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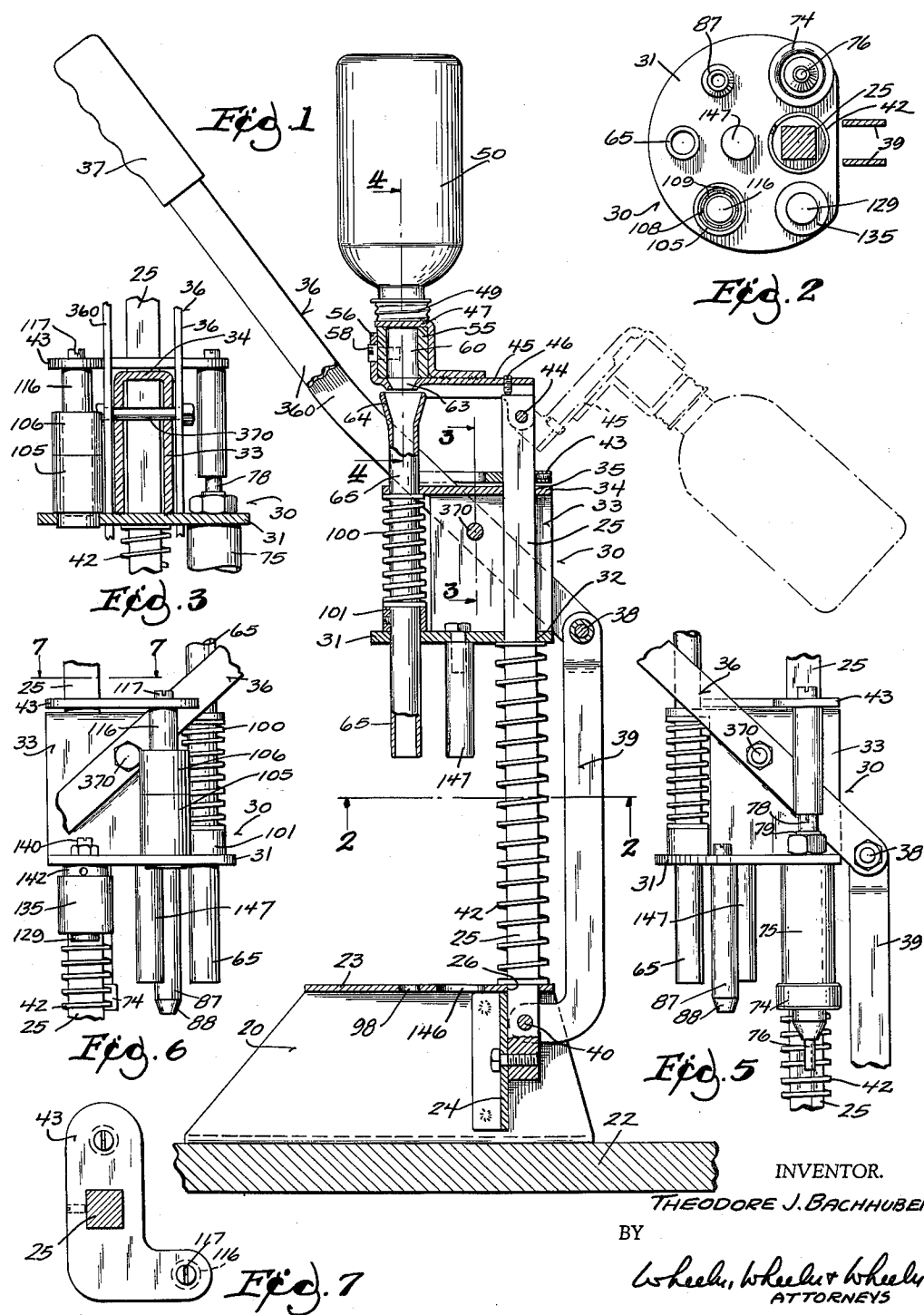
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3,105,408

