Oct. 12, 1943. J. KOUCKY 2,331,703

STOPPER FOR THE GAS CYLINDERS OF GAS-PRESSURE LOADERS IN FIREARMS

Filed July 26, 1939

Fig. 1

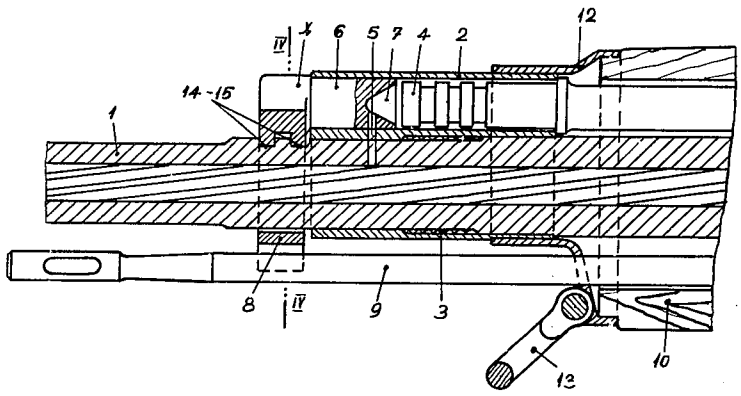


Fig. 2

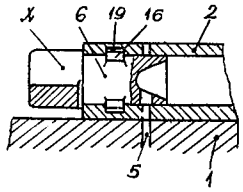


Fig. 3

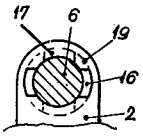
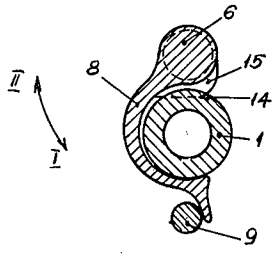


Fig. 4



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STOPPER FOR THE GAS CYLINDERS OF GAS-PRESSURE LOADERS IN FIREARMS

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In Czechoslovakia July 27, 1938

3 Claims. (Cl. 42—3)

The present invention relates to stoppers for the gas cylinders of automatic gas-pressure loaders in firearms.

The known stoppers do not, for the greater part, allow of a rapid and, especially, an easy opening of the gas cylinder for the purpose of removing the products of combustion of the gunpowder which are also contained by metallic parts—e. g., of the barrel—that are fitted in the gas cylinder or in the chamber. The stopper of a gas cylinder having screws or the like is also disadvantageous, since the screw-thread is burnt into the gas chamber, so that the screw of the stopper can only be removed by the employment of tools and, even then, with great difficulty. If a special fitting having a gas-supply passage is arranged on the barrel, into the open end of which it has been customary to insert a gas tube, the gas passage is accessible only after the gas tube has been removed or pushed out. An independent gas chamber, which is connected to the muzzle of the barrel in the manner of a bayonet joint, must likewise first be taken off the barrel, by being rotated about the axis of the connecting passage, in order to render the gas passage accessible; in that case, however, it is necessary first to detach the chamber from the gas cylinder proper which is constructed in such a manner that it can be pushed out.

The defects of the existing stoppers are avoided by the arrangement according to the invention, wherein the stopper comprises a cylindrical body adapted to be pushed into the gas cylinder in an axial direction and provided with an actuating member for effecting rotation of the said stopper when pushed into position, means being also provided to come into operation to secure the stopper against axial displacement, and the said actuating member, after its securing movement has been carried out, being secured itself against rotation by means of a removable component of the firearms. There is advantageously employed as the securing member, the ram-rod for the barrel, which ram-rod is mounted in known manner in the front part of the butt and beneath the barrel. The securing of the stopper against its being displaced axially or pushed out of the gas chamber may be effected either in the manner of a bayonet joint or by arranging on the barrel transverse recesses into which rib-like projections enter after the stopper is inserted into the gas chamber, which projections are arranged on the part of the stopper which protrudes from the gas chamber, so that ready actuation of the stopper is obtained, especially by means of the latter mentioned manner of securing the stopper, since the means in question do not come into contact with the combustion products of the powder.

