(No Model.)

W. H. NICHOL.

CARTRIDGE SHELL CRIMPER.

No. 510,187. Patented Dec. 5, 1893.

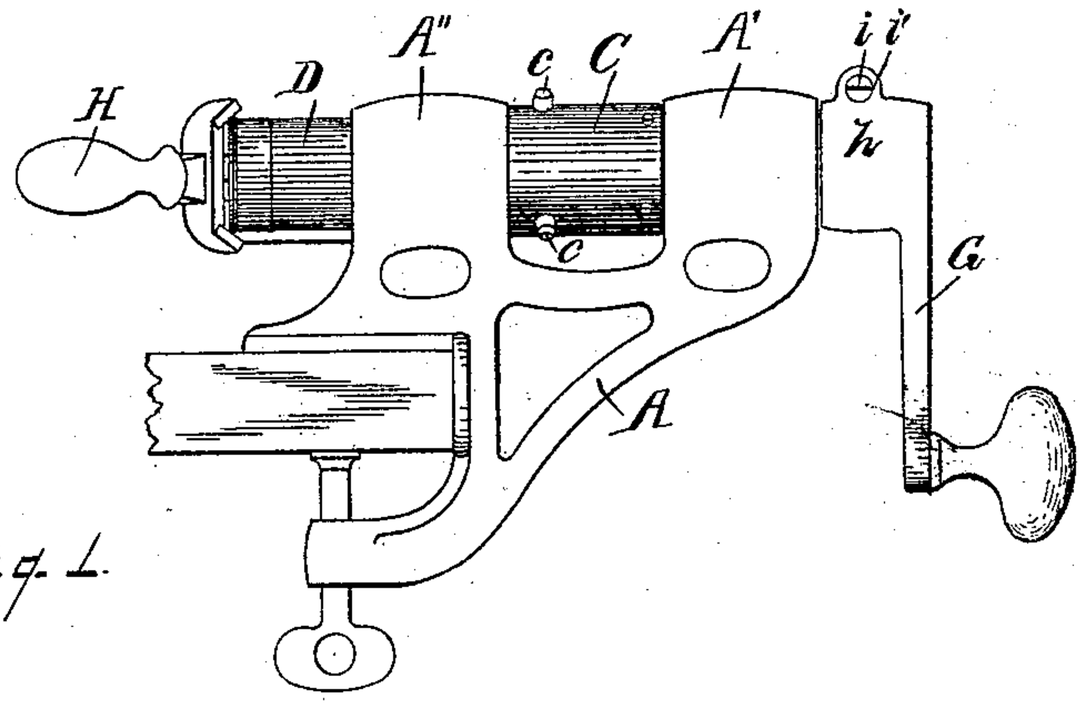

Fig. 1.

