Nov. 5, 1929. H. R. CURTIS 1,734,420

VALVE TOOL

Filed Dec. 8, 1928

Fig. 1.

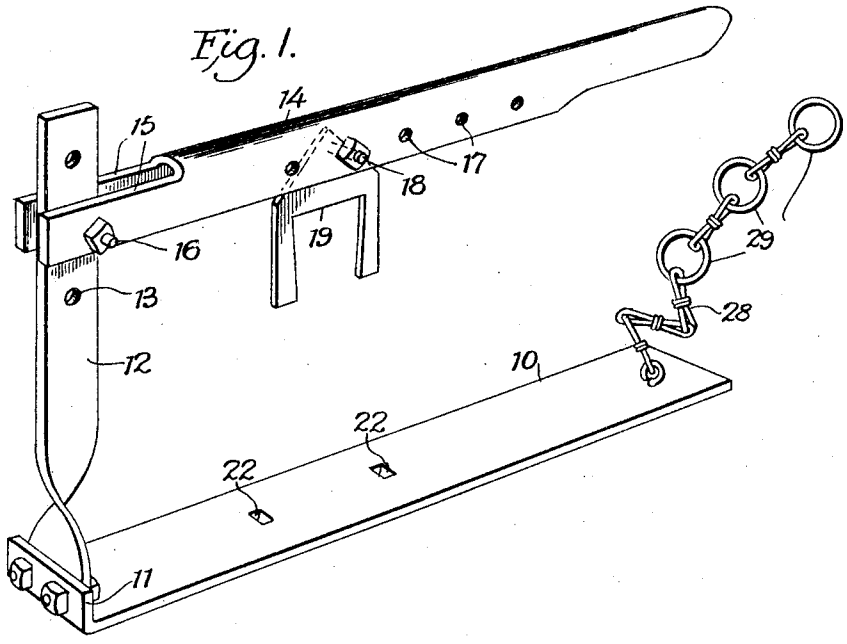
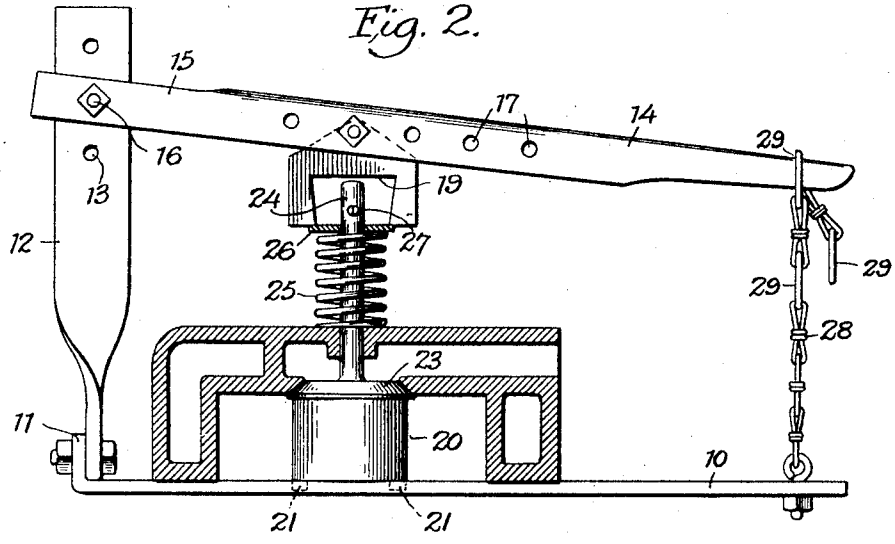


Fig. 2.



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UNITED STATES PATENT OFFICE

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VALVE TOOL

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This invention comprehends the provision of a tool by means of which the spring of an engine tappet valve can be easily and conveniently compressed on the stem of the valve with a view of either assembling or disassembling the component parts of the valve as the occasion may require.

In carrying out my invention, I contemplate a tool capable of being quickly adjusted to accommodate itself to different size valves, while the component parts of the tool itself can be easily disassembled so as to occupy a minimum of space in a tool kit or the like when not in use.

Another and very important object of the invention resides in the provision of a tool of the class in question designed to effectively engage and support the valve while the tool is in use.

