Aug. 21, 1928. 1,681,881

P. N. SHAW

TOOL FOR TAKING UP TAPPETS AND THE LIKE

Filed April 5, 1926

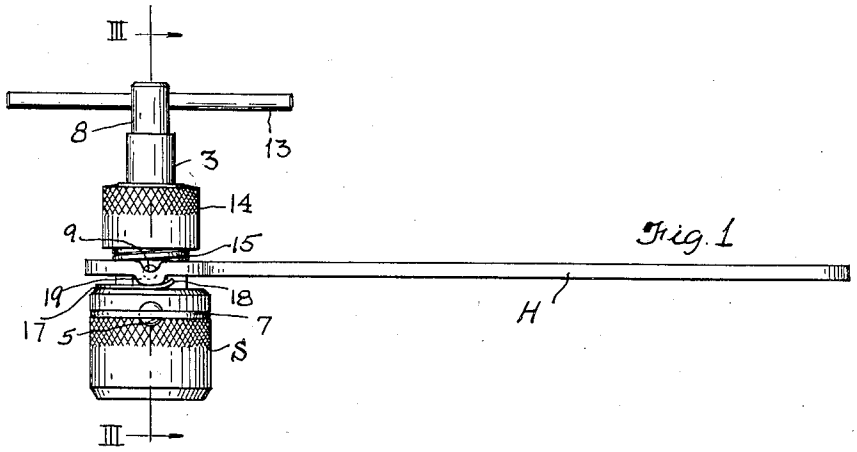


Fig. 1

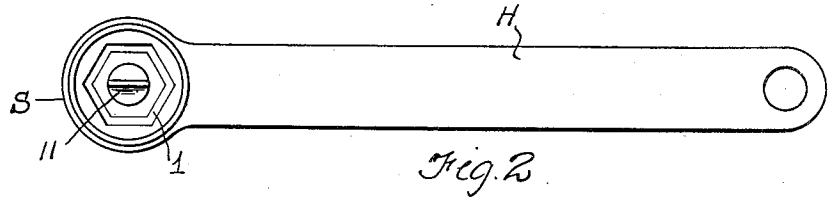


Fig. 2

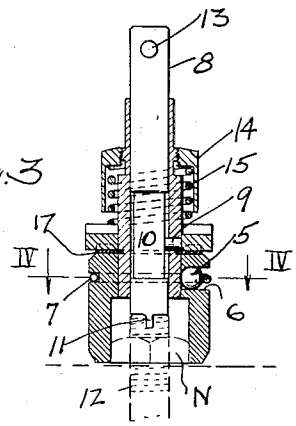


Fig. 3

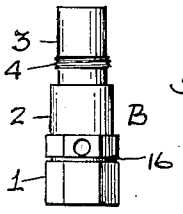


Fig. 5

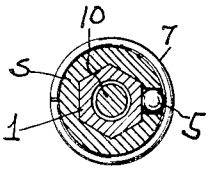


Fig. 4

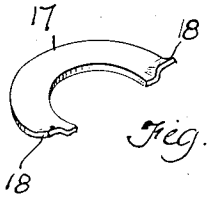


Fig. 6

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UNITED STATES PATENT OFFICE.

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TOOL FOR TAKING UP TAPPETS AND THE LIKE.

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This invention relates to tools, and more particularly tools for use on devices having a screw form of head and a set-nut in connection. In certain valves of the overhead type in automobile engines, for instance, the tappets are of such character, and adjustment by means of tools as used heretofore is inconvenient and time-consuming. It is among the objects of the present invention to provide a tool which includes the elements necessary for work of this kind and which is compact and readily applied. Other objects and advantages will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the means hereinafter fully described, and particularly pointed out in the claims, the annexed drawing and the following description setting forth in detail certain features embodying the invention, such disclosed means constituting, however, but one of various forms in which the principle of the invention may be used.

In said annexed drawing:—

Fig. 1 is a side elevation of a tool embodying the present invention; Fig. 2 is a plan view of the same; Fig. 3 is a section taken on the plane indicated by the line III—III, Fig. 1; Fig. 4 is a section taken on the plane indicated by the line IV—IV, Fig. 3; and Figs. 5 and 6 are elevational and enlarged isometric views respectively of details.

