W. F. WEBB.

VALVE LIFTER.

APPLICATION FILED JUNE 26, 1919.

1,331,602. Patented Feb. 24, 1920.

Fig. 1.

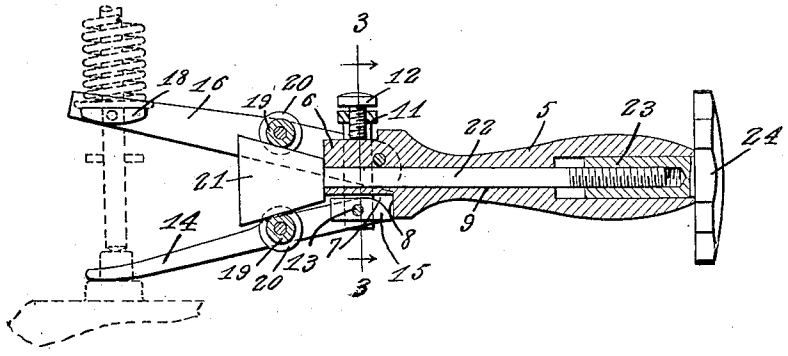


Fig. 2.

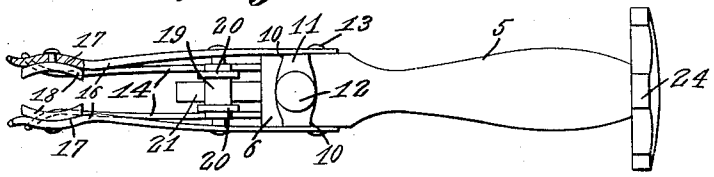
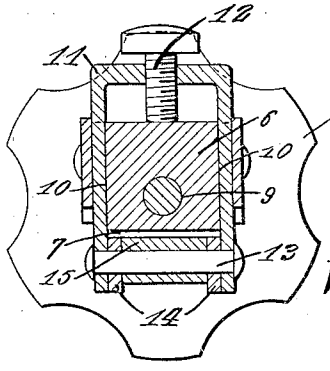


Fig. 3.



W. F. Webb, Inventor

Witness

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UNITED STATES PATENT OFFICE.

WILLIAM F. WEBB, OF GARDEN CITY, KANSAS.

VALVE-LIFTER.

1,331,602. Specification of Letters Patent. Patented Feb. 24, 1920.

Application filed June 26, 1919. Serial No. 306,901.

To all whom it may concern:

Be it known that I, WILLIAM F. WEBB, a citizen of the United States, residing at Garden City, in the county of Finney and State of Kansas, have invented a new and useful Valve-Lifter, of which the following is a specification.

This invention relates to valve spring lifters and has as its principal object to provide a device of this character which will enable a person to readily remove the valve springs of internal combustion engines.

A second object of the invention is to provide a valve spring lifting tool which may be used in removing springs which are seated in uneven engine bases.

Another object of the present invention resides in the provision of a valve spring remover that will not tip the washer upon which the spring bears and thus prevent the valve stem from binding.

An additional object is to provide a valve spring lifter which is simple in construction, consists of few parts that are not likely to become out of order, and which may be manufactured and sold at a minimum cost.

With the above and other objects and advantages the invention consists of combinations of elements, constructions, arrangement of parts, and general assemblage which will be hereinafter enlarged upon and illustrated in the accompanying drawing.

On the drawing: Figure 1 is a view of the device in operative position, part of the same being shown in longitudinal section; Fig. 2 is an elevation of the device looking downward upon the same; and Fig. 3 is a transverse sectional view taken on line 3—3 of Fig. 1.

Referring to the drawing wherein like characters of reference indicate like parts, the numeral 5 denotes a handle having a rectangular head 6 formed upon one end thereof which has a recess 7 formed upon its under face that extends entirely across the same and defines a transverse shoulder 8. A longitudinal bore 9 extends through the handle 5 and head 6. Recesses 10 are formed in the opposed outer faces of the head 6 which extend the entire width of the same. Straddling the head 6 is a U shaped yoke 11 having its side bars slidably engaged in the recesses 10. A set screw 12 is threaded into the U shaped yoke 11 and engages the upper face of the head 6.

