April 8, 1958 J. B. SAWYER 2,829,554

MANUAL CARTRIDGE RELOADING TOOL

Filed Feb. 19, 1954

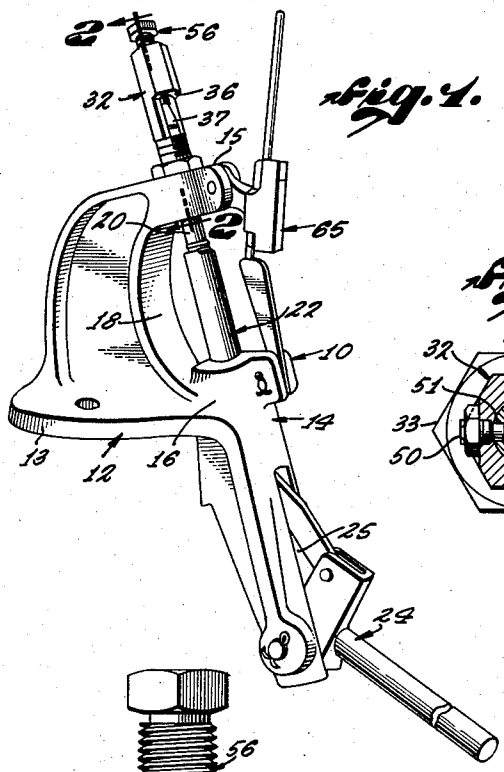


fig. 1.

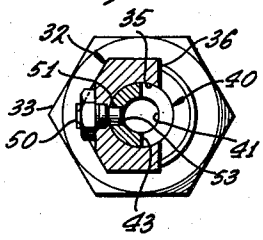


fig. 3.

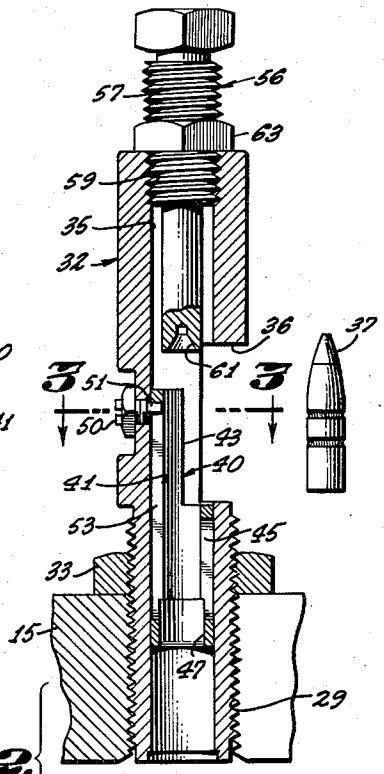


fig. 2.

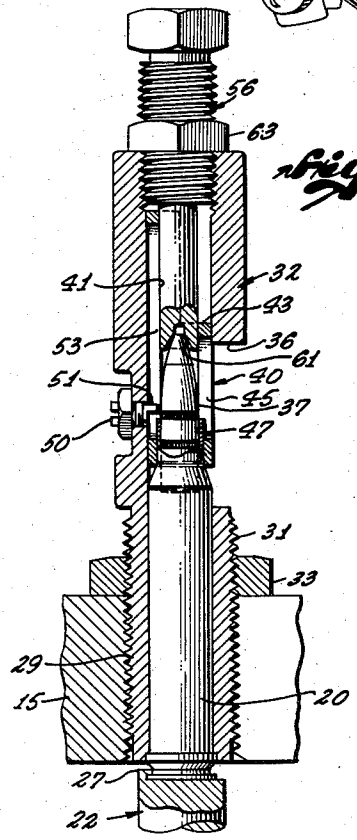


fig. 4.

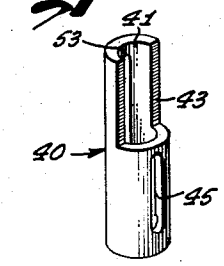
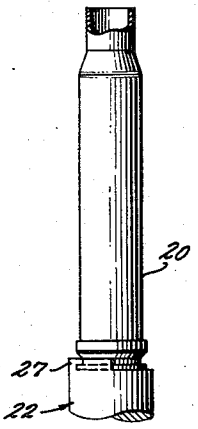


fig. 5.



