April 1, 1930. H. A. MYERS 1,752,501

ACCELERATOR CONTROL

Filed Jan. 17, 1928

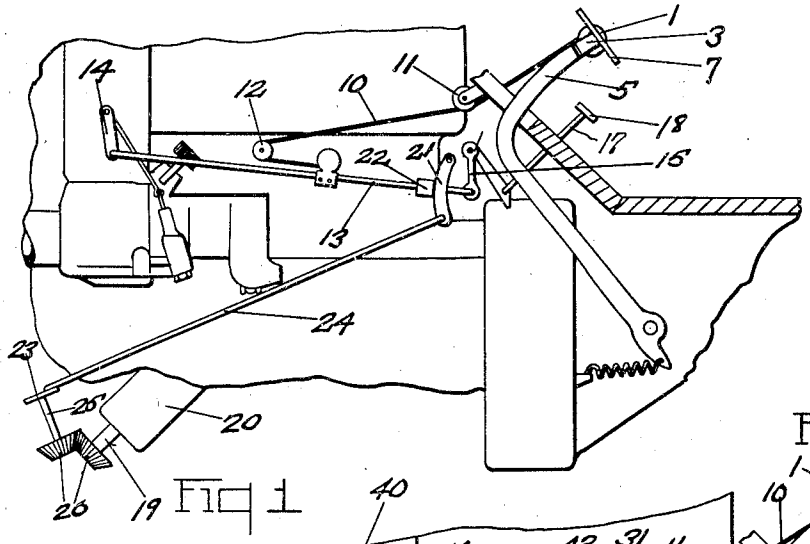
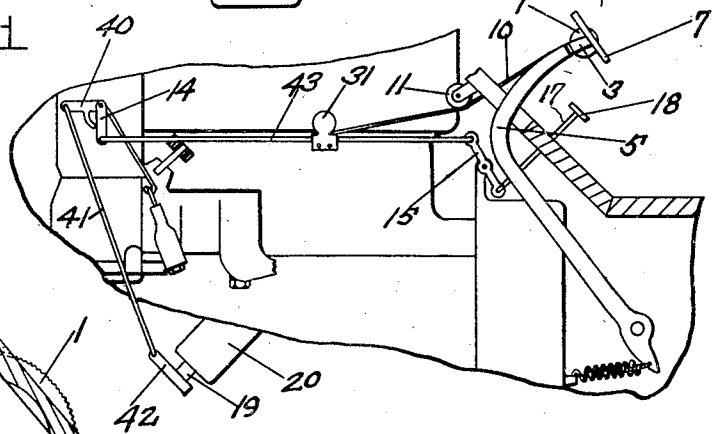


Fig 1

Fig 2



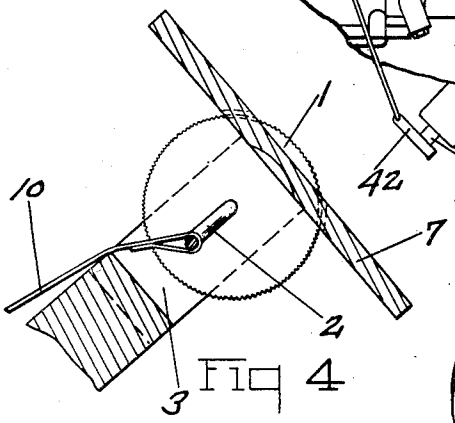


Fig 4

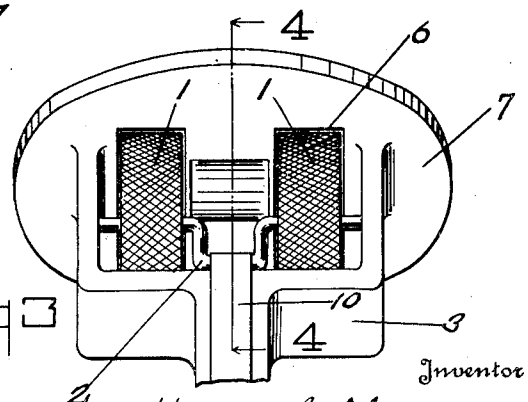


Fig 3

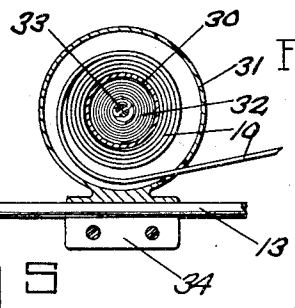


Fig 5

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UNITED STATES PATENT OFFICE

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ACCELERATOR CONTROL

Application filed January 17, 1928. Serial No. 247,328.