Pivotally connected with the ends of the yoke 11 and upon their inner faces as at 13 is a pair of parallel resilient jaws 14, the ends of which are laterally curved. A spacer block 15 having its under face rounded is mounted between the pivoted ends of the jaws and is secured in place by the pivots 13. A second pair of spring engaging resilient jaws 16 are pivoted to the opposite outer face of the block. The jaws 14 slightly diverge from each other as do the jaws 16, the latter being provided with seats or depressions 17 in their opposed faces and have their free face ends laterally curved so that they may be readily engaged with the valve spring.

Pivotally mounted in the depressions or seats 17 is a pair of spring engaging members 18. These members always lie in a horizontal position and thus prevent the washer that is assembled with the valve and valve spring from tilting which would bind the valve stem and prevent the spring being removed.

A roller 19 is journaled in each pair of jaws adjacent their pivoted ends and are formed with spaced guide flanges 20.

Slidable between the rollers 19 and between the guide flanges 20 is a tapered block 21, the block being disposed so that its widest end is toward the outer end of the jaws.

An operating stem 22 is connected to the narrow end of the block 21 and is longitudinally shiftable in the bore 9 of the handle and head. This stem 22 is threaded and receives the threaded nut 23 which is rotated by the hand wheel 24 carried thereby.

By means of the nut 23 the distance which the pairs of jaws move away from each other is varied. In the use of the device the hand wheel is grasped by the operator and the stem moved forwardly by exerting pressure on the hand wheel. This will move the block between the rollers and due to the inclined faces of the block they are separated.

The embodiment of the invention is considered the preferred construction but it is to be understood that the invention may be embodied in constructions other than the one specified and that my limits of such embodiments are only governed by the appended claims.

What is claimed is:

1. In a device of the character described,

a handle, a head carried thereby, a U shaped yoke adjustable on the head, a pair of jaws pivoted to the ends of the yoke adapted to straddle the valve stem and engaged with a stationary object, a pair of jaws pivoted to the head adapted to be engaged beneath the valve spring, and means for moving the jaws away from each other to compress the valve spring.

2. In a device of the character described, a handle, a head carried thereby having elongated recesses in its opposite outer faces, a U shaped yoke straddling the head and disposed in the recesses for longitudinal adjustment therein, a set screw carried by the U shaped yoke and engaging the head, a pair of jaws pivoted to the ends of the yoke and adapted to straddle the valve stem and engage a stationary object, a second pair of jaws adapted to be engaged beneath the valve spring, and means for moving the jaws away from each other.

3. In a device of the character described, a handle, a head carried thereby of rectangular formation and having a recess in its under face and further provided with recesses in its opposite outer faces, the handle and head being also provided with a longitudinal bore, a U shaped yoke straddling the head and disposed in the recesses in the outer faces of the head, a pair of jaws pivoted to the ends of the U shaped yoke and disposed in the first mentioned recess, a set screw carried by the U shaped yoke and engaging the head whereby the U shaped yoke may be moved in the recesses to move the jaws with respect to the head, a second pair of jaws pivoted to the head, a tapered block movable between the jaws, a stem longitudinally movable in the bore and connected with the block, and a nut threaded upon the end of the stem for regulating the distance the jaws are to be opened.

4. In a device of the character described, a head having a bore therein, a pair of pivoted jaws carried by the head, means supported on the head and adjustable transversely thereof for supporting one pair of jaws, and means for moving the outer ends of the pairs of jaws with relation to each other.

5. In a device of the character described, a head having a bore therein, a pair of jaws pivotally supported by the head, a movable member having connection with the head, a pair of jaws pivotally connected to the movable member, and means operating through the head for moving the free ends of the jaws of each pair laterally with relation to each other.

6. In a device of the character described, a head having a bore therein, a pair of jaws pivotally supported by the head, a movable member supported by the head, a pair of jaws pivotally supported by the movable member, means for adjusting the movable member, and means for moving the jaws of each pair toward and away from each other.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM F. WEBB.

Witnesses:
EUGENE MILLER,
H. M. ARMSTRONG.