Nov. 10, 1936. W. A. SMITH, JR 2,060,256

THROTTLE LOCKING DEVICE

Filed Sept. 27, 1934

Fig. 1.

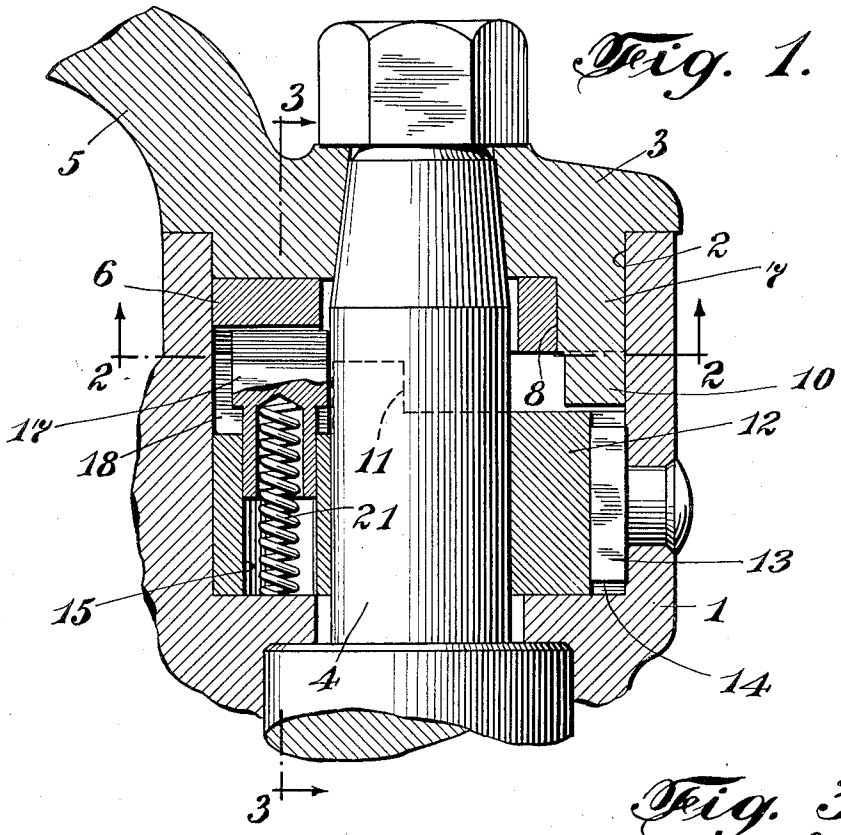



Fig. 3.

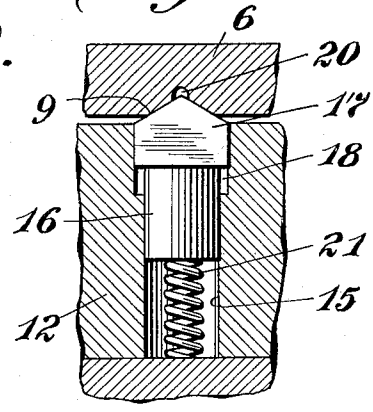
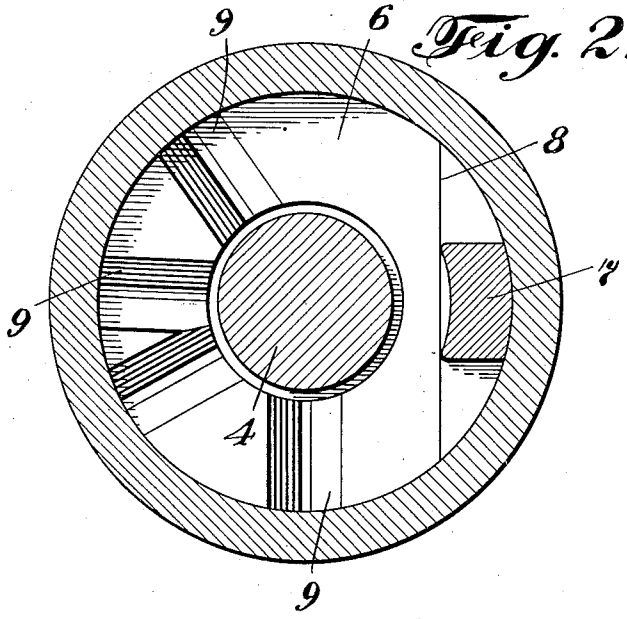



Fig. 2.




