

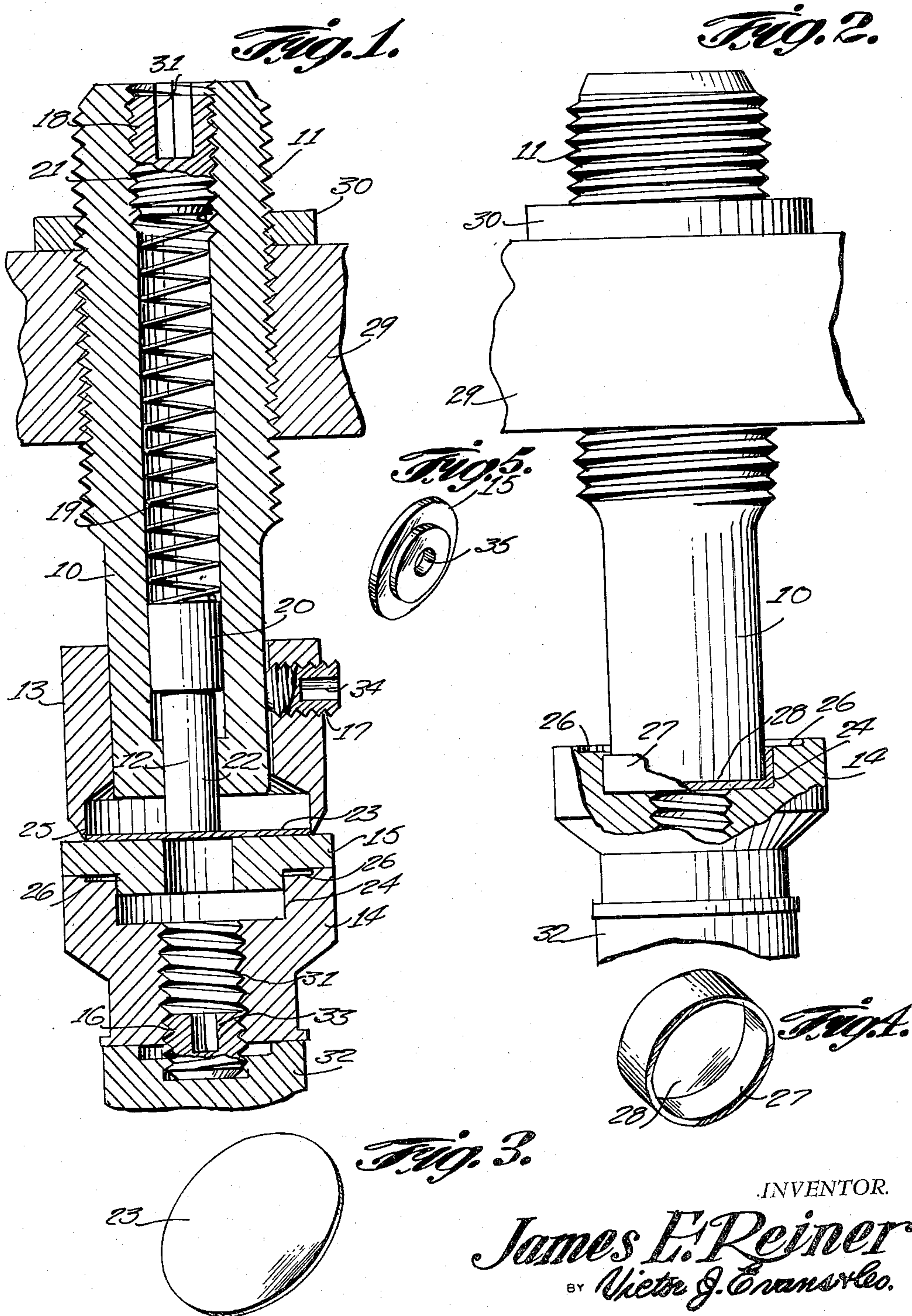
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SELF EJECTING WAD CUTTER AND CUP FORMER

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SELF EJECTING WAD CUTTER AND CUP FORMER

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1 Claim. (Cl. 86-23)

This invention relates to reloading shells of firearms and in particular a master plunger having a spring actuated ejector therein with a forming die and anvil and in which the master plunger is designed to be threaded in a conventional reloading press.

The purpose of this invention is to provide a punch and forming die with which cupped waxed wads are produced.

Various types of wad cutting devices have been provided for use particularly in reloading shells, however, it has been found desirable to include cup forming dies in a wad forming plunger whereby the finished wads are cup-shaped and waxed to facilitate reloading. With these ends in view this invention contemplates a combination plunger and forming die which first cuts wads to size and then shapes the wads to form cups.

The object of this invention is, therefore, to provide a combination master plunger and cup forming die for wads used in reloading shells in which the plunger may be used in conventional reloading presses.

Another object of the invention is to provide a master plunger and cup-shaped forming die in which wads are produced for use over the powder of shotgun shells wherein the wads are readily waxed to prevent leading of the gun barrel.

A further object of the invention is to provide a combination wad forming plunger and cup-shaped die for making wads for reloading shotgun shells in which the device is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a master plunger threaded to correspond with the threads of a conventional reloading press, a spring actuated ejector in the lower end of the plunger, a punch on the lower end of the master plunger, a cup-shaped forming die positioned to receive the plunger, an anvil on the forming die, an adjusting screw in the upper end of the plunger and an anchor screw in the lower end of the forming die.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein:

FIGURE 1 is a vertical section through the improved wad cutter and cup former showing the parts in assembled relation and with parts broken away.

