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R. R. POTTER ET AL

1,821,576

CONTROL DEVICE

Filed Oct. 15, 1927

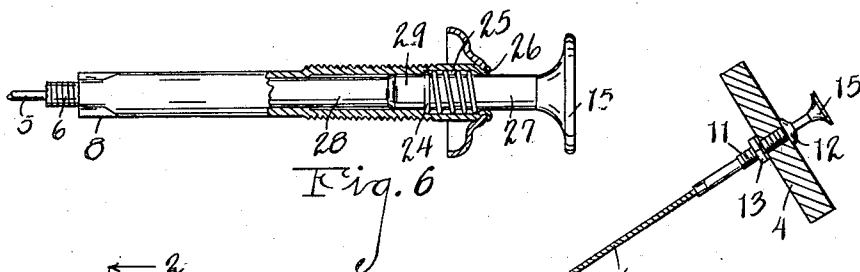


Fig. 6

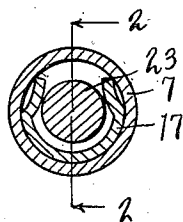


Fig. 5

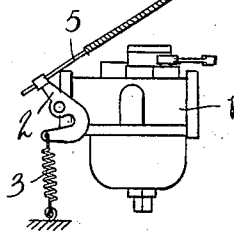


Fig. 1

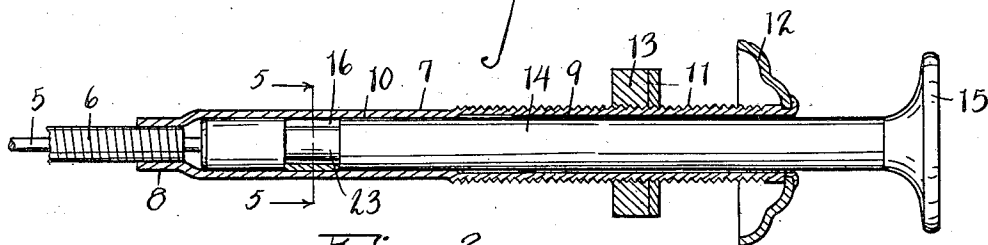


Fig. 2

Fig. 3

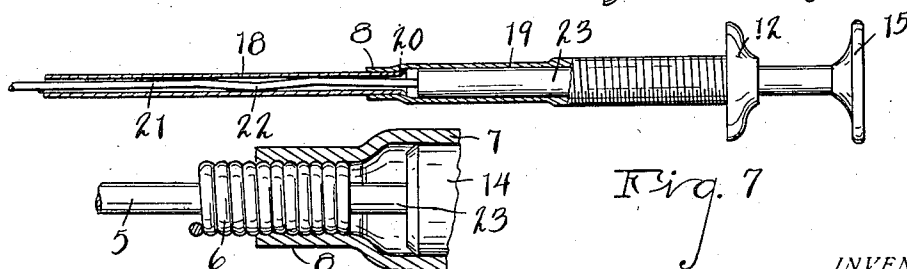
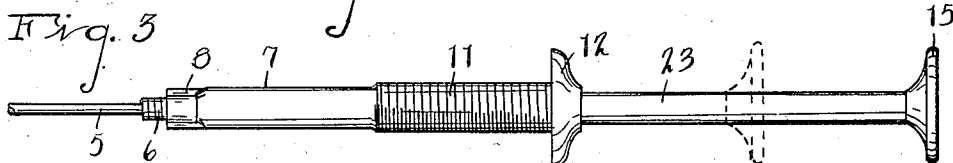


Fig. 4

Fig. 7

INVENTOR
Rossiter R. Potter
Monroe Shakespeare
BY *Chappell & Earl*
ATTORNEYS

UNITED STATES PATENT OFFICE

ROSSITER R. POTTER AND MONROE SHAKESPEARE, OF KALAMAZOO, MICHIGAN,
ASSIGNORS TO SHAKESPEARE PRODUCTS COMPANY, OF KALAMAZOO, MICHIGAN

CONTROL DEVICE

Application filed October 15, 1927. Serial No. 226,428.

The main object of this invention is to provide an improved control device for choke valves of carburetors.

A further object is to provide an improved control mechanism of this class which is very simple and economical in its parts.

Objects pertaining to details and economies of our invention will appear from the description to follow. The invention is defined in the claims.

A structure which is a preferred embodiment of our invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a fragmentary side elevation of our improved control device in operative relation to a carburetor and mounted upon the part representing an instrument board of a motor vehicle.

Fig. 2 is a detail view partially in longitudinal section on line 2—2 of Fig. 5.

Fig. 3 is a fragmentary side view with the control member extended, one position being indicated by dotted lines.

Fig. 4 is an enlarged detail section illustrating the manner of securing the support to the rod housing.

Fig. 5 is a cross section on line 5—5 of Fig. 2.

Fig. 6 is a detail view partially in longitudinal section showing a modified form or embodiment of our invention.

Fig. 7 is a detail view partially in longitudinal section showing another modification of our improvements.

