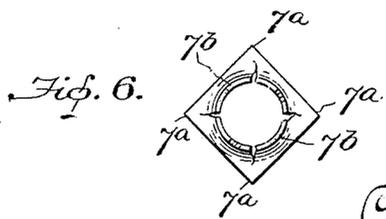
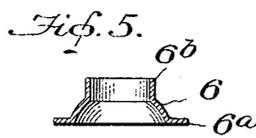
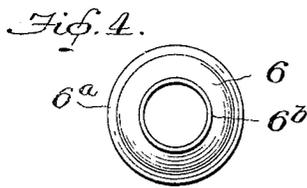
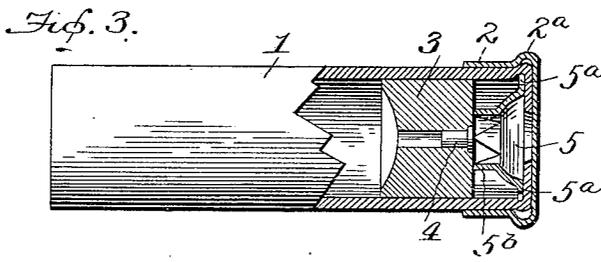
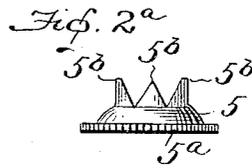
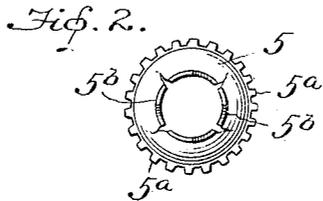
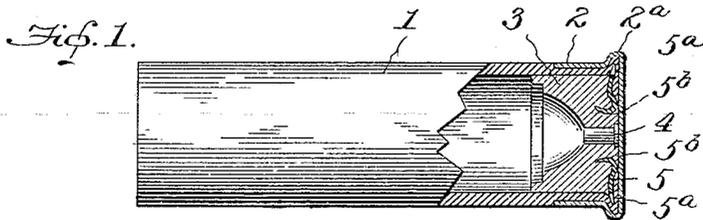


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CARTRIDGE.

APPLICATION FILED MAY 24, 1907.



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CARTRIDGE.

No. 865,979.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed May 24, 1907. Serial No. 375,434.

To all whom it may concern:

Be it known that I, CHARLES A. BAILEY, a citizen of the United States, residing at Cromwell, in the county of Middlesex and State of Connecticut, have invented certain Improvements in Cartridges, of which the following is a specification.

This invention is an improvement in cartridges, and relates more especially to the class of paper-tube cartridges or paper shot shells which are usually made up of a paper tube, metal cap and base wad, all intimately connected together.

In the use of cartridges of this construction it is not an uncommon thing for the joint or connection of the parts to become weakened or loose by the explosion of the charge, and when this occurs considerable difficulty is experienced in ejecting the parts of the empty shell from the fire-arm or gun, inasmuch as the paper tube is liable to separate and remain in the barrel of the gun.

The primary object of my invention, therefore, is to provide a simple, cheap and effective means for reinforcing the connection between the parts of a paper-tube cartridge or paper shot-shell, so that the parts will be firmly held in intimate engagement, and such engagement will not be affected by the explosion of the charge when the cartridge is in use.

With this primary object in view my present invention consists broadly in providing a paper-tube cartridge with a reinforce which engages in and securely connects the paper-tube and base-wad.

My invention further consists in the particular construction and application of the reinforce; all as hereinafter fully described and specifically set forth in the appended claims.

In the accompanying drawings, which form a part of this specification: Figure 1 is a sectional view, showing the application of my invention. Figs. 2 and 2^a are detail views showing the construction of the reinforce or metal connecting piece before the same is applied. Fig. 3 is a sectional view showing the manner of applying the reinforce or metal connecting piece. Figs. 4 and 5 are detail views showing a modified form of connecting piece. Fig. 6 is a view showing another modification.

Like numerals of reference indicate like parts in the several views of the drawings.

Referring to said drawings, 1 designates the paper-tube, 2 the metal cap, 3 the base-wad, and 4 the primer; the paper-tube, metal cap and base-wad being connected together in the usual manner by means of a press; and as shown in the drawings I prefer that the primer be embedded in the base-wad so as to lie within and be covered by the head of the metal cap, as shown in Fig. 1.