My invention has for its object to provide a means for controlling the throttle valve of the carburetor of an automobile and which is so constructed that it may be readily operated by the driver's foot while either actuating, or in position to actuate, some other control member of the automobile. As is well known in the art, the driver's foot while driving an automobile, is normally positioned on the accelerator and also, as is well known, it is frequently desirable to immediately operate the brake pedal which requires that the foot be removed from the accelerator and placed upon the brake pedal.

The invention may be used in connection with carburetor control mechanisms of different forms and, to illustrate a practical application of the invention, I have selected a structure containing the invention and have shown it applied to different forms of carburetor control mechanisms. The structure selected, as an example, is shown in the accompanying drawings and is described hereinafter.

Fig. 1 of the drawing conventionally illustrates one form of mechanism and my invention applied thereto. Fig. 2 of the drawing conventionally illustrates another form of carburetor control mechanism and my invention applied thereto. Fig. 3 is a rear view of the pedal showing a throttle valve controlling, or actuating, member supported within the pedal. Fig. 4 is a view of a section taken on the plane of the line 4—4 indicated in Fig. 3. Fig. 5 is a view of a section of a drum for taking up the slack of the flexible member that interconnects the throttle valve of the carburetor with the actuating member shown in Figs. 3 and 4.

The auxiliary accelerator embodying my invention, as shown in the drawing, may be supported in one of the controlling pedals of the automobile and so as to be operated by a sliding of the foot over the surface of the pedal, thus maintaining the foot in position at all times to operate the pedal when desired. The actuating means is, preferably, in the form of a roller that is rotated by the sliding movements of the sole of the foot and in the rotation it operates to open or close the throttle valve of the carburetor according to the direction that the foot is shifted on the pedal. Preferably, it is closed by a forward sliding movement of the sole of the foot in order that substantially the same forward movement that serves to close the throttle is used in the movement of the pedal, which is commonly forward.

In the form of construction shown, the actuating roller 1 is formed of two parts that are connected together by a crank 2 which is rotatably supported in a yoke 3 formed at the upper end of the pedal lever 5. The actuating members 1 protrude through slots 6 formed in the pedal 7 and so that portions thereof will extend above the surface of the pedal 7. Preferably, the members 1 are knurled so that the sole of the opertor's shoe will readily and frictionally engage the actuating members 1 to cause their rotation by sliding movements of the foot relative to the pedal 7. A flexible member 10, preferably in the form of a steel tape, is connected to the crank 2 so that upon rotation of the crank 2, the tape 10 will be drawn or released. The tape 10, being flexible in character, may be weaved through or under or over or around the different mechanisms that are commonly found on and about automobile engines and so as to be conveniently connected to the throttle valve of the carburetor. Thus the flexible tape 10 may be passed beneath the roller 11 and over the roller 12 until it reaches the throttle valve of the carburetor or some part of the throttle valve controlling mechanism that actuates the throttle valve by a longitudinal movement similar to that induced by rotation of the crank 2.

In the construction shown in Fig. 1, the tape 10 may be connected to the throttle rod 13 which is connected at one end to the throttle lever 14 and at the other end is connected through the lever 15, to the accelerator rod 17. The rod 13 and the rod 17 are actuated by the accelerator pedal 18. The rod 13 may also be actuated by rotation of the shaft 19 that extends up through the steering post 20. The upper end of the shaft 19 is connected to the usual hand lever commonly located in proximity to the steering wheel of an automo-

bile. A pair of bevel gear wheels are located, one on the lower end of the shaft 19, and the other on the lower end of a short shaft 25 and so as to engage each other. An eccentric 23 is located on the other end of the short shaft 25. A lever 21, located so as to operate the rod 13 by engaging a block 22, that is securely fastened to the rod 13, is connected to the eccentric 23 by a rod 24.

Thus rotation of the shaft 19 will operate the throttle rod 13 to either open or close the throttle of the carburetor and will limit the closing movement of the throttle valve to various points according to the adjustment of the hand lever at the steering wheel in the manner well known in the art. This limits the return movement of the rod 13, although the rod 13 may be operated to throw open the throttle valve by operation of the main accelerator pedal 18, or by operation of the auxiliary accelerator rollers located in the pedal 7. In order that the rod 13 may be moved in the same direction that it is moved by the auxiliary accelerator mechanism, the flexible member 10 is passed over the roller 12 which may be connected to a fixed part of the automobile structure. The return movements of the rod 13, and consequently the closing movement of the throttle lever 14, is produced by the usual spring connections commonly used in carburetor control mechanisms. In order to take up the slack that may be produced in the tape 10, after the rod 13 has moved in the direction to close the throttle valve, the end of the tape is connected to the drum 30, which may be located in the shell 31, and is elastically located to wind up the tape 10 by means of a convolute spring 32 located in the interior of the drum and connected to the pin 33 that is flexibly connected to the shell 31. The tape 10 may pass through a suitable opening in the shell 31 and the spring 32 is adjustably wound so as to limit the outward movement of the tape from the shell 31 to a point such that further drawing of the tape 10 will draw the lever 13 in the direction to open the throttle valve. The shell 31 may be connected to the rod 13 by any suitable bracket such as the bracket 34.