SHOTGUN SHELL RELOADING DEVICE

Filed April 2, 1959

3 Sheets-Sheet 1



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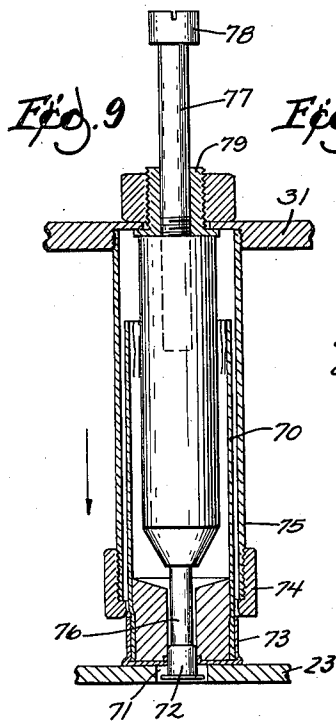
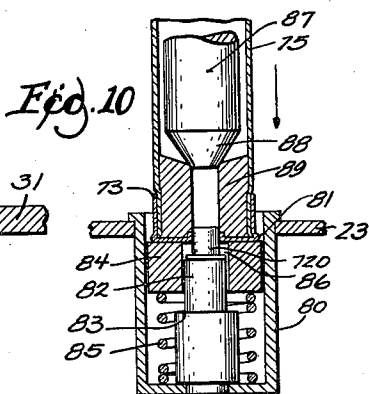
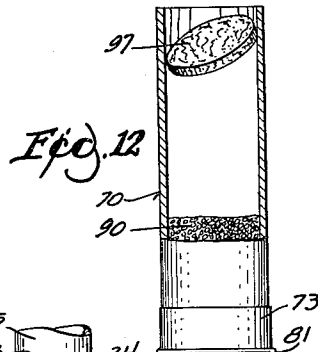
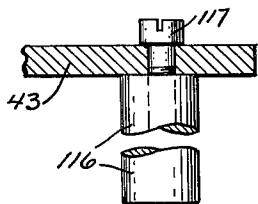
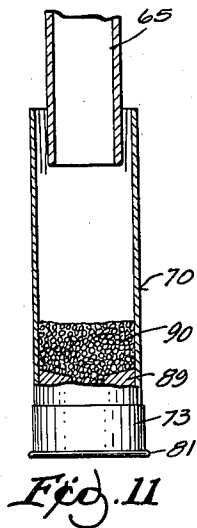
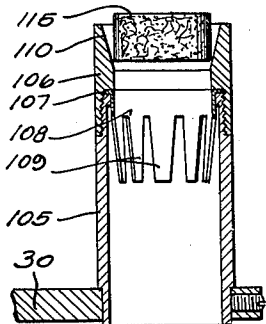
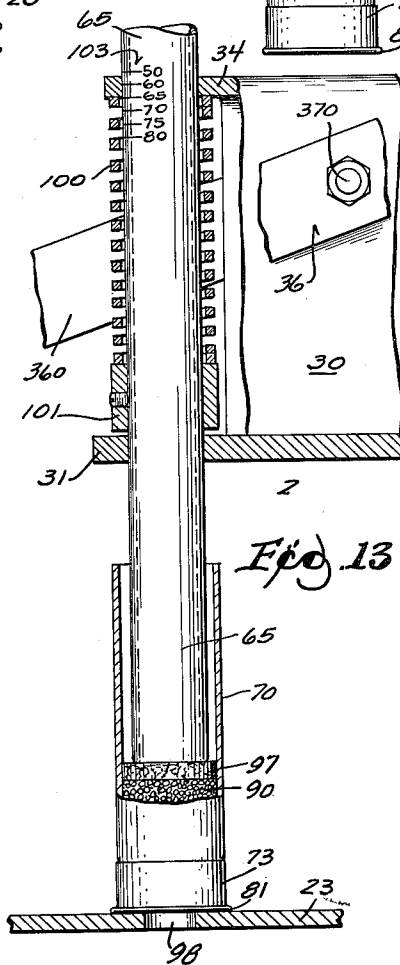
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SHOTGUN SHELL RELOADING DEVICE

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3 Sheets-Sheet 3



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SHOTGUN SHELL RELOADING DEVICE

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This invention relates to a shotgun shell reloading device.

The object of the invention is to provide a device which, by reason of its simplified form and sturdy construction, will enable the operator to perform all of the necessary operations more readily and more quickly and at lower cost than has heretofore been possible.

A base supports a column upon which a tool carrier is reciprocated manually by means of a hand lever linked to the base. The various tools mounted on the carrier are designed for sequential operation upon the work. In most cases, the work is manually positioned on a platen portion of the base, beneath the respective tool. In at least one instance, the work moves with the carrier and is engaged by a plunger fixed above the normal path of reciprocation of the tool carrier on a head at the top of the column.

The powder and shot are metered by a reciprocable valve to flow from respective containers into the shell case. A feature of the invention consists in the arrangement whereby these containers are in screw-threaded connection with a plate which is not fixed to the column but is hingedly connected therewith to be pivoted to a position in which the normally inverted containers are right side up for connection with the plate. Thus there is no possibility of spilling the powder or shot from the loaded containers as these are mounted on the device. A special arrangement seals the containers to the mounting plate and valve.

