Jan. 2, 1923.

1,440,885

J. B. MOYER.
VALVE SPRING LIFTER.
FILED JUNE 10, 1921.

Fig. 1.

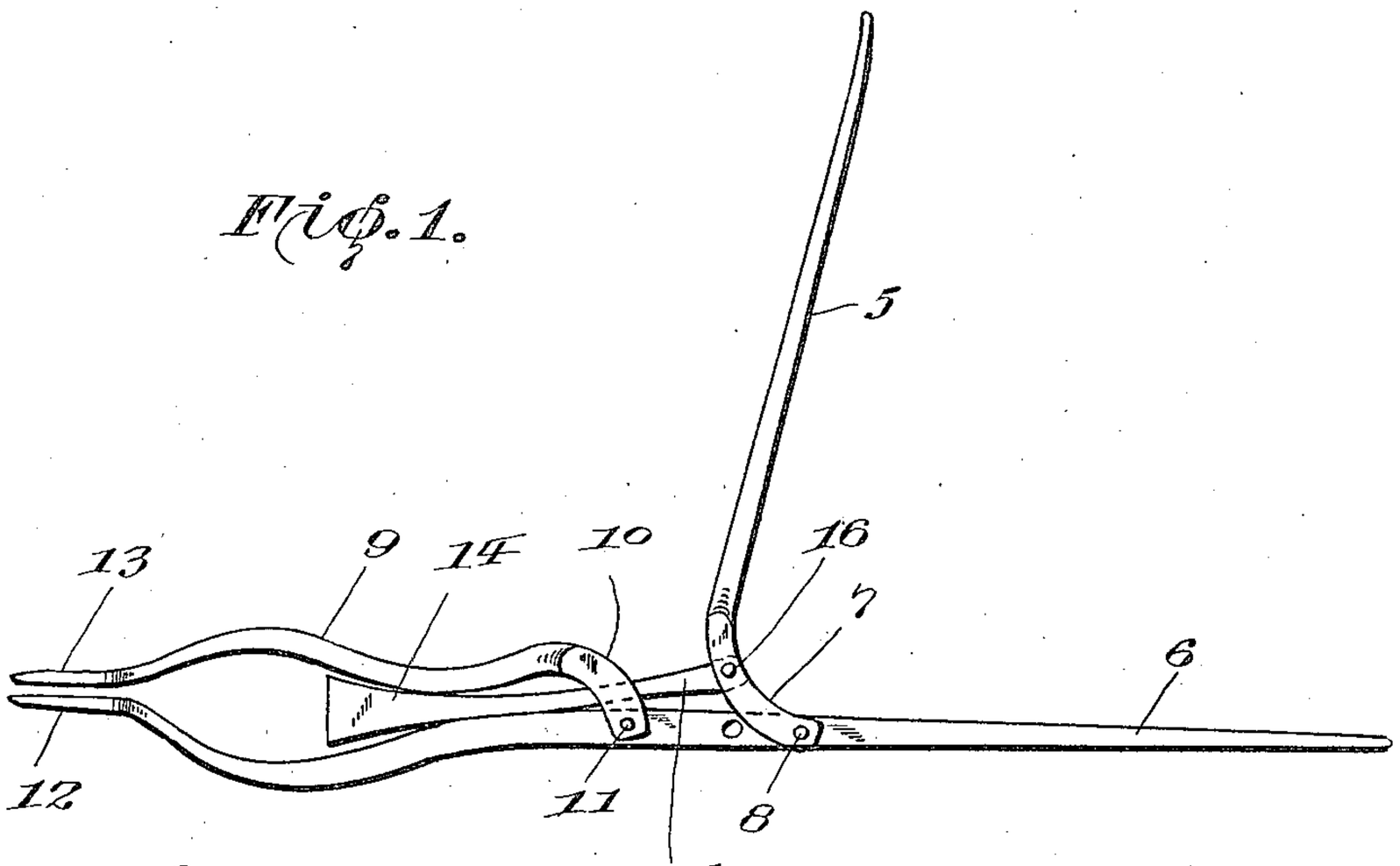
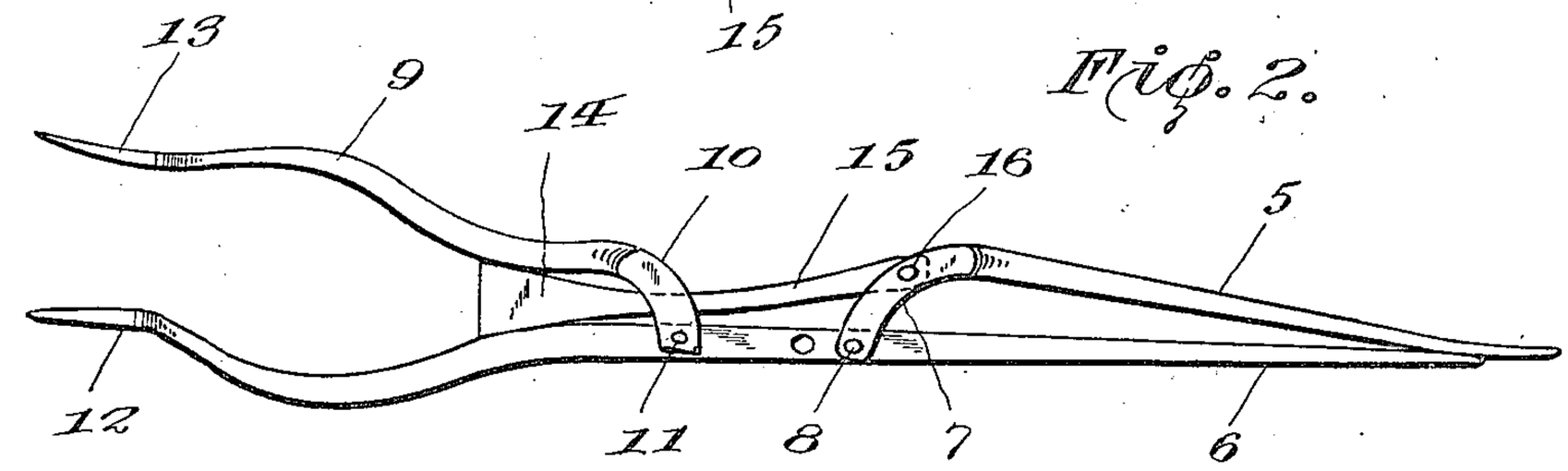