In carrying out my present invention I employ a metal connecting piece or annular disk 5, which is interposed between the base-wad 3 and paper-tube 1 so as to securely connect these parts together and also insure a more intimate engagement with the metal cap. As shown in Fig. 1 this metal piece or annular disk engages at its inner edge with the base-wad, being embedded therein, and at its outer edge with the crimped end of the paper-tube, said latter engagement forcing the crimped end of the tube into the bead or rim-flange 2^a of the metal cap. The provision of this metal piece therefore not only acts to securely connect the paper-tube and base-wad, but also serves to reinforce the engagement of the paper-tube with the bead or rim-flange of the metal cap, thereby stiffening and strengthening the parts at the points where they are most intimately connected.

In Fig. 1 of the drawings I have shown a complete cartridge or shell which embodies in its construction the reinforcing metal piece, and in which the parts have been connected together by means of a press, as is usual, and in Fig. 3 I have illustrated the several parts as they appear prior to the operation of the press; while in Figs. 2 and 2^a the preferred form of metal piece employed is shown in detail. In these figures of the drawings, as will be seen, the metal piece is provided at its outer edge with projections or teeth 5^a, and at its inner edge with upwardly-projecting teeth 5^b, the teeth 5^a being adapted to engage the crimped end of the paper tube, and the upwardly-projecting teeth 5^b being adapted to engage the rear end of the base-wad. By cupping up the metal reinforcing piece, as shown, it will be flattened out as the parts of the cartridge are pressed together, and in this operation, of course, the teeth will be forced into the paper tube and base-wad, the teeth which engage the crimped end of the tube forcing the latter into the rim flange of the metal cap, so that when said flange is further crimped it will securely connect these parts and the crimped end of the tube will be held in the bead or flange by means of the metal piece. The teeth at the inner edge of the metal piece will be embedded in the base-wad and serve to hold the latter in secure engagement with the other parts.

In Figs. 4 and 5 of the drawings I have shown a slight modification of the metal reinforcing piece, which consists in making the outer and inner edges plain instead of toothed, and, as will be obvious, in this instance the outer edge 6^a will engage the crimped end of the paper tube in the rim-flange of the metal cap, while the plain inner edge 6^b of this metal piece 6 will engage the base-wad, the said metal reinforcing piece

being flattened out in the same manner as hereinbefore described, and as illustrated in Fig. 1 of the drawings.

In Fig. 6 I have illustrated a further modification of the invention, which consists in making the metal reinforcing piece of a rectangular piece of metal, so that the corners 7^a will act as points or teeth in their engagement with the crimped end of the paper-tube, and in this instance the inner edge is formed with upwardly-projecting teeth 7^b.

In forming the upwardly-projecting teeth at the inner edge of the metal reinforce an ordinary punch may be used, such punch being also shaped to form the intermediate curved portion or dish.

From the foregoing it will be seen that the invention provides a metal connecting piece which will effectively reinforce and strengthen the connection of the parts of a paper-tube cartridge, and at little if any additional expense.

It will also be obvious that the shape of the metal reinforce or connecting piece may be varied without departing from the spirit and scope of the invention, or without sacrificing any of the advantages thereof.

Having thus described my invention, I claim:

1. In a cartridge, the combination with the paper-tube, metal cap and base-wad, of a metal reinforcing piece having teeth at one edge engaging the base-wad and teeth at the other edge which engage the paper tube. 25

2. In a paper-tube cartridge, the combination with the paper-tube, base-wad and metal cap, the latter having a rim-flange and the paper-tube crimped at its inner end, of an annular disk having teeth at its inner edge embedded in the base wad and at its outer edge engaging the crimped end of the paper-tube within the rim-flange of the metal cap. 30

3. In a paper tube cartridge, the combination with the paper-tube, metal cap and base-wad, the paper-tube having a crimped end and the metal cap a rim flange or bead, of an annular disk having teeth at its inner edge which engage into the base-wad and teeth at its outer edge which engage the crimped end of the paper tube within the rim-flange or bead of the metal cap. 35 40

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. A. BAILEY.

Witnesses:

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MAUDE E. BAILEY.