May 8, 1962 R. A. THOMPSON 3,033,070

TOOL FOR RELOADING SHOTGUN SHELLS

Filed May 9, 1960

FIG. 1

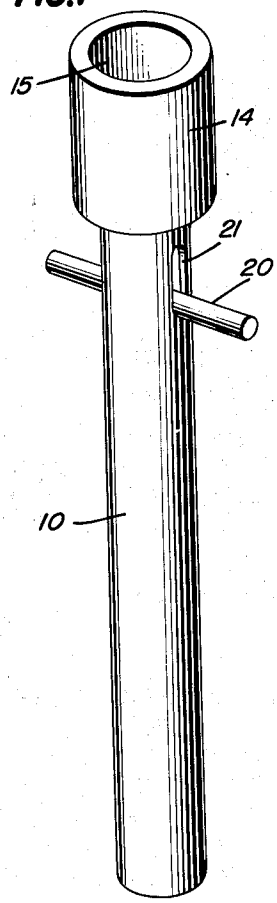


FIG. 2

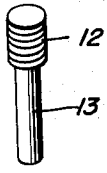


FIG. 3

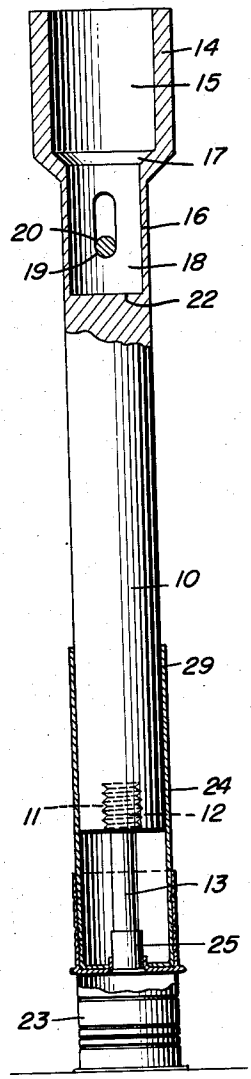


FIG. 5

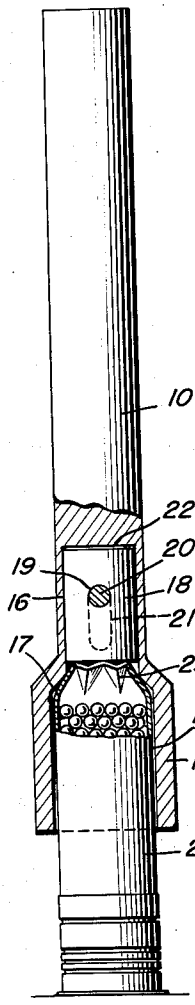


FIG. 8

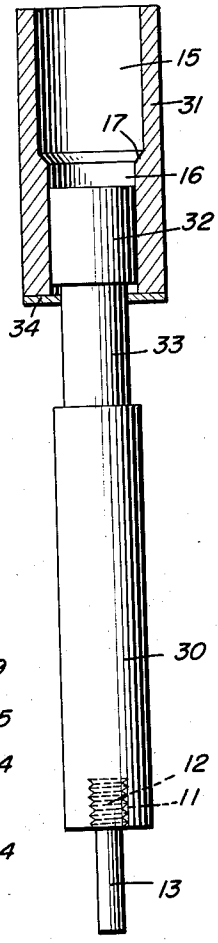


FIG. 4

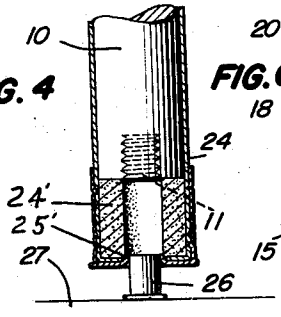


FIG. 6

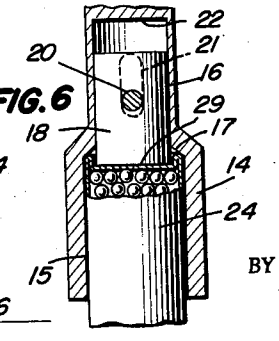
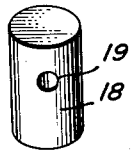


FIG. 7



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TOOL FOR RELOADING SHOTGUN SHELLS

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This invention relates to a tool for reloading shotgun shells and the like.