In the drawings:

FIG. 1 is a view of the apparatus in vertical front to rear section.

FIG. 2 is a bottom plan view of the tool carrier as used from the standpoint of the line marked 2—2 in FIG. 1.

FIG. 3 is a detail view taken in section on the line 3—3 of FIG. 1.

FIG. 4 is an enlarged detail view partially in front elevation and partially in section on the line 4—4 of FIG. 1.

FIG. 5 is a fragmentary detail view of the tool carrier in side elevation, as viewed from the same side as FIG. 1.

FIG. 6 is a fragmentary detail view of the tool carrier in side elevation as viewed in the opposite direction from the viewpoint of FIG. 5.

FIG. 7 is a plan view of a fixed plate near the top of the column as it appears from the viewpoint indicated by the line 7—7 in FIG. 6.

FIG. 8 is a view in perspective on a somewhat reduced scale showing a front three-quarter view of the apparatus, a portion of the hand lever being broken away.

The remaining views illustrate the sequence of operation:

FIG. 9 is an enlarged detail view showing the first operation on a shotgun shell, the shell and a sizing die being illustrated in section and a punch for ejecting the used primer being shown in elevation.

FIG. 10 is a fragmentary detail view in section through a portion of the cartridge and the platen to illustrate the application of a new primer cap.

FIG. 11 is a fragmentary detail view showing partially in section and partially in elevation a cartridge into which a charge of powder has been introduced through the drum tube.

FIG. 12 is a view illustrating the preliminary introduc-

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tion of the over-powder-wad into a shell which is illustrated partially in section and partially in side elevation.

FIG. 13 is a view illustrating the placement of the over-powder-wad and the compression of the charged powder in the shell, portions of the tool carrier and the shell being shown in section.

FIG. 14 is a view showing preliminary placement of the filler wad in equipment fragmentarily illustrated in section and whereby the wad is to be introduced into the shell.

FIG. 15 shows in section the parts illustrated in FIG. 14 as they appear in the process of placing the filler wad in a shell which is illustrated partially in section and partially in side elevation.

FIG. 16 shows shot introduced into the shell through the drop tube, the drop tube and portions of the shell being shown in section.

FIG. 17 fragmentarily illustrates in section a crimping die mechanism in which the loaded shell has been inserted, being illustrated partially in section.

FIG. 18 fragmentarily illustrates the initial functioning of the crimping die.

FIG. 19 is a view similar to FIG. 18 showing in section the positions of the crimping die parts as the crimping operation is completed.

A base 20 comprises an inverted channel flanged to receive mounting bolts 21 for its connection to a bench or board 22. The web portion 23 of the base comprises a platen to support the shell in various steps of the refilling operation.

Welded transversely of the channel interior is a web 24 to which the column 25 is fastened. In practice, this column comprises a square bar which is rigidly maintained upright by connection with the web 24 and by confinement in a square opening 26 of the base of identical outline with the cross section of the bar.

The tool carrier 30 is guided for reciprocation on column 25 and comprises an upper press platen 31 having a square opening at 32 embracing the column. To the platen 31 there is welded an inverted channel 33 having an upper web portion 34 which is also provided with a square opening 35 through which the column is reciprocable. A bifurcated hand lever 36 having a handle 37 has its respective legs 360 embracing the channel 33 and pivotally connected therewith by a cross bolt 370 as best shown in FIG. 3. Behind the column the hand lever 36 is connected by a pivot bolt 38 with links 39 which are pivoted to the base at 40, the connection being indirect, since the bolt 40 passes through the lower end of the column, in preferred practice. A heavy compression spring 42 seats on the lower platen 23 about the opening 26 and encircles the column 25 for the support of the tool carrier platen 31. The hand lever 36 is used in most of the operations hereinafter to be described as a means of forcing the platen and its tools downwardly against the bias of the compression spring 42.

Fixed to the column near its top is a head 43 best shown in FIGS. 3, 6 and 7. Above this a transverse pivot pin 44 supports a plate 45 which is movable from a horizontal position defined by a set screw 46 as shown in FIG. 1, from which it may be swung as indicated in dotted lines in FIG. 1 when the powder and shot containers mounted upon it are to be refilled.

