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MACHINE FOR CLEANING CARTRIDGE PRIMER POCKETS

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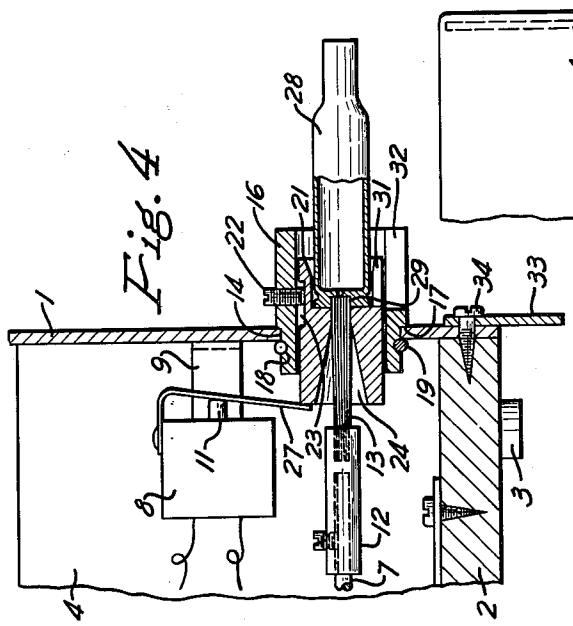


