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H. G. ROBINSON.

RECAPPER AND DECAPPER FOR CARTRIDGE SHELLS.

(Application filed Feb. 28, 1902.)

(No Model.)

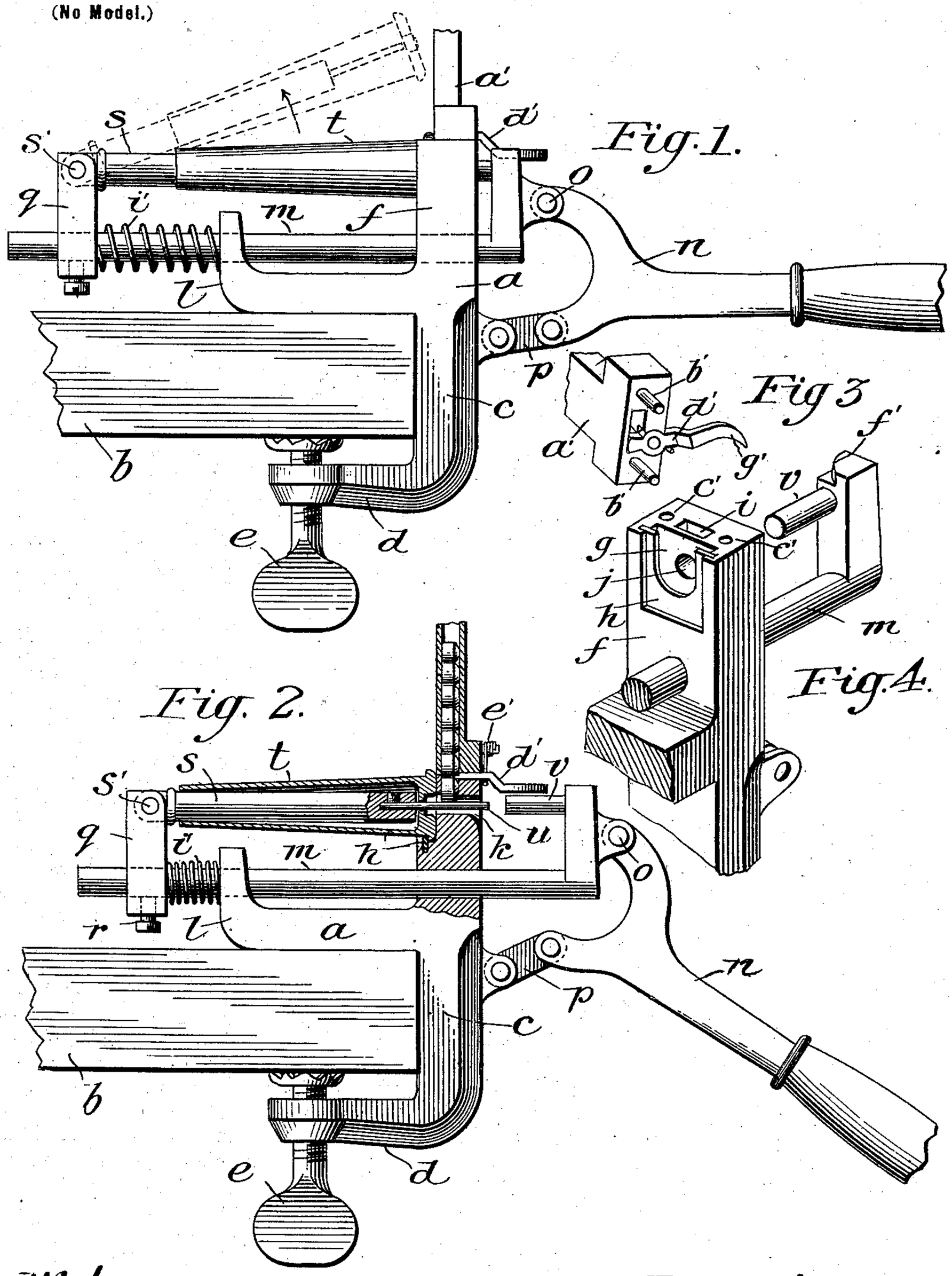

Fig. 1.