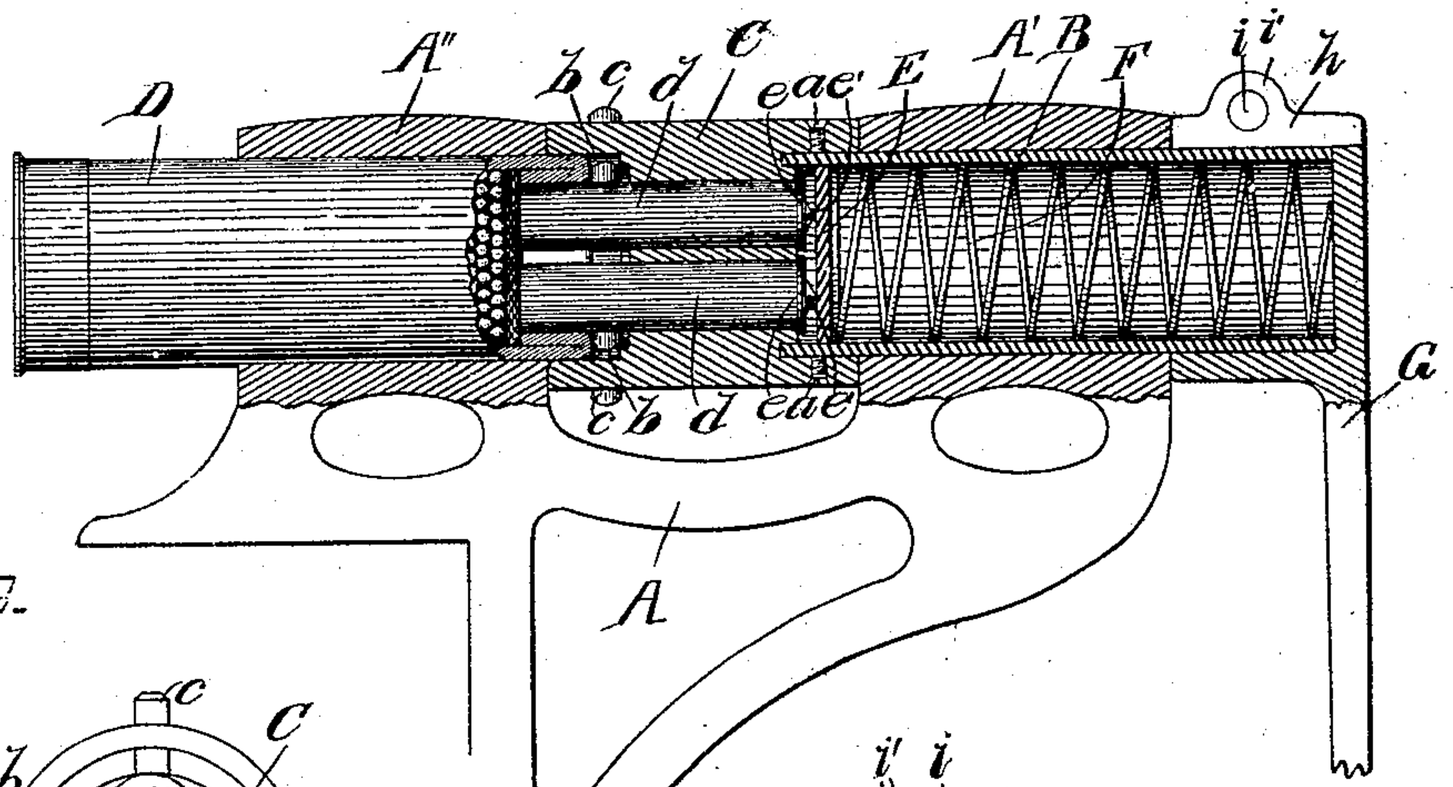

Fig. 2.

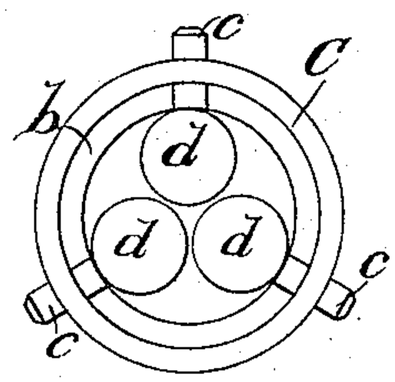

Fig. 4.

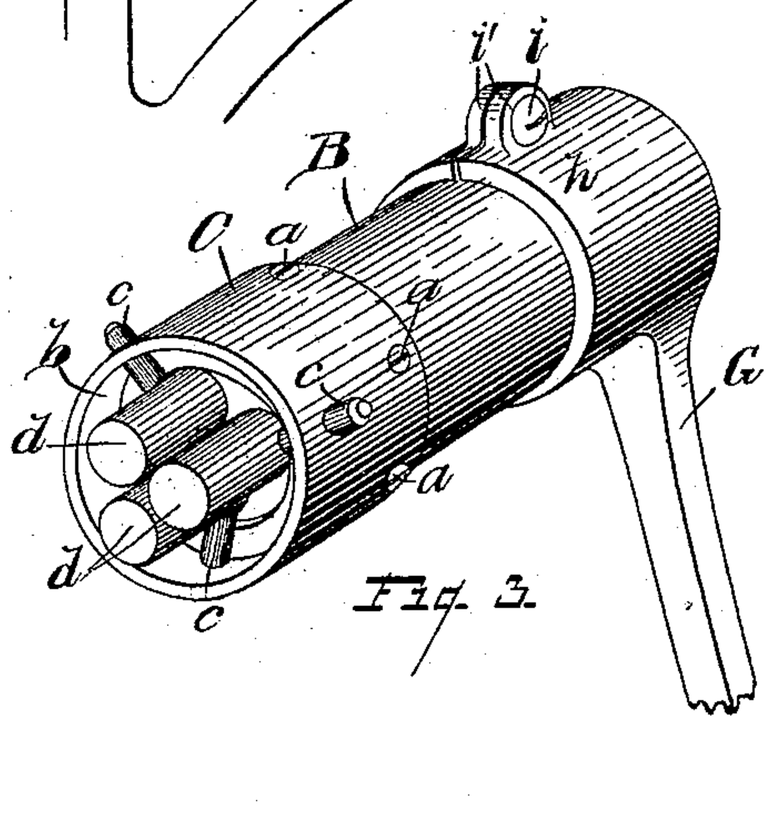

Fig. 3.

WITNESSES.

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CARTRIDGE-SHELL CRIMPER.

SPECIFICATION forming part of Letters Patent No. 510,187, dated December 5, 1893.

Application filed March 30, 1893. Serial No. 468,402. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. NICHOL, a citizen of Canada, residing at Chatham, in the county of Kent, Province of Ontario, Canada, have invented certain new and useful Improvements in Cartridge-Shell Crimpers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in tools for crimping cartridge shells, and especially to that portion of the tool called the "crimping-head," in which the unfilled extremity of the cartridge shell is caused to be turned inward against the wad therein, for purposes that are obvious, and it consists in a certain construction and arrangement of parts as hereinafter fully set forth, the essential features being pointed out particularly in the claims.

