Feb. 4, 1930. D. C. HOOKER 1,745,575

DEVICE FOR CLEANING GUNS

Filed Jan. 17, 1928

Fig. 7.

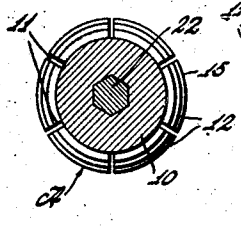


Fig. 5.

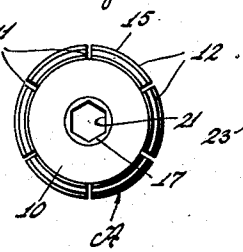


Fig. 6.

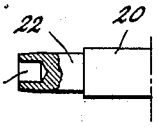


Fig. 3.

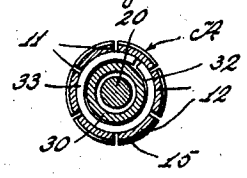


Fig. 4.

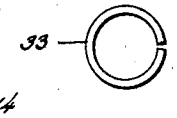


Fig. 1.

Fig. 2.

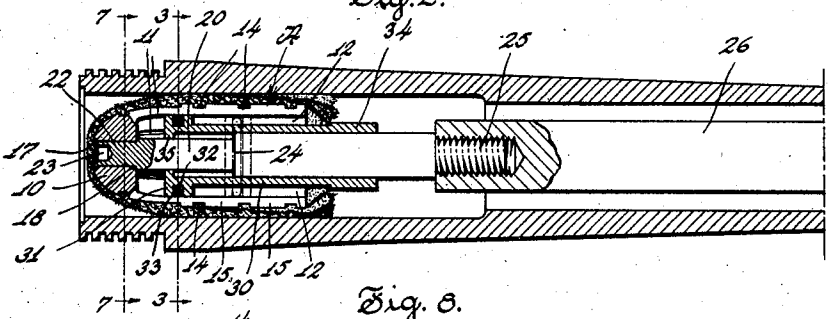


Fig. 8.

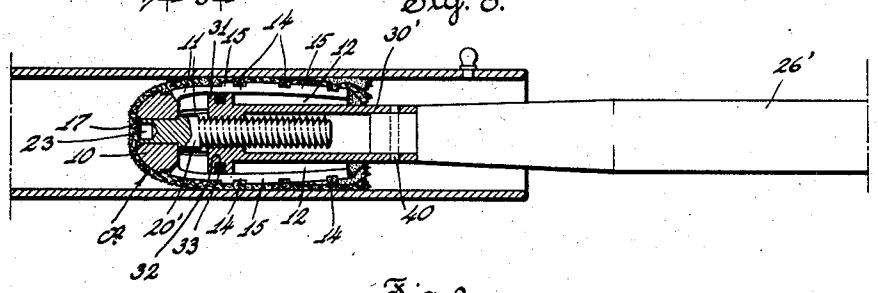
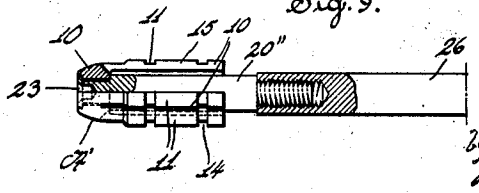


Fig. 9.



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Patented Feb. 4, 1930 1,745,575

UNITED STATES PATENT OFFICE

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DEVICE FOR CLEANING GUNS

Application filed January 17, 1928. Serial No. 247,304.

This invention relates to a device for cleaning or scrubbing and lubricating the barrels or bores of guns, and while it finds peculiar use in connection with shotguns and the like, it may be employed for cleaning rifled firearms such as pistols or rifles.

The aim of the invention is to provide means of this sort having various features of novelty and advantage.

More particularly an aim of the invention is to provide an improved cleaner or scrubber by means of which the bores of firearms or guns may be quickly, thoroughly and properly cleaned and lubricated without any liability or danger of scratching or mutilating the gun or having the cleaning patch or any part of the cleaner stick or become lodged in the bore.

My improved arrangement is such that the bores of firearms may be simply and readily cleaned throughout their length, the cleaning patch being held throughout a substantial area with that pressure which is most conducive to a quick and thorough cleaning action. The device is adapted to accommodate itself to variations in the dimensions, characteristics and styles of gun bores of the same nominal gauge. Also by preference the arrangement is such that the pressure with which the patch may be caused to bear against the wall of the bore may be varied.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the appended claims.