Fig 3

Fig. 4.

Fig. 2.

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RECAPPER AND DECAPPER FOR CARTRIDGE-SHELLS.

SPECIFICATION forming part of Letters Patent No. 711,231, dated October 14, 1902.

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To all whom it may concern:

Be it known that I, HARRY G. ROBINSON, a citizen of the United States, residing at Wakefield, county of Middlesex, and State of Massachusetts, have invented certain new and useful Improvements in Recappers and Decappers for Cartridge-Shells; and I do hereby 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.

The invention relates to the construction of tools or implements intended more especially for decapping and recapping metallic shells for rifles and revolvers.

It consists generally of a bracket or frame adapted for temporary attachment to a table or other convenient support and having a spindle onto which the shell is slipped. Within the spindle works a needle which is carried by a slide, and when the spindle is adjusted so as to seat the head of the shell in a stationary block that is a fixture to the bracket the needle is operated to eject the old cap by moving the slide in one direction. The slide also carries a plunger projecting in the opposite direction to the needle. This plunger works through the block and on the return movement of the slide operates to seat a new cap or primer in the depression in the head of the shell, the needle meanwhile backing out of the way and the cap falling naturally into a socket provided for it in the block adjacent to the seat for the shell.

It is characteristic of the invention that the acts of decapping and recapping are performed by a single oscillation of a lever that controls the operation of the slide, a movement in one direction serving to eject the old cap and the return movement serving to seat a new one in place, no change in the position of the shell being required and no handling of the caps or primers being necessary. A magazine is provided to hold a supply of primers, and as the slide is moved forward to eject an old cap a new one is allowed to drop down into position to be operated on by the plunger when the slide returns to place. Thus the implement is made entirely automatic in action and the operation of decapping and recapping is quickly and easily effected.

The implement is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of the entire implement secured to the edge of a table. Fig. 2 is a similar view, partly in section, so as to illustrate the working of the parts. Fig. 3 is a perspective detail of the under side of the magazine for holding the caps, and Fig. 4 is a detail perspective of the post on the frame looking diagonally into the socket for receiving the head of the shell.

Referring to the views, *a* denotes a bracket or frame which is attached by any suitable means of attachment to a table or other support *b*. As shown herein, the frame *a* is provided with a depending arm *c*, which is bent laterally at its lower end, as shown at *d*, where it is provided with a thumb-nut *e*, working in a threaded hole in the end of the arm. Any other means of attachment may be employed in lieu of this arrangement.

Rising from one end of the frame *a* is a vertical post *f*, having an open-faced socket *g* in one side of it to receive the head of the shell. The socket has a removable U-shaped plate *h*, fitting in vertical grooves in the post, and when the head of the shell is in position this plate embraces the shell just back of the flange of the head and the face of the head abuts against the rear wall of the socket. The object of making the plate removable is to permit the substitution of larger or smaller plates to accommodate shells of different sizes, and all the plates must be so constructed as to center the shell-head accurately in the socket. At one side of the socket the post is provided with a vertical recess *i*, and communicating with the bottom of this recess is a transverse opening *j*, which opens at one side of the post directly from the recess, as shown at *k* in Fig. 2, and at the other side of the post opens through the center of the socket, which receives the head of the shell, as shown in Fig. 3. This cap-receiving recess is accurately formed of a width and thickness just sufficient to hold one cap at a time in position.

