

(No Model.)

H. G. PIFFARD.

CARTRIDGE SHELL.

No. 272,581.

Patented Feb. 20, 1883.

Fig. 1.

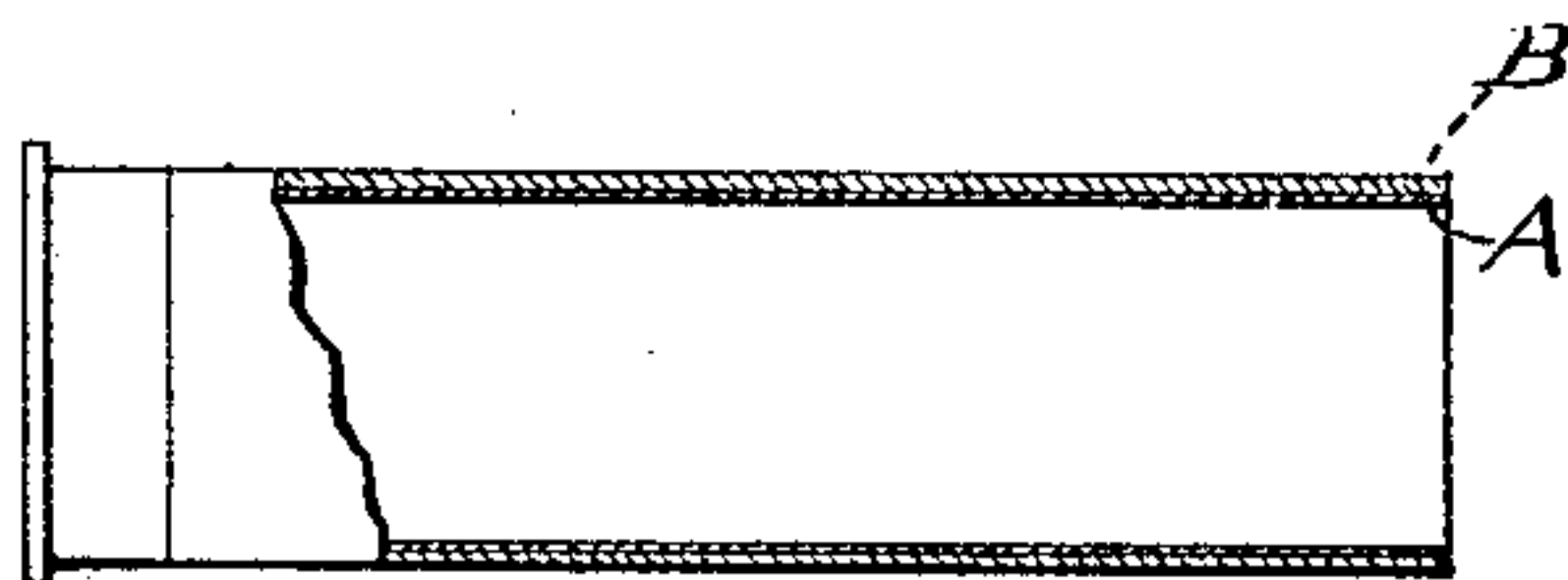
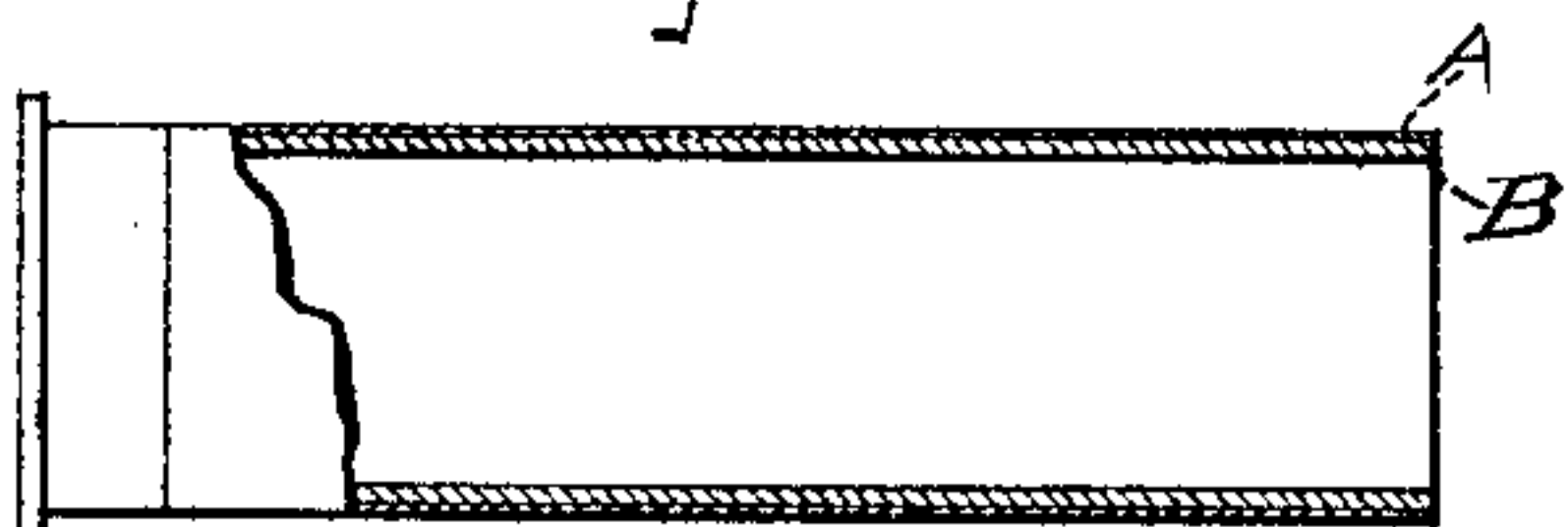


Fig. 2.