An object of the invention is to provide a highly simplified, compact and lightweight tool for the above purpose which may be used by the hunter in the field without difficulty, and which tool is reliable and efficient in operation, easy to manipulate and inexpensive to manufacture.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same,

FIGURE 1 is a perspective view of a shotgun shell reloading tool according to the invention,

FIGURE 2 is a perspective view of a depriming punch forming a part of the tool,

FIGURE 3 is a side elevation, partly in section, showing the use of the tool for depriming a shell casing,

FIGURE 4 is a fragmentary side elevational view, partly in section, showing the use of the tool for repriming the shell casing,

FIGURE 5 is a further side elevational view, partly in section, of the tool illustrating a first stage of crimping a reloaded shell casing,

FIGURE 6 is a fragmentary vertical sectional view through the tool showing a second or final crimping operation,

FIGURE 7 is a perspective view of a second stage crimping plunger removed,

FIGURE 8 is a side elevational view, partly in section, of a modified form of tool according to the invention.

In the drawings, wherein for the purpose of illustration are shown preferred embodiments of the invention, attention is directed first to FIGURES 1 through 7, wherein the numeral **10** designates an elongated cylindrical bar body portion of a proper diameter to fit snugly within a shotgun shell casing. The bar body portion **10** is provided in one end and centrally thereof with a screw-threaded recess **11**, adapted to receive the enlarged screw-threaded end portion **12** of an elongated depriming pin or punch **13** of the proper diameter to engage the primer of a spent shotgun shell. The punch **13** is adapted to project axially beyond the end of the bar body portion **10** while in use, FIGURE 3.

The other end of the body portion **10** carries an enlarged cylindrical tubular head **14**, integral therewith, and having a cylindrical bore **15** opening through the outer end of the head **14**. A reduced cylindrical recess **16** in the end portion of the bar **10** communicates with the enlarged bore **15**, and a conically tapered shoulder **17** is formed at the bottom of the head **14**, between the bores **15** and **16**. The shoulder **17** constitutes a first crimping element used during the operation of the device, as will be described.

A relatively short cylindrical crimping plug **18** is slidably mounted within the bore **16** and is preferably coextensive therewith. This plug **18** has a transverse opening **19** extending therethrough near its longitudinal center for the reception of a transverse operating pin or handle **20**, pressed or otherwise detachably secured within the opening **19** and extending through the plug **18** and beyond opposite sides thereof. The body portion **10** has a pair of longitudinal slots **21** formed therethrough on opposite sides of the bore **16**, slidably receiving the pin **20**, as

shown. When the plug **18** is engaging the bottom wall **22** of the bore **16**, FIGURE 3, the pin **20** is engaging the inner ends of the slots **21**, as shown. The plug **18** and pin **20** may reciprocate axially within the bore **16** an amount limited by the length of the slots **21**, so that one end portion of the plug **18** may be shifted into the enlarged bore **15** beyond the shoulder **17**, FIGURE 6.

In the use of the tool for reloading a shotgun shell, the paper body portion of an old shell casing of the high base type may be cut off so that the brass shell portion **23**, FIGURE 3, may be employed as an anvil with its open end facing upwardly and its lower end resting upon a flat surface. The depriming punch **13** is threaded into the screw-threaded recess **11**, and the adjacent end portion of the cylindrical bar **10** is inserted into the open end of the shell casing **24** to be reloaded, FIGURE 3. The punch **13** will now engage the old primer **25** of shell casing **24**, and the brass end of the latter rests upon the anvil **23** as shown in FIGURE 3. The head **14** of the tool may now be struck with the hand or with a mallet, and the punch **13** will readily drive out the old primer **25** and the latter will drop into the anvil **23**. Depriming may also be done by placing the brass end of the shell casing **24** on the edge of a flat support surface and striking the head **14** of the tool with the hand. When this is done, the anvil **23** is not used.

The bar **10** and punch **13** are now removed from the shell casing **24** and the punch **13** is detached from the bar **10**. The shell casing **24** is again applied over the cylindrical bar **10**, FIGURE 4, until the end of the bar **10** engages the shell base wadding **24'**. A new primer **26** is placed in an upstanding position upon a firm level surface **27**, and the opening **25'** of the deprimed shell is brought into registration with the new primer **26**. The upper end or head **14** is now struck with the hand or an implement to drive the shell casing **24** downwardly, and the new primer **26** will pass readily into the opening **25'** and remain therein due to frictional engagement. The bar **10** is now again disengaged from the shell casing **24**, and the shell has been primed.

With reference to FIGURE 5, the shell casing **24** is now charged with the proper measured amount of powder, additional wadding, and shot, and placed in an upright position upon a level supporting surface with its upper end open. The upper end of the paper shell casing **24** has the usual 6-way fold **29** to produce the well known star-crimp.