At the opposite side of the frame *a* from the post *f* there is a vertical projection *l*, and through suitable perforations in this projection and the post *f* works a slide *m*, a handle

n being pivotally connected to the end of the slide at o and working on a fulcrum formed by a link p, which pivotally connects the handle with the frame a of the implement, as clearly shown in Figs. 1 and 2. At one end of the slide a block is secured by means of a set-screw r, which permits it to be adjusted along the slide as may be required by different lengths of shell. At the upper end of this block there is pivoted a spindle s, on which the shell t is intended to fit, and the forward end of the spindle carries a needle u, which is adapted to project through the opening in the head of the shell after the latter has been set over the spindle and its head secured in the socket in the post. At the other end of the slide m and on the opposite side of the post from the spindle s there is a plunger v, which projects toward the post and is in line with the needle and the opening j through the bottom of the cap-receiving recess and the center of the socket for the head of the shell.

As thus far described the implement is adapted for the decapping and recapping of shells by placing a single cap or primer in the recess i at each operation. It is desirable, however, for the purpose of obviating the handling of the individual caps that a magazine a' be employed. This magazine is provided, as shown in Figs. 2 and 3, with dowels b', whereby it is adapted to be removably attached to the upper end of the post f by means of said dowels fitting into sockets c' in the upper end of the post. The magazine is of sufficient length to contain any desired number of caps or primers and is interiorly constructed so as to accurately form a continuation of the cap-receiving recess i in the post f. At its lower end the magazine is provided with a gate or latch d', which is held normally open by means of a spring e' and is adapted to be closed at a particular point in the operation of the device, as will be described later on, by the coöperation of a cam or other projection f' on the slide m coming in contact with the curved outer end g' of the gate.

The construction of the implement being as thus described, the operation of decapping and recapping the shells is as follows: The spindle s, being pivoted to the block q at a point, as s', in line with the socket g in the post f is raised into such position that the shell may be conveniently slipped over its end. The normal position of the slide at this time is shown in Fig. 1, where it will be seen that a spring i', coiled around the slide m and reacting between the guide l and the block q, holds the slide toward the left, as shown in the figure. When the shell has been slipped over the spindle, the latter is turned down until the head of the shell is received in the socket g of the post f in such position that the cap or primer and the shell-orifice are accurately alined with the transverse opening j through the socket g and the cap-receiving recess i. The shell being securely held with its head in the socket, the depression of the handle, as illustrated in Fig. 2, causes the slide to carry the spindle toward the shell-holding socket, sliding through the shell until the needle u in the end of the spindle has passed through the orifice in the head of the shell and ejected the old cap out through the transverse opening j and past the cap-receiving recess, whence it falls to the ground. When the slide is in its normal position, as shown in Fig. 1, the magazine is closed by contact of the projection f' with the end of the latch or gate d', the object of this arrangement being to keep the transverse opening j free, so as to permit the needle u to eject the old cap or primer from the head of the shell through the opening. When, however, the slide is moved to the right, as already described, the gate is released and immediately opens the magazine and allows the caps therein to fall until the lowermost one rests upon the top of the needle u, which by this time has ejected the old cap or primer from the shell and passed sufficiently through the opening j to receive the new cap upon its upper side, as clearly illustrated in Fig. 2. This completes the operation of decapping, and the lever being elevated the slide starts to move in the opposite direction. As shown in Fig. 2, the plunger projects in line with and toward the needle, so as to leave only sufficient space between the ends of the two for the reception of a single cap, which falls into the space between the needle and the plunger when it comes opposite the cap-receiving recess i on the return movement of the slide. Immediately before the new cap falls into the opening j from the recess i the projection f' strikes the gate d' and closes the magazine, so as to prevent the remaining caps from falling until the slide has been returned and the old cap on the next one has been ejected. During the first part of the return movement of the slide the lowermost cap—that is to say, the one in the recess i—rests upon the top of the needle, and as the latter is withdrawn it falls down into the opening j in front of the plunger v, and the continued movement of the slide toward the left causes the plunger to force the cap out of the opening and seat it firmly into the depression in the head of the shell, the plate h meanwhile holding the shell in the socket g by means of the flange around the head of the shell. This completes the operation of recapping, and the needle and spindle having been withdrawn at this time into the position shown in Fig. 1 the spindle is free to be lifted, as illustrated in dotted lines, so that the shell may be removed and is ready for loading.

