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SCREW LOCKING MEANS

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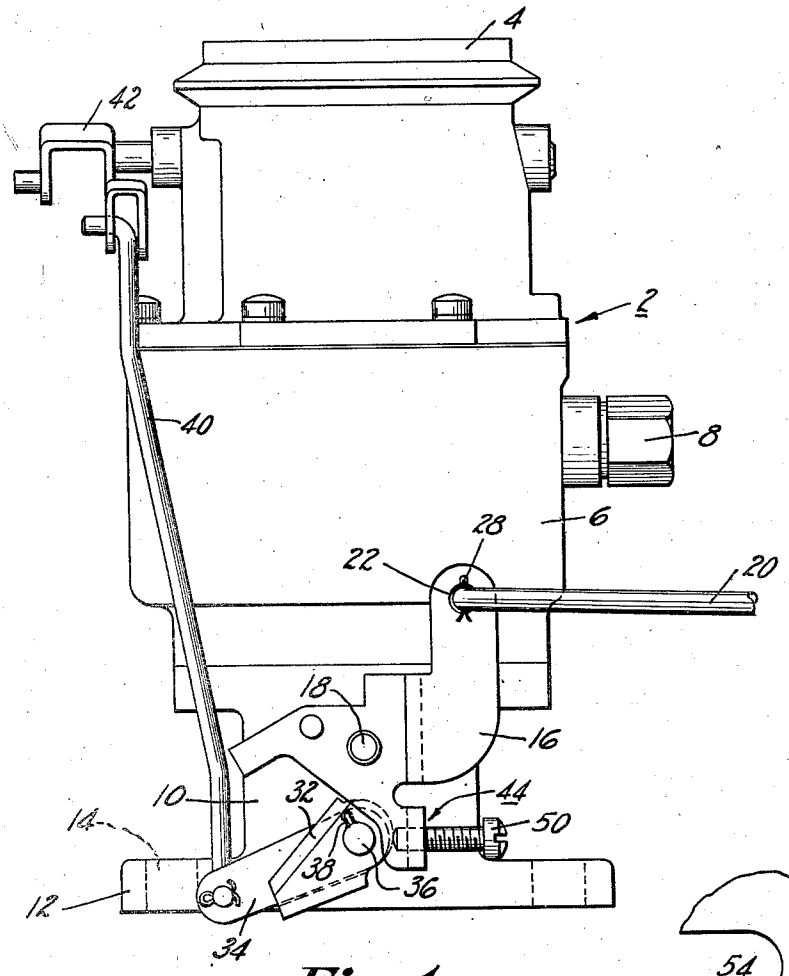


Fig. 1.

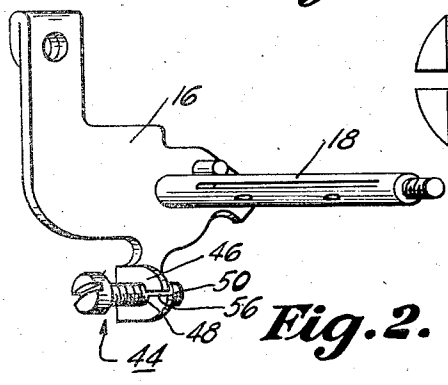


Fig. 2.

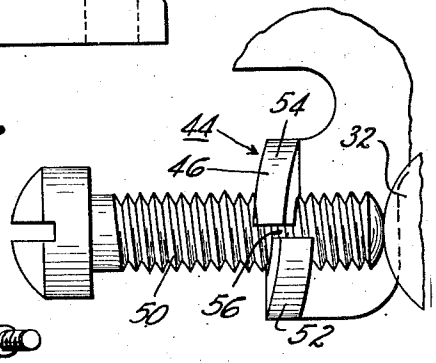


Fig. 3.

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SCREW LOCKING MEANS

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4 Claims. (Cl. 74—526)

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The present invention relates to an adjustable stop for limiting the movement of a lever or the like and more particularly to an adjustable stop for limiting the movement of a throttle valve lever on engine carburetors and a means for maintaining the adjustment once the setting is made.

One of the principal objects of the present invention is to provide a readily adjustable stop for a lever which requires only a single operation to complete the setting.

Another object of the invention is to provide a simplified adjustable stop for carburetor levers which can be accurately adjusted and which maintains said adjustment indefinitely without employing a separate locking means.

Still another object of the present invention is to provide an adjustable stop for carburetor levers which can be readily fabricated with standard equipment without the use of special dies or jigs.

Other objects and advantages of the present invention will be apparent from the following description and from the accompanying drawings, in which:

Figure 1 is a side elevation of a conventional carburetor showing the fast idle cam and throttle lever assembly in which the present adjustable stop is employed;

Figure 2 is a perspective view of the throttle valve shaft and lever of which the present invention forms an integral part;

Figure 3 is an enlarged view of the adjustable stop shown in Figures 1 and 2.

