

J. C. HOWE.

Cartridge.

No. 43,851.

Patented Aug. 16, 1864.

Fig. 1.



Fig. 2.

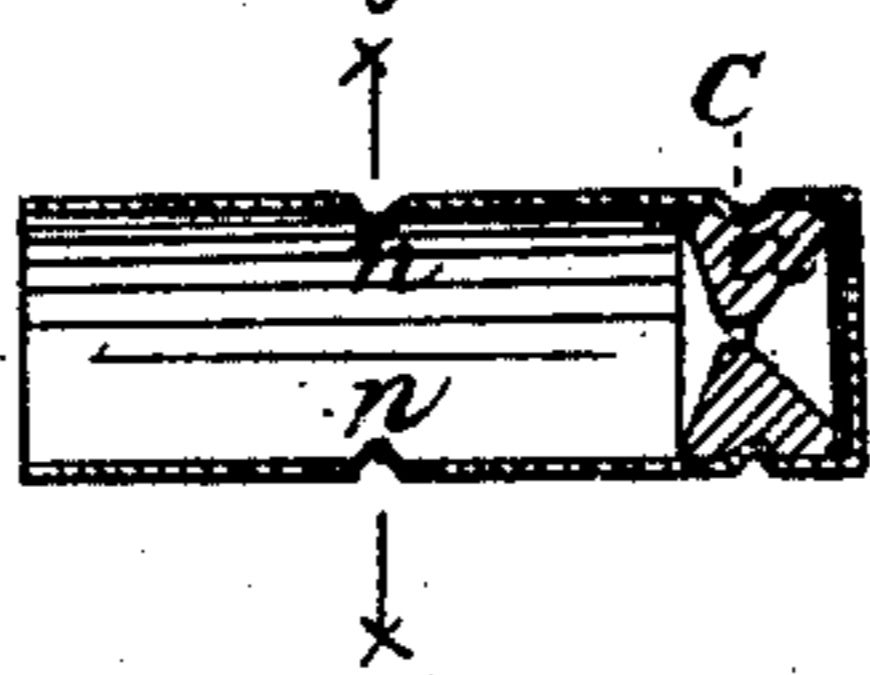


Fig. 3.



Fig. 5.



Fig. 4.



Fig. 6.



Inventor

Melville Biggs
C. J. Kemrick } Witnesses

John C. Howe

UNITED STATES PATENT OFFICE.

JOHN C. HOWE, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN METALLIC CARTRIDGES.

Specification forming part of Letters Patent No. 43,851, dated August 16, 1864.

To all whom it may concern :

Be it known that I, JOHN C. HOWE, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Cartridges for Fire-Arms; and that the following is a full, clear, and exact description of my said invention, reference being had to the accompanying drawing, in which—

Figure 1 represents a side view of a cartridge-case embodying my improvements. Fig. 2 represents a longitudinal section of the same on an enlarged scale, showing the primer at the butt. Fig. 3 represents a transverse section of the same at the line *xx* of Fig. 2. Fig. 4 represents a side view of a rod, on the same scale as Figs. 2 and 3, for withdrawing the cartridge-case from the chamber of the fire-arm. Fig. 5 represents an end view of the same; and Fig. 6 represents a side view of another form of cartridge-case embodying my improvements, with a portion of the butt removed to show its interior.

My invention is applicable principally to the cartridges which are used in repeating fire-arms.

The first part of my invention consists in combining a perforated diaphragm with the rear end of a cartridge-case, so as to strengthen the cartridge-case at that part.

The second part of my invention consists in constructing the cartridge-case with a groove in its periphery behind the position of the charge; and

The third part of my invention consists in constructing the cartridge-case with projections upon its interior, which projections may be used to form an abutment for the ball, or to engage with a rod by whose agency the cartridge-case may be withdrawn from the chamber of the fire-arm after firing the charge.

