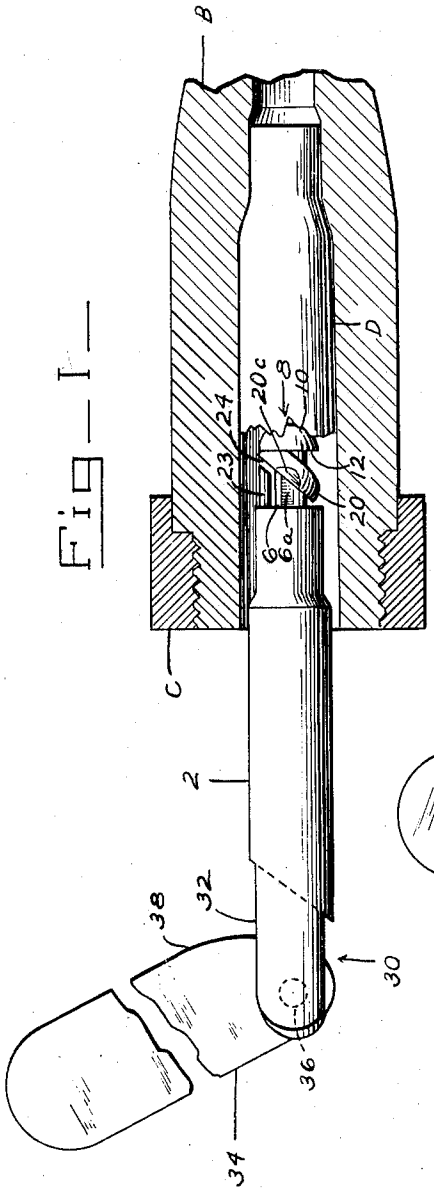
Nov. 29, 1949 J. L. GORICHAN 2,489,285

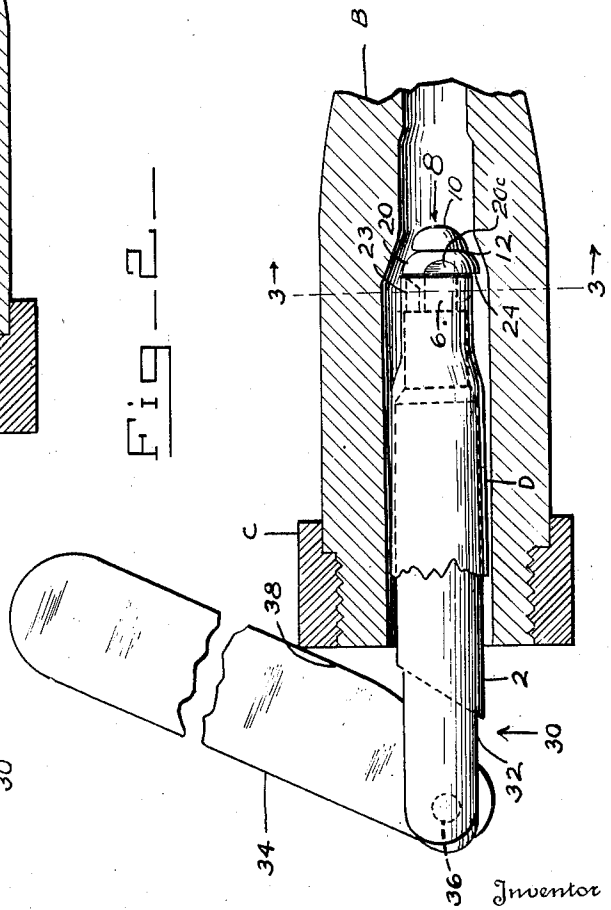
CARTRIDGE EXTRACTOR

Filed Sept. 11, 1946

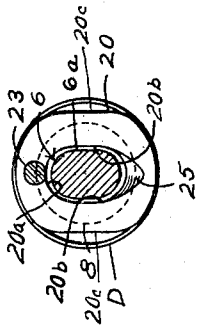
Fig—1—



Fig—2—



Fig—3—



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CARTRIDGE EXTRACTOR

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Application September 11, 1946, Serial No. 696,331

6 Claims. (Cl. 81—3.05)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

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The invention described herein may be manufactured and used by or for the Goverment for governmental purposes without the payment to me of any royalty thereon.

This invention relates to improvements in extracting devices and is directed more particularly to an improved device for extracting ruptured cartridge cases from a firearm.

It has always been a problem to remove a ruptured cartridge case from the barrel of a firearm and, as can easily be appreciated, in military use there frequently are crucial moments when it is most necessary that such cases be speedily removed. Obviously the firearm cannot be fired again until the ruptured case is removed, wherefore the operator is often in a dangerous position if the case is not quickly extracted.

