

No. 865,853.

PATENTED SEPT. 10, 1907.

C. A. BAILEY.
CARTRIDGE.

APPLICATION FILED APR. 2, 1907.

Fig. 1.

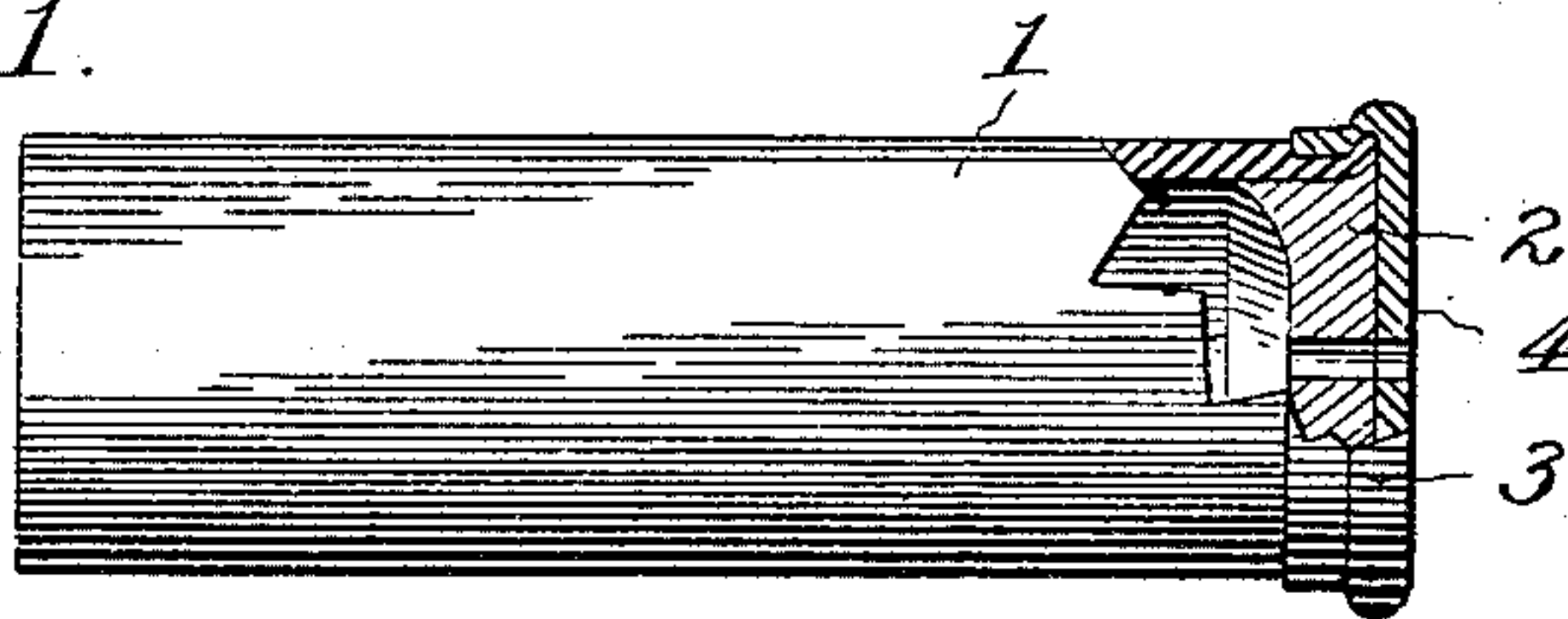


Fig. 2.