The reference character B in the drawing designates a hollow barrel which is of squared or hexagonal contour normally at one end 1, cylindrical along the middle 2, and of reduced cylindrical form at the end portion 3. Screw threads 4 are provided thereon for a purpose to be referred to hereinafter. Engageable over the end 1 of the barrel is a wrench or nut socket S, this being frictionally held, as by a plunger or ball 5 in a recess 6 in the wall of the socket, the ball being resiliently pressed inwardly by a spring-band 7 of split-ring type lodged in a groove about the socket. Various sizes of sockets may be interchangeably used in accordance with the size of a nut N which is to be operated on; assembly or removal being accomplished by a direct thrust on or off of the barrel. Within the hollow barrel is a stem 8 which is freely rotatable, and slidable within certain limits as determined by a pin 9 bearing against the reduced portion 10 of the stem. The inner end of the stem 8, within the socket, is shaped as a screw-slot engaging blade 11, adapted to operate on screw-stems such as shown at 12. The outer end of stem 8 is provided with a cross handle 13 for rotation of the stem 3. A screw cap 14 is arranged to be held by the threads 4 and is spaced from the barrel below sufficiently to accommodate a coiled spring 15 which bears against the inner end portion of a handle H, this portion fitting the hexagonal part of the barrel along with the nut socket and at the same time obstructing the outlet for pin 9. Fitting within a groove 16 in the barrel is a half-ring thrust key 17 which has up-turned portions 18 to lock behind projections 19 offset from the plane of the handle.

The manner of use of the device will be clear. With a socket of the size adapted for a nut to be operated on, the device is set in place thereover, the handle H facilitating such manipulation, and the handle 13 of the stem 8 is turned and slid inwardly to engage in the slot of the screw head to be operated upon. With a turn to the left or in anti-clockwise direction, the set-nut N may then be loosened and the screw therewithin may be adjusted as desired by means of the stem 8. Finally by a turn to the right or in clockwise direction, the nut may be set up or tightened. As indicated, various sized sockets may be used, the socket being simply thrust into position on the hexagonal portion of the barrel, the spring pressed ball 5 insuring a substantial frictional grip therefor. By virtue of the coil spring 15, bearing upon the engaging portion of the handle H, and the further provision of the offset projections 19, a slight rocking adjustment is permitted for the handle so that manipulation in difficulty accessible positions is feasible without unseating the socket from the nut to be operated upon. The degree of this spring pressure and the extent of movement possible may be regulated by the screw cap 14. When it is desired to remove the stem 8 for any purpose, this may be readily accomplished by unscrewing the cap 14 and sliding this and the spring 15 and the handle H off the barrel whereupon the pin 9 which was backed up or retained by the engaging portion of the handle H, may be readily dropped out and the stem 8 is then slidable from the barrel.

Other modes of applying the principle of the invention may be employed instead of the one explained, change being made as regards the construction herein disclosed, providing the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. In a tool of the character described, the combination of a hollow barrel having an end of non-circular contour externally, a nut socket engageable over such end, a laterally-extending handle engageable with said barrel for turning the same, a stem rotatable within said barrel and having a screw-slot blade, and a handle for rotating said stem.

2. In a tool of the character described, the combination of a hollow barrel, a nut socket frictionally held thereon, a handle for turning said barrel and being rockable with respect thereto, a stem rotatable within said barrel and having a screw-slot blade, and a handle for rotating said stem.

3. In a tool of the character described, the combination of a hollow barrel having an end of non-circular contour externally, a nut socket frictionally held thereon, a handle rockably engageable with said barrel, a thrust key cooperative therewith, a stem rotatable within said barrel and having a screw-slot blade, and a removable pin for limiting longitudinal movement of said stem.

4. In a tool of the character described, the combination of a hollow barrel of hexagonal contour externally at one end, cylindrical in the middle and reduced cylindrical at the other end, a nut socket and a handle frictionally held on the hexagonal portion of said barrel, a half-ring thrust key seating in a groove in the hexagonal portion of the barrel adjacent the nut socket, said key having up-turned corners fitting behind offset projections on the barrel-engaging portion of said handle, a coil spring surrounding the cylindrical portion of the said barrel and bearing against the said engaging portion of the handle, means for confining said coil spring, and a stem rotatable within said barrel and nut socket and having limited longitudinal motion, said stem having a screw-slot blade on the end within the nut socket and a handle on the other end.

5. In a tool of the character described, the combination of a hollow barrel of hexagonal contour externally at one end, cylindrical in the middle and reduced cylindrical at the other end, a nut socket and a handle frictionally held on the hexagonal portion of said barrel, said socket having a recess at one side, a ball within said recess and engaging against the hexagonal portion of the barrel, a spring band pressing said ball, a half-ring thrust key seating in a groove in the hexagonal portion of the barrel adjacent the nut socket, said key having up-turned corners fitting behind offset projections on the barrel engaging portion of the said handle, a coil-spring surrounding the cylindrical portion of the said barrel and bearing against the said engaging portion of the handle, a cap screw threaded on the reduced end of the barrel for confining said coil spring, a stem rotatable within said barrel and nut socket and having a reduced middle portion, and a pin in the barrel wall confined by the engaging portion of the said handle and bearing against the reduced portion of said stem for limiting its longitudinal movement, said stem having a screw-slot blade on the end within the nut socket and a handle on the other end.

Signed by me this 1st day of April, 1926.

PAUL N. SHAW.