Carried by the plate 45 is a bracket 47 to which screw caps 48, 49 are fixed to receive threaded connection with ordinary bottles 50, 51 which serve as containers for shot and powder. The respective screw caps have openings registering with the mouths of the bottles screwed therein and there are larger openings at 52 and 53 in the bracket 47 to receive annular gaskets 54. These gaskets bear on

the top surface of a metering valve 55 which is reciprocable in a way provided between the bracket 47 and an up-turned flange 56 at the front of plate 45. This flange has a slot 57 to accommodate the head of a cap screw 58 which is screwed into the valve member 55 and serves to restrict the valve member to a defined range of reciprocative movement.

The valve member has two metering cavities at 60 and 61, respectively, as best shown in FIG. 4. When one of these cavities registers with one of the annular gaskets 54, the other cavity will register with a delivery port 63 which, in a normal position of the pivoted plate 45, overlies the flared upper end 64 of the drop tube 65 through which the powder or shot, as the case may be, is guided to the shell.

Assuming that container 50 is full of shot and container 51 is full of powder, the contents will fall by gravity into the respective pockets 60 and 61 of the metering valve as such pockets alternately register with the gaskets. Thus when the metering valve has been moved to the right as shown in FIG. 4, the shot metered by the size of the cavity 60 in the valve will have been discharged through the drop tube 65 while the other cavity 61 is receiving powder from container 51 for delivery into the successive shell whenever the metering valve 55 is moved from right to left as viewed in FIG. 4 and FIG. 8.

When it is desired to replenish the contents of the containers 50 and 51, the plate 45 with the metering valve 55 and the respective containers 50, 51 is pivoted from the full line position of FIG. 1 to the dotted line position (or beyond), thereby bringing the containers 50, 51 from the normal inverted position to an upright position in which they may be handled and disengaged or engaged with their respective mounting caps 48, 49 without danger of spilling their contents.

The various tools can best be described in connection with the sequence of operations involved in reloading a shotgun shell.

The base platen 23 has numerous openings therein as shown in FIG. 8, these being of different sizes to accommodate different operations. In FIG. 9, a shotgun shell 70 is shown in place on platen 23 above an opening 71 which is sufficiently large to pass the used primer or cap 72. The ferrule portion 73 of the used shell may have been expanded in the shotgun when the shell was fired. Accordingly, the tooling carried by the tool carrier 31 includes a re-sizing die 74 which is mounted at the lower end of a sleeve 75. As the tool carrier 30 is forced downwardly by manipulation of the hand lever 36, the re-sizing die moves over the ferrule 73 to restore this to its original cross section. At the same time, a punch 76 engages the spent primer 72 and ejects it from the shell. The punch 76 is mounted for limited reciprocation with respect to the tool carrier 30, being provided with a bolt 77, the head 78 of which abuts the screw plug 79 to limit the downward movement of the punch, abutment of the punch itself with the screw plug limiting its upward movement to the position shown in FIG. 9.

After the ferrule has been redimensioned by the die 74 and the old primer cap 72 is ejected by the punch 76, a new primer cap 720 is inserted. As shown in FIG. 10, the platen 23 of the base 20 is provided with a cup 80 having a cross section slightly exceeding that of the rim 81 of the shell. An upwardly directed punch 82 is mounted in the bottom of this cup and shouldered at 83. The punch is encircled by a floating annular guide member 84 supported by compression spring 85 at a level above that of the punch to provide a recess or pocket at 86 into which the new primer cap 720 can be inserted manually.

With the primer 720 supported on the inverted punch 82 and centered by the floating ring 84, the empty shell is placed over it as shown in FIG. 10 and tool carrier 30 is moved downwardly to introduce the plunger 87 into the shell where its tapered end 88 bottoms on the base wad 89 to force the entire shell downwardly against

the thrust of the compression spring 85, whereby the new primer 720 is forced into position.

The shell is now ready to receive its charge 90 of powder as shown in FIG. 11.

The carrier moves up from the position shown in FIG. 10 to disengage the shell and the operator supports the shell manually beneath the drop tube 65. The valve 55 will be in the position illustrated in FIG. 4, with its metering cavity 61 registering with the openings of gasket 54 and in communication with the powder receptacle 51. Accordingly, the cavity 61 will be full of powder. When the valve is moved to the left, this powder will be discharged through port 63 into the flaring upper end of the drop tube 65 through which it will fall by gravity to constitute the charge shown at 90 in FIG. 11.

The shell and its charge 90 are now removed manually from beneath the drop tube 65 in order that the over-powder-wad 97 may be inserted manually into the upper end of the shell 70 as shown in FIG. 12. The shell is then placed on the platen 23 in the position illustrated in FIG. 13 and this time the carrier is forced downwardly by handle 36, the drop tube 65 now being used as a ram to seat the wad 97 upon the charge 90 and to compress the charge in the base of the shell 70 as shown in FIG. 13. Aperture 98 in platen 23 registers with the primer to preclude accidental firing.