Fig. 4

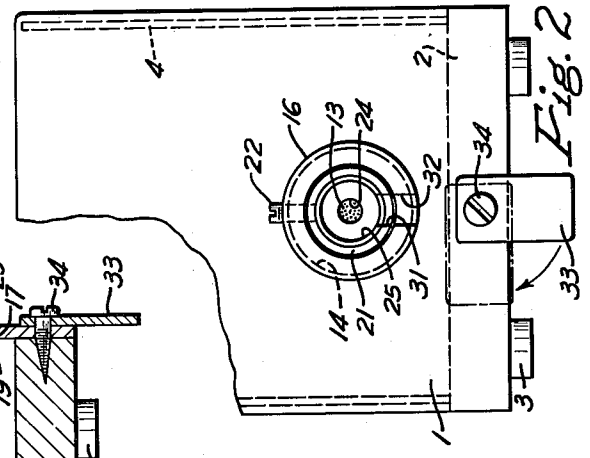


Fig. 2

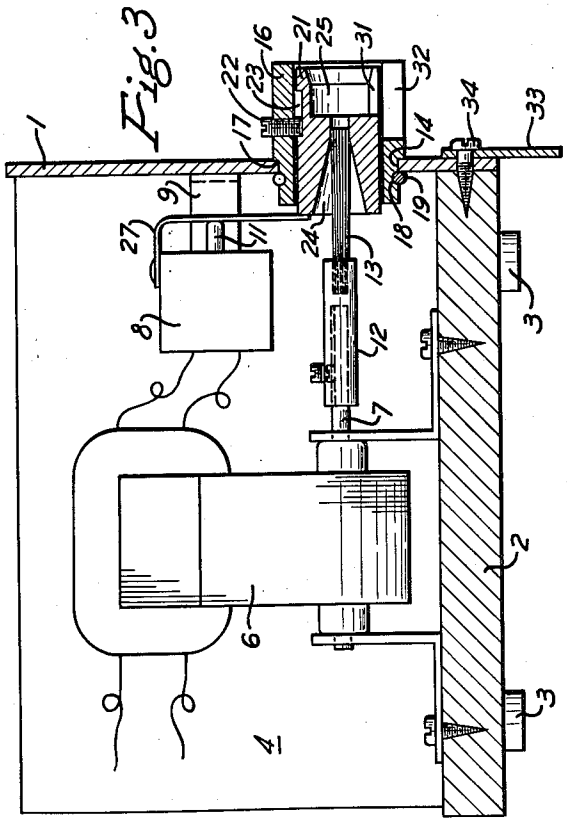


Fig. 3

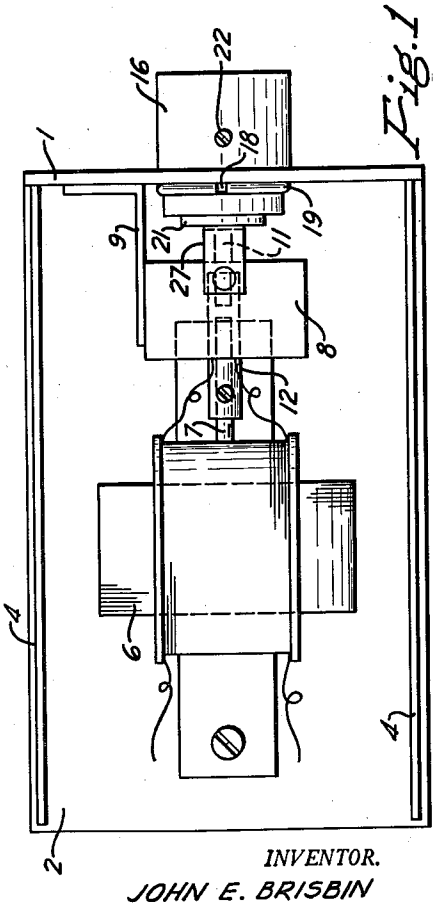


Fig. 1

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MACHINE FOR CLEANING CARTRIDGE PRIMER POCKETS

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7 Claims. (Cl. 15—104.1)

This invention relates to the cleaning of primer pockets in cartridge shells that are to be reloaded, and more particularly to a machine designed for that purpose.

It is common practice for people who do a lot of shooting to reload the cartridge shells that they have used. In order to do that, the spent primer first has to be pushed out of the primer pocket in the base of the shell and then the pocket must be cleaned before a new primer can be fitted into it. The usual way of cleaning the pocket is to use a small brush designed for that purpose but which has not been very satisfactory, or to make or buy a metal blade that can be inserted in the pocket and rotated to scrape its walls clean. Such practices not only require a considerable amount of time, but in the case of the blade metal is scraped from the side wall of the pocket so that the pocket soon becomes oversize and incapable of holding a primer.

It is among the objects of this invention to provide apparatus for cleaning cartridge pockets, which is an electrically operated machine, which operates automatically every time a cartridge shell is inserted in the mechanism, which cleans primer pockets very rapidly, which does not wear away the walls of the pockets appreciably, and which permits a large number of shells to be cleaned in a very short time with practically no manual effort.

In accordance with this invention, an electric motor is operatively connected with the inner end of a primer pocket brush for rotating the brush. A sleeve encircles the brush and is spaced from it. Slidable axially in the sleeve for a limited distance is a cartridge guide that has a longitudinal passage through it. The passage contains the outer end of the brush, with the outer end of the passage terminating in a socket. The socket is of a size for receiving the base of a cartridge shell having a primer pocket of substantially the same diameter as the outer end of the passage. A spring normally holds the guide in its outer position in the sleeve, with the outer end of the brush adjacent the outer end of the guide passage. The guide can be pushed inwardly of the sleeve by a shell inserted in the socket, whereby to move the socket back around the outer end portion of the brush and thus fit the cartridge primer pocket over the brush. Means responsive to the inwardly moving guide will close a normally open switch connected with the motor, whereby the brush will be rotated in the primer pocket to clean it.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which

Fig. 1 is a plan view of my machine without a cover;

Fig. 2 is a fragmentary front end view;

Fig. 3 is a vertical longitudinal section; and

Fig. 4 is a fragmentary vertical longitudinal section showing the parts of the machine in operative position.

Referring to Figs. 1, 2 and 3 of the drawings, a vertical front plate 1 is secured at its bottom in any suitable manner to the front end of a rectangular base 2, which may be provided with feet 3 for supporting it on a bench or table. Also mounted on the base are side walls 4. If desired, a cover (not shown) may be used to complete the enclosure.