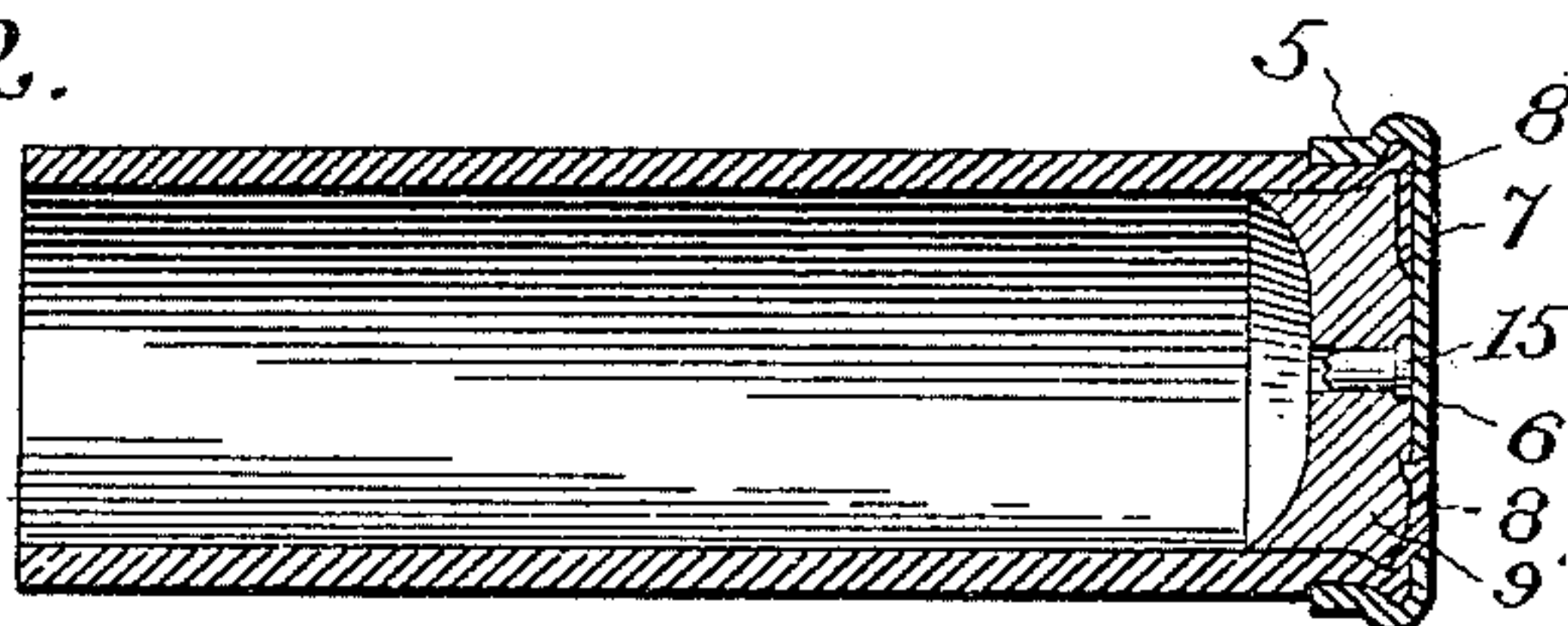


Fig. 3.