It will be observed that the drop tube is slidable bodily through the platen 31 of carrier 30 and the web 34 of the inverted channel 33 which constitutes a part of the carrier. A heavy compression spring 100 seating against web 34 acts downwardly on collar 101 which is carried by the drop tube 65, thereby biasing such tube toward the position in which it is illustrated in FIG. 1. The tube is preferably provided with a series of graduations at 103 which may be calibrated in pounds, if desired. As the hand lever 36 exerts downward thrust on the carrier 30, the reaction pressure between the wad 97 and the drop tube 65 will displace the tube upwardly against the bias of spring 100 to an amount proportioned to the pressure exerted. The relative pressure can be read by the number of calibrations which emerge above the web 34 as shown in FIG. 13. Assuming the first calibration at 103 to represent 50 pounds of pressure, the emergence of this calibration from plate 34 will indicate that the charge 90 has been compressed with 50 pounds of pressure.

When the desired compression of the charge is achieved, the carrier is raised and the cartridge is moved to engage its open end in the sleeve 105 which is mounted in the carrier plate 31 and opens therethrough as shown in FIG. 14 and FIG. 15. To the upper end of this sleeve is screw-threaded a ring nut 106 which clamps to the upper end of the sleeve the flange 107 of a ring 108 which has circumferentially spaced and inwardly converging fingers at 109. A tapered surface 110 in the upper end of the ring nut 106 is designed to receive and temporarily to support the filler wad 115 as shown in FIG. 14.

In this particular operation, the filler wad is forced into the shell by an upward rather than a downward movement of the tool carrier 30. FIG. 14 shows the carrier in its lowermost position, where the ring nut 106 and the filler wad 115 are centered beneath a plunger 116 which has a fixed mounting by means of cap screw 117 in the plate 43 carried near the upper end of the column 25. As the operator now raises the hand lever 36, the carrier plate 31 will be caused to move through the intermediate position in which it is shown in FIG. 15. As it moves upwardly, carrying with it the filler wad and shell 70, the filler wad will be forced downwardly through the throat 118, beyond which it will expand the fingers 109 in clamping engagement with the inner wall surfaces of the shell 70 to hold the shell securely in the guide tube 105. Ultimately, the plunger 116 and the filler wad 115 will reach the relative positions shown in dotted lines in FIG. 15. Thereupon the tool carrier 30

will be lowered to withdraw the shell from the plunger 116.

The shell is now in readiness to receive its new charge 120 of shot as shown in FIG. 16. For this purpose, the shell is again supported manually beneath the drop tube 65 and the metering valve 55 is moved from left to right, thereby restoring it to the position shown in FIG. 4. The metering cavity 60 will have received a charge of shot from the receptacle 50 and, upon reaching the position shown in FIG. 4, the charge will fall by gravity from the cavity through the drop tube 65 into the shell 70, where it will appear as shown in FIG. 16.

The shell is now ready to be recrimped over the shot 120. It is moved to a position on the base platen 23 in which it registers with an aperture 122 which protects the primer against accidental firing. Over the shell is placed the loose crimping sleeve 125, the interior of which is generally cylindrical except for the throat 126 to which the side walls converge on a radius at 127. Above the throat there is a conically flaring surface at 128 which serves to center the work beneath the plunger 129.

The shell still has creases at 130 where it was originally crimped before being fired. When the crimping sleeve 125 is forced downwardly over the shell, the curved surface at 127 forces the margin of the shell at its upper end to turn inwardly and it readily crimps itself upon the lines of the original creases 130. In order to bring about this crimping action, the sleeve 125 is engaged by the hollow spring biased plunger 135 which is reciprocable on the shank portion 136 of the die 129, being urged downwardly by spring 137 to the extent permitted by the shoulder 138 between the die 129 and its shank 136. A screw 140 threaded through the platen 31 and held by lock nut 141 positions the die 129. This screw carries a nut 142 serving as a seat for the spring 137. The arrangement is such that by means of the nuts 141 and 142 the screw can be adjusted to position the die 129 with accuracy.

