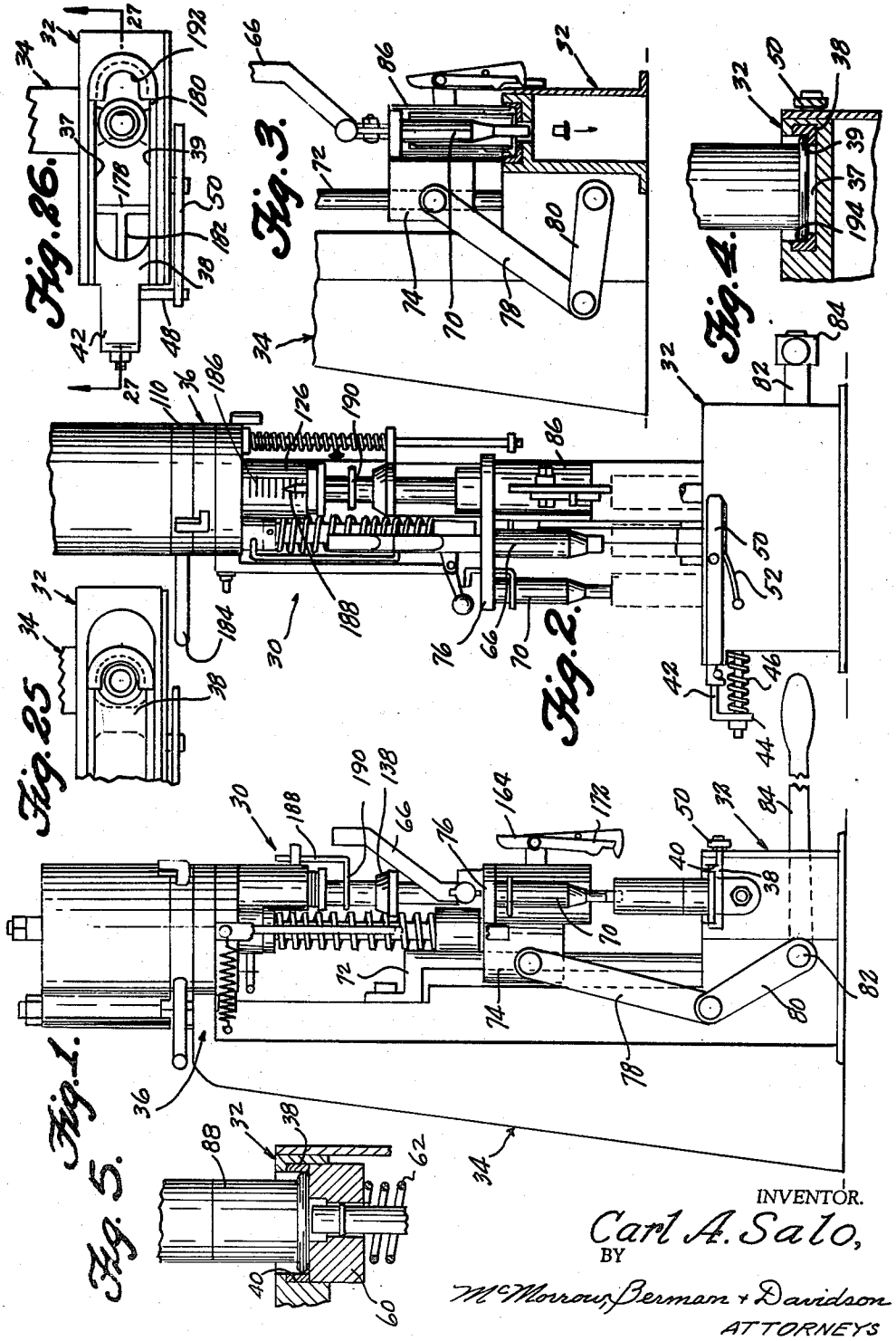
Nov. 29, 1960 C. A. SALO 2,961,915

SHELL RELOADING APPARATUS

Filed June 3, 1958 4 Sheets-Sheet 1



INVENTOR.
Carl A. Salo,
BY
McMorrow, Berman & Davidson
ATTORNEYS

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SHELL RELOADING APPARATUS

Filed June 3, 1958 4 Sheets-Sheet 2

Fig. 8.

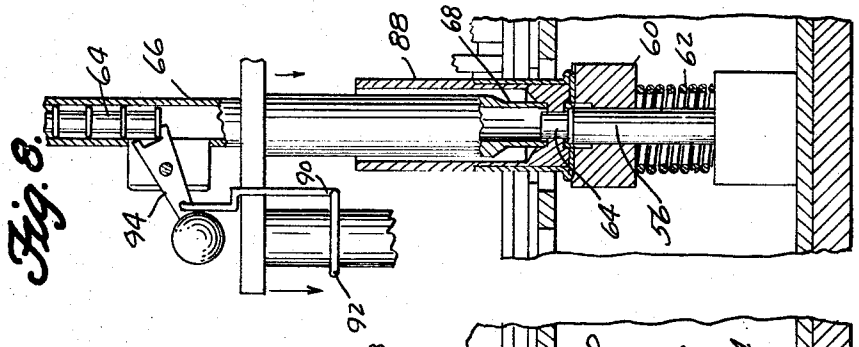


Fig. 7.