In the accompanying drawings, wherein I have shown several embodiments which the present invention may take:

Figure 1 is a perspective view showing my improved cleaner in the act of being inserted into the bore of a shotgun;

Fig. 2 is a longitudinal sectional view showing the device within the shell chamber of the gun;

Fig. 3 is a sectional view taken substantially on line 3—3 of Fig. 2;

Fig. 4 is a view of a friction ring which is employed for holding the adjusting means in adjusted position;

Fig. 5 is a front end view of the cleaning shell or plug before it is assembled on the stem;

Fig. 6 is a side view of the stem;

Fig. 7 is a detail view taken substantially on line 7—7 of Fig. 2, and showing the way in which the plug may be secured against rotation on the stem;

Fig. 8 is a view similar to Fig. 2 but showing another embodiment of the invention, the cleaner being illustrated in the bore of the gun; and

Fig. 9 is a view of a modified form of my device which is particularly adapted for use in cleaning firearms of smaller sizes or gauges.

According to the present invention, I provide a fabric or patch support (which for convenience and terminology is here termed a plug) having by preference a solid or rigid head or forward end and a generally cylindrical portion which is longitudinally slit through a substantial distance in order to provide a plurality of spring or resilient leaves or fingers. The arrangement is such that as the patch applied to the plug increases in thickness, due to folding into the bore, the fingers may spring or yield to accommodate such increasing thickness and at the same time hold the fabric or cleaning patch throughout a substantial area with the desired pressure against the wall of the bore of the firearm. In the preferred embodiment of the invention the resiliency of the plug or shell may be varied in order to adjust the device in accordance with the characteristics of the particular gun to be cleaned. The shell or plug is also by preference provided with grooves and slits so arranged that the plug will not rotate and will not move longitudinally with respect to the patch, that is to say, the patch will be held in place on the plug during the cleaning operation.

Referring specifically to that embodiment

shown in Figs. 1 to 7, A denotes, generally, my improved plug or fabric carrier. This plug A is in the nature of a shell preferably formed of spring tempered steel. The forward end or head 10 of the shell is by preference solid or rigid and is generally spherical or dome-shaped. Extending rearwardly from the head is a cylindrical portion which is longitudinally split or slitted, as at 11, so as to provide a plurality of spring fingers or leaves 12. By preference, the interior bore of the plug is normally cylindrical, that is, of substantially uniform diameter throughout its length. The head 10, and by preference, the forward end of the fingers of the cylindrical portion of the shell are of reduced diameter in order to provide the desired clearance for the patch and to render such portions substantially inactive in so far as holding the patch against the wall of the bore goes. The cylindrical portion of the shell or plug may be provided with a plurality of circumferential grooves or channels 14, or to state the matter in a different way, the shell may be provided with circumferential ribs 15 the corners of which are pronounced or square in order that they may have a biting or gripping effect on the fabric and thus prevent the fabric from slipping off of the plug. The longitudinal edges or corners of the fingers are also relatively sharp or square in order that they may obtain a purchase on the fabric.

In the embodiment shown in Figs. 1 to 7, a stem 20 is preferably connected to the rigid end or head 10 and extends longitudinally and centrally of the shell. The stem is very conveniently, economically and securely connected to the head 10 by providing the latter with an opening 21 which is polygonal or non-circular, and driving the stem into this opening in such manner that the portion of the stem entering thereinto will take the same size and shape of, and be securely anchored in said opening. The outer end of this opening is countersunk as at 17, and its inner edges 18 provide relatively sharp corners. The forward end 22 of the stem 20 is reduced in diameter and is normally round in cross section; it being larger in diameter than the minor diameter of the polygonal opening 21. Also by preference, the end of the stem is slightly chamfered so as to facilitate its entry into the opening 21, and it has a counterbore or recess 23. The stem is relatively softer than the head. To assemble the stem and plug, the reduced portion 22 is driven into the polygonal opening 21 with the result that the sharp corners 18 will cut the reduced portion of the stem as it enters into the opening to the same cross sectional shape and size as the opening. Thus turning movement between the stem and head is entirely prevented.

