May 25, 1965 E. D. SHOFFSTALL 3,185,019

SHELL CASING HOLDER

Filed Sept. 5, 1962

Fig. 1

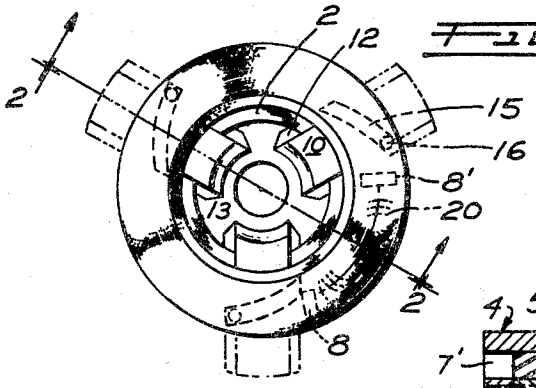
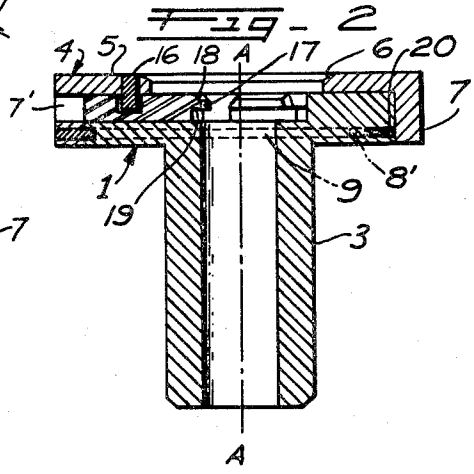


Fig. 2



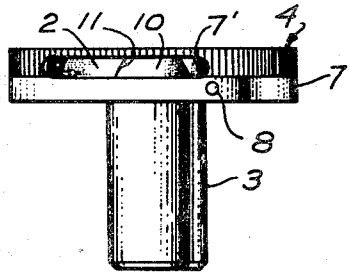
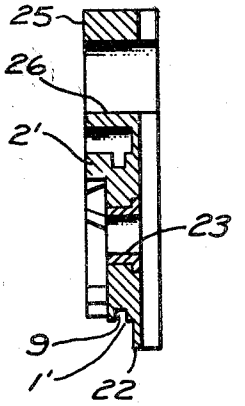


Fig. 3

Fig. 5



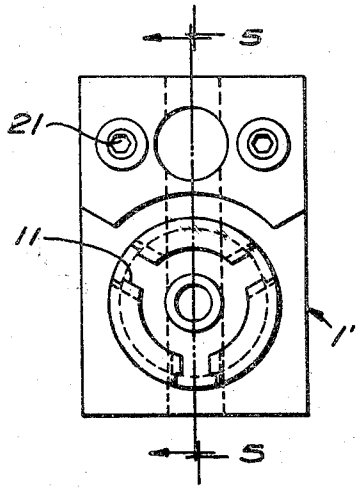


Fig. 4

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SHELL CASING HOLDER

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This invention relates to a new and useful device for holding shell casings during resizing, reloading, primer seating and like operations thereon.

The primary object of my invention is to provide a device which will receive and hold shell casings of different diameters, and which automatically centers the shell as it grips the same.

Another object of my invention is to provide the foregoing in a relatively simple and durable construction which is easily and quickly operated.

In one aspect thereof, a shell casing holder constructed in accordance with my invention is characterized by the provision of a base, a cap rotatable on the base about an axis, three movable jaws spaced apart around the axis for gripping a shell casing in centered relation thereto, the jaws being guided for movement toward and away from the axis to alternately grip and release a shell casing, motion translating means interconnecting the cap and the jaws and retracting the jaws from the axis when the cap is rotated in one direction while extending the jaws toward the axis when the cap is rotated in the opposite direction, together with return spring means urging the cap in such opposite direction for extending the jaws to grip a shell casing therebetween.

The foregoing and other objects, advantages and characterizing features of a shell casing holder constructed in accordance with my invention will become clearly apparent from the ensuing detailed description of a presently preferred, illustrative embodiment thereof, taken together with the accompanying drawing illustrating the same wherein like reference numerals denote like parts throughout the various views and wherein:

FIG. 1 is a top plan view of a shell casing holder of my invention;

FIG. 2 is a sectional view thereof, on an enlarged scale, taken about on line 2—2 of FIG. 1;

FIG. 3 is a side elevational view thereof;

FIG. 4 is a top plan view thereof on a modified mounting, the cap and jaws being omitted for greater clarity; and

FIG. 5 is a sectional view thereof, taken about on line 5—5 of FIG. 4.