The tool is inverted, FIGURE 5, and the enlarged tubular head **14** is telescoped downwardly over the open end of the shell casing, and the tapered shoulder **17** engages the folded end of the shell casing, as shown, and crimps the same inwardly, uniformly around the circumference of the shell casing as shown in FIGURE 5, so that the upper end of the shell casing **24** is conically formed or tapered during the first stage crimping operation. The second stage crimping plunger **18** is at this time held by the pin **20** at the upper limit of its travel, FIGURE 5. When the tubular head **14** is thus applied over the top of the shell casing **24**, FIGURE 5, the tool is preferably rotated, and this improves the operation. The first crimping stage of FIGURE 5 partially closes or crimps the shell casing, as shown.

With reference to FIGURE 6, and while the tubular head **14** is still engaged over the shell **24**, the handle or pin **20** is now pushed downwardly in the slots **21** with the crimping plunger **18**, and the lower end of the latter completes the crimping and closing of the shotgun shell as shown clearly in FIGURE 6. The folded portions **29** of the shell casing will now assume a flat interfitting relation to completely close the end of the shell casing, FIGURE 6. As a final step, heavy pressure may be applied

to the head **14** and to the handle **20** and the tool is rotated one or more turns upon the shell **24** when the same has been fully crimped, FIGURE 6. The tool is not rotated at the time that the crimping plunger **18** is shifted downwardly by the handle **20**. The tool is now removed and the shell **24** is reloaded and ready for use.

In FIGURE 8, there is shown a modification of the invention, wherein a cylindrical bar portion **30** is provided, corresponding to the bar **10**, and the removable depriming punch **13** is detachably secured to one end of the bar portion **30** in the exact manner described in connection with the first form of the invention.

A tubular enlarged head **31** separate from the bar portion **30** is provided, having the enlarged cylindrical recess or bore **15**, conically tapered shoulder **17** and reduced cylindrical bore **16**. A cylindrical second stage crimping plunger **32** is slidably mounted within the bore **16**, and is integrally connected with the bar portion **30** through a reduced cylindrical neck **33**, slidable through a central opening in an annular locking ring **34**, suitably rigidly secured to the inner end of the tubular head **31**. The plunger **32** takes the place of the separately formed plunger **18** in the first form of the invention, and the pin **20** and slots **21** are dispensed with. The tool of FIGURE 8 is essentially formed of only two moving parts which cannot become separated or lost.

The operation of the tool in FIGURE 8 for reloading the shell **24** is essentially identical to the previously described operation of the tool shown in FIGURES 1 through 7.

The steps of depriming and repriming the shell, FIGURES 3 and 4, are carried out in the identical manner by means of the elements **30** and **13**. The first stage crimping of the shell shown in FIGURE 5 is carried out in the same manner utilizing the tubular head **31** and crimping shoulder **17**. Finally, the second stage crimping or final closing of the shell in FIGURE 6 is done with the plunger **32** and head **31** in substantially the identical manner shown in FIGURE 6 and previously described.

It is to be understood that the forms of the invention herewith shown and described are to be taken as preferred examples of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. An manually operated tool for reloading shotgun shells comprising a unitary elongated cylindrical bar body portion having one end adapted for insertion in an open shell casing, a primer punch detachably secured to said one end of the bar body portion and extending axially beyond said one end, an enlarged cylindrical tubular head integrally secured to the opposite end of the bar body portion and having a cylindrical bore engageable snugly over the shell casing, the bar body portion having a cylindrical recess in said opposite end communicating directly with the bore of said head and being of considerably smaller diameter than the bore of said head and concentric therewith, a conically tapered crimping shoulder formed at the juncture of said bore and recess and at the inner end of said bore, a cylindrical crimping plug slidably mounted for reciprocation within said recess and being somewhat shorter axially than the length of said recess so that the plug may lie bodily within the recess and inwardly of said tapered shoulder, said plug having a transverse through opening intermediate its opposite ends, said bar body portion having a pair of diametrically opposed axially elongated slots formed through its side wall adjacent said recess and communicating with the recess, the inner ends of said slots spaced from the bottom wall of said recess and the outer ends of said slots disposed near and axially inwardly of said crimping shoulder, and a transverse pin element adapted to serve as a handle extending detachably through the slots and through the opening of the plug and beyond opposite sides of the body portion, whereby the plug may be held retracted at the bottom of said recess when the pin element is engaging the inner ends of said slots to permit a first stage of crimping of the shell casing by said shoulder, the plug being shiftable by said pin element axially outwardly and beyond said shoulder and into said bore to produce a final stage of crimping of the shell casing, the outer ends of said slots limiting the outward movement of said plug and pin element.

2. A manually operated tool for reloading shotgun shells according to claim 1, and wherein said one end of the bar body portion has a screw-threaded opening formed therein and said primer punch has a screw-threaded portion detachably engageable within said screw-threaded opening.

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