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United States Patent Office 2,829,554 Patented Apr. 8, 1958

2,829,554

MANUAL CARTRIDGE RELOADING TOOL

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Application February 19, 1954, Serial No. 411,421

1 Claim. (Cl. 86—43)

This invention relates to a manual cartridge reloading tool for reloading spent ammunition and, more particularly, to a tool of the aforementioned character which includes means for inserting a bullet in the neck of the cartridge.

It is conventional practice to reload spent ammunition by the utilization of manual reloading tools of varying degrees of efficiency. Among the disadvantages of conventional tools is the fact that such tools necessitate the utilization of the fingers to maintain a bullet in predetermined orientation with a cartridge case in which the bullet is to be seated, thus entailing considerable risk of injury to the fingers of the individual operating the reloading tool since considerable pressure must be exerted on the cartridge case and the bullet to drive the bullet into the neck of the cartridge case and since there is always the possibility that the cartridge case may slip from the cartridge holder or the bullet slip from the bullet-seating die with resultant injury to the fingers holding the bullet in place above the neck of the cartridge case.

It is, therefore, an object of my invention to provide a cartridge case reloading tool which eliminates the danger of injury to the fingers of the individual utilizing the tool since the bullet can be readily inserted in the tool and maintained in a proper orientation with respect to the cartridge case in which it is to be driven without the necessity for maintaining it in the proper orientation with the fingers.

An additional object of my invention is the provision, in a bullet-seating die, of means for completely supporting a bullet which is to be inserted into a cartridge case, in such a manner as to prevent misalignment of the bullet with the cartridge case, thus preventing damage to the mouth of the cartridge case and preventing seating of the bullet at an offset angle to the longitudinal axis of the cartridge case which would cause inaccuracy of the reloaded cartridge when fired.

Another object of my invention is the provision of a tool of the aforementioned character in which the bullet seating die includes an elongated, axial bore and said bore has a transverse bullet insertion opening communicating therewith and formed in the wall of the die to permit a bullet to be inserted into said bore.

An additional object of my invention is the provision of a cartridge reloading tool of the aforementioned character which includes a bullet receiving guide, said guide being provided with an axial bore adapted to receive a bullet inserted thereinto from the aforementioned insertion opening in the wall of the bullet seating die.

Another object of my invention is the provision in a tool of the aforementioned character of a bullet guide which is provided with a bullet receiving opening in a wall thereof, said bullet receiving opening being registerable with the bullet insertion opening in the bullet seating die to permit the insertion of a bullet into the bore of the guide.

An additional object of my invention is the provision

of a tool of the aforementioned character in which the aforesaid bullet guide is provided with a viewing opening in the wall thereof, said viewing opening being disposed below the bullet receiving opening therein and being movable into registry with the bullet insertion opening in the wall of the bullet seating die.

A further object of my invention is the provision of a tool of the aforementioned character in which the bullet guide is slidably movable in the bore of the bullet seating die between a first, lowermost position in which the bullet receiving opening therein is juxtaposed to the bullet insertion opening in the wall of the bullet seating die and a second, uppermost position in which the aforementioned viewing opening or orifice is juxtaposed to the bullet insertion opening in the bullet seating die.

It is apparent, therefore, that by providing a bullet guide for the reception of the bullet to be driven into the neck of a cartridge case it is possible to eliminate the necesisty for maintaining the bullet between the cartridge case and the bullet seating die, thus forestalling the possibility of injury to the fingers of the operator of the tool. Furthermore, since the bullet is adequately supported in the bullet guide, the proper orientation of the bullet with respect to the longitudinal axis of the cartridge is maintained, thus eliminating the possibility of improperly inserting the bullet in the neck of the cartridge.

Of importance also, is the fact that the provision of the viewing opening in the bullet guide permits the operator of the tool to determine whether the bullet is being properly driven into the neck of the shell while the operation is taking place, and whether the bullet is being inserted to the proper depth into the cartridge case, all without requiring removal of the cartridge from the bullet seating die.