ATTEST:

J. A. Mudd
Thomas Dooney

INVENTOR:

H. G. Piffard
by H. C. Townsend
Att'y

UNITED STATES PATENT OFFICE.

HENRY G. PIFFARD, OF NEW YORK, N. Y.

CARTRIDGE-SHELL.

SPECIFICATION forming part of Letters Patent No. 272,581, dated February 20, 1883.

Application filed November 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. PIFFARD, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cartridge-Shells for Shotguns, of which the following is a specification.

My invention relates to cartridge-shells for breech-loading shotguns; and its object is to produce a rechargeable shell having all the advantages of both paper and metal shells with the defects of neither, and at the same time adapted for use with breech-loading shotguns whose barrels and chambers are of the standard size or caliber.

My invention consists of a cartridge-shell for a breech-loading shotgun, having an interior cylindrical portion of metal sufficiently thin to be readily crimped or compressed, and of an internal caliber corresponding properly to the bore of the gun with which it is intended to be used, and an exterior covering of paper or similar material, the exterior caliber of which shall be such that it will properly fit the chamber of the gun. As an equivalent I may employ an exterior cylinder of thin metal, thin enough to be readily compressed and of an exterior caliber to fit properly the chamber of the gun, said cylinder being provided with a lining of paper or other suitable material, the interior caliber of which is the same as the caliber of the barrel of the gun with which the shell is to be used. Shells made entirely of paper possess the advantages of lightness, adaptability for crimping, so that they will securely retain the wad, and can be made, without sacrifice of lightness, sufficiently strong and of such thickness that they will not only fit snugly into the shell-chamber of the gun with which they are to be used, but that their bore will coincide perfectly with the bore of the gun-barrel. They are, however, neither waterproof nor durable, and they have been found in practice not to shoot as well as metal shells. On the other hand, a metal shell, if of the proper size to fit the shell-chamber of the ordinary shotgun, cannot be made to coincide as to its interior bore with the bore of the gun unless it is made so thick as to be fatally cumbersome and heavy, and to be also incapable of being crimped or bent to retain the wad. At

the same time, if it be made thin so as to be light and compressible or capable of being crimped, its interior bore will not coincide with the gun-bore in guns having shell-chambers of the ordinary diameter suited to paper shells, and its wad will therefore be slightly larger than the bore of the gun-barrel, so as to impair the shooting qualities of the gun, while if a shell of proper internal caliber to correspond with the bore of the gun be used said shell will be too large for the chamber. To overcome these objections to the use of thin metal shells, it has been proposed to either bush the chamber of the gun or to rebores the barrel; but such practice is expensive as well as objectionable on other accounts.

My invention overcomes these difficulties, secures the qualities of lightness, ductility, imperviousness to moisture, improved shooting, owing to the use of metal, and adaptability to guns having shell-chambers and bores whose diameters have the ordinary relation suited for the use of paper shells.

In the drawings, Figure 1 is a longitudinal section of a shell embodying my invention. Fig. 2 is a similar view of the modification.

In Fig. 1, A indicates the metal portion of the shell, made, if desired, of sheet metal, and sufficiently thin to be readily compressed or crimped at or near its end, so as to retain the wad and charge. Its interior diameter is the same or substantially the same as the caliber of the barrel of the gun with which it is intended to be used. Its exterior caliber is less than that of the chamber of the gun with which it is intended to be used, whereas in the case of the ordinary thin metal shell as used the exterior caliber should properly correspond with the caliber of the chamber.

B indicates a layer of paper applied to the exterior of the metal in any suitable manner, and of sufficient thickness to cause the completed shell to properly fit the shell-chamber. This layer may consist of a sheet of paper wrapped upon the metal or of a shell of paper made in any way known to the paper-making art and afterward slipped upon the metal shell and cemented in place; or it may be made by applying a layer of paper-pulp of the requisite thickness to the metal shell and finishing in any proper way. Instead of paper, any other material may be used, which, by reason of its

lightness and its ductility or compressibility, would be suited to the purposes of my invention.

5 In Fig. 2 the paper is upon the interior of the thin metal cylinder. The exterior caliber of the latter in this case corresponds with the caliber of the chamber; but its interior caliber is less than that of the gun-barrel. The interior lining of paper is, however, of such a thick-
10 ness as to give to the completed shell an interior caliber the same as that of the barrel.

What I claim as my invention is—

A cartridge-shell for breech-loading shot-guns, composed of an interior cylinder of metal

sufficiently thin to be readily crimped or com- 15 pressed, the interior caliber of which shall properly correspond to the bore of the barrel of the gun with which it is intended to be used, and having an exterior paper or similar covering the exterior caliber of which shall be such that 20 it will properly fit the chamber of the gun.

Signed at New York, in the county of New York and State of New York, this 18th day of November, A. D. 1882.

HENRY G. PIFFARD.

Witnesses:

H. C. TOWNSEND,
THOMAS TOOMEY.