Fig. 2.



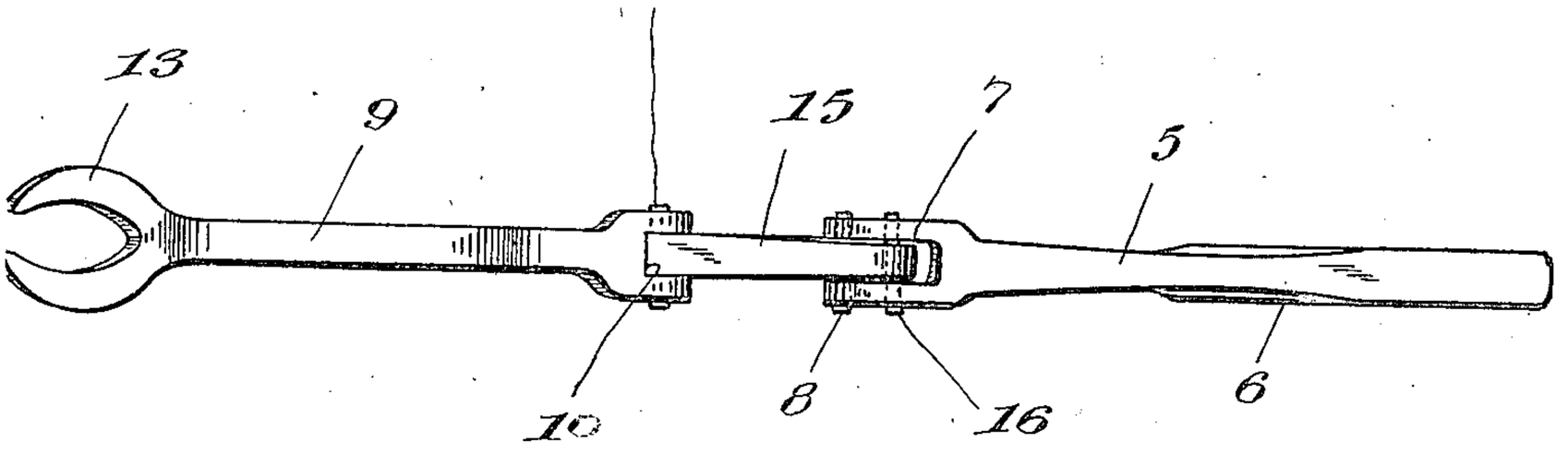


Fig. 3.

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UNITED STATES PATENT OFFICE.