In the drawings, numeral 2 designates generally a conventional carburetor including an air horn 4, float chamber 6, fuel inlet union 8, throttle body 10, having flange 12 and holes 14 to receive bolts for securing the carburetor to the intake manifold of an internal combustion engine (not shown). A throttle valve lever 16 is mounted on one end of a throttle valve shaft 18 and is rigidly secured thereto by riveting the end of said shaft around the adjacent portion of the lever. A rod 20 connecting the throttle valve lever to an accelerating pedal or lever is journaled in hole 22 and is secured in said hole by cotter pin 28. A fast idle cam 32 and a fast idle lever 34 are mounted on stud 36 and secured in place by hair pin clip 38. Lever 34 and rod 40 form a one-way connection between the fast idle cam 32 and a choke valve lever 42, said choke valve lever being adapted to be connected to a temperature responsive mechanism (not shown) which adjusts the position of the fast idle cam in

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accordance with engine temperature. The fast idle cam thus prevents the throttle from completely closing while the engine is being cranked and before it has become warm after starting, thereby providing an enriched mixture for the cold engine. The degree to which the throttle valve will be held open when the engine is cold depends upon the setting of a throttle valve lever stop mechanism generally shown at 44 in the drawings. A lateral arm or lug 46 is formed integrally with the throttle valve lever and is provided with an internally threaded hole 48 which is adapted to receive a threaded member 50, such as a machine or fillister head screw or a threaded pin having a slot in one end to permit adjustment thereof with a screw driver or similar instrument. One end of screw 50 is adapted to engage an abutment to limit the closing movement of the throttle valve lever, and in the present embodiment the abutment is the periphery of the fast idle cam 32 which is adapted to vary the degree of closing of the throttle valve in accordance with the engine temperature and choke valve positions.

After the adjustment of screw 50 relative to the periphery of the fast idle cam 32 has been made to obtain the desired degree of closing of the throttle valve, said screw is held in the final setting by the frictional engagement of its screw threads with the screw threads on segments 52 and 54 of the marginal portion of arm 46 around hole 48, said segments being separated at one end of said arm by slot 56. The frictional engagement of the threads of the aforementioned elements is accomplished by slightly offsetting the screw threads of one segment from the corresponding threads of the other segment. The resiliency of segments 52 and 54 in their deformed position creates a constant force urging the threads of the segments against the threads of screw 50 which prevents accidental rotation of said screw. The threads are offset by bending either one of said segments to the right or left or by bending both segments in opposite directions, as shown in the drawings, sufficiently to cause a substantial gripping action between the contacting threads of the segments and screw, but not sufficiently to prevent alignment of corresponding threads of the two arms when the screw is in hole 48. The degree of frictional resistance to rotation of the screw 50 depends upon the degree of offset of the corresponding threads of the two segments, as long as the distortion is is not great enough to cause the threads of one segment to align with threads adjacent to the corresponding threads of the other segment.

In the fabrication of the present stop mechanism on the throttle valve lever, the lug **46** is first formed integrally with the throttle valve lever in a single stamping operation; then hole **48** is drilled in said lug and tapped. Slot **56**, which separates segments **52** and **54**, is preferably machined in arm **46** after hole **48** has been tapped, but this slot may be formed in the arm during the stamping operation. After hole **48** has been tapped and slot **56** formed in said arm, segments **52** and **54** are permanently deformed relative to one another as clearly shown in Figure 3 of the drawings.

While the two segments are shown separated from one another by slot **56**, the threads may be offset without forming said slot between segments **52** and **54**. This may be accomplished by upsetting arm **46** after hole **48** has been tapped. Further, the offset portion or slot **56** between the two segments may be located on either side of lug **46** instead of at the end of said arm as shown in the drawings. Still further modifications of the present invention will be apparent to those skilled in the art, and the use of any or all the ramifications of the present invention falling within the scope of the appended claims is contemplated. It is understood that the stop mechanism may readily be adapted to many forms of levers or elements of the oscillating or reciprocating type, and the use of the term "lever" in the appended claims is intended to embrace all such types of movable elements to which the present invention can be adapted.

I claim:

1. An adjustable stop mechanism for a lever comprising an arm, a threaded hole through said arm, a screw in said hole supported by said arm, an abutment for said screw to limit the movement of said lever, the portion of said arm defining said hole being divided into two segments, the threads of one of said segments being offset in respect to the threads of the other segment, whereby the threads of said hole frictionally engage the threads of said screw.

2. An adjustable stop mechanism for a lever comprising an arm, a threaded hole through said arm, a screw in said hole supported by said arm, an abutment for said screw to limit the movement of said lever, a radial slot extending from said hole dividing said arm into segments, the threads of one of said segments being offset in respect to the threads of the other segment, whereby the threads of said hole frictionally engage the threads of said screw.

3. An adjustable stop mechanism for a throttle valve lever of a carburetor comprising an arm, a threaded hole through said arm, a screw in said hole supported by said arm, an abutment for said screw to limit the movement of said lever, a single radial slot extending from said hole dividing said arm into two segments, the threads of one of said segments being offset in respect to the threads of the other segment, whereby the threads of said screw frictionally engage corresponding threads of said segments.

4. An adjustable stop mechanism for a throttle valve lever of a carburetor comprising an arm, a threaded hole through said arm, a screw in said hole supported by said arm, a fast idle cam forming an abutment for said screw to limit the movement of said lever, a radial slot extending from said hole dividing said arm into two segments, the threads of one of said segments being offset in respect to the threads of the other segment, whereby the threads of said screw frictionally engage corresponding threads of said segments.

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