As the carrier 30 is urged downwardly by the hand lever, the hollow plunger 135 engages the upper end of the crimping die sleeve 125 to force the sleeve downwardly over the shell to crimp its upper margin, the movement being from the position of FIG. 17 to that of FIG. 18. After the upper margin 145 of the shell has been crimped as shown in FIG. 18, and the crimping die sleeve 125 cannot be forced downwardly to any greater extent, the continued downward movement of carrier 30 and its platen 31 will cause the die 129 to move downwardly through the throat 126 of the die into engagement with the crimped margin 145 of the shell 70, thereby recessing the crimped margin of the shell over the charge 120 of shot in the manner clearly shown in FIG. 19. This completes the operation except for the ejection of the reloaded shell from the crimping die 125. It is sometimes possible for the operator to grasp the rim 81 and withdraw the shell. Otherwise, the crimping die with the loaded shell within it is centered over the opening 146 in the base platen 23 and the tool carrier 30 is lowered to move the plunger 147 through the throat 126 of crimping die sleeve thereby forcing the loaded shell through the opening 146 into the space within the base channel 20.

I claim:

1. A cartridge reloading device comprising a base provided with a platen, a column connected with the base and extending upwardly therefrom, a tool carrier reciprocable upon the column, tool means mounted on the carrier, a hand lever in pivotal connection with the tool carrier intermediate its ends and having a handle at one end and having links in pivotal connection with its opposite end and in pivotal connection with the base, a drop tube mounted upon the tool carrier to partake of the movement thereof and means mounted on the upper end of the column for metering powder and shot selectively

into said drop tube, the reciprocable tool carrier comprising an upper platen having an opening through which the column extends, and an inverted channel mounted on said upper platen and having a web portion provided with another opening through which the column extends, said channel further having legs constituting means for supporting the web portion above an upper platen, the column being closely confined in the respective openings, whereby the carrier is guided for reciprocation on the column.

2. A cartridge reloading device comprising a base provided with a platen, a column connected with the base and extending upwardly therefrom, a tool carrier reciprocable upon the column, tool means mounted on the carrier, a hand lever in pivotal connection with the tool carrier intermediate its ends and having a handle at one end and having links in pivotal connection with its opposite end and in pivotal connection with the base, a drop tube mounted upon the tool carrier to partake of the movement thereof and means mounted on the upper end of the column for metering powder and shot selectively into said drop tube, the base comprising an inverted channel having a web which constitutes the said platen, and having side flanges constituting legs supporting the web, said web having an aperture in which the column is confined and having means remote from the web connecting the column below said aperture with said base.

3. A cartridge reloading device according to claim 2 in which the means connecting the column with the base comprises a transverse web having means connecting it with said side flanges below the web portion of the inverted channel constituting said base, and means for connecting the column to said transverse web.

4. A cartridge reloading device according to claim 2 in which a pintle bolt extends transversely through the column below the top web of the inverted channel which constitutes the base, the said links being mounted on the pintle bolt and thereby placed in pivotal connection through said column with the base as aforesaid.

5. A cartridge reloading device comprising a base provided with a platen, a column connected with the base and extending upwardly therefrom, a tool carrier reciprocable upon the column, tool means mounted on the carrier, a hand lever in pivotal connection with the tool carrier intermediate its ends and having a handle at one end and having links in pivotal connection with its opposite end and in pivotal connection with the base, a drop tube mounted upon the tool carrier to partake of the movement thereof and means mounted on the upper end of the column for metering powder and shot selectively into said drop tube, the reloader being adapted to act upon a shell having a body portion and a ferrule, which ferrule has been expanded in firing, the tool means including a tube of sufficiently large interior cross section to receive the body freely and provided at its lower end with an annular sizing die of such dimensions as to restore the ferrule to its original gauge when forced thereover, and a floating punch suspended within said tube from the tool carrier and having a terminal portion of such cross section as to be adapted to displace the used primer from the shell, said punch having limited relative movement in the tube and having a portion engageable with the carrier to provide primer ejecting pressure as the sizing die acts on the ferrule.

6. In a shell reloader, the combination with a base, of a drop tube, means for supporting the drop tube and means for delivering a charge into the drop tube, said last mentioned means comprising a plate having mounting hinge means supporting it for movement from a first position in which the plate overlies the drop tube to a second position in which the plate is at least partially inverted, the plate having an aperture registering with the drop tube when the plate is in said first position, a metering valve mounted on the plate and provided with a cavity registerable with said aperture, and a powder container in

connection with said mounting and movable with said plate, said container being normally inverted in the first position of the plate for flow of its contents toward said valve cavity and being at least partially erect in the second position of the plate for flow of powder toward the end of the container remote from said valve.

