(No Model.)

H. A. SANFORD.

WAD SETTER FOR PAPER SHELL CARTRIDGES.

No. 497,103. Patented May 9, 1893.

Fig. 1

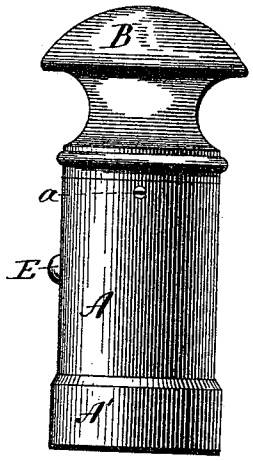


Fig. 2

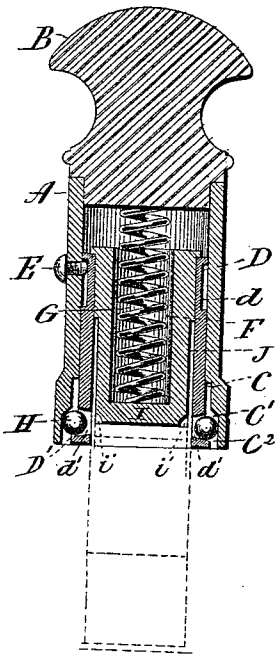


Fig. 3

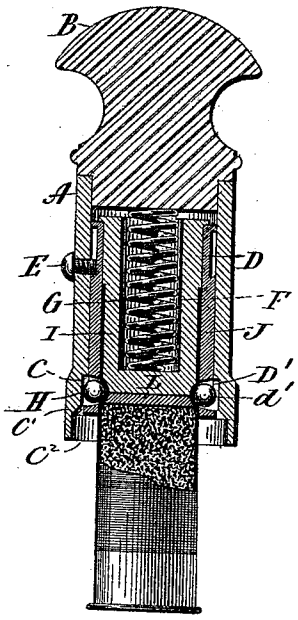


Fig. 5

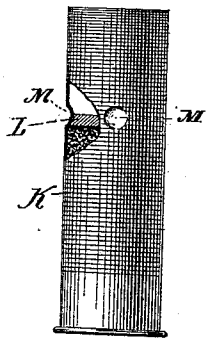
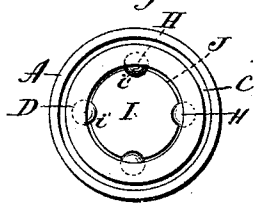


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

HOPKINS A. SANFORD, OF DERBY, CONNECTICUT, ASSIGNOR OF ONE-HALF TO FRANK KNIGHT, OF SAME PLACE.

WAD-SETTER FOR PAPER-SHELL CARTRIDGES.

SPECIFICATION forming part of Letters Patent No. 497,103, dated May 9, 1893.

Application filed December 19, 1892. Serial No. 455,636. (No model.)

To all whom it may concern:

Be it known that I, HOPKINS A. SANFORD, of Derby, in the county of New Haven and State of Connecticut, have invented a new Improvement in Wad-Setters for Paper-Shell Cartridges; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of a wad-setter constructed in accordance with my invention; Fig. 2, a view thereof in central longitudinal section with a loaded shell in the position it has therein, just before the plunger is moved inward; Fig. 3, a similar view with the shell driven home into its final position in the device and indented; Fig. 4, a view of the device in transverse section on the line *x*—*x* of Fig. 2, looking inward; Fig. 5, a broken view of a shell after its wad has been set in my improved device.

My invention relates to an improvement in loading implements for small arms, and more particularly to devices for setting or securing wads in place in paper-shell cartridges for shot-guns, the object being to produce for the purpose described, a small, durable, convenient and effective device, comprising few parts, and adapted to do the work so that the shell will discharge well, and so that it may be used over and over again before it is thrown away.

With these ends in view, my invention consists in the combination, in a wad-setter, of a case provided at one end with a handle, and having a bevel located just within its open opposite end; of a spring-actuated plunger located within the case, and constructed at its outer end with one or more lateral openings to confine one or more balls within the range of the said bevel, and an anvil located within the plunger, encircled by a chamber adapted to admit the open end of a shell, and having its face cut away in conformity with the said opening or openings in the plunger, to permit the ball or balls to move inward onto the shell when the inward movement of the plunger throws them upon the said bevel.

