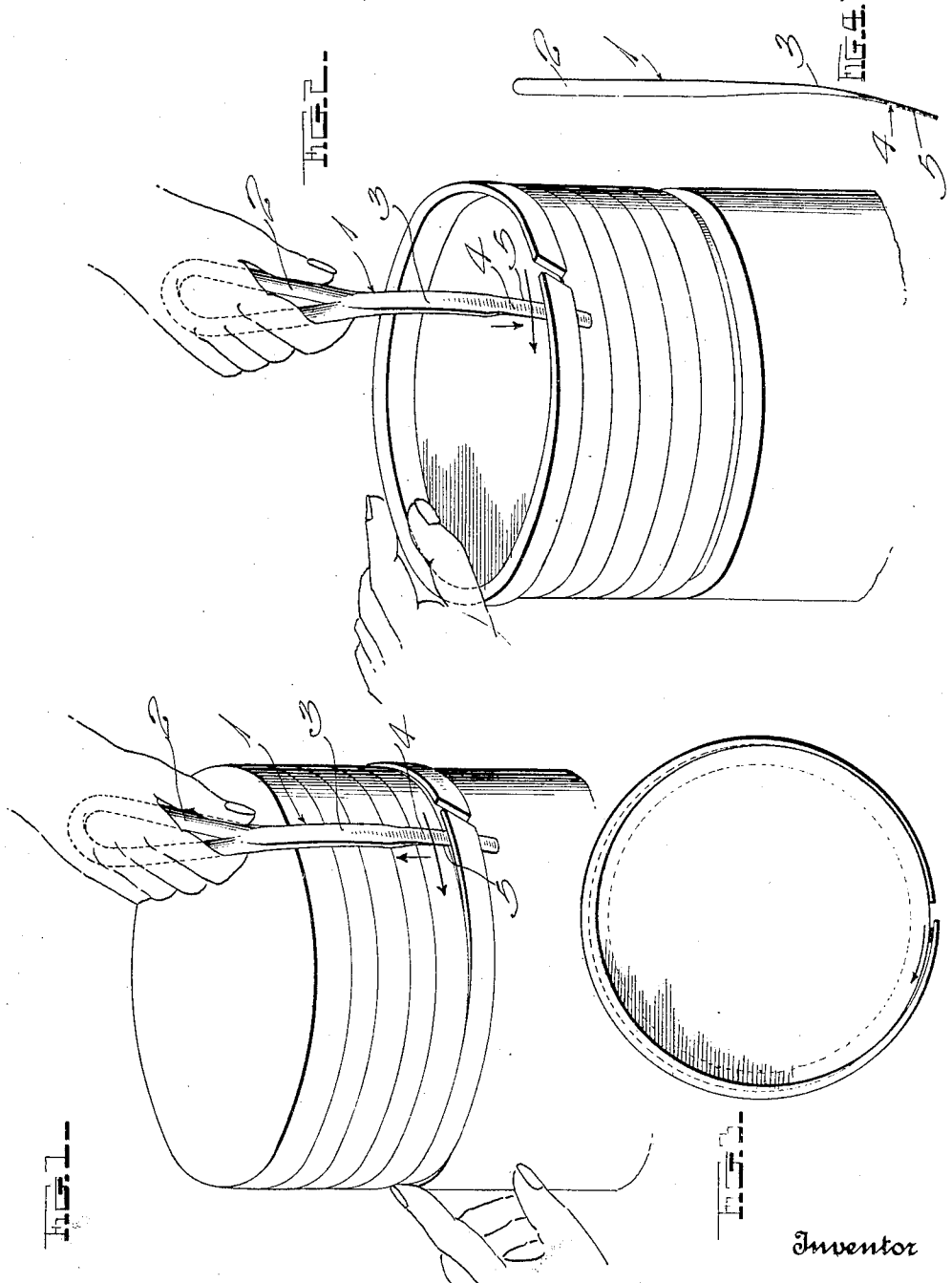
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PISTON RING TOOL.

APPLICATION FILED SEPT. 4, 1919.

1,354,034.

Patented Sept. 28, 1920.



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PISTON-RING TOOL.

1,354,034. Specification of Letters Patent. Patented Sept. 28, 1920.