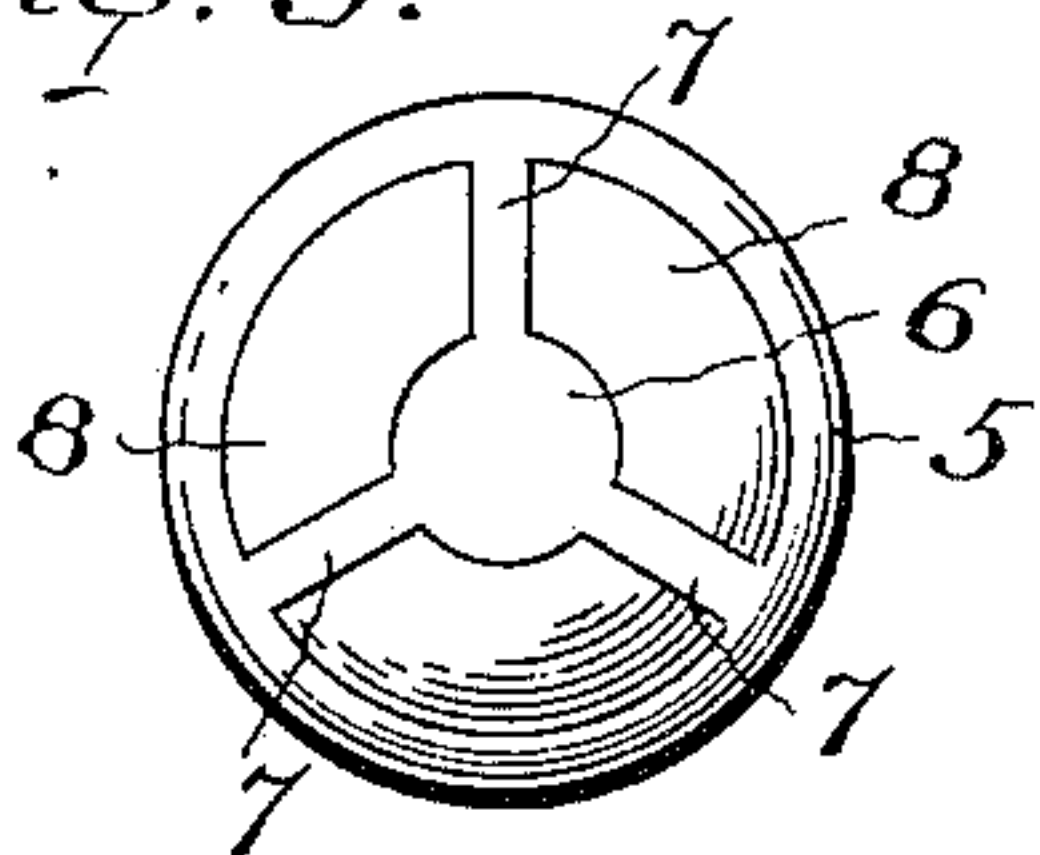


Fig. 4.