The nature and advantages of the invention will be better understood when the following detail description is read in connection with the accompanying drawing, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawing forming part of this application like numerals of reference indicate similar parts in the several views and wherein:

Figure 1 is a perspective view of the tool forming the subject matter of my invention.

Figure 2 is a side elevation showing the manner of using the tool.

While the invention can be practiced in a general way, it is particularly useful and advantageous for compressing the spring of a valve when arranged in the head of the engine, and is therefore primarily designed for use in this connection.

The tool essentially embodies a base 10 preferably in the nature of an elongated flat bar, one end of which is upturned to provide a flange 11. Bolted or otherwise suitably secured to this flange 11 is a standard 12, the latter being twisted at an appropriate point in its length as illustrated to arrange the lower portion of the standard parallel with the flange 11. The standard 12 is provided with a plurality of spaced openings 13 to permit the lever 14 to be pivoted upon the standard at different points, depending upon the size of the particular valve to be dealt with. The handle 14 is formed from a single piece of material of channel-shaped formation in cross section for the major portion of its length, although the handle is bifurcated at one end and the separated portions 15 arranged to straddle the upright 12. These separated portions support a pivot bolt 16, which as above stated can be arranged in any one of the openings 13, thereby permitting the handle to be adjusted toward and away from the base 10 as the occasion may require. The handle 14 is also provided with a longitudinal series of spaced openings 17 to receive the pivot bolt 18 which supports the yoke 19 on the handle 14. As clearly shown in the drawing this yoke 19 depends from the handle, and is capable of adjustment longitudinally thereof by arranging the pivot bolt 18 in the desired opening 17 of the handle.

As above stated the tool is primarily intended for use in conjunction with engine tappet valves, for compressing the spring of the valve to facilitate the assemblage or disassemblage of the component parts of the valve as the occasion may require.

As hereinabove stated the tool is primarily intended for use in conjunction with valves arranged in the head of the engine, and further embodies a tubular extension or valve support 20 which is preferably provided with a plurality of lugs 21 depending from the lower edge thereof. The elongated base 10 is provided with spaced openings 22 to accommodate the lugs 21, so that when the valve support 20 is arranged upon the base, it will be prohibited from slipping or moving relatively thereto or with respect to the valve to be dealt with.

In practice the head of the engine indicated generally at A is arranged upon the base 10, with the valve support 20 positioned to engage the head 23 of the particular valve to be dealt with. The stem of the valve is indicated at 24, while surrounding the stem is the usual spring 25, one end bearing against the head of the motor and the other end against a washer 26. The spring is held in position by

the usual cross pin 27 which is normally engaged by the washer 26. After the parts have been arranged in the manner illustrated in Figure 2, the handle 14 is lowered, bringing the yoke 19 into engagement with the washer 26, and upon continued movement of the handle in the same direction, the spring 25 is compressed. Secured to one end of the base 10 is a flexible element, preferably a chain 28, which includes a plurality of spaced rings 29, one of which is adapted to be placed over the adjacent end of the handle 14 to hold the latter in its active position, and the spring 25 in a compressed condition, thereby permitting the use of both hands to remove the cross pin 27 from the stem of the valve. After this has been accomplished, the handle 14 is released, and moved upwardly to an out of the way position, whereupon the spring and valve can be readily and easily separated. The same operation is proceed with when it is desired to associate the spring with the valve.

As above stated the handle 14 can be adjusted upon the standard 12, and the yoke 19 adjusted longitudinally of the handle so that the tool can accommodate itself to different size valves. In addition to this feature of the invention, the component parts of the tool can be quickly and easily separated so that the said parts can be compactly arranged within a tool kit or the like and thus occupy a minimum of space. For this purpose the handle 14 can be removed from the upright 12, and the latter subsequently separated from the flange 11 so that all three of these parts can be arranged side by side in parallelism, while if desired the yoke 19 can also be separated from the handle 14.

While it is believed that from the foregoing description the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to what is herein shown and described, and that such changes my be resorted to when desired as fall within the scope of what is claimed.

What is claimed is:

A valve tool of the character described comprising a base, a standard rising therefrom, a handle pivoted on the standard and arranged above the base, a valve spring engaging member depending from the handle and adjustable longitudinally thereof, a tubular valve support, lugs depending from the support, and said base having spaced openings to receive said lugs to hold the support fixed relatively to the base when the tool is in use.

In testimony whereof I affix my signature.

HOWARD R. CURTIS.