Other objects and advantages of my invention will be apparent from the following specification and the accompanying drawing which is for the purpose of illustration only and in which:

Fig. 1 is a perspective view showing a conventional cartridge reloading tool with a bullet seating die, constructed in accordance with the principles of my invention installed therein;

Fig. 2 is a vertical, sectional view taken on the broken line 2—2 of Fig. 1;

Fig. 3 is a transverse, partly sectional view taken from the broken line 3—3 of Fig. 2;

Fig. 4 is a vertical, sectional view similar to Fig. 2 with the exception that the cartridge case and bullet guide are shown as disposed in the second, uppermost position thereof; and

Fig. 5 is an isometric view of a bullet guide incorporated in the cartridge reloading tool of my invention.

Referring to the drawing and particularly to Figs. 1–4 thereof, I show a conventional cartridge reloading tool **10**, in order to illustrate use of my invention, and including a frame **12**, said frame incorporating a base **13** adapted to be secured to a table or workbench and said base having formed integrally therewith an angularly oriented yoke **14**.

The yoke **14** includes upper and lower mounting arms **15** and **16**, respectively, which define therebetween a cartridge receiving space **18** which permits a cartridge case **20** to be inserted into the tool **10**.

A substantially cylindrical cartridge holder **22** is slidably mounted in a bore provided in the lower mounting arm and is actuable by actuating means **24** disposed in a slot **25** in the mounting arm **16**. The cartridge holder **22** is provided at its uppermost end, as best shown in Figs. 2 and 4 of the drawing, with a semi-annular flange **27**, said flange being adapted to receive the end of the cartridge case **20** and to retain it on the cartridge holder **22** during upward movement of the cartridge case **20**

on the cartridge holder 22 as caused by the energization of the actuating means 24.

A threaded bore 29 is provided in the upper mounting arm 15 for the reception of the threaded lowermost end 31 of an elongated bullet seating die and mounting means 32. The threaded engagement of the lowermost end 31 of the bullet seating die 32 with the threaded bore 29 of the upper mounting arm 15 permits the lowermost end of the bullet seating die 32 to be adjusted with respect to the upper end of the cartridge holder 22 so that the cartridge case 20 mounted thereupon may be driven into the bullet seating die 32 to the extent necessary to accomplish the proper bullet seating operation thereof. Therefore, when the bullet seating die 32 is threadedly engaged in the bore 29, it is urged downwardly until the lowermost end thereof is juxtaposed to the uppermost end of the cartridge holder 22 when the cartridge holder 22 is in its uppermost position, as best shown in Fig. 4 of the drawing. When so located, a hexagonal nut 33 is driven into engagement with the adjacent surface of the upper mounting arm 15 to lock the bullet seating die 32 in its adjusted position.

The bullet seating die 32 is, as best shown in Figs. 2 and 4 of the drawing, provided with an elongated bore 35, the lower portion of which serves as a guide for the cartridge case 20, as best shown in Fig. 4 of the drawing. A transverse bullet insertion opening 36 is provided in the wall of the bullet seating die 32, said opening permitting the insertion of a bullet 37 into the bore 35 of the bullet seating die 32.

Slidably mounted for movement in the bore 35 of the bullet seating die 32 is a bullet guide 40, said guide being generally cylindrical in cross-sectional configuration and providing a bullet receiving bore 41. A bullet receiving opening or slot 43 is provided in the upper end of the bullet guide 40 which is registered with the bullet insertion opening 36 in the wall of the bullet seating die 32 when the bullet guide 40 is located in a first, lowermost position in the bore 35 of the bullet seating die 32, best shown in Fig. 2 of the drawing. When the bullet guide 40 is located in the aforesaid first, lowermost position, a bullet 37 can be easily inserted through the bullet insertion opening 36 and the bullet receiving opening 43 to locate the bullet 37 in the bore 41 of the guide 40. However, when the guide 40 is shifted upwardly into a second, uppermost position, best shown in Fig. 4 of the drawing, the bullet receiving opening 43 is moved upwardly and the bullet 37 is encompassed by the wall of the guide 40 to prevent lateral mislocation thereof as the bullet is driven into the neck of the cartridge case 20, in a manner to be described in greater detail below.

