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J. F. KOONS

VALVE PIN REPLACER

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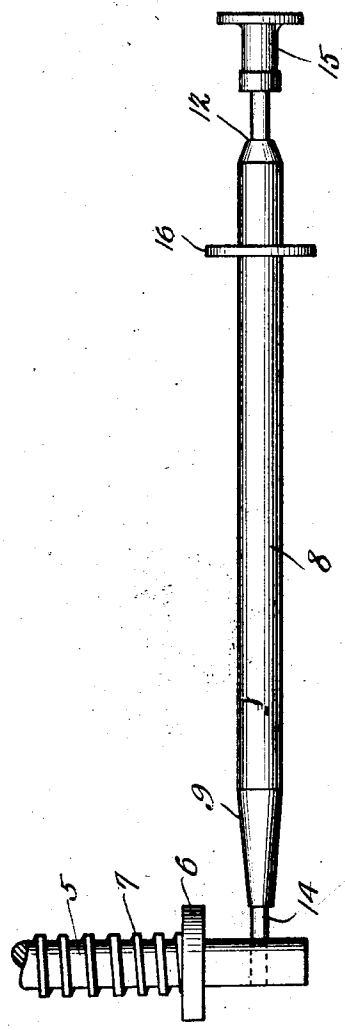



Fig. 1.

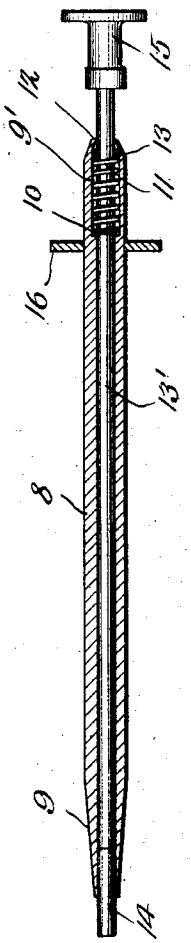



Fig. 2.

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# UNITED STATES PATENT OFFICE.

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## VALVE-PIN REPLACER.

Application filed April 30, 1925. Serial No. 27,050.

This invention has reference to a pin replacer and is especially designed for use in connection with the repair of internal combustion engines, when it becomes necessary to remove or replace the valve pins employed for holding the valve springs under tension.

An important object of the invention is to provide a device of this character which will support a pin in such a way as to facilitate the replacing thereof, to the end that it will be unnecessary to remove the usual carburetor or intake manifold to apply or remove a valve spring.

A still further object of the invention is the provision of means to restrict the movement of the device while in use, as a pin replacer to insure against the pin being inserted too far within the opening of the valve stem.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawing:

Figure 1 is an elevational view of a pin replacing tool constructed in accordance with the invention.

Figure 2 is a longitudinal sectional view through the tool showing a pin as supported therein.

Referring to the drawing in detail, the reference character 5 indicates a valve stem which is of the usual construction, the same being supplied with the usual pin opening to receive a pin against which the washer which is indicated at 6 is forced, as by means of the coiled springs 7. In the present showing the washer 6 is illustrated as held upwardly out of contact with the pin being positioned, which movement of the washer and spring is accomplished by means of a suitable valve lifter, not shown.

The body portion is indicated by the reference character 8 and is tubular in formation, the same having a tapered extremity 9 in order that the operator may have full view of the outer end of the tool while in use.

The bore through the body portion is formed with an enlarged cut out portion 9′ defining shoulders 10 against which the coiled spring 11 engages, there being provided a flange 12 adjacent to the cut out portion adapted to engage the washer 13 that engages the opposite end of the coiled spring.

Operating through the body portion is a plunger 13′ to which the washer 13 is secured, to the end that when the plunger is forced inwardly, in the act of inserting a pin, the spring will be placed under tension to return the plunger to its inactive position.

A pin is shown in Figure 2 of the drawing as positioned in the body portion and in contact with the outer end of the plunger so that as the plunger is moved forwardly the pin which is indicated by the reference character 14 is forced from the body portion 8 and properly seated within the usual pin opening of a valve stem.

Secured to one end of the plunger 13 is a finger piece 15 which is magnetized, to the end that when the finger piece is placed adjacent to a pin to be removed, the pin will be attracted by the finger piece and withdrawn from its opening.

Mounted on the body portion is a washer 16 to be engaged by the fingers of the operator, while the thumb of the operator is positioned on the finger piece 15. As pressure is brought to bear on the finger piece 15, the plunger 13 will be moved through the body portion.

I claim:—

A pin setter including an elongated body portion having a bore extending centrally therethrough and disposed longitudinally thereof, said bore having an enlarged end portion defining shoulders, a rod disposed within the bore, a coiled spring on the rod and positioned within the enlarged portion of the bore, said coiled spring being connected with the rod, one end of the body portion being turned in to engage the rod

and provide a stop for one end of the spring, said spring adapted to exert a pressure on the rod to normally hold the rod so that one end thereof will lie within the bore and in spaced relation with the end of the body portion, a finger piece on one end of the rod, a washer on the body portion and in spaced relation with the finger piece, and said body portion adapted to accommodate a valve pin to be positioned.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

JOHN F. KOONS.