Aug. 5, 1924. 1,504,089

L. H. BRISBIN

VALVE LIFTING TOOL

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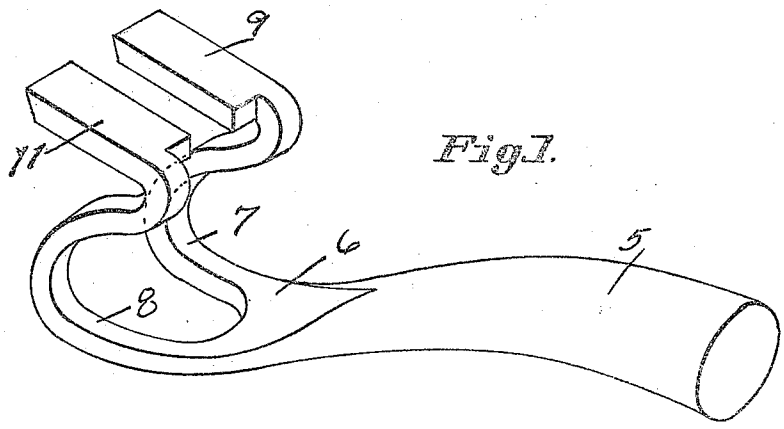


Fig. 1.

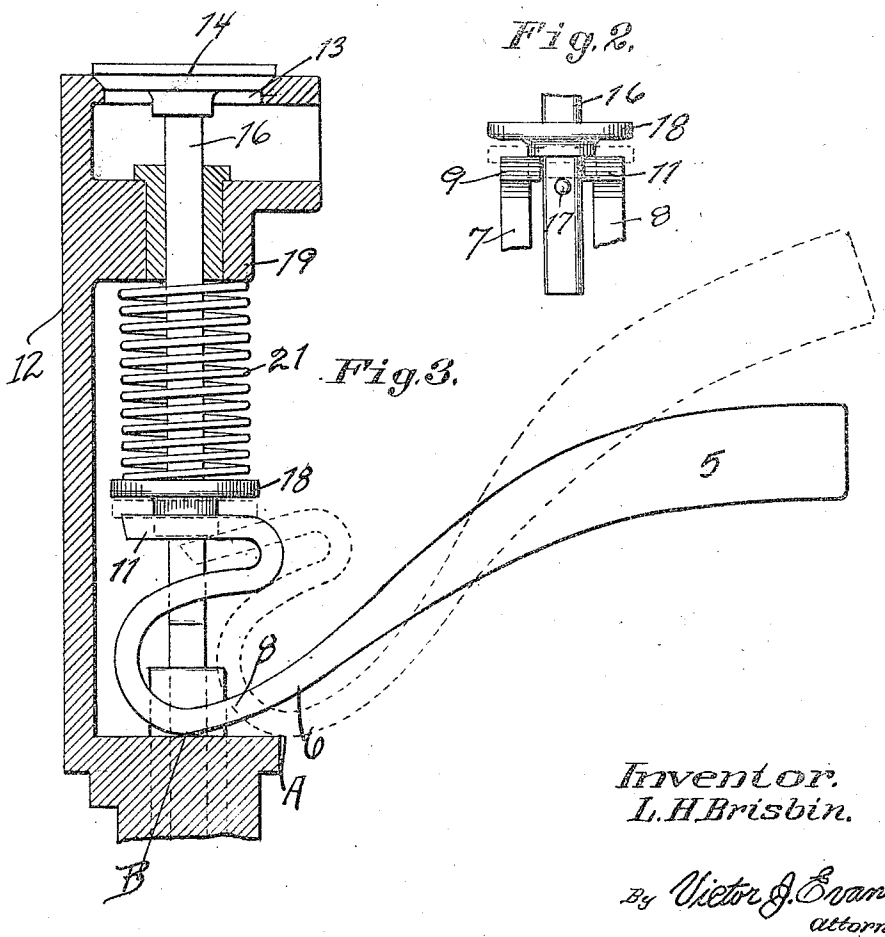


Fig. 3.