Referring now in detail to the accompanying drawing, and particularly to FIGS. 1–3 thereof, there is shown a shell casing holder of my invention comprising an annular base **1** having an upstanding annular body **2** on one side thereof. A tubular mounting shank **3** depends from the opposite side of base **1** for engagement in a chuck or the like, thereby providing a means for mounting and anchoring the holder. Base **1** and body **2** are concentric about the axis A—A (FIG. 2), which is the axis of shank **3**, and body **2** has an internal diameter substantially greater than base **1**. In the illustrated embodiment, base **1**, body **2** and shank **3** are integral.

A cap **4** is rotatable on base **1** about axis A—A. Cap **4** has an annular top wall portion **5**, overlying and turning on the top wall of body **2**. Top wall **5** of cap **4** has a relatively large central opening therethrough, the edge of which is beveled as shown at **6**. Cap **4** also has a circular skirt **7** depending therefrom and encircling body **2** and base **1**. One or more, and preferably three pins **8** are carried by skirt **7** and extend into a circumferential groove **9** around base **1** to hold cap **4** in place on body **2** and base **1**, and guide the cap for rotation thereon.

Three movable jaws **10** slide in three guide passages **11** through body **2**. The opposite side edges **12** of jaws **10** are beveled, and the opposite side edges of passages **11** are correspondingly undercut to retain and guide jaws **10** as they reciprocate across the top surface **13** of base **1**.

It is a particular feature of my invention that the jaws **10**, which are spaced apart 120° about axis A—A, are moved toward the axis in unison and thereby center a shell casing on the axis. They also are retracted in unison, to facilitate operation thereof. To this end, each jaw is provided with a slot **15** in its upper surface, receiving a pin **16** depending from the top wall **5** of cap **4**. When cap **4** is rotated in one direction about the axis A—A, for example counter-clockwise as viewed in FIG. 1, the jaws **10** are simultaneously retracted by the camming action of pins **16** and slots **15** to the position indicated in phantom in FIG. 1. This opens the jaws for placement of a shell holder therebetween, the extent of opening or retraction varying with the degree of rotation of cap **4**. Upon rotation of cap **4** in the opposite direction, clockwise as viewed in FIG. 1, the camming action of pins **16** and slots **15** moves jaws **10** inwardly toward their extended position shown in full lines in FIG. 1. This causes jaws **10** to engage the shell casing, each jaw having a lip **17** with a beveled upper surface **18** and undercut, as indicated at **19**, to provide a shoulder adapted to overlie the annular rim found on a conventional shell casing.

Because jaws **10** are moved inwardly in unison, a shell holder engaged thereby is automatically centered in the holder, on axis A—A. This automatic centering action will occur, regardless of the diameter of the shell holder which simply determines the extent to which the jaws move inwardly.

The cap skirt **7** has three, circumferentially elongated slots **7'** so alined with jaws **10** as to receive and accommodate the same when retracted.

Further, jaws **10** are constantly urged into their extended, gripping position shown in full lines in FIG. 1. This is accomplished by a coiled return spring **20** lying in groove **9** between one of the pins **8** carried by skirt **7**, and a similar pin **8'** carried by body **2** and extending therefrom into groove **9**. Spring **20** is compressed by and upon rotation of cap **4** to retract jaws **10**.

Therefore, when it is desired to insert a shell into the holder cap **4** is rotated, against the force of spring **20**, to retract jaws **10**. The shell casing is inserted between the retracted jaws, following which the cap is simply released. The released cap is rotated in the opposite direction by the stressed spring **20**, thereby moving jaws **10** inwardly to engage the shell casing and simultaneously center it with respect to the axis A—A of the device.

FIGS. 4 and 5 show the holder of my invention, with another form of mounting particularly adapted for use with a primer seating device. The cap **4** and jaws **10**, being identical with the corresponding parts in the embodiment of FIGS. 1–3, have been omitted for clarity. The base **1'** differs only in that it is adapted to be mounted on a primer seating device by bolts **21** extending through a base plate **22**. Base **1'** has a primer guide **23** through its central opening, and plate **22** has at one end a block **25** containing a passage **26** for a primer tube. Base **1'** carries as an integral part thereof an annular body **2'** which, like the body **2** in FIG. 1 has guide openings **11** undercut to receive the jaws **10**.

