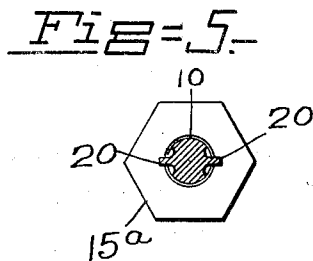
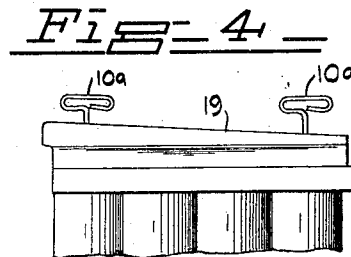
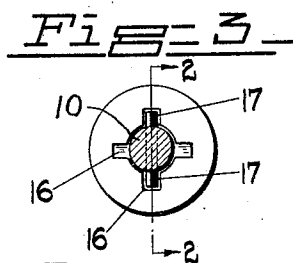
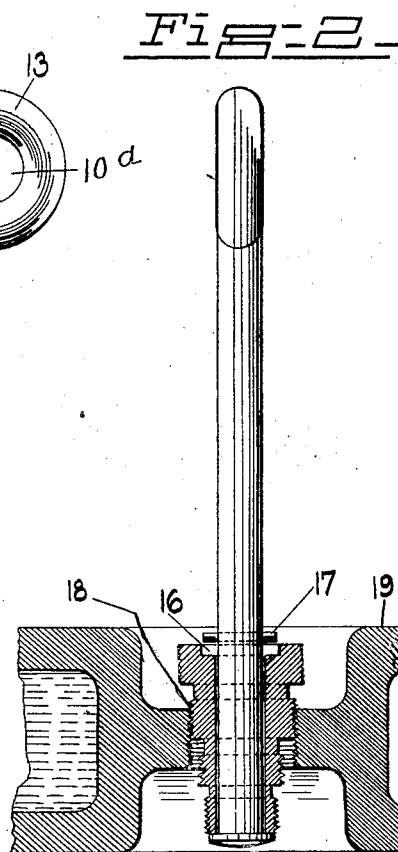
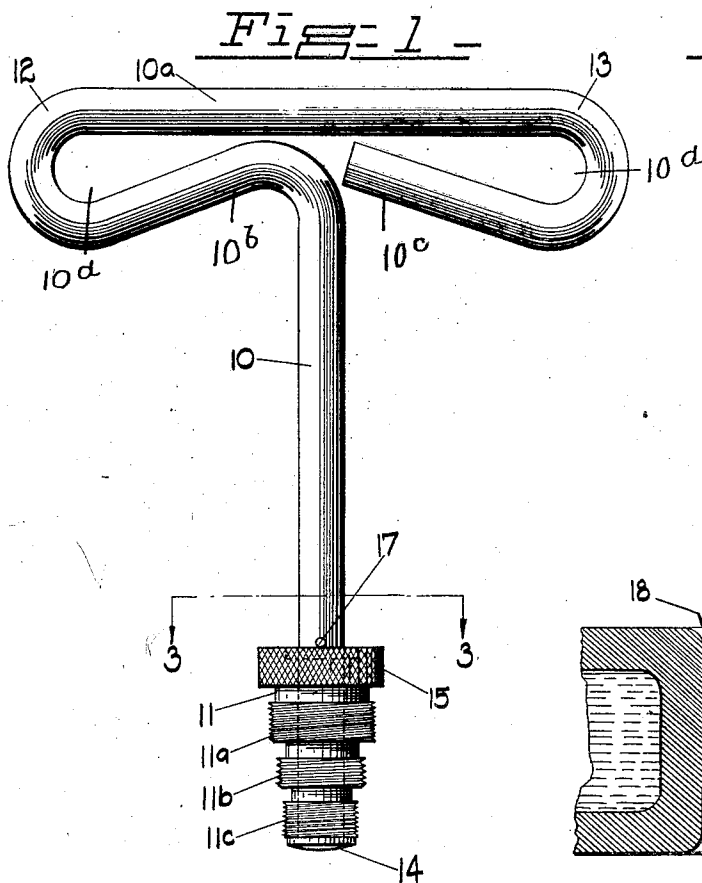


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J. V. CRITCHLEY
CYLINDER HEAD LIFTING TOOL

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CYLINDER-HEAD-LIFTING TOOL.

Application filed February 11, 1926. Serial No. 87,498.

This invention relates to handles for lifting the cylinder heads from the cylinder blocks of automotive internal combustion engines.

5 One of the objects of the invention is to provide a simple and easily constructed handle which will fit into the spark-plug openings of the cylinder heads of engines of different makes and sizes.

10 Another object of the invention is to provide a handle for lifting the cylinder heads of automotive internal combustion engines, which may be easily attached to the cylinder heads through the spark-plug opening and which is swiveled to the attaching means to permit easy shifting of position of the handles during lifting.