Referring to the drawings, 1 represents a carburetor provided with a choke valve actuating lever 2 which is returned to its normal or open position by the spring 3.

4 represents the instrument board of a motor vehicle.

The control rod 5 which is normally formed of wire is arranged through a supporting tube or housing 6, the arrangement being commonly designated as a Bowden tube. The upper end of this tube 6 is arranged within and secured to the barrel-like support 7 preferably by clamping or upsetting the end 8 of the support thereon—see Fig. 4.

The support 7 has a shouldered bore therein, that is, it has a bore with the outer por-

tion 9 of a larger diameter than the inner portion 10. This support is externally threaded at 11 and has a head 12 at its outer end constituting a finish member and engaging the inner side, a clamping nut 13 engaging the inner side of the instrument board.

The control rod is provided with a headpiece 14 having a finger piece 15 at its outer end. The rod is secured to the inner end of this headpiece. The headpiece has an annular groove 16 to receive the U-shaped or split spring 17 which frictionally engages the walls of the smaller diameter of the bore. The friction of the spring 17 with the walls of smaller diameter of the bore is such as to hold the headpiece against the return action of the spring 3, the spring 3, however, returning the parts to the position in which the friction spring engages the reduced walls of the bore so that if the choke be fully closed, that is, the headpiece pulled out its full length and then released, the spring 3 will return the parts to retarding position, the choke then being only partially opened. This permits the choke being fully closed to start a motor vehicle and the vehicle may be run with the choke partially closed until the engine is sufficiently warmed to run on the normal supply of gasoline, the choke being completely opened by manually returning the headpiece.

In Fig. 7 the tube 18 is a solid wall tube as distinguished from the tube formed of coiled wire illustrated in the other figures, and the support member 19 is clamped upon the flared end 20 of the tube 18. In this embodiment the control rod 21 has a kink or offset 22 therein bringing it into frictional engagement with the walls of the tube 18, which, in effect, constitutes an extension of the support member. This obviates the necessity of forming a groove or mounting a spring on the headpiece 23.

In the modification shown in Fig. 6, the friction spring 24 is mounted in the barrel which has an enlargement 25 in its bore to receive the spring, the end 26 of the barrel being spun down to retain the spring. The headpiece 27, in this embodiment, has a reduced portion 28 at its inner end which moves

freely within the spring, the spring, however, coacting with the larger portion 29 to hold the headpiece with the choke in partially open position.

5 We have illustrated and described our improvements in embodiments which we have found very practical. We have not attempted to illustrate or describe certain other modifications and adaptations which we
10 contemplate as we believe the disclosure made will enable those skilled in the art to embody or adapt our improvements as may be desired.

15 Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. In a control mechanism, the combination with the controlled member provided with a return spring, of a control rod connected thereto and provided with a cylindrical headpiece, a barrel-like support in which said headpiece is reciprocatingly mounted, said support having a stepped bore with its larger diameter at the outer end of the support, said headpiece having an annular groove adjacent its inner end, and a split spring mounted in said groove to frictionally engage the walls of the smaller diameter of said bore but moving freely in the larger diameter thereof.

2. A control device comprising a control rod provided with a cylindrical headpiece, a barrel-like support in which said headpiece is reciprocatingly mounted, said support having a stepped bore with its larger diameter at the outer end of the support, said headpiece having an annular groove adjacent its inner end, and a U-shaped spring mounted in said groove to frictionally engage the walls of the smaller diameter of said bore but moving freely in the larger diameter thereof.

3. A control device comprising a barrel-like support having a stepped bore, the larger diameter of the bore being at the outer end of the support, a headpiece reciprocatingly mounted in said support provided with a finger piece at its outer end and having an annular groove adjacent its inner end, and a split spring mounted in said groove to frictionally engage the walls of the smaller diameter of the bore of the barrel-like support but to move freely in the larger diameter thereof.

4. A control device comprising a support having a stepped bore, a headpiece reciprocatingly mounted in said support and having a groove therein, and a spring mounted in said groove to frictionally engage the walls of the smaller diameter of said bore.

5. A control device comprising a barrel-like support member having a stepped bore, a headpiece reciprocatingly mounted in said support, a return spring operatively associated with said headpiece and a friction means mounted in one of said members to

frictionally engage the other with a substantially uniform friction to hold said headpiece in any desired one of a plurality of positions of its stroke, the remainder of the stroke being free.

6. A control device comprising a barrel-like support having a stepped bore, a control member reciprocatingly mounted therein and carrying a spring frictionally engaging the smaller diameter of said bore while moving freely in the larger diameter.

7. In a carburetor choke control, the combination with an element designed to be connected to the choke valve, of instrumentalities permitting said valve to be fully closed and thereafter to be automatically partly opened, the said instrumentalities comprising a housing providing two ranges of movement for said element, a spring for automatically moving said element through one of its ranges when the said element is in its fully closed position, and means for frictionally holding said element in any position to which it is manually shifted in its other range.

In witness whereof we have hereunto set our hands.

ROSSITER R. POTTER.
MONROE SHAKESPEARE.