To facilitate the insertion of the bullet 37 in the neck of the cartridge case 20, a viewing opening or orifice 45 is provided in the wall of the bullet guide 40 immediately below the bullet receiving slot or opening 43 therein, the bullet viewing opening 45 being registerable with the bullet insertion opening in the bullet seating die 32 when the guide 40 is located in the second, uppermost position shown in Fig. 4 of the drawing. Therefore, the operator of the tool is able to follow the insertion of the bullet 37 in the neck of the cartridge case 20 to make sure that the bullet 37 is properly oriented with respect to the neck of said cartridge case and thus prevent mislocation of said bullet with respect to said cartridge case. Furthermore, the provision of the bullet viewing opening 45 also permits the operator to determine the depth to which the bullet 37 will be driven into the neck of the cartridge case 20.

It should be noted that the opening 45 is a relatively narrow opening so that the bullet 37 is practically completely encompassed by the wall of the bullet guide 40 when the bullet guide is disposed in the second, uppermost position shown in Fig. 4 of the drawing to prevent lateral movement of the bullet 37 and insure proper location thereof in the cartridge case 20.

The lowermost end of the bullet receiving bore 41 of the bullet guide 40 is counterbored, as at 47, to receive the neck of the cartridge case 20, as best shown in Fig. 4 of the drawing. Therefore, the counterbore at 47 serves to locate said neck with respect to the lower end of a bullet 37 to be driven into said neck.

The bullet guide 40 is supported within the elongated bore 35 of the bullet seating die 32 by means of a set screw 50, said set screw having its innermost end 51 located in an elongated slot 53 formed in the guide 40 and extending from one end to the other of said guide. Therefore, when the cartridge holder 22 is moved upwardly by the action of the actuating means 24 to carry the cartridge case 20 upwardly into the bore 35 of the bullet seating die 32, the neck of said cartridge case enters the counterbore at 47 and subsequent movement of the cartridge case causes upward translation of the bullet receiving guide 40 to carry the guide upwardly into a position in which the bullet is encompassed by the wall of the guide 40, as best shown in Fig. 4 of the drawing, and to register the viewing opening 45 in the guide with the bullet insertion opening 36 in the bullet seating die 32.

The diameter of the bullet receiving bore 41 of the bullet guide 40 is substantially equivalent to the major diameter of the bullet 37 so that the bullet 37 is accurately located with respect to the neck of the cartridge case 20 to facilitate the insertion of the bullet 37 in said neck.

Suspended in the upper end of the bore 35 of the bullet seating die 32 is a bullet seating plug 56 which is provided with a threaded periphery 57 engageable in a threaded portion 59 at the upper end of the bore 35. A frusto-conical recess 61 is provided in the lowermost end of the bullet seating plug 56 and is adapted to receive the nose of the bullet 37 to urge the lower end of the bullet into seating relation with the neck of the cartridge case 20, as best shown in Fig. 4 of the drawing. The bullet seating plug 56 is adjustable in the threaded portion 59 of the bore 35 to permit it to be raised or lowered to accomplish the desired depth of seat of the bullet 37 in the neck of the cartridge case 20.

A hexagonal nut 63 is provided which prevents the bullet seating plug 56 from being inadvertently moved out of adjustment after the desired point of adjustment has been attained. The periphery of the bullet seating plug 56 is spaced from the wall of the bore 35 in the bullet seating die 32, the space defined therebetween being adapted to receive the upper end of the bullet guide 40, as best shown in Fig. 4 of the drawing, when the bullet guide 40 is moved into the second, uppermost position by the upward movement of the cartridge case 20 as caused by the upward movement of the cartridge holder 22.

Also mounted on the frame 12 are means 65 for feeding primers to the cartridge case prior to the loading of the cartridge case 20 with powder.