Fig. 2.

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UNITED STATES PATENT OFFICE.

LEWIS HASTINGS BRISBIN, OF BERKELEY, CALIFORNIA, ASSIGNOR OF ONE-THIRD TO ANTHONY JORSKI, OF LIVERMORE, CALIFORNIA, AND ONE-THIRD TO T. FRED M. CADE, OF OAKLAND, CALIFORNIA.

VALVE-LIFTING TOOL.

Application filed February 28, 1923. Serial No. 621,926.

To all whom it may concern:

Be it known that I, LEWIS HASTINGS BRISBIN, a citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented new and useful Improvements in Valve-Lifting Tools, of which the following is a specification.

This invention relates to improvements in valve lifting tools.

The principal object of this invention is to provide a tool constructed of a single piece of material and devised for the purpose of lifting a valve spring so as to remove the customary pin against which the valve spring contacts.

Another object is to produce a tool of this nature which is cheap to construct and therefore one which may be sold at a reasonable cost.

A further object is to produce a tool which will perform the work required with a minimum amount of effort.

A still further object is to produce a tool which when in place will remain so placed due to the action of the spring which serves to hold the same against accidental removal.

Other objects and advantages 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 of my tool,

Figure 2 is a fragmentary detail view showing the spring retainer raised so that the valve pin may be removed, and

Figure 3 is a fragmentary vertical cross section of an engine having a valve to which my tool is applied.

Applicant is aware of the fact that various tools have been devised for the purpose of lifting the valve spring for the purpose of removing the tension from the valve pin. These devices, however, have consisted of chains, pliers and the like arrangements, but the same have failed in that they are cumbersome and often result in slipping, with the consequence that the user often receives injury to his hands.

I have sought to improve a tool of this character by providing a single piece peculiarly bent and having a bifurcated end which may be passed beneath the valve spring and then cammed so as to raise the spring out of contact with the valve pin, thereby causing the valve to exert a downward pressure on the end of the tool which owing to the peculiar construction prevents the tool from accidentally jumping out from under the spring.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 5 designates the handle portion of my tool, which is preferably curved as shown in Figures 1 and 3, which handle terminates in a flattened portion 6. This flattened portion is in turn bifurcated so as to form arms 7 and 8.

At the extremities of these arms there are formed supporting lugs 9 and 11. By viewing Figures 1 and 3, it will be noted that these bifurcated arms are substantially Z-shaped. In Figure 3, it will be noted that the numeral 12 designates the wall of an engine having a valve port 13 within which is positioned a valve 14 having a downwardly extending stem 16 through which extends a retainer pin 17.

A cup 18 is slidable upon the stem 16 and is adapted to abut the pin 17, while positioned between this cup 18 and an outwardly extending portion 19 of the engine there is placed a spring 21.

The manner of using my tool is as follows:—

The same is first placed in the dotted line position of Figure 3, with the lugs 9 and 11 contacting the under surface of the cup 18 and at the same time straddling the valve stem 16. The lower portion of the Z is thus caused to bear upon the base of the engine as shown at A. A downward pressure upon the handle will now cause the Z portion to assume its full line position of Figure 3 with the result that the fulcrum point will be moved to the point B therefore the downward pressure of the spring 21 is directly upon the fulcrum point, with the result that there is no tendency of my tool to jump from beneath the spring after the spring has thus been raised.

The pin 17 may be removed and the valve together with its stem may be withdrawn from its position in the engine.

It is to be understood that the form of

my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:—

In a valve spring lifter, a handle, a flattened portion integral with said handle, said flattened portion being twice reversely bent upon itself so that the ends of said flattened portion lie in a plane parallel to the point of juncture of said flattened portion and said handle, said flattened portion being bifurcated, substantially as and for the purpose specified.

In testimony whereof I affix my signature.

LEWIS HASTINGS BRISBIN.