In order that the present invention may be clearly understood and readily carried into effect, the same will now be described more fully, by way of example, with reference to the accompanying drawing, in which—

Figure 1 is a fragmentary longitudinal vertical sectional view of the barrel of a gas cylinder and relative parts of a firearm having a stopper according to the present invention applied thereto,

Figure 2 is a similar view to Figure 1 but showing a modification,

Figure 3 is a cross-sectional view of Figure 2, and

Figure 4 is a cross-section taken on the line IV—IV of Figure 1.

Referring first more particularly to Figure 1 of the drawing, 1 denotes the barrel which is rigidly connected, by means of a screw-thread 3, to a gas cylinder 2 in which a piston 4 of the driving mechanism of the breech device of the firearm moves. The gases pass from the barrel into the cylinder 2 through a passage 5 which opens into the stopper of the gas cylinder. The stopper consists of a cylindrical part 6 having a recess 7 forming the gas chamber into which the passage 5 opens, and a bent, elastic actuating member 8 constituting an arm which passes partly around the barrel in such a manner that, in the closed position, the lower end thereof extends behind a ram-rod 9 which is mounted, in known manner, in the lower part of the stock 10 of the firearm. The lower part of the stock 10 is, with an upper part, fixed to the firearm by means of a sleeve 12 having a suspension loop 13 for a strap. The stopper 6, when inserted into the gas cylinder, is secured in the axial direction against being pushed unintentionally out of the gas cylinder 2, by means of a device one constructional form of which is illustrated, by way of example, in Figures 1 and 4. The said device consists of two transverse grooves 14 which are provided on the barrel 1 and into which projections 15 associated with the stopper enter when the actuating member occupies the closing position shown in Figure 4. The projections 15 are constituted by eccentric ribs which are provided at the end of the body of the stopper 6 at the position at which the curved actuating member adjoins the stopper. The actuating member is formed in such a manner that the curvature thereof is eccentric to the axis of the barrel, so that, on

being folded in, it snaps in behind the barrel and is secured sufficiently in the folded-in position by the existing friction. The member 8 is, in addition, secured in the folded-in position by pushing in, or screwing in, the ram rod 9, so that any loosening of the stopper cannot be effected.

In the embodiment illustrated in Figures 2 and 3, security of the stopper against axial displacement is obtained by means of a bayonet joint which consists of two segment-like projections 16 which are provided on the cylindrical body of the stopper 6 and which, when the stopper is pushed in, pass through slots 17 which conform with the outline of the projections 16. A circular groove 19 is formed in the wall of the gas cylinder to permit rotation of the stopper with the projections 16 through an angle of 90° when the member 8 is folded down. When in this position, the stopper is secured against axial displacement.

In the two embodiments described, the stopper closes the gas cylinder, whilst, on dismantling, which is necessary, for example, to permit the cleaning of the passage 5 and the removal of the deposited combustion products of the powder, which may be present on the whole stopper both in the gas cylinder and in the chamber, the pushing out of the stopper and, consequently, the making of the gas cylinder accessible, can be readily obtained without dismantling of the firearm to a large extent being necessary.

What I claim is:

1. In a gas operated firearm having a gas cylinder and a barrel, a stopper comprising a cylindrical body adapted to be pushed into the gas cylinder in an axial direction, said barrel having a groove therein, releasable locking means on said body cooperating with said groove for locking said body against axial displacement, an actuating member secured to said body for operating said locking means and a ramrod mounted on said firearm for releasably locking said actuating member.

2. In a gas operated firearm having a gas cylinder and a barrel, a stopper comprising a cylindrical body adapted to be pushed into the gas cylinder in an axial direction, said barrel having a transverse groove therein, a segment-like projection on said body cooperating with said groove for locking said body against axial displacement, an actuating member for rotating said body and said projection into and out of said groove and a ramrod for releasably locking said actuating member.

3. In a gas operated firearm having a gas cylinder and a barrel, a stopper comprising a cylindrical body adapted to be pushed into the gas cylinder, means on said body and on a fixed part of said firearm for locking said body against axial displacement, said locking means being releasable by a partial rotation of said body whereby said body can be inserted and withdrawn axially, a resilient arm fixed at one end to said body and being curved so as to encompass a portion of the barrel and cooperate therewith and a ramrod for releasably locking the other end of said lever.

JOSEF KOUCKÝ.