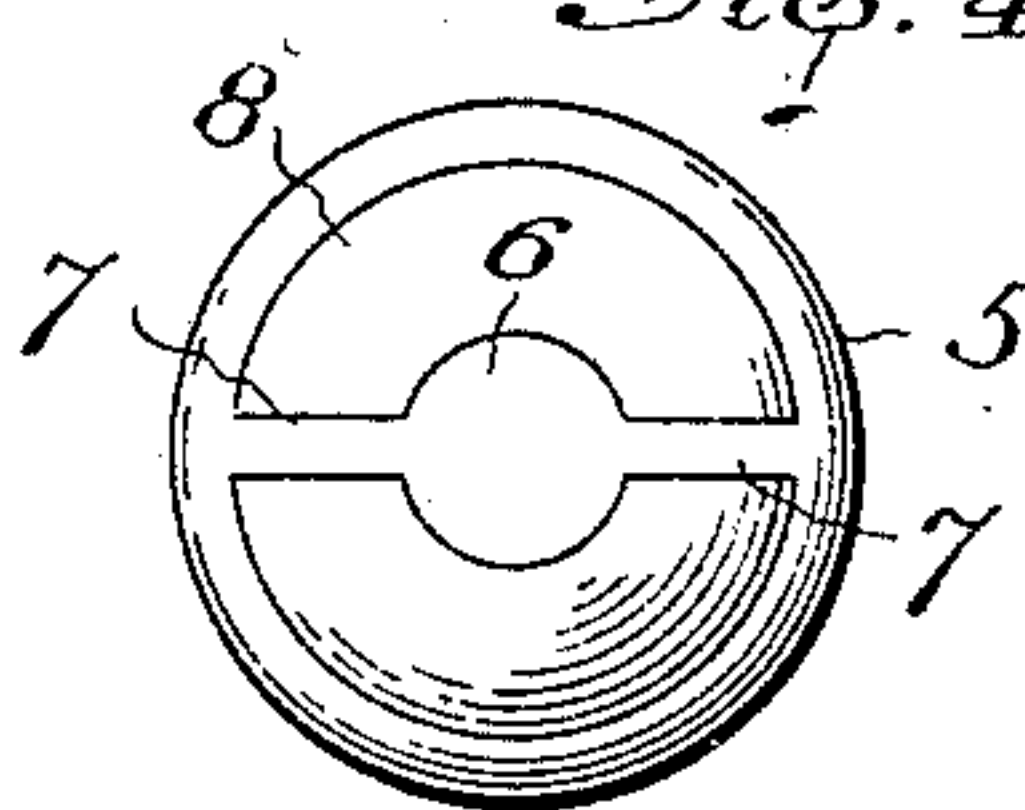


Fig. 5.