While various devices for such purposes have been heretofore conceived, such previous devices have been generally unsatisfactory and expensive to manufacture. The device of this invention is simple and economical to manufacture and easy to operate as will be seen.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawings in which:

Fig. 1 is a partial and sectional view showing the device of the invention in pre-extracting position;

Fig. 2 is a similar view showing the device of the invention in extracting position; and

Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

For purposes of description, there is shown in Fig. 1, the breech portion of a .50 cal. machine gun, for example. The barrel is indicated by B, and the usual barrel extension by C.

The extractor device embodying the features of the invention consists principally of what may be referred to as a plunger or body member 2 shaped generally to conform to the chamber of the firearm barrel B. There is also a neck portion 6 extending forwardly of the body member which is of less diameter than the latter.

A stop member 8 is provided on the outer or forward end of neck 6 and this is preferably in the form of an annular member having a more or less semispherical head portion provided with a somewhat rounded front surface 10 and a relatively flat rear surface 12. The stop member is held securely on neck portion 6, as by riveting or welding. The rounded surface 10 is adapted to facilitate insertion of the plunger into the ruptured case, while the surface 12 provides a flange, all for purposes which will presently appear.

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A ring-like collar member 20 is loosely mounted on the neck part 6 and the arrangement is such that it may tilt or pivot on an angle relative to the head 8 and is non-rotatable relative to the neck 6. This may be accomplished in various ways but, according to the preferred embodiment, the reduced part 6 has its opposite sides 6a flattened somewhat as shown in Fig. 3 and an opening 20a of the collar 20 through which the part 6 extends is more or less enlarged and elongated providing opposed flattened sides 20b corresponding to sides 6a of neck portion 6.

Opposite exterior sides 20c parallel to the flattened inner sides 20b of the collar 20 are correspondingly flattened or straight. The flattening of exterior sides 20c permits the insertion of collar 20, in a tilted position, through the ruptured cartridge case D. The collar member 20 normally lies at an angle to said flat surface 12 of the head member 8, being assisted into such position by a pin-like part 23 which extends forwardly from the body 2 and is preferably spaced above and disposed substantially in parallelism with the neck 6.

The forward extremity of said part 23 is adapted to engage the rear surface 24 of the collar so as to assist the tilting movement of the collar when the device is moved forwardly through the case D. The collar also preferably is formed to have a cut-away portion 25 (Fig. 3) on its lower side so as to accommodate the tilting movements of the collar.

The body member 2 has on its rear end a yoke portion 30 consisting of spaced arms 32 and between these arms is pivoted the forward end of what may be referred to as a handle member 34. The handle 34 may obviously be of any size or shape but, in any event, it is arranged for pivotal movement relative to the extractor body member, as on a pin 36 extending through arms 32.

The handle 34 is adapted to be swung upwardly relative to the firearm and the upper surface of its forward end portion is rounded or otherwise formed so as to present a cam surface 38. That is, the arrangement is such that the surface 38 engages the rear face of the barrel B and/or a part of the barrel extension C when the handle is swung upwardly so as to bring about the extracting of the case in a manner which will be described.

The said collar member, as stated, is non-rotatable relative to the neck part. However, it is tiltable or rockable relative thereto in such a way that the overall diameter of collar and neck is re-

ducible and adjustable to such an extent that the extractor body 2 may be easily inserted within the bore of the ruptured cartridge.

At the same time, the inner face of the collar 20 is more or less flattened so that when the forward marginal edge of the cartridge engages said inner face, said collar is automatically tilted into abutting engagement with the rear face of the head member 3. The subsequent pivotal and upward movement of the handle will automatically withdraw the ruptured cartridge case from the firearm.

In other words, in operating the device of the invention, the plunger is inserted into the bore of the ruptured cartridge so that the head 3 and rocking member 20 are disposed within the neck of the case as shown in Fig. 2 and the upward swinging of the handle and consequent camming engagement thereof with the extension or barrel, or both, results in removal of the case rearwardly and hence extraction thereof from the barrel. That is to say, the handle engages the barrel or other portion of the firearm as a fulcrum so that the plunger and its engaged ruptured case may be withdrawn.

I claim:

1. A device of the class described for extracting a ruptured cartridge case from a firearm barrel comprising in combination, a plunger member arranged to be insertable forwardly into the barrel and thru the ruptured case and including a body portion and a head portion, said head portion being adapted to project forwardly of the mouth of the ruptured case, a reduced neck part extending between said body and head portions, a collar member having opposed flattened exterior sides and of slightly greater diameter than the neck of a cartridge non-rotatably disposed on said neck part and pivotable thereon between a small diameter position at an angle to said head portion and a large diameter position substantially in abutment therewith, a pin-like member associated with said body portion adapted to assist in pivoting said collar member when the plunger member is inserted through the case and means attached to the plunger member for withdrawing the same from the barrel of the firearm.