FIGURE 2 is a side elevational view of the unit shown in FIG. 1 also with parts broken away and showing, in particular, a cup-shaped washer forced into the forming die with the lower end of the plunger.

FIGURE 3 is a view illustrating a wad formed by the machine.

FIGURE 4 is a view showing the wad after being formed into a cup.

FIGURE 5 is a view looking toward the lower end of the anvil designed to be positioned on the forming die to form the blank wad.

Referring now to the drawing wherein like reference characters denote corresponding parts the improved wad former and cup cutter of this invention includes a master plunger 10 having threads on the upper surface to correspond with threads of a conventional reloading press, an ejecting pin 12 mounted in the lower end of the plunger, a punch 13, a forming die 14 positioned in alignment with the plunger, an anvil 15 positioned on the forming die, an anchor screw 16 threaded in the

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lower end of the forming die, a set screw 17 threaded in the punch and positioned to retain the punch in position upon the plunger, and an adjusting screw 18 threaded in the upper end of the plunger and positioned to adjust the tension on a spring 19 positioned between the adjusting screw 18 and a head 20 of the ejecting pin 12.

The upper end of the plunger 10 is provided with threads 21 which receive the adjusting screw 18 and the lower end is provided with an opening 22 in which the ejecting pin 12 is slidably mounted. In use the ejecting pin slides upwardly against the pressure of the spring 19 until the lower end of the pin is flush with the lower end of the plunger whereby the pin coacts with the end of the plunger for forming a wad 23 wherein with the anvil 15 removed the wad is pressed downwardly into a recess 24 forming the body of a cup.

The wad 23 is formed by cutting through a sheet of material with the sharp angular cutting edge 25 of the punch 13 and after the wad is removed from the sheet of material the anvil 15 is removed and the wad placed in the annular recess 26 of the forming die 14 whereby the wad is in alignment with the plunger 10 so that as the plunger moves into the forming die the wad is shaped to form the cup shown in FIG. 4 with an annular flange 27 extended from a base 28.

In use the master plunger 10 is threaded in an arm 29 in the conventional reloading press and with the plunger in position a lock nut 30 is turned downwardly against the upper surface of the arm 29 whereby the plunger is retained in position as wads are cut and formed in the cutting and forming elements.

The adjusting screw 18 is provided with a socket 31 that is formed to receive a wrench and the lower end of the adjusting screw is formed to receive the upper end of the spring 19, the lower end of which is positioned upon the head or upper end 20 of the ejector 12.

The forming die 14 is provided with a threaded bore 31 in which the anchor screw 16 is threaded and, as shown in FIG. 1 the screw 16 extends into a mounting base 32 to which the parts are secured. The anchor screw 16 is provided with a socket 33 which facilitates rotating the screw particularly with the master plunger removed.

With the parts designed and assembled as illustrated and described the anvil 15 is first positioned upon the upper end of the forming die 14 with a boss 35 on the under side of the anvil 15 positioned in the annular recess 24 in the upper end of the forming die and with a sheet of material, for forming wads, placed upon the anvil 15, the master plunger is moved downwardly for stamping a disc, such as the disc 23 shown in FIG. 3, from the sheet of material.

With the anvil and punch removed from the tool the disc is placed in the annular recess 26 of the forming die whereby it is shaped to form a cup as the plunger 10 moves downwardly, as described. FIGURE 1 shows the punch 13 connected to the plunger 10 by means of the set screw 17, and FIGURE 2 shows the punch 13 removed or disconnected from the plunger 10. It is to be noted that the set screw 17 can be loosened whereby the punch 13 can either be taken all the way off as for example as shown in FIGURE 2, or else with the set screw 17 loosened the punch 13 can be slid or moved up on the plunger 10, and the set screw 17 can then be tightened in order to maintain or hold the punch 13 stationary in an elevated position on the plunger 10.

The set screw 17, threaded in the punch, is also provided with a socket 34 by which the screw is rotated with a Philips head wrench, or the like.

The punch 13 may be replaced with punches of different sizes so that substantially any size wad that may be desired may be formed with the tool.

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It will be understood that modifications, within the scope of the appended claim, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

A wad forming tool comprising a plunger having a threaded outer surface for use in a reloading press, an anvil positioned in alignment with the plunger, a disc forming die secured, by a set screw, in position on the outer surface of the plunger and positioned to stamp a disc from a sheet of material positioned on the anvil, an ejector positioned in the plunger, and a forming die also positioned in alignment with the plunger and upon which the anvil is positioned, the anvil being removable from the forming die, the disc being positioned on the forming

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die with the anvil removed whereby the plunger coacts with the forming die for pressing the disc into a cup.

References Cited in the file of this patent

UNITED STATES PATENTS

190,683	Jenkins	May 15, 1877
374,482	Lee	Dec. 6, 1887
506,374	Richards	Oct. 10, 1893
945,874	Thompson	Jan. 11, 1910
2,031,850	Peterson	Feb. 25, 1936
2,379,450	Musser	July 3, 1945
2,501,682	Kuchman	Mar. 28, 1950
2,545,237	Maby	Mar. 13, 1951
2,917,960	Gargrave	Dec. 22, 1959