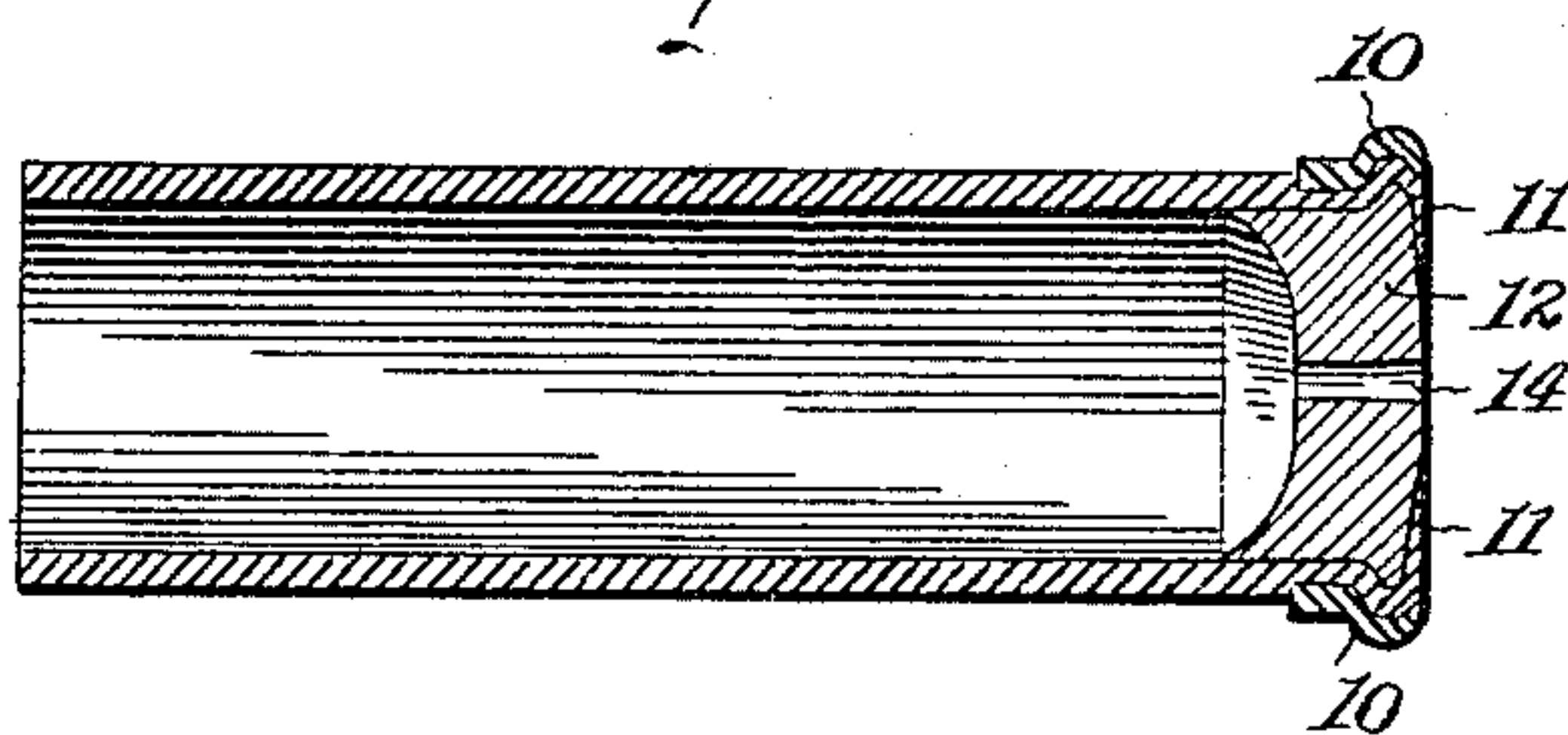
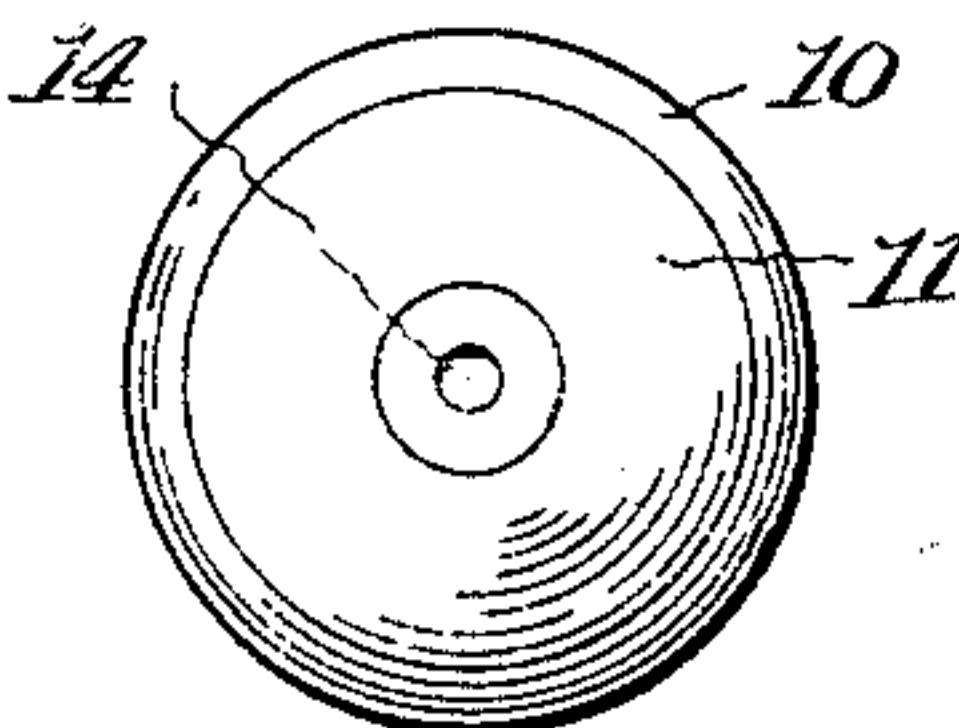