It is to be noted of the operation of the construction that the shells do not require to be changed from one position where they are decapped to another position where they are recapped, but that they are held in fixed position until both operations are completed.

It is also to be noted that when the magazine is employed it is not necessary to handle the caps or primers, and the magazine may be made of any length and width to hold any number of caps, and it is to be particularly noted that the operations of decapping and recapping are effected by one oscillation of the operating-handle and one complete reciprocation of the slide which carries the needle and the plunger. The operation is extremely simple, and the movements of all the parts are positive, the spring *i'* being intended merely for the purpose of holding the frame in the position shown in Fig. 1 ready to receive the shell.

Although I have herein illustrated the device as adapted to be secured to a table or other support, I do not desire to be limited to such an arrangement, as the essential features of the invention may be embodied in an implement which need not necessarily be fixed to any support, and although I have described the device as useful mainly for the purpose of decapping and recapping such metallic shells as are intended for rifles and revolvers it is obvious that it could also be adapted without material alteration for the purpose of decapping and recapping all kinds of cartridge-shells.

Having thus described my invention, what I claim is—

1. In an implement for decapping and recapping shells, the combination with a bracket or frame having a post provided with a socket to receive the head of the shell and hold it against longitudinal movement, of a slide carrying at one end a needle extending toward the post, and at the opposite end a plunger also extending toward the post in line with the needle, a recess in the post at one side of the socket to receive and aline the caps with respect to the socket, and a transverse opening communicating with the recess and socket for the passage of the needle, the plunger and caps, the needle operating to decap the shell on moving the slide in one direction, and the plunger operating to recap the shell on the return movement of the slide.

2. In an implement for decapping and recapping shells, the combination with a bracket or frame having a post provided with a socket to receive the head of the shell and hold it against longitudinal movement, of a slide carrying on one side of the post a pivoted spindle on which the shell fits, said spindle having a needle in its end, a plunger on the slide on the opposite side of the post in line with the needle, a recess in the post on the outer side of the socket to receive and aline the caps with respect to the socket, a transverse opening communicating with the recess and socket for the passage of the needle, the plunger and caps, and means for operating the slide so that when moving in one direction the needle will decap the shell, and when returned in the other direction the plunger will recap it.

3. In an implement for decapping and recapping shells, the combination with a bracket or frame having a post provided with a socket to receive the head of the shell and hold it against longitudinal movement, of a slide carrying on one side of the post a spindle on which the shell fits, said spindle having a needle in its end, a plunger on the slide on the opposite side of the post in line with the needle, a recess in the post on the outer side of the socket to receive and aline the caps with respect to the socket, a transverse opening communicating with the recess and socket for the passage of the needle, the plunger and the caps, a magazine communicating with the cap-receiving recess, and means for moving the slide in one direction to cause the needle to eject the old cap, and for moving it in the other direction to seat a new cap received from the magazine.

4. In an implement for decapping and recapping shells, the combination with a bracket or frame having a post provided with a socket to receive the head of the shell and hold it against longitudinal movement, of a slide carrying a needle on one side of the post, and a plunger in line with the needle on the opposite side of the post, a recess in the post at one side of the socket to receive and aline the caps with respect to the socket, a cap-magazine communicating with said recess and having a gate or latch at its lower end, a transverse opening communicating with the recess and socket for the passage of the needle, the plunger, and caps, a projection on the slide coöperating with the gate, and means for moving the slide in one direction so that the needle will decap the shell, and moving it in the other direction so that the plunger will recap the shell, the magazine being closed on the return movement so as to leave the opening free for the ejection of the old cap on the next shell.

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

HARRY G. ROBINSON.

Witnesses:

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EDWIN S. CLARKSON.