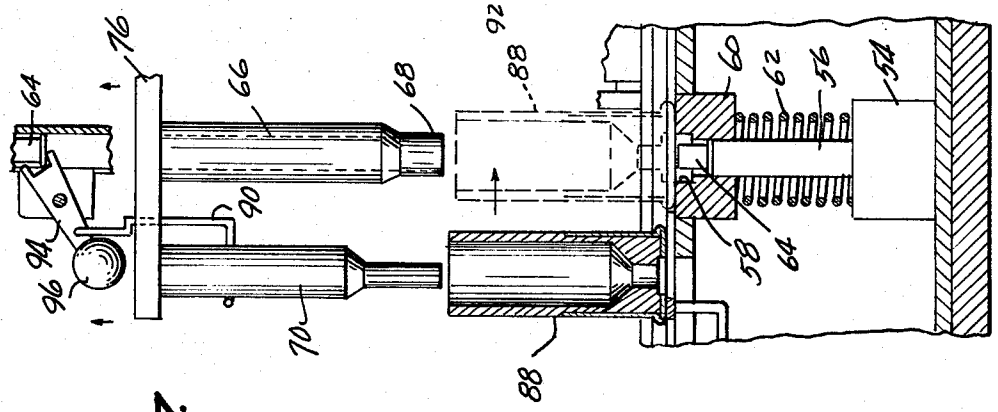
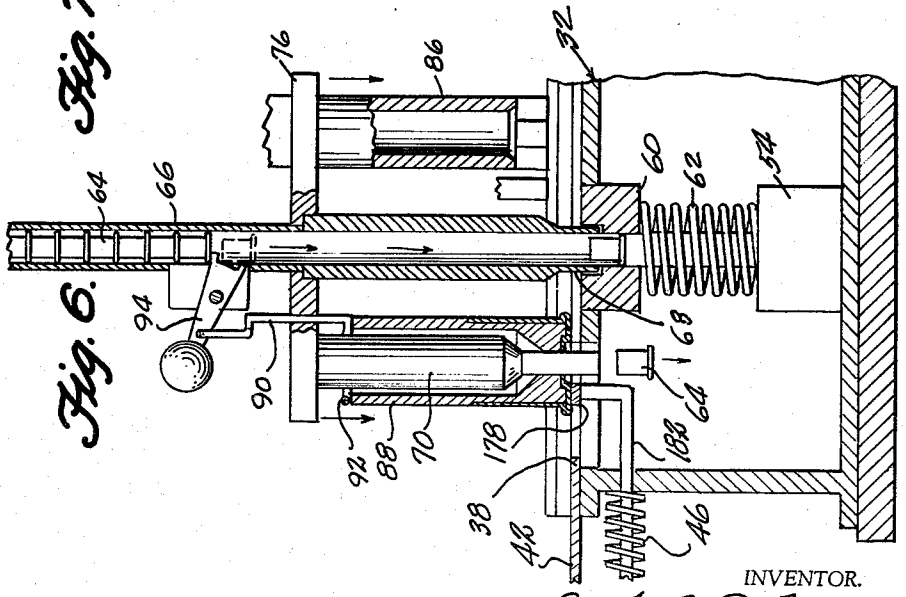


Fig. 6.



INVENTOR.