Another object of the invention is to provide a handle for lifting the cylinder heads of automotive internal combustion engines, which comprises a handle part and a part for engaging in the spark-plug openings, the handle part being adapted to engage the opening engaging part to screw the same into the spark-plug opening in the cylinder head, but to be quickly disengaged from the opening engaging part so that the handle part may be free to rotate therein while the head is being lifted.

30 Another object of the invention is to provide a handle member which is particularly adapted for such lifting, but which can be manufactured at a reduced cost over handles heretofore used on tools of this type.

35 Various other objects of the invention will be apparent as the description proceeds.

One form of embodiment of the invention has been illustrated in the accompanying drawings, in which,—

40 Fig. 1 is an elevational view of the engine cylinder head lifting handle;

Fig. 2 is a part sectional side view of the handle shown in Fig. 1, screwed into the spark-plug opening of an engine cylinder head, and taken on the line 2—2 of Fig. 3;

45 Fig. 3 is a part sectional plan view taken on the line 3—3 of Fig. 1;

Fig. 4 is a view showing a pair of the handles attached to a cylinder head of an engine; and

50 Fig. 5 is a view similar to Fig. 3 showing a modified form of embodiment of the invention.

The cylinder head lifting handle comprises

a handle portion or shank 10, and a sleeve 11 55 rotatably mounted thereon. The upper portion of the shank 10 is bent in loops 12 and 13 to form a handle 10^a, while the lower end 14 of the shank 10 is swaged over to retain the sleeve 11 upon the shank 10. The sleeve 60 11 has a plurality of threaded portions 11^a, 11^b and 11^c, of different diameter and different thread pitch, each adapted to fit a different-size spark-plug opening in the cylinder heads of different makes of automobiles. 65 A nurlled rim 15 at the top of the sleeve 11, permits the sleeve to be readily grasped and turned by the hand, if so desired. Grooves 16 are formed at the top of the sleeve 11, at diametrically opposite points as shown in 70 Fig. 3, and a pin 17 is passed through the shank 10 at a point just above the top of the sleeve 11, the ends of this pin projecting from each side of the shank 10 and being adapted to engage with either of the grooves 75 16 when the shank 10 is moved downwardly relative to the sleeve 11.

In operating the handle, the sleeve 11 may be screwed into the spark-plug opening 80 18 in the engine head 19 of Fig. 2, either by turning the nurlled rim 15 by hand or by grasping the handle 10^a, and pushing the shank 10 down into the sleeve 11 so that the pin 17 will engage either one of the grooves 85 16, and screwing the sleeve 11 into the opening 18 by turning the handle 10^a. In lieu of the pin 17 and grooves 16, a portion of the shank 10 may be given a polygonal shape and the top of the sleeve 11 broached to the same size and shape, or any simple ratchet 90 connection may be used between the shank and sleeve. When the sleeve has been screwed into the spark-plug opening 18, the handle 10^a may be raised, whereby the pin 17 disengages the grooves 16 and the swaged 95 end 14 of the shank 10 contacts with the bottom end of the sleeve 11, and the sleeve 11 and engine head 19 may be raised thereby. It will be evident from an inspection of Fig. 2 that the shank 10 may be rotated freely 100 within the sleeve 11, to permit shifting of the position of the hands and arms or of the lifting crane during the lifting, the swaged end 14 acting as a bearing against the bottom of the sleeve 11 without causing rotation of the sleeve 11 in the spark-plug opening. 105 Hence, it is possible to grasp one of these handles in each hand and raise an engine

head, at the same time turning the hands in any desired and convenient manner.

It will be noted that the handle 10^a which is formed by bending the shank 10 has upwardly inclined portions 10^b and 10^c adjacent the shank 10 which tend to slide or force the fingers toward the shank 10 and render the hold upon the handle more secure, and that this bending also provides convenient loops 10^d for the engagement of crane hooks or the like, while the free swiveling of the handle in the sleeve permits ready adjustment of the handle position to any desired lifting condition.

Fig. 5 illustrates a modified form of embodiment of the invention in which the grooves 16 and pin 17 are omitted, the shank 10 is provided with a struck up ear 20, limiting movement of the sleeve 11, and the rim 15^a is of a polygonal shape permitting the use of a wrench for screwing the sleeve into a spark-plug opening.

While I have shown a sleeve with three screw-threads of different sizes thereon, it will be understood that I may have a greater or smaller number of threads on the sleeve, and that these threads may be of any desired size and pitch; and while I have illus-

trated a preferred embodiment of the invention, there are many modifications that may be resorted to without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. A lifting handle for cylinder heads comprising a shank, a member rotatably secured thereon adapted to fit various standard practice openings in the cylinder head without deforming said openings, and means for causing a non-rotative engagement between said shank and member, said shank being freely rotatable when said member is normally engaged to a cylinder head.

2. A lifting device for cylinder heads comprising a shank, a member rotatably secured thereon adapted to fit a standard practice opening in a cylinder head without deforming said opening, means for causing a non-rotative engagement between said shank and member, said shank having a projection for manual turning, and being freely rotatable when said lifting device is in normal engagement with a cylinder head.

In testimony whereof I have affixed my signature to this specification.

JAMES VERNER CRITCHLEY.