The cartridge-cases represented in the annexed drawing embody all parts of my invention. The shell of these cartridge cases is constructed of copper, with a perforated diaphragm, *a*, at the butt. This diaphragm is within the cartridge-case; separates the primer (represented in red) from the powder; it strengthens the rear end of the case and forms a species of anvil, on which the primer is sustained when struck by the hammer of the lock, so that any special arrangement of the

fire-arm for this last purpose is rendered unnecessary. It also, by filling up a portion of the case, protects that part from the explosive force of the charge, so that a portion of the wall of the chamber of the fire-arm opposite the diaphragm may be removed for any desirable purpose without incurring the risk of the swelling or bursting of the cartridge-case through the opening thus made when the charge is fired. The form of cartridge-case represented at Figs. 1, 2, and 3 is adapted to fire-arms in which the hammer of the lock strikes downward at an angle upon the corner of the cartridge-case. The form represented at Fig. 6 is adapted to a fire-arm in which the hammer strikes through a hole at the butt of the chamber of smaller diameter than the body of the cartridge.

In order to embody the second part of my invention, the rear end of the cartridge in these examples is formed with a groove, *c*, in its exterior. The groove in this position is useful for two purposes; it may be made use of to retain the cartridge in its place in the chamber, by engaging with an instrument which is arranged upon the fire-arm for that purpose. Moreover, as the metal of the cartridge-case is protuded inward by the formation of the groove, it may be made to constitute the means of securing the perforated diaphragm in its position, either by causing the indented material to enter into a corresponding groove in the periphery of the diaphragm, as at Fig. 2, or by locating the groove immediately in front of the diaphragm, as at Fig. 6. In case the instrument for engaging in the groove is located further forward on the fire-arm than the position of the diaphragm, a groove or indentation should be made in the cartridge-case opposite that point. There may then be one groove at the rear to hold the diaphragm, and another further forward to engage with the holding instrument. Each groove may be replaced by its equivalent, viz, one or more indentations, but I prefer the grooves.

In order to embody the third part of my invention, each cartridge-case is constructed in the present examples with two projections, *n n*, in its interior. These form an abutment against which the butt of a conical ball may set squarely, so that the powder may be left

loose behind it without any risk of the ball being set obliquely in the cartridge. They also constitute a means of engagement with a rod, by whose agency the cartridge-case may be readily withdrawn after its contents are discharged. The rod D is constructed with a grooved head, *t*, in such form that when turned to one position with reference to the projections *n* it will enter between them, and when so entered may be turned to engage the projections *n* of the cartridge-case in its grooves *s*. When this engagement is effected the withdrawal of the rod of necessity brings the cartridge-case with it. The construction of a cartridge-case in this manner, therefore, fits it for use in those fire-arms whose construction does not permit the cartridge-case to be pushed out of the chamber. It is not essential that there should be two projections to engage with the rod, as there may be more or less, provided the head of the withdrawing-rod is suitably formed to engage with them; but I prefer to have two, or, at most, three, projections. The easiest way of forming these projections with which I am acquainted is to indent the exterior of the cartridge-case, thus forcing the metal inward.

I prefer to manufacture my cartridge-cases of thin copper, with brass diaphragms, but any

other suitable material may be used for the purpose.

Having thus described two forms of cartridge-cases embodying my improvements, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a perforated diaphragm with the rear end of the shell of a cartridge-case in such manner that the diaphragm forms a perforated partition between the primer and the powder, is rigidly secured to the cartridge-case, so as to support the primer against the blow of the hammer, and by its breadth of rim protects the part of the cartridge-case surrounding it from the explosive force of the powder, substantially as set forth.

2. A cartridge-case constructed with a groove in its periphery behind the position of the charge, substantially as herein set forth.

3. A cartridge-case constructed with projections in its interior, substantially as herein set forth.

In testimony whereof I have hereunto subscribed my name.

JOHN C. HOWE.

Witnesses:

MELVILLE BIGGS,
E. S. RENWICK.