My invention further consists in a wad-setter having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention, I construct a cylindrical case A, of metal, and secure a handle or knob B, within one of its ends by means of screws *a*. The opposite, open end of the case is enlarged, as at A′, and constructed within to form a shoulder C, as bevel C′, and a clearance-space C^2, the said features succeeding each other in the order named, from the interior of the case outward. Within this case I locate a plunger D, which is encircled at its inner end by a wide groove *d*, which receives a retaining-screw E, extending inward from the case, in which the plunger is thus retained with a capacity for longitudinal movement therein, corresponding to the width of the groove, and free to rotate. The inner end of the plunger is also constructed with a longitudinal chamber F, which receives a coiled spring G, the respective ends whereof abut against the bottom of the chamber, and the inner end of the handle or knob B, whereby it exerts a constant effort to maintain the plunger in its normal position, in which its outer end stands just within the open end of the case, as shown by Fig. 2 of the drawings. The plunger is constructed at its outer end with a broad shoulder D′, which as herein shown, has four transverse openings *d*′ formed at equidistant points from each other, to receive as many balls H. I do not limit myself, however, to using any number of balls, for one or more may be used, as desired. The number of openings *d*′, will of course conform to the number of balls used. It will be noticed that the said openings are slightly tapering in form, being a little smaller at their inner than at their outer ends, whereby the balls are caused by the action of gravity, to normally roll out into the clearance space C^2, formed in the outer end of the case A, as shown by Fig. 2 of the drawings, the balls being then partly within the said openings, and partly in the said space. Within the outer end of the plunger, there is located an anvil

I, encircled by an annular space J, which is adapted in its dimensions to receive the open end of a paper-shell cartridge. The face of this anvil is notched or grooved, as at *i'*, at points opposite the openings *d'*, before mentioned, to afford clearance to the balls H, when they are forced to move inward by their contact with the bevel C', which pulls them toward each other when the plunger is moved inward in the case.

In setting the wad of a cartridge with my improved device, the open end of the cartridge-shell is inserted into the space J of the device, over the anvil I, thereof. Then when the wad comes in contact with the face of the anvil, the plunger will be moved inward, causing the balls H, to be forced against the bevel C', which will draw them inward onto the shell, sufficiently to form one or more smooth, round indentations in the same according as one or more balls are used, at a point just in advance of the wad, as shown by Fig. 5 of the drawings, in which the shell is represented by K, the wad by L, and the indentations by M. The indentations thus produced in the shell are small, and in form cup-shaped. They do not cut the shell, nor do they weaken the same so but what it may be used over and over again, nor do they appreciably interfere with the discharge of the charge, whereas when the shells are indented and cut, or longitudinally crimped, as has been done heretofore, the discharge of the charge is not only interfered with, but the shells are so weakened that they cannot be used over and over, and oftentimes they are destroyed with one use. The indentations are always formed at just the right point in the shell, because their position is determined by the wad, for the plunger does not move inward and bring the balls into action, until it is pushed by the impingement of the wad on the anvil. The space J, is on this account made so deep that its bottom will never be reached by the edge of the shell, for if that occurred, the plunger might be pushed inward before the wad had been engaged with the anvil, and the indentations would be formed out of place.

I would have it understood that I do not limit myself to the exact construction herein shown and described, but hold myself at liberty to make such changes and alterations therein 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 Patent, is—

1. In a wad-setter, the combination with a case provided at one end with a handle, and having a bevel located just within its open opposite end; of a spring-actuated plunger located within the case, and constructed at its outer end with one or more lateral openings to confine one or more balls within the range of the said bevel, and an anvil located within the plunger, encircled by a chamber adapted to admit the open end of a shell, and having its face cut away in conformity with the said opening or openings in the plunger to permit the ball or balls to move inward onto the shell when the inward movement of the plunger throws them upon the said bevel, substantially as described.

2. In a wad-setter, the combination with a case provided with a handle and constructed at its open opposite end with a shoulder, a bevel and a clearance space; of a spring-actuated plunger located within the case, and constructed at its outer end with an annular shoulder having one or more lateral openings to confine one or more balls within the range of the said bevel, an anvil located within the plunger, encircled by a chamber adapted to admit the open end of a shell, and having its open end notched or grooved in conformity with the said openings in the plunger to permit the balls to move inward on the shell when the inward movement of the plunger throws them onto the said bevel, substantially as described.

3. In a wad-setter, the combination with a case, provided at one end with a handle, and having a bevel located just within its opposite open end, of a plunger located within the case, having its inner end chambered to receive a spring, and encircled by a wide annular groove to receive a retaining-screw, which projects inward from the said case, and constructed at its outer end with one or more transverse openings to confine one or more balls within the range of the said bevel, and an anvil located within the plunger, encircled by a chamber adapted to admit the open end of a shell, and having its face cut away to permit the ball or balls to move inward onto the shell when the inward movement of the plunger throws them onto the said bevel, substantially as described.

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

HOPKINS A. SANFORD.

Witnesses:
WM. KNIGHT,
JOHN BRAY.