Carl A. Salo,

BY

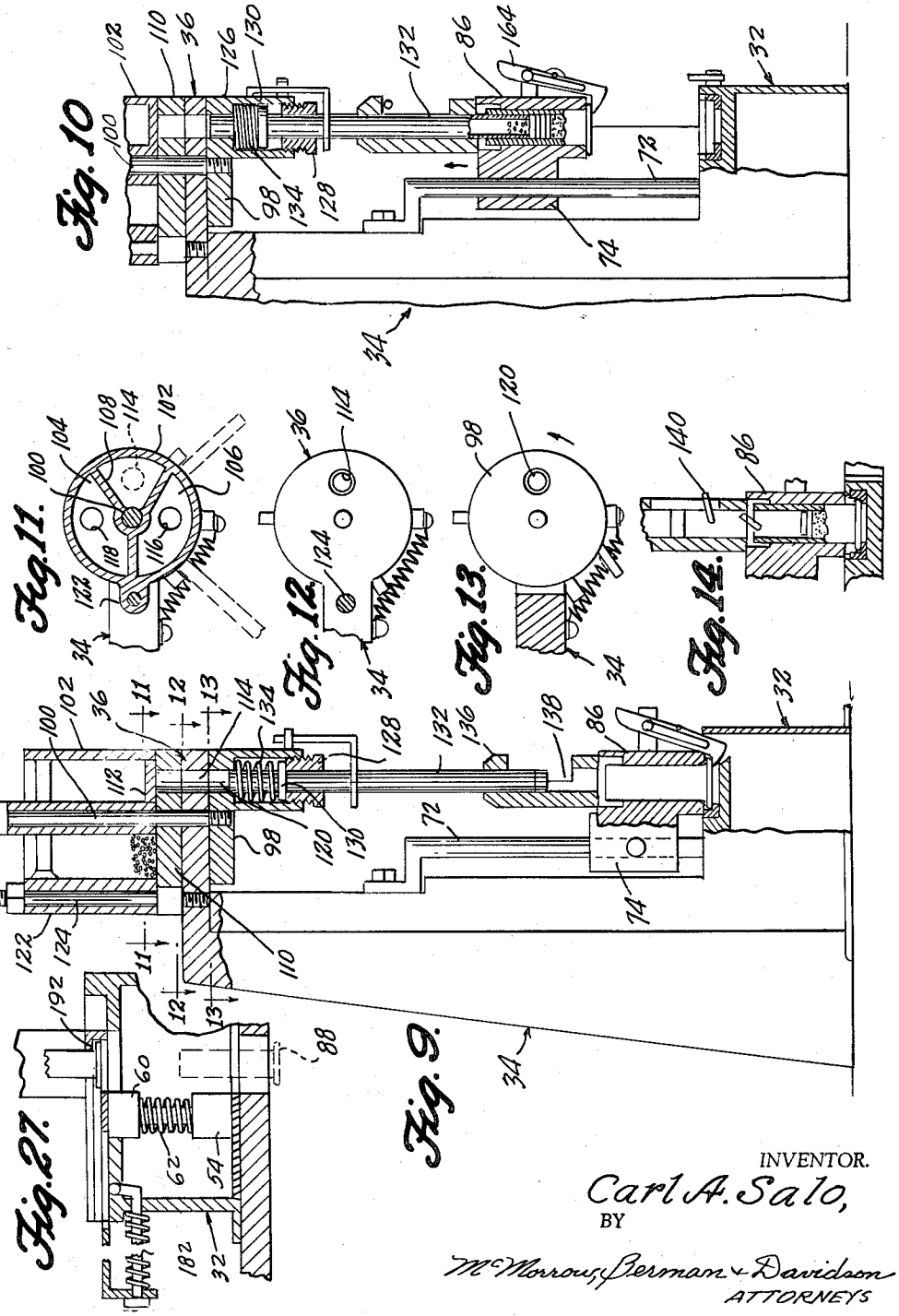
McMorrow, Berman & Davidson

ATTORNEYS

Nov. 29, 1960 C. A. SALO 2,961,915

SHELL RELOADING APPARATUS

Filed June 3, 1958 4 Sheets-Sheet 3

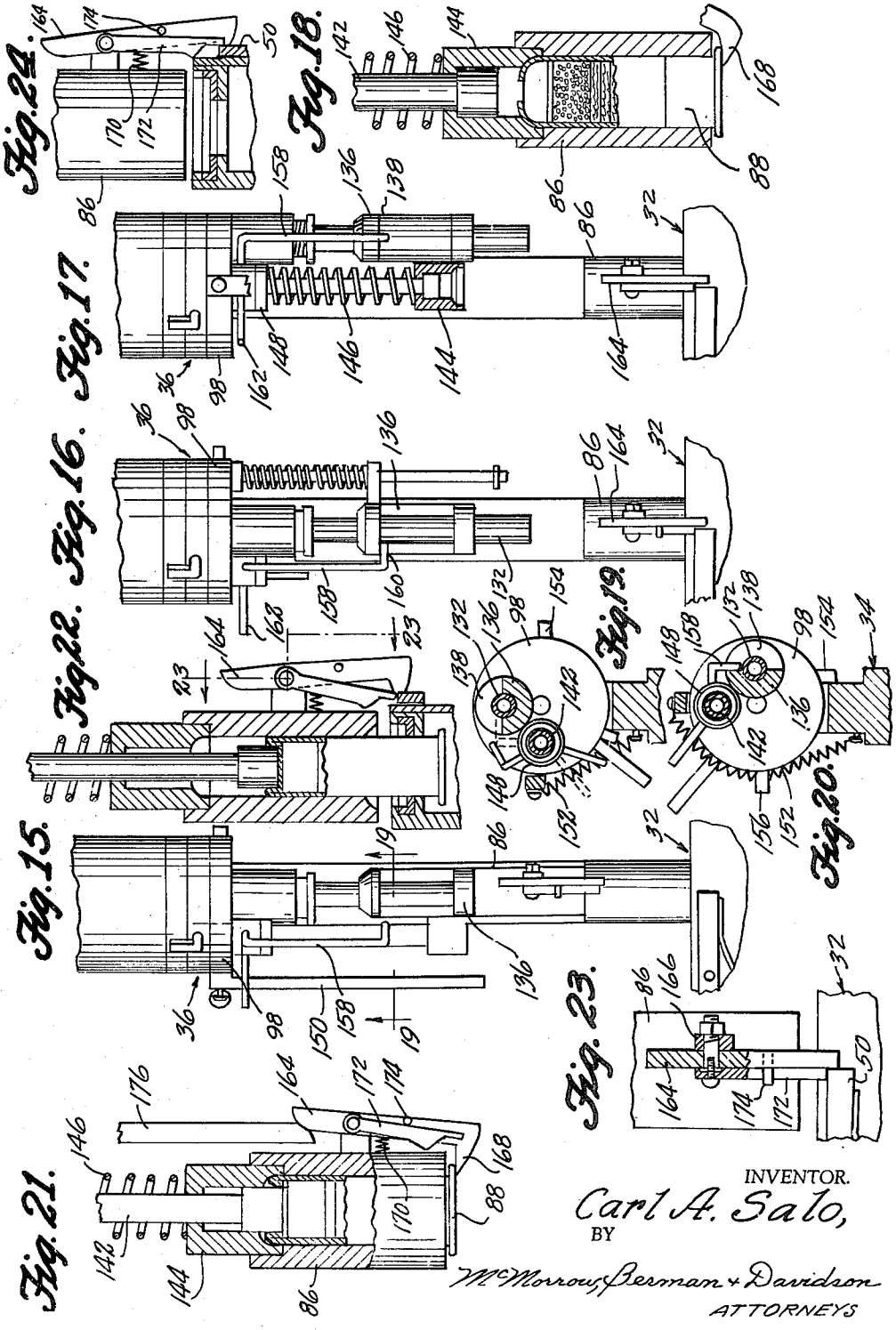


INVENTOR.
Carl A. Salo,
BY
McMorrow, Berman & Davidson
ATTORNEYS

Nov. 29, 1960 C. A. SALO 2,961,915

SHELL RELOADING APPARATUS

Filed June 3, 1958 4 Sheets-Sheet 4



INVENTOR.
Carl A. Salo,
BY
McMorrow, Berman & Davidson
ATTORNEYS

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2,961,915

SHELL RELOADING APPARATUS

Carl A. Salo, 5704 Tamorth Way, Stockton, Calif.