Rigidly mounted on the base some distance behind the front plate is an electric motor 6 provided with a drive shaft 7 that extends forward toward the plate. The motor can be electrically connected to any household electrical outlet. The operation of the motor is controlled by an electric switch 8 supported in front of it above the motor shaft by a bracket 9 secured to the front plate. The switch is normally open, but can be closed by a projecting push button 11 that is urged forward by a spring (not shown) inside the switch. Rigidly mounted on the motor shaft is a tubular member 12, in the front end of which the inner end of a pack of brush bristles 13 is secured. The bristles are made of wire that extend forward and preferably through the center of a circular opening 14 in the front plate 1. Rigidly mounted in the plate opening is a cylindrical sleeve 16 that has a shoulder 17 engaging the front of the plate. Directly behind the plate the sleeve is provided with a circumferential groove 18, in which a snap ring 19 is mounted for holding the sleeve tightly in place.

Slidable axially inside sleeve 16 is a cartridge guide 21 that is retained in the sleeve by a set screw 22 threaded in the wall of the sleeve and projecting into a longitudinal groove 23 in the outside of the guide. The screw and groove limit the distance that the guide can slide back and forth in the sleeve. The guide is provided with an axial passage 24 extending forward from its inner end and terminating short of its outer end in a socket 25 of a size that will more or less snugly receive the base of a cartridge sheel that is to be cleaned. The brush extends most of the way through the passage when the guide is in its forward position shown in Fig. 3. The front end of the passage is cylindrical, but the rest of it may flare toward the inner end of the guide to facilitate insertion of the brush, which will flare forward unless it is compressed radially by the wall of the passage. The cartridge guide 21 normally is held in its outer position in sleeve 16 by means of a spring, which preferably is a leaf spring 27 secured to the top of switch 8 and extending down across push button 11 and into engagement with the inner end of the guide above the brush.

When, as shown in Fig. 4, the base of an empty cartridge shell 28 is inserted in guide socket 25 and pushed, guide 21 will be pushed inward against the resistance of spring 27. As the spring is flexed, it will push against button 24 and close the switch, which will start the motor. At the same time, the outer end of guide passage 24 will move back behind the outer end of the brush, so the primer pocket 29 of the shell will slip over and fit around the projecting end of the brush in the socket because the diameter of the outer end of the passage is about the same as that of the pocket. Due to the fact that the end of the brush projecting into socket 25 will tend to expand or flare out, the rotating brush will rub against the side wall of the primer pocket as well as its end wall and thereby thoroughly clean the pocket. As soon as the cartridge shell is pulled away from guide 21, spring 27 will move the guide forward to the position shown in Fig. 3 and allow the switch to open and stop the motor. The bottom of the guide and the underlying portion of the sleeve may be provided with superimposed slots 31 and 32 for the escape of material cleaned from the primer pocket.

It is desirable to provide the front of this machine with a stop lug 33 engaging the outer side of front plate 1 and attached to it by a screw 34 extending into the front end of the base 2. Normally, the lug is in its upper dotted line position shown in Fig. 2, but it can be swung down, when desired, for engagement with the edge of the table or bench on which the machine is placed. The lug then will prevent the mahcine from slipping backward on its support when shells are pushed against the cartridge guide.

Shells of different sizes can be cleaned with this machine by retracting set screw 22, removing guide 21 and

substituting another one provided with an axial passage and socket that will accommodate a shell of a different size. This machine will clean primer pockets just about as fast as the empty sheels can be inserted in and removed from the guide socket, and it will do it without unduly wearing away the side walls of the pockets.

It will be observed that the motor runs only while a shell is pressing guide 21 against spring 27, and that the motor is started and stopped automatically by the movements of the guide. For best results, the switch and spring are so arranged that the switch will close and the brush will begin rotating by the time the brush starts to project into the inwardly moving socket 25. This will facilitate entrance of the brush into the primer pocket and the entire side wall of the pocket will be exposed to the abrasive action of the very tip of the rotating brush as the shell moves back over it and forward away from it.

According to the provisions of the patent statutes, I have explained the principle of my invention and have illustrated and described what I now consider to represent its best embodiment. However, I desire to have it understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically illustrated and described.