JOHN B. MOYER, OF LUCAS, SOUTH DAKOTA.

VALVE-SPRING LIFTER.

Application filed June 10, 1921. Serial No. 476,591.

To all whom it may concern:

Be it known that I, JOHN B. MOYER, a citizen of the United States, residing at Lucas, in the county of Gregory and State of South Dakota, have invented new and useful Improvements in Valve-Spring Lifters, of which the following is a specification.

This invention relates to tools used for removing the valves of internal-combustion engines for the purpose of grinding, etc. Before the valve can be removed, it is necessary to take out the pin which holds the valve spring seat on the valve stem, this operation necessitating that the spring be compressed and its seat lifted clear of the pin. The present invention has for its object to provide a simple and very efficient tool for compressing the valve spring and lifting its seat, and to this end it consists in a novel combination and arrangement of parts to be hereinafter described and claimed.

In order that the invention may be better understood, reference is had to the accompanying drawing forming a part of this specification, and in said drawing—

Figure 1 is a side elevation of the tool;

Fig. 2 is a similar view showing the jaws of the tool spread, and Fig. 3 is a plan view.

Referring specifically to the drawing, 5 and 6 denote a pair of pivotally connected handles, the former having its forward end forked as shown at 7 to straddle the latter. The pivot pin 8 connecting the handles passes through the handle 6 and the branches of the forked end 7 of the handle 5.

To the handle 6 is also pivoted a lever 9, the rear end of which is forked, as shown at 10, to straddle said handle, with the pivot pin 11 passing through the fork branches.

The forward end of the handle 6 has a forked jaw 12 as is usual in tools of this character, and the forward end of the lever 9 has a similar jaw 13. The two jaws 12 and 13 are opposite each other, and when the tool is in position for use, the jaw 13 is above the jaw 12.

A wedge 14 is provided for swinging the lever 9 in a direction to move the jaw 13 outwardly or away from the jaw 12. This wedge seats slidably between the rear end portion of the lever 9 and the opposite side of the handle 6. From the wedge 14 extends, rearwardly, a shank 15, which extends between the fork branches 10 and terminates between the fork branches 7 of the handle 5, to which latter it is pivoted, as shown at 16. The pivotal connection 11 between the lever 9 and the handle 6 is forwardly of the pivotal connection 8 between said handle and the handle 5. It will therefore be seen that when the handle 5 is swung toward the handle 6, the wedge 14 is drawn rearwardly to swing the jaw 13 away from the jaw 12.

In use, the tool is placed so as to locate the jaw 13 above the jaw 12. The jaw 12 is placed around the valve push rod to rest on top of the guide boss from which said rod protrudes to engage the bottom end of the valve stem. This, or any other expedient according to the design of the motor, provides a firm support for the handle 6. The handle 5 is swung upwardly to hold the wedge 14 advanced and allow the jaw 13 to come close to the jaw 12 for insertion beneath the usual valve spring seat. The handle 5 is now swung down, which draws the wedge rearwardly, whereupon the jaw 13 rises and elevates the valve spring seat clear of the cross pin beneath the same, which can now be removed as it is entirely free. The tool is also used in this manner for compressing the spring and elevating its seat when the cross pin is to be replaced. When the handle 5 is swung down as described to draw the wedge rearwardly, the lever 9 is locked in elevated position, this self-locking feature effectually preventing the lever from accidentally swinging down and releasing the spring to injure the operator's fingers.

The tool is very simple in construction and easy to operate, as well as efficient and reliable. The fork branches 7 and 10 between which the shank 15 of the wedge 14 seats form guides for said shank and wedge and effectually prevent lateral displacement thereof.

I claim:

1. A valve tool comprising a pair of pivotally connected handles, a lever pivoted to one of the handles forwardly of the pivotal connection between the handles, said lever terminating in a jaw opposite the forward end of the handle to which the lever is pivoted, a longitudinally slidable wedge between the last-mentioned handle and the lever, and an operative connection between the other handle and the wedge.

2. A valve tool comprising a handle, a

second handle having its forward end forked to straddle the first-mentioned handle and pivoted thereto, a lever having its rear end forked to straddle the first-mentioned lever and pivoted thereto, said lever having a jaw at its forward end opposite the corresponding end of the first-mentioned handle, and a longitudinally slidable wedge between the lever and the first-mentioned handle, said wedge having a rearwardly extending shank seating between the branches of the afore-mentioned forks and connected to the second-mentioned handle.

In testimony whereof I affix my signature.

JOHN B. MOYER.