The object of this invention is to so construct the crimping-head as to obviate the binding and undue friction of the parts that bear against the cartridge shell in crimping or folding the end thereof, thus reducing the wear on said parts and retaining a uniformity in the work produced without adjustment, as well as reducing the labor of operating the tool. These objects are effectually accomplished by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a crimping tool embodying my invention. Fig. 2 is a central longitudinal section through the tool showing a cartridge therein partly in section. Fig. 3 is a perspective view of the crimping-head and crank arm attached to the ends of a hollow journal. Fig. 4 is a front elevation of the crimping-head.

Referring to the letters on the drawings, A is the supporting frame, which is provided with means for attachment to a suitable support and having mounted thereon the journal bearing A′ and cartridge receptacle A″, as is common in tools of this class. Journaled in the bearing A′ and extending beyond the ends thereof is the hollow journal B, on the inner end of which the crimping-head C is mounted and secured by means of the set-screws *a* which pass therethrough and bear against said journal, thus supporting said head C within the space between the journal A′ and cartridge receptacle A″, in line therewith, as shown in Fig. 2. Formed in the forward end of said head adjacent to, and communicating with the cartridge receptacle is an aperture *b*, that receives the end of the cartridge D to be treated, and projecting into said aperture diametrically through the wall of the head C, is a series of pins *c*, against which the end of the cartridge-shell abuts, and which serve to crimp or fold the end thereof as said head is rotated. Journaled in the body of said head and projecting therefrom at the forward end, is a series of revoluble and reciprocal plungers *d*, which are located in a triangular position with respect to each other, so that the outermost portions of the peripheries of said plungers lie within the arc of a circle concentric with the center of said head and bear against the inner perimeter of the cartridge shell, while the ends thereof abut against the wad and force the same against the contents of the shell. The rear ends of said plungers are provided with the enlarged heads *e* terminating in the acuminated points *e′*. Said heads limit the outward movement of the plungers, and the conical points form the bearings for the ends thereof, against which the washer E is forced by the coiled spring F to force said plungers outward. See Fig. 2. Said spring is located within the hollow journal, being confined therein by the crank-arm G, which is provided with a split collar *h* that receives the end of the hollow journal around which it is clamped by means of a bolt or screw *i* passing through the ears *i′* of said collar. See Fig. 3. Thus the spring is retained in position and the crank-arm secured to the journal, through the medium of which the head is rotated, carrying the plungers in the arc of a circle around the inner perimeter of the shell, and as said shell is forced inward (by a suitable lever H hinged to the frame, see Fig. 1), the end thereof being forced against the pins *c* of the revolving head is folded or turned inward against the wad, bringing the folded portions against the periphery of the plun-

gers, which by frictional contact therewith are caused to rotate in the head C as said head revolves and securely roll the folded portions together, while the ends of said plungers bear against the wad and by the tension of the coiled spring thereon firmly force said wad against the contents of the shell.

It will be seen from the foregoing that by the employment of the revoluble and reciprocal plungers, instead of a non-rotative central plunger as heretofore employed, a great amount of friction on the wearing parts is obviated, thus contributing to the life of the tool, and enabling the production of a uniform grade of work without adjustment of the parts to compensate for wear, as the rubbing contact with the stationary or non-revoluble plunger soon causes a diminution in the size thereof sufficient to require its replacement with a new one, while the rolling contact of the revoluble plungers has but little, if any, tendency to wear away the parts sufficiently to effect the perfect operation of the tool.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cartridge-crimper, in combination with a supporting frame having a journal bearing and cartridge receptacle, a revoluble crimping-head mounted in said frame and carrying a series of revoluble plungers journaled therein, and means for forcing said plungers outward, substantially as specified.

2. In a cartridge-crimper, the combination of the supporting frame having the journal bearing and cartridge receptacle, the hollow shaft journaled in said bearing, the crimping-head supported on said shaft adjacent to and in line with said cartridge receptacle, the series of reciprocal and revoluble plungers journaled in said head, the spring and washer located in the hollow shaft and bearing against said plungers, the crank-arm for securing said spring and driving said shaft, substantially as specified.

3. In a cartridge-crimper, the combination of the supporting frame having the journal bearing and cartridge-receptacle, the hollow journal supported in said bearing, the crimping-head secured to said journal in line with the cartridge receptacle, the series of reciprocal and revoluble plungers journaled in said head in the arc of a circle and having the enlarged conical heads on their inner ends, the crank-arm provided with a split collar, the screw for binding said collar to the hollow journal, the coiled spring in said journal compressed between said washer and crank-arm whereby said plungers are forced against the wad and permitted to rotate during the crimping of the cartridge, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. NICHOL.

Witnesses:
J. L. WEIR,
PETER RUTHERFORD.