The operation of my invention in the form of FIGS. 4 and 5 obviously is the same as in FIGS. 1–3, the shell casing holder being the same in each instance.

Accordingly, it is seen that my invention fully accomplishes its intended objects. A shell casing of any normal, small bore size is inserted by simply grasping cap **4**, which can be knurled, and rotating it to open or retract

the jaws. Upon releasing the cap, the jaws are automatically extended inwardly to center and grip the shell casing. The operation is quick, simple, and dependable.

While I have illustrated and described in detail, only one embodiment of my invention, with two different types of mountings, this has been done by way of illustration only. Those modifications and variations which will naturally occur to those skilled in the art and do not depart from the spirit of my invention are intended to be included within the scope of the appended claims.

Having fully disclosed and completely described my invention, and its mode of operation, what I claim as new is:

1. A shell casing holder comprising a base, a cap mounted on said base for rotation about an axis, three movable jaws spaced apart 120° around said axis for gripping a shell casing in centered relation to said axis, said jaws being guided for movement toward and away from said axis to alternately grip and release a shell casing thereat, motion translating means interconnecting said cap and said jaws for retracting said jaws from said axis when said cap is rotated in one direction and extending said jaws toward said axis when said cap is rotated in the opposite direction, and return spring means urging said cap in said opposite direction upon rotation thereof in said one direction, wherein said base has a circular peripheral portion with a circumferential groove therein, said cap having a skirt encircling said base portion and having a part entering said groove and movable therealong upon rotation of said cap.

2. A shell casing holder as set forth in claim 1, wherein said return spring means comprise a coiled spring lying in said groove and covered by said skirt, said spring being fixed at one end to said base and having its opposite end engaging said cap part for being stressed thereby upon rotation of said cap in said one direction.

3. A shell casing holder comprising a base, a cap mounted on said base for rotation about an axis, three movable jaws spaced apart 120° around said axis for gripping a shell casing in centered relation to said axis, said jaws being guided for movement toward and away from said axis to alternately grip and release a shell casing thereat, motion translating means interconnecting said cap and said jaws for retracting said jaws from said axis when said cap is rotated in one direction and extending said jaws toward said axis when said cap is rotated in the opposite direction, and return spring means urging said cap in said opposite direction upon rotation thereof in said one direction, wherein said base includes an annular body having passages therethrough guiding said jaws for reciprocation across said base, coacting means on said jaws and said body whereby said body retains said jaws on said base, and wherein said cap includes an annular top wall overlying said body and a depending skirt encircling said body, wherein said jaws project outwardly beyond said body when retracted, and wherein said cap skirt has three openings therethrough elongated circumferentially of said skirt, said skirt openings being alined with said jaws to accommodate retraction thereof.

4. A shell casing as set forth in claim 3, wherein said motion translating means comprise cam slots in said jaws, and cam pins carried by said cap and engaging said jaw slots for movement therealong upon rotation of said cap.

5. A shell casing holder comprising an annular base, an annular body carried by said base in concentric relation thereto, said body being of larger internal diameter than said base, an annular cap rotatable on said body about the axis of said body and base, three jaws equally spaced apart around said axis, said body having three passages therethrough receiving said jaws and guiding the same for movement across said base toward and away from said axis to alternately grip and release a shell casing, each of said jaws having a cam slot therein, said cap having a top wall and pins extending from said top wall into said slots for retracting said jaws away from said axis upon rotation of said cap in one direction about said axis and extending said jaws toward said axis upon rotation of said cap in the opposite direction, said cap also having a skirt encircling said body and said base, said skirt having three circumferentially elongated slots therethrough receiving and accommodating said jaws upon retraction thereof, a circumferential groove in said base, pins carried by said skirt and extending into said groove, and a coiled spring lying in said groove and held at one end in fixed relation to said base, the opposite end of said spring being engaged by one of said skirt carried pins for compressing said spring upon rotation of said cap in said one direction, thereby energizing said spring for return rotation of said cap in said opposite direction, said skirt enclosing said spring within said groove.

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