In the form of construction shown in Fig. 2, the throttle is provided with, not only the lever 14 which is connected to a lever 15 that is operated by the main accelerator pedal 18, but also the lever 40 that may be actuated by the shaft 19 located in the steering post 20 to which it is connected by means of the link 41 and the arm 42. Rotation of the shaft 19 by the hand lever at the steering wheel will rotate the lever 40 and limit the closing movement of the lever 14 and, consequently, of the accelerator pedal 18. The rod 43 that interconnects the lever 14 and the lever 15 is thus not only limited by movements of the lever 40, but is actuated by the pedal 18 in a direction to open the throttle by a rearward movement of the rod 43. The tape 10 of the auxiliary accelerator is connected to the drum 30 in the shell 31, and the shell 31 is connected to the rod 43 and so as to cause the opening of the throttle valve by rotation of the accelerator roller 1, the return or closing movement being limited by the position of the lever 40 as determined by the location of the hand lever at the steering post. Thus, when the pedal 7 is depressed to brake the automobile, the slack of the tape 10 will be taken up by the rotation of the drum 30 induced by the spring 32. The adjustment of the spring 32 is such that the rod 13, in Fig. 1, and the rod 43, in Fig. 2, may not be actuated upon the return movement of the pedal 7 until the pedal has been returned to its normal position. Also, the adjustment of the spring 32 is such that when the pedal 7 is depressed and, if the accelerator roller is released, the spring 32 will also locate the crank 2 at its lowermost position relative to the pedal 7, and so that upon the return of the pedal 7 to its normal position, the throttle valve will be closed to a position determined by the location of the lever 21 in the form of construction shown in Fig. 1, and the lever 40 in the form of construction shown in Fig. 2.

I claim:

1. In a controlling mechanism for carburetors of automobiles, a rotatable member supported on a pedal of the automobile, a flexible member connected to the rotatable member and the throttle valve of the carburetor, and means for winding the flexible member when the pedal is moved in the direction that the flexible member extends from the pedal.

2. In a controlling mechanism for carburetors for automobiles, the automobile having a brake pedal, a rotatable member supported on the pedal, a flexible member longitudinally moved by rotation of the rotatable member and connected to the throttle valve of the carburetor, and means for winding the flexible member when the brake pedal is moved in the direction in which the flexible member extends from the brake pedal.

3. In a controlling mechanism for the carburetor of an automobile, an accelerator pedal, a rod for connecting the accelerator pedal to the throttle valve of the carburetor, a rotatable member connected to the brake pedal of the automobile, a flexible member connected to the rod and to the rotatable member for actuating the rod to operate the throttle valve, and means for winding up the flexible member when the pedal is moved in the direction in which the flexible member extends from the pedal.

4. In a controlling mechanism for carburetors on automobiles, a roller rotatably supported by and located within the brake pedal of the automobile, the axis of rotation of the

roller being parallel to the pressure face of the pedal, the side of the roller protruding slightly from the pressure face of the pedal, and a member connected to the rotatable member and to the throttle valve of the carburetor for operating the valve by rotative movements of the roller.

5. In a controlling mechanism for carburetors of automobiles, a rotatable member supported on the brake pedal lever of the automobile and having its axis of rotation located substantially parallel to the pressure face of the pedal lever and operable by sliding movements of the foot of the operator in a direction located in a plane at right angles to the axis of the pedal lever, and means connected to the rotatable member and to the throttle valve of the carburetor for operating the valve by rolling movements of the foot of the operator on the rotatable member and parallel to the face of the foot pedal.

6. In a controlling mechanism for carburetors on automobiles, a roller rotatably supported by and located within the plane of the brake pedal of the automobile, the axis of rotation of the roller being parallel to the pressure face of the pedal, the side of the roller protruding slightly from the plane of the pressure face of the pedal, and a member connected to the rotatable member and to the throttle valve of the carburetor for operating the valve by rotative movements of the roller.

In witness whereof I have hereunto signed my name to this specification.

HUBERT A. MYERS.