7. In a shell reloader the combination with a base having an upstanding column thereon, a carrier reciprocable on the column and means provided with a handle for reciprocating the carrier respecting the base, of means for delivering refill materials into a shell supported on the base, said means including a plate having an aperture and provided with a flange upstanding at one side of the plate, of an angle connected with the plate and having a portion opposite said flange and another portion overlying said aperture, the said angle and flange and plate providing a way, a valve bar reciprocable in the way and provided with a cavity which registers with the aperture in one position of the bar and is offset therefrom in another bar position, the said angle having an aperture with which the bar cavity registers in said other bar position, a screw cap fixed on the angle and having a port registering with the aperture of the angle, a container having a screw-threaded mouth portion in threaded engagement with said cap, an annular gasket interposed between the end of the container mouth and the bar and confined within the port of said cap and within the aperture of said angle, said gasket bearing on said valve bar as well as against the container mouth and thereby providing a seal between the container mouth and the valve bar.

8. In a device of the character described, the combination with a drop tube and a column, of an apertured plate having a mounting including hinge means for supporting said plate for movement between a first position in which its aperture substantially registers with the drop tube and a second position in which the plate is at least partially inverted, means for supporting the drop tube in a position in which it will underlie the plate in the first said position of the plate, the plate having an upstanding flange forwardly of its aperture, a valve bar slidable transversely of the plate against the flange and across the aperture and having metering cavities selectively registrable with the aperture, an angle connected with the plate and having one flange opposed to the plate flange and a second flange overlying the aperture of the plate, said angle cooperating with the plate and plate flange to provide a way in which said bar is guided, the second mentioned flange of the angle having ports with which the respective valve cavities are selectively registrable, annular gaskets in said ports bearing against said bar, annular screw caps connected with the second mentioned flange of the angle in registry with the ports thereof, and containers having threaded mouth portions engaged in the caps and abutting the respective gaskets.

9. A shotgun shell reloading device having means for re-crimping the bodies of loaded shells, said re-crimping means comprising the combination with a platen for supporting a loaded shell to be crimped, a loose sleeve enveloping the shell body and provided with an internal shoulder having a radius adapted to effect crimping when engaged under pressure with the end of the shell body, a tool carrier mounted for movement to and from the platen, an annular plunger engageable with the end of said sleeve to exert crimping pressure on the shell body, means yieldably supporting the plunger from the carrier and an inner die connected with the carrier and movable through the sleeve beyond the shoulder thereof to recess the end of a crimped shell body after the latter has been crimped by pressure of said sleeve developed by the annular plunger first mentioned.

10. A shotgun shell reloading device according to claim 9 in which said inner die has a screw-threaded shank adjustably threaded to the carrier and has a bearing portion upon which said annular plunger is guided for

reciprocation, the means yieldably supporting the plunger from the carrier including a compression spring encircling the shank and confined between the plunger and the carrier, said inner die having a shoulder supporting the annular plunger against the bias of said spring and from which shoulder the annular plunger is yieldable toward the carrier when engaged with said sleeve, said sleeve having an opening at its end through which the die is movable to engage the crimped end of the shell after the annular plunger yields toward the carrier against the bias of said spring upon engagement with said sleeve.

11. A shell loading device comprising the combination with a base providing a platen and having an upright column, a tool carrier reciprocable on the column and comprising an upper platen, an inverted channel having a side flange carried by the upper platen intermediate the sides thereof, and a hand lever having link connection with the base and comprising laterally spaced leg portions disposed at opposite sides of the respective side flanges of the inverted channel and connected with the carrier by a pintle extending through the said flanges of the channel.

12. The combination with a tool carrier and means mounting it for reciprocation for reloading a shotgun shell having a body portion and requiring insertion of a wad, a downwardly open tube having means for support on said carrier in a position in which its lower end is exposed and into which the shell body portion is receivable from below, to be held frictionally therein, a guide ring having flexible fingers converging axially of the tube and receivable into the shell body as the body is inserted in the tube, and a ring nut connected with the tube and provided with a tapered shoulder for temporarily supporting a wad above such fingers, a ram having means fixedly mounting it in registry with said tube to be received into the shell, and means for effecting upward movement of the tube and the shell disposed therein respecting said fixed ram whereby to force the wad past said tapered shoulder and through said fingers into the shell, the shell in which the ram has been inserted being freely removable from said tube.

13. In a shotgun shell reloader, the combination with a base having the form of an inverted channel with a web portion constituting a platen and provided with an aperture, a partition spanning the base beneath the aperture, a hollow column extending through the aperture and in bolted connection with the partition, a tool carrier reciprocable on the column, link means in pivotal connection with the column beneath the web of the base and extending upwardly behind such web along the column, and a bifurcated lever having pivotal connection intermediate its ends with said carrier for the reciprocation of said carrier and having terminal pivotal connection with said link means.