Filed June 3, 1958, Ser. No. 739,523

4 Claims. (Cl. 86—25)

The present invention relates to an apparatus for reloading shotgun shells.

An object of the present invention is to provide a unitary apparatus for reloading shotgun shells which performs all the operations in a series of steps without the need of other tools.

Another object of the present invention is to provide a shell reloading apparatus which is compact in size, one having a minimum number of parts, one semiautomatic in operation, and one which is economically feasible.

A further object of the present invention is to provide a shell reloading apparatus which enables an operator to refill used shotgun shells rapidly and efficiently, to load shotgun shells with the correct amount of powder and shot and provide the shell with a new primer cap, and to properly size and crimp the shell after reloading, with a minimum of hand manipulation of the shell.

These and other objects and advantages of the present invention will be fully apparent from the following description when taken in conjunction with the annexed drawings, in which:

Figure 1 is a side elevational view of the apparatus according to the present invention showing an empty shotgun shell in position under the primer cap ejector;

Figure 2 is a front elevational view of the assembly shown in Figure 1, with one dotted line showing indicating the position of the empty shell for insertion therein ing indicating the position of the shell for filling with of a new primer cap, and with a second dotted line showing indicating the position of the shell for filling with powder and shot, and for the operations of crimping and closing the refilled shell;

Figure 3 is a fragmentary elevational view, similar to Figure 1 and partially in section, showing the action of the primer cap ejector;

Figure 4 is a fragmentary side elevational view partly in section, and on an enlarged scale, showing the slide and the lower end portion of a shell supported thereon;

Figure 5 is a fragmentary side elevational view, partly in section and similar to Figure 4, showing the shell portion in place on the anvil prior to the insertion in the shell of a new and unused primer cap;

Figure 6 is a front elevational view partly in section, showing the primer cap ejector ejecting a cap through an opening in the slide and into the table, and showing a fresh primer cap being released to drop upon the anvil;

Figure 7 is a fragmentary view similar to Figure 6 showing the ejector raised and the empty shell in dotted lines moved to the position for the insertion therein of a new primer cap;

Figure 8 is a view of the apparatus shown in Figure 7 showing the insertion into the shell of a new primer cap;

Figure 9 is a side elevational view, partially in section, showing the empty shell in position for resizing and filling with a new charge of powder;

Figure 10 is a fragmentary elevational view, similar to Figure 9, showing the shell raised on the resizing or

former tool and the wadding being compressed on the charge of powder;

Figure 11 is a sectional view as seen on line 11—11 of Figure 9;

Figure 12 is a view taken on the line 12—12 of Figure 9;

Figure 13 is a view taken on the line 13—13 of Figure 9;

Figure 14 is a fragmentary sectional view showing the wadding being inserted into the partially filled shell through the wadding sleeve;

Figure 15 is a fragmentary elevational view taken from the front showing the step of tamping the wadding and powder charge within the partially refilled shell;

Figure 16 is a fragmentary elevational view taken from the front showing the resizing holder dropped to the table and withdrawn from the refilling and forming tool;

Figure 17 is a view partially in section, similar to Figure 16, showing the tamping and crimping tool moved into position over the shell holder;

Figure 18 is an enlarged sectional view showing the step of the operation of crimping the shotgun shell over the shot and powder charge;

Figure 19 is a view in section taken on the line 19—19 of Figure 15;

Figure 20 is a view similar to Figure 19 after the filler tube and wadding sleeve has been shifted out of registry with the shell holder and the crimping and tamping tool moved into registry with the shell holder;

Figure 21 is a sectional view similar to Figure 18, showing the final step in crimping the shotgun shell upper end portion on the shot charge and prior to ejection of the filled shell from the holder;

Figure 22 is a view similar to Figure 21 showing the refilled shell being ejected from the holder;

Figure 23 is a view taken on the line 23—23 of Figure 22;

Figure 24 is a fragmentary elevational view partially in section showing the action of the slide trigger after ejection of the shell;

Figure 25 is a fragmentary plan view of the slide prior to moving into engagement with the shell rim;

Figure 26 is a view of the slide from the top showing it after engagement with the shell rim and after the shell has been ejected through a hole in the slide and into the table; and

Figure 27 is a view taken on the line 27—27 of Figure 26.

Referring in greater detail to the drawings in which like numerals indicate like parts throughout the several views, the reference numeral 30 designates generally the apparatus of the present invention which comprises a table 32, a standard 34 rising from the back of the table, and a head carried on the upper end of the standard, the head being designated by the reference numeral 36.

A slide 38 is positioned in a trackway 40 provided in the table 32 for back and forth movement in a linear path transversely of the table 32. A slide 38 is provided with a hole 37 and with means for supporting a spent shell in upright position, such means embodying the portion 39 of the slide 38 surrounding the perimeter of the hole 37. The slide 38 has a portion 42 extending beyond the side edge of the table 32 and terminating in a downwardly turned flange 44. A coil spring 46 is positioned between the flange 44 and the adjacent part of the table 32 and has its ends bearing against the table 32 and the flange 44 for urging the slide 38 to the position away from the table 32, or to the left as seen in Figure 2.