Application filed September 4, 1919. Serial No. 321,538.

To all whom it may concern:

Be it known that I, NEIL C. ENSWORTH, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented certain new and useful Improvements in Piston-Ring Tools; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in tools and it has particular reference to a tool for applying and removing piston rings, the same being especially designed for use in connection with internal combustion engine pistons such as are employed on automobiles.

It is customary, to a great extent, in applying and removing piston rings to employ an ordinary screw driver, the point of which is inserted in the "split" of the ring in order to pry it open. After it is opened wide enough the ring may then be removed or taken off with the fingers. This method is crude, unhandy, tiresome, and oftentimes bruises or cuts the fingers of the person doing such work.

It is therefore the object of this invention to overcome these circumstances, and to provide a tool which is especially designed for this purpose, which is extremely simple in construtrion, strong, durable, inexpensive, efficient and easy to manipulate.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same;

Figure 1 is a perspective view illustrating the manner of using my tool to remove a piston ring.

Fig. 2 is a view like Fig. 1 illustrating the manner of applying a piston ring.

Fig. 3 is a top or plan view of Fig. 2.

Fig. 4 is an edge view of a tool constructed in accordance with my invention.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention the numeral 1 designates, as a whole, my improved tool, which is preferably constructed from a single piece of metal. One end of the said metal is bent upon itself and serves as a handle as shown at 2. The shank is flattened and comprises a stiff wide portion 3 and narrower and substantially flexible end portion or blade 4. The entire shank is longitudinally curved and gradually reduced in thickness from the handle 2 to the tip of the flexible blade 4. The blade 4 has its edges sharpened to provide knife edges as indicated at 5 which may be formed with an ordinary file and which permits this portion 4 to be readily inserted beneath the piston ring and drawn circumferentially around the piston to remove or apply as the case may be.

I will first set forth the method of removing a ring or rings from the piston which is clearly shown in Fig. 1. As is generally well known, the grooves in which the piston rings are seated are deep enough to permit the ring to be pushed slightly therein, say in the manner shown in this figure. Hence, when thus pushed in by the finger the split ends of the ring will be forced out of the groove far enough to permit the thin blade portion 4 of the tool to be inserted in the split of the ring and moved circumferentially around the piston and gradually remove the ring from the groove. It will be found advantageous and will effect a much quicker removal of the ring if the operator will apply a slight upward movement on the tool while at the same time moving it circumferentially.

Just the reverse is true when it comes to apply a ring. This step is clearly illustrated in Figs. 2 and 3, wherein the ring is laid flat on top of the piston and the split end pushed slightly down or hooked over the edge of the piston. The blade 4 of the tool is then inserted beneath the ring and moved circumferentially around the piston with one hand, while holding the ring with the other hand, thereby gradually expanding the ring and forcing it on the piston at the same time. A slight downward pressure will be found advantageous during this operation.

Of course, in both instances, it will be found convenient when removing rings to start with the lowest ring first, and when applying them, to start with the first or highest ring.

It is a matter of choice just as to whether or not the tool is used in the exact manner illustrated in the drawings. That is,

whether or not the curved shank of the tool be used as shown, or whether the entire tool is reversed and the other flat face of the shank permitted to bear on the piston.

It is added though, that in order to keep the flexible portion 4 from becoming easily broken when used with tough rings, it will be found convenient, and perhaps necessary, to use the thin blade portion 4 as a "starter" and then cause the ring to move up on the stiffer part 3 of the tool, to effect the removal.

I claim:

1. A tool for applying and removing piston rings comprising a single strip of metal having a handle formed at one end, the opposite end thereof being flattened and reduced in thickness from the handle to the end of the strip to form a shank, said shank being longitudinally curved, the end portion thereof being of less width than the portion adjoining the handle.

2. A tool for applying and removing piston rings comprising a handle and a shank, the latter being longitudinally curved and gradually tapered from its end adjoining the handle to its free end, thus providing relatively stiff and flexible portions respectively, the stiff portion being of a width greater than said flexible portion, the last named portion having its edges sharpened to enable ready insertion thereof through the split and underneath the ring, said shank being of uniform thickness in cross section throughout its length.

In testimony whereof I have hereunto set my hand.

NEIL COGSWELL ENSWORTH.