14. A cartridge reloading device comprising a base provided with a platen, a column connected with the base and extending upwardly therefrom, a tool carrier reciprocable upon the column, tool means mounted on the carrier, a hand lever having means connecting it with the tool carrier, a drop tube mounted upon the tool carrier to partake of the movement thereof, and means for metering powder and shot selectively into said drop tube comprising a plate, a mounting, hinge means connecting the plate with the mounting for pivotal movement between a generally horizontal position overlying the drop tube to a second position in which the plate is at least partially inverted, means providing a way transversely of the plate, the plate having a delivery aperture opening from said way above the drop tube, a metering valve reciprocable in the way, and normally inverted containers detachably connected with the way-providing means, said way-providing means having means providing communication therethrough for supplying material to be delivered to the drop tube subject to the control of said metering valve, said containers being

adapted to be at least partially inverted in the pivotal movement of the plate, the containers being upside down in the normal position of the plate and being at least partially turned toward erect position in said second position of said plate.

15. In a device for reconditioning a shotgun shell having a body portion and a ferrule, which ferrule has been expanded in firing, the combination with a base provided with a platen, a column mounted on and extending upwardly from the base, a tool carrier reciprocable upon the column, and a hand lever in pivotal connection with the tool carrier intermediate its ends and having a handle at one end and links in pivotal connection with its opposite end and with the base, of a tool mounted on said tool carrier and comprising a tube of sufficiently large interior cross section to receive the body portion of the shell freely and provided at its lower end with an annular sizing die of such dimension as to restore the ferrule to its original gauge when forced thereover, and a floating punch disposed within the tube and having a guide rod at its upper end, a bearing having means for adjustably connecting it with the carrier and in which bearing said rod is reciprocable, the punch including a primer ejecting portion and further having a shoulder engageable with said bearing as said sizing die engages the ferrule, the primer ejecting portion being thereby caused to eject the primer during the handle-effected descent of the carrier while the sizing die operates on the ferrule of a shell supported on said platen, the platen having an aperture in registry with the primer and through which the primer is ejected.

16. In a shotgun shell reloading device, means for delivering a fresh charge to a shell and comprising a charge container, a support for said container, the container and the support having coacting means for connecting the container detachably to the support, a mounting for the support, means providing a hinged connection between the mounting and the support, the support and said container connected therewith being unitarily movable upon the hinged connection between a first position in which the container is inverted for the gravity delivery of a charge and a second position in which the container is at least partially erected and can be connected with and disconnected from the support without discharge of its contents, said mounting having means upon which such support and container rest in said first position, and valve means for controlling delivery of a charge from the container when the container and its support are in said first position, said valve means being mounted for unitary movement with said support and said container.

17. A device according to claim 16 in which at least two containers are detachably connected with the support for unitary movement therewith between said positions, one such container being a powder container and one a shot container, said support comprising a way which is

beneath the containers in said first position and has charge admission apertures with which the inverted containers register, said valve comprising a slide reciprocable in said way and provided with at least one cavity registrable with respective admission apertures and in consequence of slide reciprocation with delivery port means with which the way is provided.

18. In a shotgun shell reloading device the combination with a slide valve having at least one metering cavity, of a way having means guiding the slide valve for reciprocation and having spaced inlet and outlet ports with which said cavity is selectively registrable in first and second positions of said valve, a shotgun shell charge container normally inverted for gravity delivery and having a mouth portion registering with the inlet port aforesaid, annular means for positioning said container, said annular means being mounted on the way in registry with said inlet port, and a gasket within the inlet port and in bearing engagement with the slide valve and upon which the mouth of said container is seated, the container positioning means and the mouth of said container having interacting parts constituting means for detachably maintaining the container in unitary assembly with the way, the gasket providing a seat for the container mouth and a seal for the valve.

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713,032	Wetzig	Nov. 4, 1902
735,047	Alsop	Aug. 4, 1903
2,031,850	Peterson	Feb. 25, 1936
2,405,507	Lefren	Aug. 6, 1946
2,600,530	Griffin et al.	June 17, 1952
2,748,648	Miller	June 5, 1956
2,749,790	Miller	June 12, 1956
2,749,791	Miller	June 12, 1956
2,794,359	Lyman et al.	June 4, 1957
2,807,186	Veum	Sept. 24, 1957
2,819,644	Corcoran	Jan. 14, 1958
2,854,881	Craft	Oct. 7, 1958
2,960,903	Scott	Nov. 22, 1960
3,001,436	Deitemeyer	Sept. 26, 1961
3,009,387	Puth	Nov. 21, 1961

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