

UNITED STATES PATENT OFFICE

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ASSEMBLY TOOL

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2 Claims. (Cl. 29—225)

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

This invention relates to a tool for assembling or disassembling the extractor and ejector from the bolt of a firearm.

With some types of firearms the construction of the bolt, extractor, and ejector is such that it is only with extreme difficulty that the ejector and extractor can be assembled to the bolt or disassembled therefrom. Invariably when disassembling these components the ejector will be lost because such component is spring biased by a very strong spring which causes the ejector to fly outwardly with considerable force.

Accordingly it is an object of this invention to provide a tool to facilitate the assembly or disassembly of the components of a bolt of a firearm.

A particular object of this invention is to provide a tool for disassembling or assembling the components of a bolt for the U. S. carbine, cal. .30 M1.

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 drawing in which:

Fig. 1 is a front elevational view of the assembly tool showing a firearm bolt positioned therein for disassembly of the various parts.

Fig. 2 is a view similar to Fig. 1 but shown partly in section to illustrate more clearly the function of the assembly tool.

A stand 1 comprising a base 2 and an overhanging inverted U-shaped arm 3 is provided to support a bolt 4 while removing an extractor 5 and ejector 6 from such bolt. The bolt 4 shown is similar to that utilized in the U. S. carbine cal. .30 M1. In such bolt the firing pin (not shown) and the ejector 6 are held within their respective recesses by the extractor 5. The extractor 5 has a stem portion (not shown) which engages respective notches on the ejector and firing pin thereby retaining such members within the bolt while permitting slight longitudinal movement of these members. The ejector is spring biased outwardly. Extractor 5 is retained in position in bolt 4 by a spring biased plunger 22 which is housed in an obliquely disposed hole in an integral lug 21 on bolt 4. The plunger 22 engages a suitable recess in the side of extractor 5.

The bolt 4 is vertically mounted on stand 1 as shown in the appended drawing so that ejector

6 and extractor 5 are underneath arm 3. A sloped surface 7 provided on the base 2 facilitates insertion of the bolt into stand 1. A plunger 8 is vertically mounted in a hole 9 in arm 3 directly over ejector 6. An integral head 10 is provided on top of plunger 8 to facilitate the operation of plunger 8. A spring 11 surrounds the stem portion of plunger 8 and is placed between the top of arm 3 and underneath head 10 to bias plunger 8 upwardly. Plunger 8 is retained within hole 9 by a transverse pin 12 in arm 3 which engages a flattened surface 13 on the side of plunger 8. Thus plunger 8 is arranged to be forced downwardly against ejector 6 for a purpose to be presently described.

In the downwardly projecting portion of arm 3 a screw 14 is screwed into a threaded horizontal hole 15. A knob 16 integrally formed on the end of screw 14 is provided to facilitate turning screw 14 by hand. The screw 14 is provided to force bolt 4 to the left as shown in Fig. 2 for a purpose to be presently described. A rod 17, the lower end of which terminates in a wedge shaped blade 18 is inserted in a hole 19 which is obliquely disposed approximately midway between plunger 8 and screw 14. The rod 17 is secured within hole 19 by a transverse screw 20, inward or outward adjustment of rod 17 being readily made by unloosening screw 20. The blade end 18 of rod 17 fits between extractor 5 and the integral bolt lug 21 on bolt 4.

To disassemble the extractor and ejector from the bolt of a rifle, the bolt is placed in a vertical position in stand 1 by first inserting the front end of such bolt underneath the overhanging arm 3 and then sliding the rear end of the bolt up the sloped surface 7. Then by slight rotation of the bolt the blade end 18 of rod 17 is permitted to slide between extractor 5 and the spring biased extractor plunger 22 obliquely disposed in lug 21. When screw 14 is turned inwardly by means of knob 16, blade 18 bears against plunger 22 and as bolt 4 is pushed farther to the left by screw 14, the spring biased plunger 22 will be further compressed. Tension on extractor 5 will then be released. Plunger 10 is then forced downwardly to compress spring biased ejector 6. Extractor 5 is then free to be withdrawn from bolt 4. Plunger 10 is then permitted to return to its normal position under the bias of spring 11. Screw 14 is then unscrewed to relieve tension on plunger 22. Bolt 4 may then be removed from stand 1 and the spring biased plunger 22 and ejector 6 may then be readily removed. Assem-

bly of these components is readily accomplished by reversing the procedure above described.

From the foregoing description it is readily apparent to one skilled in the art that a tool for disassembling or assembling the extractor and ejector to a bolt of the type previously mentioned is convenient to use and greatly facilitates the work of these operations.

I claim:

1. An assembly device for firearm bolts having interlocking spring biased extractors and ejectors comprising a stand arranged to support a bolt, a wedge mounted in said stand and arranged to engage between the extractor and its spring biasing member, means arranged to move the bolt in said stand in a direction compressing said extractor spring bias against said wedge and a

plunger movably mounted in said stand, said plunger arranged to engage and depress the ejector against the ejector spring bias.

2. An assembly device for firearm bolts having interlocking spring biased extractors and ejectors comprising a stand arranged to support a bolt, a wedge mounted in said stand and arranged to engage between the extractor and its spring biasing member, a manually rotatable bolt member threadably mounted in said stand and arranged to engage and move the bolt in a direction compressing said extractor spring bias against said wedge and a plunger movably mounted in said stand, said plunger arranged to engage and depress the ejector against the ejector spring bias.

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