A pin 48 projects perpendicularly from the underface of the slide portion 42 and is engageable by a hook on one end of a lever 50 which is pivotally connected intermediate its ends to the front face of the table 32, as seen

in Figures 2 and 26, for tilting movement about a horizontal axis. A leaf spring 52 normally biases the lever 50 to the position in which the hook on the one end thereof is in engagement with the pin 48, as shown in Figure 2. The pin 48 and lever 50 constitute a means for holding the slide 38 in a position to the right of the table 32 after being moved there by hand, the mechanism for releasing the slide is to be described later.

The table 32 is hollow for the most part and a block 54 rises from the bottom of the table 32 underneath the trackway 40. A post 56, constituting a support means, rises from the block 54 and has its upper end projecting into a vertically disposed bore 58 in an anvil 60. A coil spring 62 is positioned so as to encircle the post 56 and supports the anvil 60 for resilient up and down movements. The anvil 60 is positioned beneath the slide 38 and receives in its bore 58 a fresh and unused primer cap 64 as delivered to it from a chute 66 which has its lower end in registry with the anvil bore 58, as shown in Figures 6 to 8. The lower end portion 68 of the chute 66 constitutes an upstanding hollow former member arranged in side by side spaced relation with respect to an upstanding ejector plunger 70. Both the chute 66 and the plunger 70 are positioned above the table 32 and connected to the table 32 for upward and downward movement. The means connecting the chute 66 and the plunger 70 to the table for upward and downward movement include a vertically disposed bar 72 having its lower end mounted in the table 32 and its upper end fixed to the standard 34 on the front face of the latter. A carriage 74 rides upwardly and downwardly from the bar 72 and carrries the chute 66 having the former member portion 68 on its lower end and the plunger 70, constituting an ejector, for upward and downward movement, there being a head piece extending forwardly of the carriage 74 and connecting the upper end of the plunger 70 to the midportion of the chute 66, the head piece being designated by the reference numeral 76. A first link 78 has its upper end pivotally connected to the carriage 74 on one side thereof and has its lower end connected to the upper end of a second link 80. The lower end of the second link 80 is fixedly secured on one end of a shaft 82 which extends through the standard 34 and carries on its other end an actuating handle 84. Depending from the head piece 76 at the end remote from the plunger 70 is a holder 86 of a size to fit around a shotgun shell 88 and so dimensioned as to compress the shell 88 to its original size before use.

A rod 90 is disposed vertically and supported for sliding movement in the head piece 76 (Figures 6, 7, and 8) and carries on its lower end a ring 92 conformably shaped to the open upper end of the shell 88. The portion of the rod 90 above the head piece 76 is offset to form a stop engageable with the upper face of the head piece 76 when the rod 90 is at the limit of its downward movement. The upper end of the rod 90 is bent at a right angle and extends through a lever 94 having a weight 96 on one end thereof. The other end of the lever 94 extends through a slot provided in the chute 66. The end of the lever 94 within the chute 66 is bifurcated so that one leg serves as a support for the lowermost primer cap 64 in a stack of primer caps 64 carried in the chute 66. When the head piece 76 moves downwardly, the ring 92 is supported upon the upper end of the shell 88 and the rod 90 moves upwardly through the head piece 76, causing the lever 94 to move to the position shown in Figure 6 which releases the lowermost one of the caps 64 for free fall through the chute 66 into the former member portion 68 and thence onto the top of the post 56.

As shown in Figures 6 to 8, the plunger 70 serves to eject the used primer cap 64 from the bottom of the shell 88 when the shell is in position in registry with the plunger 70. When the shell has been moved to the dotted line position shown in Figure 7, the former member portion 68 on the lower end of the chute 66 is in registry with the hole in the bottom of the shell 88 and in registry with the new cap 64 which is supported in the anvil upon the post 56. As shown in Figure 8, descent of the chute 66 responsive to downward movement of the head piece 76 causes the former member portion 68 to enter the shell 88 and to encircle the new primer cap 64 and engage the inside bottom of the shell 88, forcing the material of the shell bottom around the primer cap 64 in securing the latter within the shell 88.

Referring now to Figures 9 to 21, a powder refilling assembly is seen to comprise an overhead support 98 positioned in vertically spaced relation with respect to the holder 86 and supported from the standard 34 for limited rotational movement about a vertical axis in opposite directions. The overhead support 98 is seen to consist in a circular body mounted on the underface of the head 36.

As shown in Figure 8, a vertically disposed bolt extends through the head 36 and carries on its lower end the support 98, the bolt being designated by the reference numeral 100. An open top cylindrical receptacle 102 is carried upon the upper face of the head 36. As shown in Figure 11, the receptacle 102 is divided into two reservoirs 104 and 106, the dividing means being a Y-shaped upstanding partition 108.

The reservoirs 104 and 106 have no bottoms and are closed on their lower ends by valve means embodying a measuring disc 110 rotatably supported upon the bolt 100. The portion of the receptacle 102 not occupied by the reservoirs 104 and 106 is provided with a floor or bottom 112 (Figure 9) in registry with a vertical bore 114 provided in the head 36. The measuring disc 110 has two openings 116 and 118, each selectively registrable with the bore 114 when the disc 110 is moved to one side or the other about the bolt 100.

The overhead support 98 is provided with an aperture 120 (Figure 13) normally in registry with the bore 114 and registrable with the openings 116 and 118 in the disc 110 when the latter is turned first in one direction and then in the other direction to discharge the contents of the reservoirs 104 and 106. In Figure 9, one of the openings 116 or 118 in the disc 110 is shown in registry with the bore 114 and aperture 120.