The rim or edge of the recess 23 is then expanded or peened over so as to prevent the stem from being pulled longitudinally out of the opening. The stem has intermediate its ends a shoulder 24, and has at its rear end a threaded portion 25 adapted to receive the forward end of a ram rod 26. Only a portion of this rod 26 is illustrated as it may be of any desired or well known type.

By preference, my improved cleaner or scrubber is provided with means whereby the resiliency or spring pressure with which the fingers or leaves hold a patch against the bore of the gun may be varied at will without, however, changing the size or normal shape of the plug or shell. Such a feature or element is desirable in order that a plug or shell of a given size may be adjusted in accordance with the particular characteristics of the gun in connection with which it is to be used, it being a well known fact that guns of the same gauge, and in fact the barrels of the same gun of like gauge, vary in characteristics, as for example in the extent and degree of the choke. By my improved arrangement any desired amount of friction between the cleaning patch and the bore may be had. For the purpose of accomplishing such adjustment I provide, as shown in Fig. 2, a sleeve 30 longitudinally adjustable on the stem 20. This sleeve has, at its forward end, an enlarged portion in the form of a collar or rib 31 which is of substantially the same diameter as the bore of the shell or plug A. For the purpose of frictionally holding the adjustable sleeve 30 in any predetermined position of adjustment, the collar 31 may be provided with a groove 32 within which is located a spring or split ring 33 adapted to press against the inner circumference of the shell or plug. The rear end of the stem 30 may be knurled as at 34 in order to provide a good grip. The forward end of the sleeve has an internal annular flange 35 adapted to engage the shoulder 29 to prevent the sleeve from being withdrawn from the stem.

The manner in which the cleaning device shown in Figs. 1 to 7 is used will be clear from the drawings, and particularly from Figs. 1 and 2. The resiliency or stiffness of the fingers may be adjusted by longitudinally moving the sleeve 30 to the correct position. A patch is placed over the shell or plug with the center of the patch against the forward rounded or tapered end of the plug, or if desired, the patch may be held over the end of the barrel, as shown in Fig. 1, and then the plug moved against the patch and into the barrel in which event the patch will be forced into the barrel and lay or fold itself about the plug. The collar 31 of the stem 30 constitutes, so to speak, a fulcrum about which the fingers spring or flex. The patch will retain its position upon the plug irrespective of the movement which is given to the plug. In the event that the plug is inserted into the forward end of the barrel, as shown in

Fig. 1, and then moved down into the chamber of the barrel, as shown in Fig. 2, the plug may be moved back into the bore of the barrel without stripping the patch from or disturbing its relation to the plug. It is found of advantage to insert the plug with the patch thereon into the barrel, and while holding the barrel in an upright position, pour thereinto a cleaning fluid and then work the device up and down so as to thoroughly scrub and cleanse the barrel.

The structure shown in Fig. 8 is generally similar to that shown in the preceding embodiment, except that the arrangement of Fig. 8 is such that the pressure of the fingers may be adjusted while the plug is in the barrel. To this end the sleeve 30′ instead of being slidably mounted on the stem 20′ is screwed thereonto. The sleeve 30′ is connected, in any suitable manner, to the ram rod 26′ against rotation relative thereto, and for this purpose a pin 40 may be employed. It will be seen that by turning the ram rod, the position of the sleeve 30′ will be changed so as to vary the resiliency of the fingers of the plug.

In the embodiment shown in Fig. 9, the means for adjusting the resiliency of the fingers is omitted. The structure shown in Fig. 9 is particularly adapted for use in smaller size guns and may be employed for cleaning rifles or pistols. In this embodiment the plug A′ is directly connected to the stem 20″. The plug A′ is similar to the plug of the preceding embodiments, except that it is of smaller diameter. In the event that the device is made for cleaning pistols, rifles, revolvers or other firearms having a rifling, the plug may be arranged to swivel or rotate on the stem.

It is apparent, of course, that instead of connecting my cleaner to a ram rod, it may be connected to a flexible member such as a wire or cable in which event the device would be drawn through the barrel of the gun with the solid end 10 foremost. The cable would be threaded through the center of the patch.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim as my invention:

1. A device for cleaning the bores of guns having an unobstructed dome shaped forward end adapted to receive the center of the cleaning patch, and a normally cylindrical portion extending rearwardly therefrom and constituting a plurality of spring fingers each of said fingers being segmental in cross section.