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## THROTTLE LOCKING DEVICE

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1 Claim. (Cl. 251—163)

This invention relates to throttle valves for percussive tools such as rock drills and similar machines and more particularly to a locking device for holding such throttle valves of the rotary type in adjusted positions.

An object of the invention is to provide a throttle valve locking device which is wholly enclosed in the back head of a percussive tool, and one which, while being readily releasable, will hold the valve in adjusted positions against accidental movement which might be caused by the jarring or vibration of the machine while in operation.

With these and other objects in view as may appear from the acompanying specification, the invention consists of various features of construction and combination of parts, which will be first described in connection with the accompanying drawing, showing a throttle locking device of the preferred form, and the features forming the invention will be specifically pointed out in the claim.

In the drawing:

Fig. 1 is a section through the back head of a percussive tool showing the improved locking device in place therein.

Fig. 2 is a cross section on the line 2—2 of Fig. 1.

Fig. 3 is a section taken on the line 3—3 of Fig. 1.

Referring more particularly to the drawing, 1 indicates the back head of a percussive tool of any approved type, which is provided with a recess 2 opening out through its rear end. The throttling valve-carrying plug 3 extends into the recess 2 and has the stem 4 of the throttle valve connected thereto for rotation with the plug 3. Any suitable type of throttle valve may be attached to the stem 4.

The plug 3 has a handle 5 formed thereon for facilitating its rotation.

A ratchet disc 6 engages against the inner end of the plug 2 and is held for rotation with the plug 2 by means of the projection 7 which engages against the flat locking surface 8 of the ratchet disc 6. The ratchet disc 6 has a plurality of radially extending notches 9 formed in its inner surface which represents various adjusted positions of the throttle valve. The projection 7 has a stop extension 10 formed thereon which co-operates with a stop shoulder 11 formed on the pawl-carrying member 12 for limiting the rotation of the plug 3.

The pawl-carrying member 12 is inserted in the recess 2 in the back head 1 and it is held against rotary movement by means of a key 13 which fits in a slot 14 in the member 12.

The member 12 is provided with a transversely extending bore 15 which receives therein the locking pawl 16. The pawl 16 has a rectangular head 17 which slides in the rectangular portion or channel 18 of the bore 15. The rectangular head 17 engaging in the channel 18 prevents rotation of the pawl 16. The head 17 of the pawl 16 and the notches 9 have inclined co-operating surfaces as indicated at 20 in Fig. 3 of the drawing. The incline or angle of the surfaces 20 is such that the plug 3 will be held against accidental rotation which might be caused by the vibration set up during the operation of the tool; however, they are such that the application of rotating force to the plug 3 will cause the ratchet disc to slide over the inclined surfaces 20 of the head 17 and depress the pawl in the bore 16 against the tension of its spring 21.

From the foregoing description taken in connection with the accompanying drawing it will be seen that an effective locking or latching mechanism is provided which will prevent accidental adjustment of the throttle valve (not shown) carried by the stem 4 and one which will, however, permit adjustment of the throttle valve by manual rotation of the plug 3 without requiring manual release of the latching pawl.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown but that they may be widely modified within the invention defined by the claim.

What is claimed is:

In a locking device for percussive tool throttle valves, a throttle valve stem, a back head having a recess therein, a rotatable back head plug extending into said recess, said stem attached to said plug, a ratchet disc in said recess and having a plurality of radial ratchet notches therein, a flat locking surface on one side of said ratchet disc, a projection on said back head plug engaging said flat surface and connecting said disc to said plug for rotation therein, a locking pawl-carrying member in said recess, a locking pawl carried by said member and attached to engage in said radial ratchet notches, a key carried by said back head and engaging said locking pawl-carrying member to prevent rotation thereof, a spring for urging said pawl into any one of said notches, a stop shoulder formed on said pawl-carrying member and an extension formed on said back head plug for engagement with said stop shoulder to limit rotation of the plug.

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