

UNITED STATES PATENT OFFICE.

THOMAS G. BENNETT, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
WINCHESTER REPEATING ARMS COMPANY, OF SAME PLACE.

SHELL.

SPECIFICATION forming part of Letters Patent No. 472,782, dated April 12, 1892.

Application filed January 4, 1892. Serial No. 416,941. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. BENNETT, of New Haven, in the county of New Haven and State of Connecticut, have invented a new
5 Improvement in Cartridge-Shells; 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
10 same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in central longitudinal section of a cartridge-shell constructed in accordance with my invention; Fig. 2, a detached plan view of a pocket and primer
15 thereof; Fig. 3, a sectional view of modified forms which the pocket and primer may assume.

My invention relates to an improvement
20 in metallic cartridge-shells particularly designed for small cannon, the object being to furnish them with expansion room to be filled by the displacement of metal resulting from the explosion of the charge, whereby the shell
25 will be made gas-tight, and the escape through the head of the shell of any of the gases generated by the explosion of the charge prevented.

With these ends in view my invention consists in a cartridge-shell having a central perforation formed in its head, a pocket located in the said perforation, and a primer located within the pocket, one, two, or all of the said
30 parts being constructed with an expanding space.

The heavy cast-metal shell A has its head provided with a central perforation B, enlarged at its outer end to form a shoulder b and having its wall recessed about midway of
40 its length to form the annular expansion-space C. This perforation receives the metallic pocket D, which is struck up from suitably-heavy sheet metal, and constructed with a central cone d with a flange d', which engages
45 with the shoulder b of the perforation and with

an annular clearance-space E formed about midway of its length in its outer face. The cup-shaped primer F is struck up from sheet metal and adapted in its external diameter to fit closely within the pocket, with its edges
50 downward over the cone d, before mentioned. The outer face of this primer is constructed with an annular clearance-space G. It will thus be seen that, as shown in Fig. 1 of the drawings, the cartridge is provided with three
55 aligned clearance-spaces, which afford room for the displacement of metal into them when the charge is exploded, whereby the shell will be made gas-tight so far as the escape of gas backward through its head is concerned. It
60 is not necessary that the shell pocket and primer be furnished with clearance-spaces, for it will suffice to construct one or two of the said parts with such spaces. As shown in Fig. 3 of the drawings, the inner face of
65 the pocket H is provided with an annular clearance-space H', the primer I in this case being made as usual. I would therefore have it understood that I do not limit myself to the exact construction herein shown and de-
70 scribed, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

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

A cartridge-shell having a central perforation in its head, combined with a pocket set in said perforation and a primer in said
80 pocket, one or more of the parts constructed with an annular expansion-space between it and the adjacent surface of another part, substantially as and for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscrib-
85 ing witnesses.

THOMAS G. BENNETT.

Witnesses:

DANIEL H. VEADER,
CHAS. H. MEIGS.