2. A device for cleaning the bores of guns having a rigid forward end adapted to receive the center of the cleaning patch, and a normally cylindrical portion extending rearwardly therefrom and provided with longitudinal slits, the forward end of said device being of reduced diameter.

3. A device for cleaning the bores of guns having a rigid forward end adapted to receive the center of the cleaning patch, and a plurality of cylindrically arranged spring parti-cylindrical leaves extending rearwardly therefrom, said fingers being provided with gripping edges.

4. A device for cleaning the bores of guns having a dome shaped forward end adapted to receive the center of the cleaning patch, and a normally cylindrical portion extending rearwardly therefrom and constituting a plurality of spring leaves, said cylindrical portion having annular grooves.

5. A device for cleaning the bores of guns having a rigid unobstructed forward end adapted to receive the center of the cleaning patch, and a normally cylindrical portion extending rearwardly therefrom and provided with a plurality of longitudinal slits, the external corners of which provide gripping edges, said cylindrical portion having annular ribs, the corners of which provide gripping edges.

6. A device for cleaning the bores of guns having a rigid unobstructed forward end adapted to receive the center of the cleaning patch, a plurality of parti-cylindrical spring fingers extending rearwardly therefrom, and means connected to said forward end for moving said device through the bores of guns.

7. A device for cleaning the bores of guns having a rigid unobstructed forward end adapted to receive the center of the cleaning patch, a normally cylindrical portion extending rearwardly therefrom and longitudinally slitted to provide a plurality of spring fingers, and a stem connected to said forward end and adapted to be connected to a ramrod or the like.

8. A device for cleaning the bores of guns having a rigid unobstructed dome shaped forward end adapted to receive the center of the cleaning patch, a normally cylindrical portion extending rearwardly therefrom and longitudinally slitted to provide a plurality of spring leaves, said cylindrical portion having circumferential ribs, and a stem connected to the central portion of said forward end and extending centrally through said cylindrical portion.

9. A device for cleaning the bores of guns having a rigid unobstructed forward end adapted to receive the center of the cleaning patch, a plurality of cylindrically arranged spring leaves extending rearwardly therefrom, and means for adjusting the resiliency of said leaves without changing the size of the device.

10. A device for cleaning the bores of guns having a rigid unobstructed forward end adapted to receive the center of the cleaning patch, a normally cylindrical portion extending rearwardly therefrom and provided with longitudinally extending slits, and a fulcrum member within and movable longitudinally of said cylindrical portion.

11. A device for cleaning the bores of guns having a rigid unobstructed forward end adapted to receive the center of the cleaning patch, a normally cylindrical portion extending rearwardly therefrom and having a normally uniform bore, said cylindrical portion being longitudinally slitted to provide a plurality of spring fingers, and an annular member of substantially the same size as said bore and adjustably mounted therein.

12. A device for cleaning the bores of guns having a rigid unobstructed forward end adapted to receive the center of the cleaning patch, a normally cylindrical portion extending rearwardly therefrom and longitudinally slitted to provide a plurality of spring fingers, a stem connected to said forward end and extending through said cylindrical portion, and a sleeve slidably mounted on said stem and having a collar adapted to constitute a fulcrum for said fingers.

13. A device for cleaning the bores of guns having a rigid unobstructed forward end adapted to receive the center of the cleaning patch, a normally cylindrical portion extending rearwardly therefrom and longitudinally slitted to provide a plurality of spring fingers, a stem connected to said forward end and extending through said cylindrical portion, a sleeve slidably mounted on said stem and having a collar adapted to constitute a fulcrum for said fingers, and a split ring carried by said sleeve and frictionally engaging said cylindrical portion.

14. A device for cleaning the bores of guns having a rigid unobstructed forward end adapted to receive the center of the cleaning patch, a normally cylindrical portion extending rearwardly therefrom and longitudinally slitted to provide a plurality of fingers, a stem connected to said forward end and extending through said cylindrical portion, a sleeve threaded on said stem and having a collar constituting a fulcrum for said fingers, and means for connecting said sleeve to a ramrod.

15. A device for cleaning the bores of guns having a rigid unobstructed forward end adapted to receive the center of the cleaning patch, a longitudinally slitted cylindrical portion extending rearwardly therefrom, and a stem, said rigid end having a polygonal opening and the forward end of said stem being driven into and caused to take the same shape and size as said opening, the forward end of said stem having a peened over rib to secure the stem in place.

DUNCAN C. HOOKER.