The receptacle 102 is provided with a hollow post 122 through which extends a bolt 124 securing the receptacle 102 to the head 36.

Referring to Figures 9 and 10 in particular, an upright sleeve 126 is seen to depend from the underface of the overhead support 98. A nut 128 is threadedly received within the threaded open lower end of the sleeve 126 and forms a support for a collar 130 secured to a filling tube 132 which has the portion adjacent its upper end extending through the nut 128 and into the sleeve 126. A coil spring 134 is circumposed about the filling tube 132 within the sleeve 126 and has one end registering in the collar 130 and the other and bearing against the underface of the support 98. The spring 134 constitutes means resiliently supporting the filling tube 132 in the head 36.

A wadding or wad sleeve 136 is circumposed about and slidably mounted upon the lower end portion of the filling tube 132. In Figure 9 it will be seen that the wad sleeve 136 has an opening or open face 138 for the insertion therethrough (Figure 14) of wads 140.

Also included in the powder refilling assembly is a ram 142 positioned adjacent the filling tube 132 and dependingly carried by the overhead support 98. A crimping head 144 is resiliently slidable on the ram 142 and is shiftable into closing engagement with the upper end of the holder 86 upon movement of the filling tube 132 to the out of filling relationship position with respect to the holder 86. The ram 142 with the attached crimping

head 144 is shiftable out of closing engagement with respect to the holder 86 upon movement of the filling tube 132 into the filling relationship position with respect to the holder 86.

A coil spring 146 is circumposed about the ram 142 and has one end bearing on the upper end of the crimping head 144 and the other end bearing against a bushing 148 which dependingly connects the ram 142 to the underside of the support 98. A handle 150 depends from the support 98 (Figure 15) and serves as a means by which the support 98 may be shifted from the position shown in Figure 19 in which the filling tube 132 is in registry with the holder 86 and the ram 142 is out of registry with the holder 86 to the position shown in Figure 20 in which the ram 142 is in registry with the holder 86 and the filling tube 132 is out of registry with the holder 86. It is understood that the position of the holder 86 is diametrically opposite to the standard 34, the holder 86 not being shown in Figures 19 and 20 for the reason that these views are taken on the line 19—19 of Figure 15.

A coil spring 152 biases the support 98 to the position in which the filling tube 132 is in registry with the holder 86. This spring 152 has one end fixed to the support 98 and the other end fixed to the standard 34, as shown most clearly in Figures 19 and 20.

Stops 154 and 156 project outwardly from the perimeter of the support 98 and engage with the adjacent portion of the standard 34 for limiting the rotary movement of the support 98 in each direction.

Means is provided for holding the wad sleeve 136 in an up position relative to the filling tube 132. Such means consists in a rod 158 bent to have a foot 160 on its lower end (Figure 16) and having the portion adjacent its upper end bent to a horizontal position and journaled in the bushing 148. The upper end portion 162 projects outwardly and forms a handle by means of which the rod 158 is moved to a position in which the foot 160 engages under the upper flanged end of the wad sleeve 136, as seen in Figures 16 and 17.

Means is provided for supporting the shell 88 within the holder 86 when the holder 86 is to be moved up so that its upper end is in communication with the lower end of the filling tube 132, and also when the upper end of the holder 86 is to be in communication with the crimping head 144 and in alignment with the ram 142. Specifically, this means consists in a vertically disposed latch element 164 carried by a bracket 166 on the forward side of the holder 86 and pivotally connected thereto for movement about a horizontal axis, as shown in Figures 22 to 24. The lower end portion of the latch 164 has a shoe or foot 168 (Figure 18) underlying the shell 88 when the latter is within the holder 86. A spring 170 biases the latch element 164 to the position in which the foot 168 is out of engagement with the shell bottom. A trigger element 172 is also carried by the bracket 166 for free swinging movement about a horizontal axis. A pin 174 projects from one side of the latch element 164 adjacent the trigger element 172 and is engageable therewith to move the trigger element 172 toward the holder 86 when the latch element 164 swings toward the shell bottom engaging position.

Movement of the latch element 164 to the position in which its foot 168 is under and supports the shell 88 is effected by engagement of the latch element upper end portion with a downwardly depending latch actuating rod 176 which has its upper end secured to the support 98 for movement therewith. The engagement of the rod 176 with the latch element 164 is shown in Figure 21. As the holder 86 is carried upwardly on the head piece 76, the rod 176 engages the sloping upper face of the element 164 and shifts the latter to where the foot 168 engages under the bottom of the shell 88. At the same time the pin 174 causes the trigger element 172 to move toward the holder 86. Upon downward movement of the holder 86, the spring 170 moves the latch element 164 to the original position but the trigger element 172 stays in its inwardly moved position and engages the end of the lever 50 remote from the pin 48, as shown in Figures 23 and 24.

In operation, the apparatus 30 is supported upon a suitable bench or table and an empty and discharged shotgun shell 88 is first moved to a position on the slide 38 in registry with the ejector or plunger 70. The slide 38 has previously been shifted by hand to the position in which the pin 48 is engaged by the hook on the end of the lever 50. As seen in Figure 26, the slide 38 has a first bridge portion 178 and a second bridge portion 180 extending across the hole 37. An L-shaped rod 182 is disposed with its short leg vertical and with the free end of its short leg fixedly secured to the midportion of the bridge portion 178, as shown most clearly in Figures 6 and 7. The long leg of the rod 182 extends through a hole provided in the end wall of the table 32 and has its free end secured to the downwardly bent flange 44 on the end of the slide 38. The shell 88 when in registry with the plunger 70 has one portion resting upon the first bridge portion 178 and has its rim supported on the adjacent portions of the slide 38. Movement of the handle 84 upwardly now brings the carriage 74 downwardly to the position in Figure 6 in which the lower end portion of the plunger 70 engages the primer cap 64 and ejects the same downwardly through the slide 38 and into the table 32.

