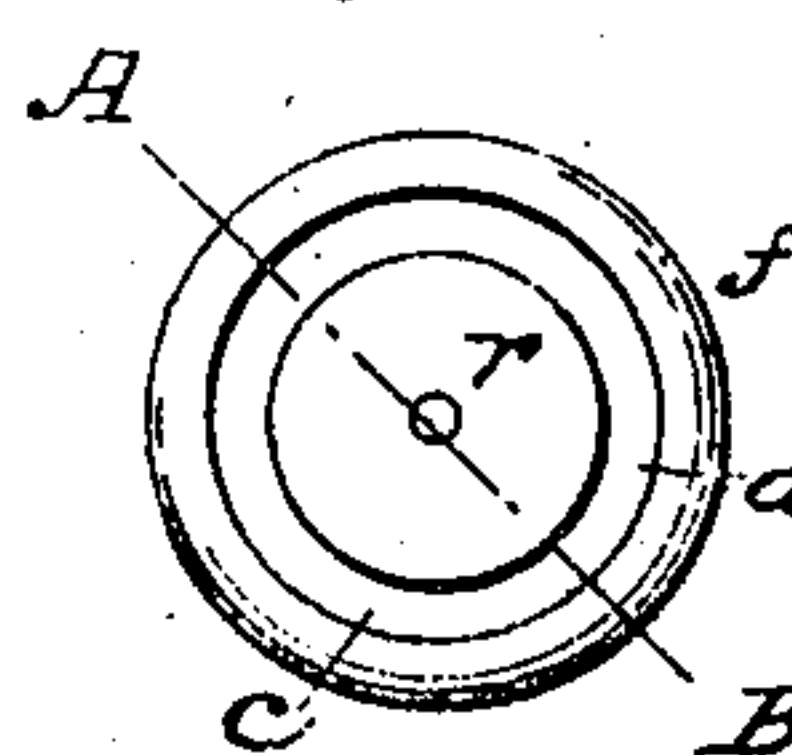
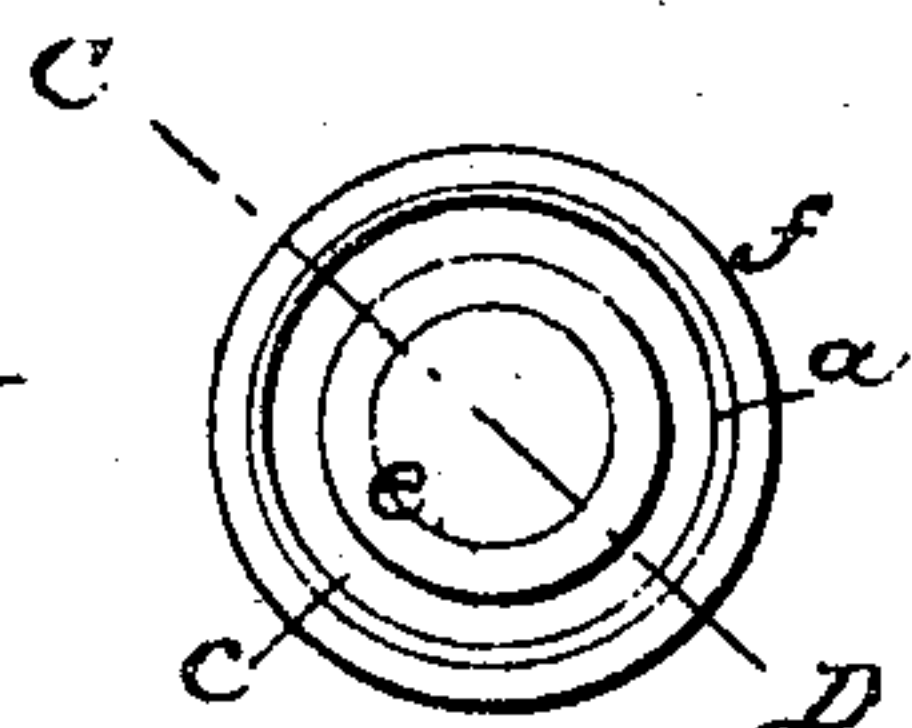
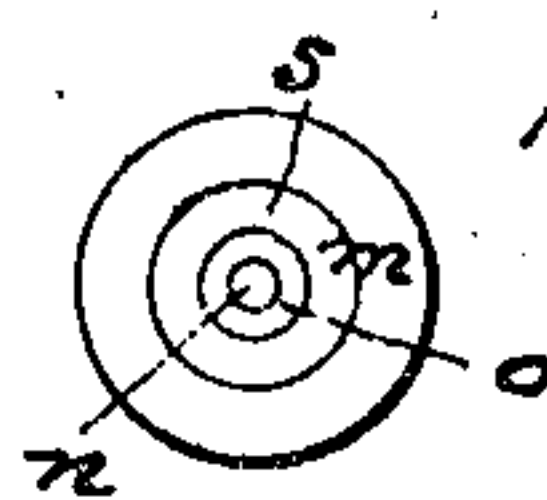


FIG. 1.

FIG. 4.



FIG. 3.