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

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CARTRIDGE.

No. 865,853.

Specification of Letters Patent.

Patented Sept. 10, 1907.

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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
5 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 shot-shells which are made up of a paper tube, a metal cap, and a
10 base-wad, which are connected together so that the paper tube is securely clamped between the base-wad and metal cap.

In the construction of this class of cartridges or paper shot-shells it is customary to make the same slightly
15 smaller than the bore of the gun in which they are used, so that they will slip easily into the gun, and I have found that when the cartridge is exploded the paper tube often bursts or breaks at the edge of the rim of the metal cap. This is apparently due to the fact that the
20 paper tube expands beyond the rim of the metal cap and the failure of the latter to expand with the paper tube is due to the fact that it is reinforced by the solid head.

It is the purpose of my invention, therefore, to so construct the metal cap that it will readily expand with
25 the paper tube, and at the same time provide that the said cap will securely connect the paper tube and wad.

Other though minor objects of my invention will hereinafter appear, and what I claim as new and desire to secure by Letters-Patent will be specifically set forth
30 in the appended claims.

In the accompanying drawings, which form a part of this specification:— Figure 1 is a side view, partly in section, showing the ordinary form of paper-tube cartridge or paper shot-shell. Fig. 2 is a longitudinal sectional view through a paper-tube cartridge constructed
35 in accordance with my invention. Fig. 3 is a rear end view of my improved cartridge. Fig. 4 is a slight modification of the form shown in Figs. 2 and 3. Figs. 5 and 6 illustrate a further modification of the invention.

The form of cartridge illustrated in Fig. 1 is that usually employed, and consists of the paper-tube 1, base-wad 2 and metal cap 3, and as is usual the inner crimped end of the paper-tube is clamped between the base-wad and metal cap, the latter having the solid
45 head 4. These cartridges are usually made of slightly smaller diameter than the bore of the gun in which they are used, and as a consequence when the cartridge is exploded the paper tube 1 expands beyond the rim of the metal cap 3 and results in breaking or
50 bursting the tube at the edge of said rim, so that said paper tube is liable to break apart in extracting the empty shell. In carrying out my invention, therefore, I construct the metal cap so that it will comprise the rim 5, center piece 6, and connecting pieces 7, all
55 in one piece, whereby the head of the cap is cut away sufficiently to permit the rim 5 to readily expand and

yet offer a sufficient protection for securing the paper tube 8 and base-wad 9. This is the preferred construction, and it will be readily seen that when the cartridge is exploded the rim 5 will quickly expand in the bore
60 of the gun and so that the paper tube cannot therefore expand beyond the same.

In making up the cartridge the parts are clamped in the usual press, and in this operation the crimped end of the paper tube 8 is pressed out in the openings
65 formed in the head of the metal cap, as shown in Fig. 2, and indicated in Figs. 3 and 4, and this of course serves to more securely connect the parts of the cartridge or shell together, for which purpose the edges of said openings are beveled outward, as shown. In this form of
70 construction, also, the center piece 6 serves to cover and protect the primer 15, which latter is embedded in the base wad in the rear of said center piece.

In some instances, and as shown in Figs. 5 and 6, I purpose that the metal cap comprise simply a metal
75 rim 10, between which and the base-wad 12 the crimped end of the tube 11 is clamped, and said crimped end of the paper tube is extended beyond the edges of the metal cap and may be glued to the base-wad so as to adhere closely thereto. In this form of construction
80 the base-wad is provided with the usual opening 14 to receive the primer. It will be obvious therefore that in each instance the metal cap will quickly expand with the paper tube so as to prevent any fracture of the latter at the inner edge of the metal rim; and, also, that
85 in the forms shown in Figs. 2, 3 and 4 the connection of the metal rim to the other parts is reinforced by the skeleton head comprising the center 6 and connecting pieces 7 beveled as shown, so that the said cap will have the required holding capacity.
90

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

1. In a paper-tube cartridge, the combination with the paper-tube and base-wad, of a metal cap comprising a rim and skeleton head, whereby said rim is permitted to
95 expand with the paper-tube, substantially as described.

2. In a paper tube cartridge, the combination with the paper-tube and base-wad, of a metal cap comprising an expandible rim and skeleton head, the latter having a center piece, substantially as shown and described.
100

3. In a paper-tube cartridge, the combination with the paper-tube and base-wad, of a metal cap comprising a rim 5, center piece 6 and connecting pieces 7, the edges of the center piece and connecting pieces being beveled outward, substantially as shown and for the purpose set forth.
105

4. In a paper-tube cartridge, the combination with the paper-tube and base-wad, of a metal cap comprising an expandible rim 5, center piece 6 and connecting pieces 7, and a primer embedded in the base-wad in the rear of the center piece, substantially as shown and described.
110

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

CHAS. A. BAILEY.

Witnesses:

THOS. W. BEAUMONT,
ARTHUR BOARDMAN.