The carriage is now raised and the shell 88 is shifted manually to the position in which it is in alignment with and below the chute 66. The carriage 74 is again brought downwardly and the former member portion 68 of the chute 66 enters the shell 88, as shown in Figure 8, and engages the material of the shell bottom around the new primer cap 64 which has entered through the bottom of the shell 88 in response to downward pressure of the chute 66 and against the action of the resiliently mounted anvil 60. The post 56 carries the new primer cap 64 upwardly into the hole in the bottom of the shell 88 and the chute portion 68 seals it there in the bottom of the shell.

Next, the carriage 74 is again raised and the shell 88 is manually shifted to a position in which it is supported upon the second bridge portion 180 of the slide 38. The shell 88 is now in registry with the open bottom of the holder 86 which, when the carriage 74 is returned to its down position, slides over the shell 88 and returns the shell 88 to its original size.

The next step consists in raising the resizing tool or holder 86 with the shell 88 therein to a position in which the lower end of the wad sleeve 136 closes the upper end of the holder 86. The filling tube 132 is in alignment with the holder 86 due to the action of the spring 152. The handle 184 (Figure 2) which projects from the perimeter of the measuring disc 110 is now pulled to bring into registry the appropriate one of the openings 116 or 118 with the bore 114 and aperture 120 so as to deliver into the filling tube 132 the proper amount of gun powder. The disc 110 is turned to its neutral position and the carriage 74 is lowered sufficiently to withdraw the filling tube 132 upwardly in the wad sleeve 136 so as to permit the insertion through the open face 138 of the wad sleeve 136 of the proper number of wads 140 with the wads overlying the powder charge. At this point, the carriage 74 is now raised so that the lower end of the filling tube 132 acts as a ram to compress the wadding or wads 140 on the powder charge.

An important feature of the apparatus of the present invention consists in means for determining the compressive force applied to the wads 140. This means consists in a scale 186 imprinted or engraved on the sleeve 126 and a pointer 188 slidably mounted upon the sleeve 126 and having the lower end formed with a ring 190 (Figures 1 and 2) against which abuts the up-

per end of the wad sleeve 136 when the latter is raised with the holder 86 and in response to upward movement of the carriage 74. The resiliency of the coil spring 134 within the sleeve 126 yields to the upward pressure of the wads 140 on the lower end of the filling tube 132 and this pressure is measured on the scale 186.

When the wads 140 have been compressed on the powder charge to the desired degree of compression, the handle 184 is turned to the proper direction to discharge the shot contained in the other of the reservoirs 104 or 106 into the filling tube 132 in the same manner as the discharge of the gun powder. The shot now lies on the top of the wads 140 and the shell 88 is ready to be crimped and closed over the shot.

The wad sleeve 136 is now in a raised position with reference to the filling tube 132 and the projecting portion 162 of the rod 158 is now pulled to swing the foot 160 into the open face 138 of the wad sleeve 136 to engage thereunder and to hold the sleeve 136 in the elevated position with reference to the filling tube 132. Further pulling upon the rod portion 162 will turn the turret against the action of the spring 152 to the position in which the ram 142 is in registry with the holder 86, the latter having been lowered by downward movement of the carriage 74 to a position in which the filling tube is clear of the upper end of the holder 86. Next, the holder 86 is again raised with the carriage 74 by actuation of the handle 84 and the rod 176 engages the latch element 164 to move the foot 168 under the shell 88 in the holder 86. The holder 86 is now forced upwardly under the crimping head 144, as in Figure 21, and the curved inner faces of the crimping head 144 effect the inward crimping of the shell upper end with the spring 146 yielding and permitting the head 144 to move upwardly relative to the ram 142 so that the lower end of the ram 142 effects the final closing gripping action of the shell upper end. The initial curving inwardly of the shell upper end is shown in Figure 18 and the final action is shown in Figure 22.

The final step consists in lowering of the holder 86 which releases the latch element 164 from holding the shell within the holder 88 but leaving the trigger element 172 in the position in which it engages the free end of the lever 50 and upon completion of downward movement of the carriage 74 and the holder 86, the pin 84 is disengaged from the lever 50 and the spring 46 effects the shifting of the slide 38 to the left as in Figures 25 and 26 to a position in which a shoulder or flange 192 on the slide 38 overlies and engages the outwardly projecting rim 194 on the lower end of the shell 88. A final upward movement of the carriage 74 with the attached holder 86 now removes the holder 86 from about the shell 88, the latter being held by the engagement of the rim 194 in the flange 192 of the slide 38. When the shell 88 is free of the lower end of the holder 86, it drops through the table 32 into an appropriately arranged box or basket, the latter not being shown as not being a part of the present invention.

It has been found that by using the apparatus of the present invention, shotgun shells may be reloaded quickly and efficiently with a proper charge of powder and a proper charge of shot as desired.

When the support 98 is returned to the position in which the filling tube 132 is over the holder 86, under the action of the spring 152, the sudden stopping of rotary movement of the support 98 releases the foot 160 from under the wad sleeve 136, allowing the latter to drop on the filling tube 132.