WITNESSES:

J. H. Curtis
Edmund Bennett

INVENTOR.

Edwin Martin

UNITED STATES PATENT OFFICE.

EDWIN MARTIN, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN METALLIC CARTRIDGES.

Specification forming part of Letters Patent No. 105,348, dated July 12, 1870.

To all whom it may concern:

Be it known that I, EDWIN MARTIN, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Metallic Cartridges; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the said invention, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view of the inside of a cartridge shell with my invention applied. Fig. 2 is a vertical longitudinal section of the same through line A B of Fig. 1. Fig. 3 is a plan view of the base or cone. Fig. 4 is a side elevation of the same. Fig. 5 is a plan view of another modification of my invention. Fig. 6 is a vertical longitudinal section through line C D of Fig. 5.

My invention relates to that class of metallic cartridges known as center-fire cartridges; and it consists in forming a metallic base of sufficiently hard metal, somewhat conical in form, and having any desirable number of grooves around its periphery set into a pocket or recess in the outside of the head of the shell, and securing it therein by forcing down the said pocket upon and around the said conical base, by which process the metal is forced into the annular grooves, thus securing the base within the recess. The base may be made of steel or iron, and upon the outer or large end is a recess, at the center of which recess is a nipple upon which to place a percussion-cap; and a perforation is made through the base at the center of the nipple, and into the interior of the shell through the bottom of the pocket; and my invention also consists in reinforcing the interior of the head of the shell with graphite or plumbago, pressed in firmly around the pocket which holds the conical base at the head of the cartridge, for the purpose of strengthening it, and preventing the gas from blowing through the head of the cartridge when it is exploded.

That others skilled in the art may be able to make and use my invention, I will proceed to describe its construction and the mode of its operation.

In the drawings, *a* represents the shell, in the head of which a recess or pocket is formed by forcing in the metal from the outside by means of a proper punch or tool, *r* being the extreme inner base of said recess, and *f* the ordinary flange at the head.

Fig. 3 represents a plan view of the outer end of the conical base *m*, in which *o* is a center projection or nipple, a perforation, *n*, at the center of said nipple, communicating with the interior of the shell, as shown in section in Fig. 2. The outer projection *m'* projects beyond the plane of the center projection or nipple *o*, so that the outer part *m'* serves as a guard to prevent the cap, when placed upon the nipple, from being exploded by any accidental blow.

The metallic base *m* has one or more annular grooves or channels *i* thereon, and is of a proper form to fit, in a measure, the recess in the head of the shell. The base *m* is placed within the pocket or recess, and a tool, having a cavity in the end, of a corresponding form to the exterior of the pocket or recess *r*, but a trifle smaller, is forced down upon the inside of the shell, so that the sides of the cavity in the tool are pressed hard against the exterior of the recess *r*, so that the metal at the side of the recess all around is forced hard against the metallic base *m*. This operation forces the metal at the sides of the recess, or a portion of it, into the annular grooves *i* firmly, so that the metallic base *m* cannot, by any ordinary process, be withdrawn from the recess. This forms a shell which may be loaded and fired as often as desirable.

I strengthen this shell, as well as any other having a projection, or a projecting pocket upon the interior of the head of the shell, in the following manner: I prepare graphite, by reducing it to powder, or grinding it, and place a suitable quantity within the shell, and then press it in firmly by means of a suitable tool, having an annular projection upon the end of sufficient face to cover the graphite at *c*, and force it in firmly.

Fig. 1 shows a shell having a pocket formed as described in Letters Patent granted to me, and dated March 23, A. D. 1869, numbered 88,191, but re-enforced with graphite, as herein described. This method of re-enforcing a

shell gives great strength to the head of the shell, and forms a most perfect gas-check, as the graphite, after being pressed in, is perfectly hard, and, as heat has no effect upon it whatever, it may be fired any number of times without deteriorating in the least.

It is evident that a shell having a metallic base, *m*, secured therein, as herein described, is operative as a shell, without the re-enforcement of graphite, which is represented in black at *c*, but this said re-enforcement is a valuable addition, as it renders any shell much more perfect and durable.

Whenever it is desirable to remelt the copper of which shells are made, having a graphite packing, it may be done, and, as heat will have no effect upon the graphite, it will of itself separate from the molten metal and remain on top, and may be easily removed. This is a great advantage over the use of different metals in the manufacture of shells, as the remelting of the same would form an alloy which injures its ductility in its manufacture into shells again.

I am aware that shells have been heretofore

made so that they could be fired and reloaded at pleasure; but never to my knowledge has the device herein shown and described been before known or used; and I am aware, also, that shells have heretofore been re-enforced or strengthened by various metallic devices; and I disclaim any and every device in which graphite is not used as a strengthening material; but—

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

1. The metallic perforated base *m*, having the nipple *o* thereon, and one or more annular grooves, *i*, when secured within the recess *r* at the head of the cartridge-shell, as described.

2. The re-enforcement of graphite, pressed firmly in at the interior of the head of the cartridge-shell, for the purpose and in the manner substantially as described.

EDWIN MARTIN.

Witnesses:

T. A. CURTIS,
OGDEN GRISWOLD.