Nov. 1, 1932. W. BOYNTON 1,885,579

TAPPET ADJUSTING TOOL

Filed Aug. 29, 1930

Fig. 1.

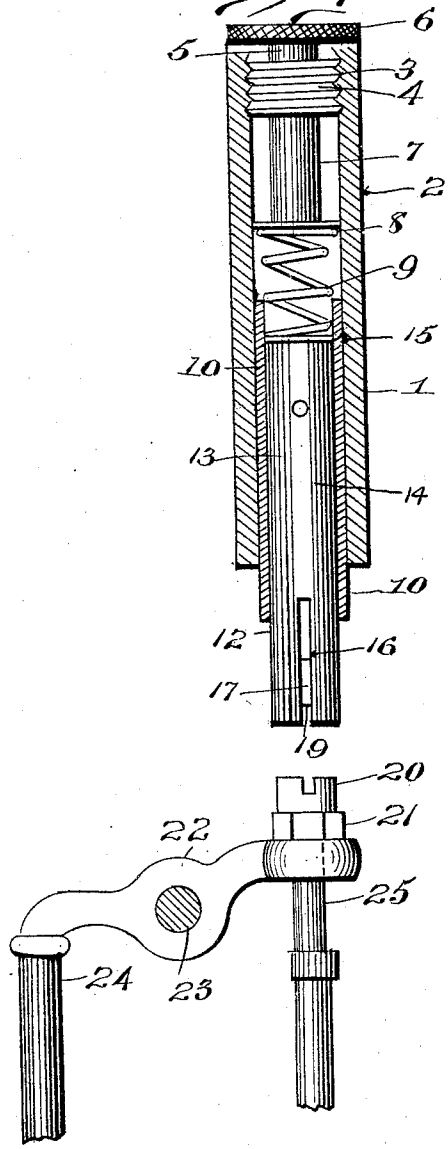
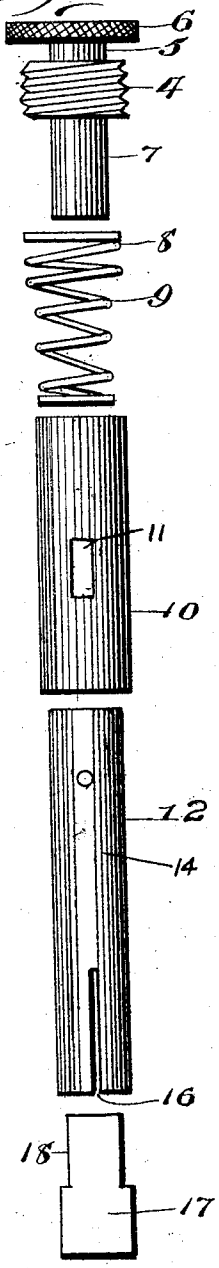


Fig. 2.



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UNITED STATES PATENT OFFICE

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TAPPET ADJUSTING TOOL

Application filed August 29, 1930. Serial No. 478,716.

Generically this invention relates to adjusting tools, but it more especially is directed to the type for effecting the adjustment of the valve tappets of overhead motors.

One of the principal objects of this invention is the provision of an adjusting tool for adjusting valve tappets to effect proper valve stem clearance and comprising stationary and reciprocatory members, the stationary member adapted to be rotated in clockwise and counterclockwise direction as desired.

An important object of this invention is the provision of a device of this character for effecting, while the engine is running, adjustment of the valve tappets to effect proper valve stem clearance, and comprising a substantially stationary handle member, a valve tappet adjusting screw engageable member associated therewith and adapted for reciprocatory movement with respect thereto, and means connecting said members, whereby said screw engaging member is adapted to remain in contact with said adjusting screw during its course of travel, and rotation of the handle effects rotation of the screw engaging member during its reciprocatory movement.

A still further object of this invention is the provision of a device of the character described, comprising a handle member and a valve tappet adjusting screw engaging member adapted to reciprocate with respect to said handle member, compression means in connection with the respective members, and means associated with one of the members for adjusting the tension of said compression member, whereby said handle member is adapted to remain stationary during the reciprocation of said screw engaging member and rotation of said handle effects rotation of said screw engaging member to effect adjustment of said screw and regulate the valve stem clearance as desired.

With these and other objects in view, which will become apparent as the description proceeds, the invention resides in the construction, combination and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawing, in which like characters of reference indicate like parts throughout the several figures, of which:

Fig. 1 is a longitudinal sectional view through my improved valve tappet adjusting tool, showing the same as operatively applied to a rocker arm; and

Fig. 2 shows the various components of my device in disassembled relation.

The usual method of adjusting valves after the lock nut has been loosened, is to use a screw driver, putty knife or the like in engagement with the kerf of the adjusting screw, turning same to the right or left to effect the proper valve stem clearance, but such procedure is unsatisfactory, since the operation must be performed while the engine is running and the movement of the rocker arm renders it extremely difficult to keep the screw driver or knife in contact with the adjusting screw to effect an accurate adjustment, which for similar reasons is true in connection with the devices heretofore in use with which I am familiar, and it was to overcome the deficiencies of such methods and devices and to provide an adjusting tool comprising a screw engaging member, a handle member telescopically mounted thereon, spring means mounted within said handle and seating on said screw engaging means, means carried by the handle for adjusting the tension of said spring means, and means associated with said members, whereby rotation of the handle effects rotation of the screw engaging member while at the same time permitting reciprocation of said member with respect to said handle during the adjusting operation, that I designed the device forming the subject matter of this invention.