What is claimed is:

1. In a shell reloading apparatus, a table, a slide positioned in said table and connected to said table for back and forth movement in a linear path, an anvil positioned below said slide and resiliently movable upwardly and downwardly with respect to said table, said slide being provided with means for supporting a spent shell in an upright position so that the shell base carrying the used primer cap rests upon the portion of the slide surrounding the perimeter of a hole formed in said slide with the hole in registry with the used primer cap, an upstanding ejector and an upstanding hollow former member arranged in side by side spaced relation positioned above said table and mounted on said table for up and down movement, means connecting said ejector to said former member for simultaneous up and down movement together, a plurality of primer caps arranged in stacked relation positioned within the upper portion of said former member and having the lowermost one of said caps resting upon a pivoted lever having one end within said former member, and means connecting said lever to said ejector so that upon down movement of said ejector the one end of said lever will be shifted to a position to permit release of the lowermost primer cap into position upon said anvil; and upon up movement of said ejector the one end of said lever will be shifted to a position to support the next lowermost one of said primer caps, said ejector and former member upon execution of said down movement ejecting the use primer cap from a spent shell when supported on said slide through the hole in said slide with the lower end of said former member being projected through the hole in said slide and into bearing engagement with said anvil.

2. In a shell reloading apparatus, a table, a slide positioned in said table and connected to said table for back and forth movement in a linear path, an anvil positioned below said slide and resiliently movable upwardly and downwardly with respect to said table, said slide being provided with means for supporting a spent shell in an upright position so that the shell base carrying the used primer cap rests upon the portion of the slide surrounding the perimeter of a hole formed in said slide with the hole in registry with the used primer cap, an upstanding ejector and an upstanding hollow former member arranged in side by side spaced relation positioned above said table and mounted on said table for up and down movement, a plurality of primer caps arranged in stacked relation positioned within the upper portion of said former member and having the lowermost one of said caps resting upon a support means within said former member, means connecting said ejector to said former member for simultaneous up and down movement together, means connecting said support means to said ejector so that upon down movement of said ejector the support means will be shifted to a position to permit release of the lowermost primer cap into position upon said anvil and upon up movement of said ejector the support means will be shifted to a position to support the next lowermost one of said primer caps, said ejector and former member upon execution of said down movement ejecting the used primer cap from a spent shell when supported on said slide through the hole in said slide with the lower end of said former member being projected through the hole in said slide and into bearing engagement with said anvil.

3. In a shell reloading apparatus, a table, a slide positioned in said table and connected to said table for back and forth movement in a linear path, an anvil positioned below said slide and resiliently movable upwardly and downwardly with respect to said table, said slide being provided with means for supporting a spent shell in an upright position so that the shell base carrying the used primer cap rests upon the portion of the slide surrounding the perimeter of a hole formed in said slide with the hole in registry with the used primer cap, an upstanding ejector and an upstanding hollow former member arranged in side by side spaced relation positioned above said table and mounted on said table for up and down movement, means connecting said ejector to said former member for simultaneous up and down movement together, a plurality of primer caps arranged in stacked relation positioned within the upper portion of said former member and having the lowermost one of said caps resting upon a pivoted

lever having one end within said former member, means connecting said lever to said ejector so that upon down movement of said ejector the one end of said lever will be shifted to a position to permit release of the lowermost primer cap into position upon said anvil and upon up movement of said ejector the one end of said lever will be shifted to a position to support the next lowermost one of said primer caps, said ejector and former member upon execution of said down movement ejecting the used primer cap from a spent shell when supported on said slide through the hole in said slide with the lower end of said former member being projected through the hole in said slide and into bearing engagement with said anvil, a holder for supporting and resizing a spent shell arranged in side-by-side relation with respect to said former member and carried by said means connecting the ejector and former member for simultaneous movement up-and-down together, and a powder refilling assembly arranged in an upright direction positioned above said holder and carried by said table.

4. In a shell reloading apparatus, a table, an upstanding hollow holder adapted to receive and support a shell in an upright position so that the primer charged end is supported upon a slide positioned in said table with the upper uncrimped end facing vertically upwardly away from the table, a powder refilling assembly arranged in an upright direction position above said holder, said assembly comprising an overhead support positioned in vertically spaced relation with respect to said holder and supported from said table for limited rotational movement about a vertical axis in opposite directions, a vertically disposed filling tube carried by said support, an open top receptacle rising from the upper face of said support, means subdividing said receptacle into two reservoirs, one reservoir being adapted to contain powder and the other reservoir being adapted to contain shot, the lower end of each of said reservoirs being open, valve means embodying a disc provided with a pair of measuring openings positioned below and adjacent the lower ends of the said reservoirs and selectively shiftable to control the admission of powder or shot from said reservoirs through the respective measuring openings into said filling tube, said tube being shifted upon rotational movement of said support in one direction to a position in which the lower end is in filling relationship with respect to the uncrimped upper end of a shell when supported in said holder and being shiftable upon rotational movement of said support in the opposite direction to a position in which the lower end is out of filling relationship with respect to the uncrimped upper end of a shell when supported in said holder, a ram positioned adjacent said filling tube and carried by said support, a crimping head resiliently slidable on said ram, said head being shiftable into closing engagement with the upper end of said holder upon movement of said filling tube to the out of filling relationship position and being shiftable out of closing engagement with said holder upon movement of said filling tube into the filling relationship position, and a shoe exteriorly of said holder and supported on said holder for rocking movement about a horizontal axis for bridging the lower end of said holder when the crimping head is in closing engagement with the upper end of said holder, said holder being connected to said table for upward movement into shell crimping engagement with said crimping head when the latter is in the closing engagement position.

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