I claim:

1. Machine for cleaning cartridge primer pockets, comprising a primer pocket brush having inner and outer ends, an electric motor operatively connected with the inner end of the brush for rotating it, a normally open electric switch for the motor, a stationary sleeve encircling the brush and spaced from it, a cartridge guide in the sleeve slidable axially thereof a limited distance, said guide having a longitudinal passage through it containing the outer end of the brush and terminating at its outer end in a socket for receiving the base of a cartridge shell having a primer pocket of substantially the same diameter as said outer end of the passage, a spring normally holding the guide in its outer position in the sleeve with the outer end of the brush adjacent the outer end of said passage, said guide being pushable inwardly of said sleeve by a cartridge shell inserted in said socket to move the socket back around the outer end portion of the brush and thereby fit the cartridge primer pocket over the brush, and means responsive to the inwardly moving cartridge guide for closing said switch to rotate the brush.

2. A machine according to claim 1, in which the front end portion of said guide passage is cylindrical and fits snugly around the brush, and the rest of the passage flares toward the inner end of the guide.

3. A machine according to claim 1, in which said axial sliding of the cartridge guide is limited by removable means in the sleeve projecting into a longitudinal groove in the guide.

4. Machine for cleaning cartridge primer pockets, comprising a primer pocket brush having inner and outer ends, an electric motor operatively connected with the inner end of the brush for rotating it, a normally open electric switch for the motor, a stationary sleeve encircling the brush and spaced from it, a cartridge guide in the sleeve slidable axially thereof a limited distance, said guide having a longitudinal passage through it containing the outer end of the brush and terminating at its outer end in a socket for receiving the base of a cartridge shell having a primer pocket of substantially the same diameter as said outer end of the passage, a leaf spring normally holding the guide in its outer position in the sleeve with the outer end of the brush adjacent the outer end of said passage, said guide being pushable inwardly of said sleeve by a cartridge shell inserted in said socket to move the socket back around the outer end portion of the brush and thereby fit the cartridge primer pocket over the brush, said spring being flexed by said inward movement of the guide, a switch push button in a position to be actuated by the flexed spring for closing said switch to rotate the brush.

5. Machine for cleaning cartridge primer pockets, comprising a substantially horizontal primer pocket brush having inner and outer ends, an electric motor operatively connected with the inner end of the brush for rotating it, a normally open electric switch for the motor, a stationary sleeve encircling the brush and spaced from it, a cartridge guide in the sleeve slidable axially thereof a limited distance, said guide having a substantially horizontal longitudinal passage through it containing the outer end of the brush and terminating at its outer end in a socket for receiving the base of a cartridge shell having a primer pocket of substantially the same diameter as said outer end of the passage, a spring normally holding the guide in its outer position in the sleeve with the outer end of the brush adjacent the outer end of said passage, said guide being pushable inwardly of said sleeve by a cartridge shell inserted in said socket to move the socket back around the outer end portion of the brush and thereby fit the cartridge primer pocket over the brush, and means actuated by the inwardly moving cartridge guide for closing said switch to rotate the brush for cleaning a primer pocket, the bottom of the socket and sleeve being provided with openings for escape of material cleaned from primer pockets.

6. A machine according to claim 5, including a base supporting said motor and sleeve, and a stop depending from the base adjacent the sleeve for engaging a vertical edge of a support to hold the base when a cartridge shell is pushed against said guide.

7. Machine for cleaning cartridge primer pockets, comprising a primer pocket brush having inner and outer ends, an electric motor operatively connected with the inner end of the brush for rotating it, a normally open electric switch for the motor, a stationary sleeve encircling the brush and spaced from it, a cartridge guide in the sleeve slidable axially thereof a limited distance, said guide having a longitudinal passage through it containing the outer end of the brush and terminating at its outer end in a socket for receiving the base of a cartridge shell having a primer pocket of substantially the same diameter as said outer end of the passage, a spring normally holding the guide in its outer position in the sleeve with the outer end of the brush spaced inwardly from the outer end of said passage, said guide being pushable inwardly of said sleeve by a cartridge shell inserted in said socket to move the socket and the outer end of the passage back around the outer end portion of the brush and thereby fit the cartridge primer pocket over the brush, and means responsive to the inwardly moving cartridge guide for closing said switch by the time the inwardly moving outer end of said passage is substantially flush with the outer end of the brush.

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