In the illustrated embodiment characteriz-

ing this invention, there is shown a tubular member 1 constituting a handle member having its outer circumferential surface knurled as indicated at 2, and formed at its upper end with internal threads 3 adapted to engage the complemental threads 4 of spring tension screw 5 when operatively positioned in said handle member, said screw 5 being formed with a knurled top or head 6 and a reduced tubular portion 7 adapted to engage the enlarged portion 8 in coil spring 9, as and for a purpose hereinafter more fully appearing.

A cylindrical stationary guide tube 10 is formed in its opposite walls with aligned slots 11 and a sliding or reciprocatory tubular member 12 is adapted to be mounted within guide 10 and is formed adjacent its upper ends with aligned apertures 13 adapted to register with slots 11. Pin 14 is adapted to extend through slots 11 with its opposite ends substantially flush with the outer surface of member 10 and is firmly secured to member 12, for reciprocatory travel in said slots 11, as will hereinafter be more fully explained.

Member 10 with member 12 mounted therein is adapted for a tight or press fit within handle 1 to unite said members into a unitary structure. Mounted on the upper end of member 12 and forming a seat for the lower end of spring 9 is a washer or spring seat 15. The lower end of movable member 12 is formed with aligned longitudinal slots 16. A steel blade 17 having its lower end corresponding to the exterior diameter of member 12 and its upper end reduced as at 18 corresponding to the interior diameter thereof, is adapted to be rigidly mounted by a press fit or in any suitable manner in slots 17 with its lower edge slightly spaced above the lower extremity of member 12 as at 19 for engagement with adjusting screw 20 extended through lock or jam nut 21 and rocker arm 22 mounted on shaft 23, the free end of said rocker arm is adapted to engage valve stem 24, and adjusting screw 20 is adapted to engage push rod 25, as will be clear without further discussion.

While the operation of the device would seem to be clear from the above description, it might be well to further state, that proper adjustment as to valve stem clearance can only be properly effected while the motor is in operation, which owing to the reciprocatory movement of the adjusting screw carried by the rocker arm, renders it difficult to maintain the adjusting tool in contact with said screw, and which I have overcome by my improved device above described, wherein to effect such adjustment, it is but necessary to effect engagement of the screw engageable member with the adjusting screw, the handle remaining stationary and the reciprocatory member traveling with the adjusting screw remains in contact therewith, and actuation of said handle imparts similar movement to said screw through the instrumentality of said reciprocating member, thereby expeditiously effecting accurate adjustment of the respective valve tappets, as desired.

Further summarizing, to adjust the valve tappet the tool is positioned over the adjusting screw with the blade 17 engaging the kerf formed therein, the spring 9 adjusted by screw 5 to tension the movable guide tube or sleeve 12 to the approximate tension of the particular tappet mechanism so that the reciprocating movement of said sleeve will conform to that of the tappet being adjusted, and the stationary handle or hand grip 1 then rotated in either right or left hand direction to impart similar movement to adjusting screw 20 thereby effecting the desired adjustment of the valve tappet, as will be well understood.

From the above, it is apparent that I have designed a valve tappet adjusting tool, simple in construction, manufacturable at a negligible cost, and efficient for the purposes intended, whereby the valve stem clearance may be expeditiously and accurately effected while the motor is in operation.

Although in practice I have found that the form of my invention illustrated in the accompanying drawing and referred to in the above description as the preferred embodiment, is the most efficient and practical; yet realizing the conditions concurrent with the adoption of my invention will necessarily vary, I desire to emphasize that various minor changes in details of construction, proportion and arrangement of parts, may be resorted to within the scope of the appended claims without departing from or sacrificing any of the principles of this invention.

Having thus described my invention, what I desire protected by Letters Patent is as set forth in the following claims:

1. A device of the character described comprising a cylindrical hand grip, a slotted tubular member fixedly disposed within the grip, a slidable sleeve positioned in the tubular member, a pin carried by the sleeve having its extremities extending into the slots of the tubular member, said sleeve being formed at its lower end with a slot engaging tool, the lower end of which is spaced from the end of said tubular member to form a socket to receive the slotted tappet adjusting screw, a spring in the hand grip coacting with the sleeve to normally maintain the same in extended position, and means for loading said spring to the approximate tension of the particular tappet under adjustment.

2. A device of the character described comprising a cylindrical hand grip, a slotted tubular member fixedly disposed within the grip, a slidable sleeve positioned in the tubular member, a pin carried by the sleeve having its extremities extending into the slots of the tubular member, said sleeve being formed

at its lower end with a slot engaging tool, the lower end of which is spaced from the end of said tubular member to form a socket to receive the slotted tappet adjusting screw, means for yieldably retaining the sleeve in normally extended position with respect to the hand grip, and means for loading the last mentioned means, whereby the movement of the sleeve will conform to that of the particular tappet under adjustment.

This specification signed this 20 day of May, A. D. 1930.

WALTER BOYNTON.