The manner in which the reloading tool is used, utilizing my invention, is as follows:

The bullet seating die 32 is installed in the upper mounting arm 15 of the yoke 14 and rotated to carry it downwardly in the threaded bore 29 in the upper mounting arm 15 until the bottom end of the bullet seating die 32 barely meets the top end of the cartridge holder 22 when the cartridge holder is at the top of its stroke. The hex nut 33 is then tightened to maintain the bullet seating die 32 in its adjusted position. The bullet guide 40 is then inserted in the bore 35 of the bullet seating die 32 from the lower end thereof and the set screw 50 is rotated to urge the innermost end 51 thereof into engagement with the elongated retention slot 53 in the bullet guide 40. The cartridge case 20, which has been resized, primed, and filled with the proper

amount of powder, is then placed on the cartridge holder **22** and the actuating means **24** energized to permit the neck of the cartridge case **20** to engage the counterbore at **47** in the lower end of the bullet guide **40**. A bullet **37** is then inserted through the bullet insertion opening **36** and the bullet receiving opening **43** to locate the bullet in the bullet receiving bore **41** in the bullet guide **40**.

The cartridge holder **22** is then moved upwardly to carry the bullet guide into the second, uppermost position shown in Fig. 4 of the drawing. By viewing the bullet **37** through the viewing opening **45** in the bullet guide **40**, the desired seating depth of the bullet **37** in the neck of the cartridge case **20** may be obtained. This is accomplished by adjusting the bullet seating plug **56** in the upper end of the bore **35** of the bullet seating die **32**.

After the adjustment of the bullet seating plug **56** has been accomplished, the hexagonal nut **63** can be utilized to lock the bullet seating plug **56** in adjusted position. No other adjustments of the tool **10** are necessary during the future utilization of the tool unless a different type or weight of bullet is used.

Since the bullets **37** are fed directly into the bullet guide **40** and since the bullets **37** are entirely supported by the bullet guide when the bullet guide is moved into the second, uppermost position shown in Fig. 4 of the drawing, there is no necessity for supporting the bullet with the fingers and injury incidental to the use of prior art devices is eliminated. Since the counterbore at **47** and the bullet guide **40** fits tightly over the neck of the cartridge case, said case **20** and the bullet are maintained in axial alignment thus causing seating of the bullet **37** in the neck of the cartridge case **20** with no possibility of deforming the neck or seating the bullet **37** in the neck of the cartridge case **20** at an angle.

Furthermore, the provision of the viewing opening **45** in the bullet guide **40** permits visual inspection of both the bullet and the neck of the cartridge case **20** when the bullet **37** is seated in the neck of said cartridge case and also permits rapid adjustment of the seating depth without removing the cartridge case **20** from the bullet guide **40** or the bullet seating die **32**. Moreover, the

bullet seating die may be utilized for a plurality of cartridges of similar size by merely changing the bullet guide and thus one bullet seating die can be utilized to reload a large number of similar cartridge cases **20**.

Although I have shown and described a specific embodiment of my invention, I do not intend to limit the invention thereto since modifications of the details of the invention may be made which will, nevertheless, fall within the scope of the appended claim.

I claim as my invention:

In a manually operable tool for reloading spent ammunition, the combination of: an elongated mounting member having an axial bore therein for tightly fitting around the outside wall of a cartridge case, said member having an opening in a side wall thereof at least as long as a bullet for the sidewise insertion of a bullet into said bore; a bullet guide slidable in said bore by a cartridge case, said guide having a lateral slot therein for the sidewise reception therein of a bullet passed through said member communicating with said opening when said guide is disposed in a first lowermost position in said bore retention means on said guide operatively connected to retention means on said member to prevent its being displaced from said bore, said guide having an axial bullet receiving bore for tightly fitting around the surface of the bullet, said guide having a viewing orifice therein registerable with said opening when said guide is in a second, uppermost position in said bore for visually inspecting the position of both a bullet and the neck of the cartridge; and a bullet seating plug in said bore above said guide for urging said bullet into the neck of said cartridge case.

References Cited in the file of this patent

UNITED STATES PATENTS

1,864,880	Zimmerman	June 28, 1932
2,700,915	Pattison	Feb. 1, 1955

FOREIGN PATENTS

553,972	Germany	July 2, 1932