2. A device of the class described for extracting a ruptured cartridge case from a firearm barrel comprising in combination, a plunger body member arranged to be insertable forwardly into said barrel and thru the ruptured case, a reduced neck part forwardly of said body member, a head portion forwardly of said neck part, a non-rotatable collar member having oppositely disposed flattened exterior sides and of slightly greater diameter than the neck of the cartridge tiltable on said neck part and pivotable thereon between a small diameter position at an angle to the plane of said head portion and a large diameter position substantially in abutment with the rear face of said head portion, means for tilting said collar member from a position in abutment with the rear face of said head portion to an angular position in relation to the rear face of said head portion, and a handle member pivotally secured to said body member, said handle member having a cam surface arranged to engage the firearm barrel as a fulcrum whereby said plunger body member may be cammed rearwardly out of the barrel.

3. A device of the class described for extracting a ruptured case from a firearm barrel comprising in combination, a plunger member arranged to be insertable forwardly into the barrel and through the ruptured case and including a body portion and a head portion, the latter being adapted to project forwardly of the mouth of the ruptured case, a reduced neck part extending between said body and head portions, said neck part having opposite side surfaces flattened, a collar member having exterior flattened sides and interior flattened surfaces parallel therewith engageable with said flattened surfaces of said neck part whereby the same is held against rotative movements relative thereto but is permitted to pivot relative thereto between a small-diameter position at an angle to the plane of said head portion and a large-diameter position substantially in abutment with the rear face of said head portion, a pin-like member protruding from said body portion in parallelism with and spaced above said neck portion to assist the pivoting of said collar member when the plunger member is inserted through the case, and means attached to the plunger member for withdrawing the same from the barrel of the firearm.

4. A device of the class described for extracting a ruptured cartridge case from a firearm barrel comprising in combination, a plunger body member arranged to be insertable forwardly into the barrel and through the ruptured case and including a head portion adapted to project forwardly of the mouth of the case, the outside diameter of said head portion being less than that of the mouth of the case, a neck portion of less outside diameter than those of both the plunger body member and head portion and extending therebetween, a collar member having oppositely disposed flattened exterior sides and non-rotatably disposed on said neck portion but pivoted thereon between an angular position wherein the overall outside diameter of said neck portion and collar member is approximately the same as that of said head portion and a position substantially in abutment with the rear face of said head portion wherein the overall outside diameter of said neck portion and collar member is greater than the mouth of the case, a pin-like member protruding from said body portion in parallelism with and spaced above said neck portion to assist in the pivoting of said collar member when the plunger member is inserted through the case, and means attached to the plunger body member for withdrawing the same from the barrel of the firearm.

5. A device of the class described for extracting a ruptured cartridge case from a firearm barrel comprising in combination, a plunger member arranged to be insertable forwardly into the barrel and through the ruptured case and including a body portion and a head portion, said head portion being adapted to project forwardly of the mouth of the ruptured case, a reduced neck part extending between said body and head portions, said neck part having flattened side surfaces, a collar member having exterior flattened sides and flattened interior surfaces parallel therewith engageable with opposite flattened side surfaces of said neck part whereby the said collar member is held against rotative movements relative thereto but is permitted to pivot relative thereto between a small-diameter position at an angle to the plane of said head portion and a large-diameter position substantially in abutment with the rear face of said head portion, a pin-like member extending forwardly from the plunger member in parallelism with the longitudinal axis of said neck part and arranged to

assist the pivoting of said collar member when the plunger member is moved forwardly through the case, and means attached to the plunger member for withdrawing the same from the barrel of the firearm.

6. A device of the class described for extracting a ruptured cartridge case from a firearm barrel comprising in combination, a plunger body member arranged to be insertable forwardly into said barrel and through the ruptured case and including a head portion adapted to project forwardly of the mouth of the case, the outside diameter of said head portion being less than that of the mouth of the case, a neck part of less outside diameter than those of both the plunger body member and head portion and extending therebetween, a collar member having oppositely disposed flattened exterior sides and non-rotatably disposed on said neck part but pivoted thereon between an angular position wherein the overall outside diameter of said collar member is approximately the same as that of said head portion and a vertical position substantially in abutment with the rear face of said head portion

wherein the overall outside diameter of said collar member is greater than the mouth of the case, a pin-like member extending forwardly from the plunger body member in parallelism with the longitudinal axis of said neck part and arranged to assist the pivoting of said collar member when the plunger body member is moved forwardly through the case, and means attached to the plunger body member for withdrawing the same from the barrel of the firearm.

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