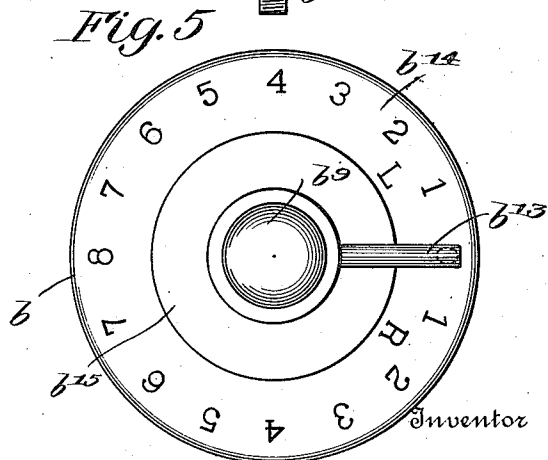
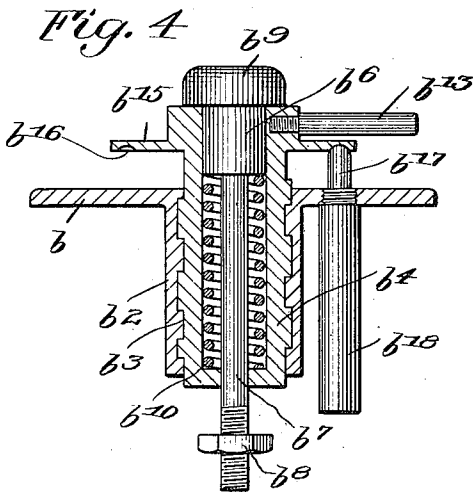
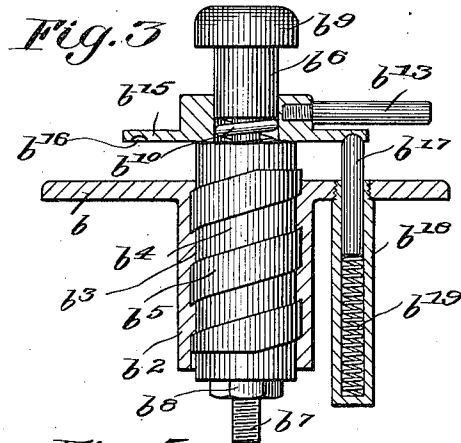
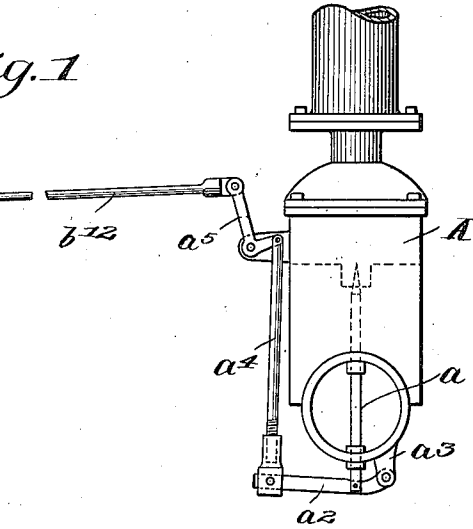
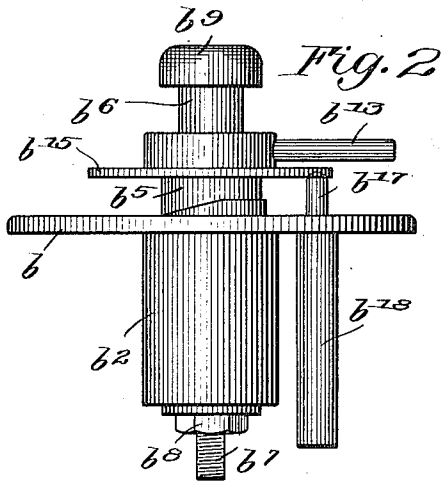
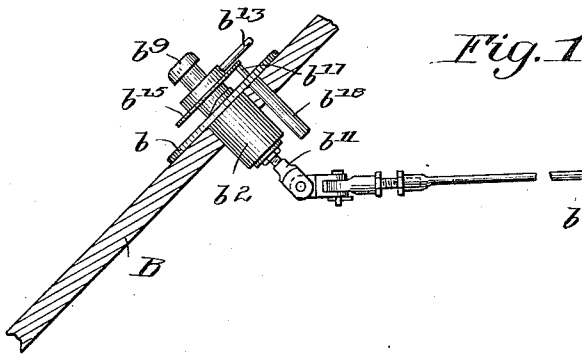


C. J. PEMBROKE.  
CARBURETER CONTROLLING DEVICE.  
APPLICATION FILED MAR. 5, 1914.

1,196,976.

Patented Sept. 5, 1916.



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# UNITED STATES PATENT OFFICE.

CHARLES J. PEMBROKE, OF ROCHESTER, NEW YORK.

## CARBURETER-CONTROLLING DEVICE.

1,196,976.

Specification of Letters Patent.

Patented Sept. 5, 1916.

Application filed March 5, 1914. Serial No. 822,576.

*To all whom it may concern:*

Be it known that I, CHARLES J. PEMBROKE, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Carbureter-Controlling Devices; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My invention relates to devices for controlling carbureters, with particular reference to its application to motor vehicles, and it has for one of its objects to provide a simple and efficient construction, with few parts, which enables the needle valve of the carbureter to be readily adjusted so as to give just the sort of mixture that is required.

A further object of my invention consists in providing as a part of the controlling mechanism, an accelerating device embodying a means that is quickly adjustable to admit a charge of maximum richness, when a quick increase of speed is desired.

Another purpose of my improvement resides in the provision of an arrangement whereby the operator may always be advised of the richness of the mixture by a convenient indicating means that can be previously standardized.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a view in elevation of a mechanism constructed in accordance with a preferred embodiment of my invention; Fig. 2 is an enlarged elevation of the parts of the control; Fig. 3 is a vertical sectional view of the parts illustrated in Fig. 2; Fig. 4 is a view similar to Fig. 3, showing the controller in section, and the operating device in its lowermost position, and Fig. 5 is a plan view of the control.

Similar reference numerals in the several figures indicate the same parts.

My invention, as illustrated in the present embodiment, is disclosed in connection with a carbureter designated generally at A and comprising a needle valve  $a$ . The needle valve is pivotally connected to an arm  $a^2$  which is mounted on the bracket  $a^3$ . Con-

nected to the arm  $a^2$  is a rod  $a^4$  which in turn has pivotal connection with a bell crank  $a^5$ , the latter being connected to the controlling mechanism and operating in a manner which I will point out presently.

The control may be arranged in any suitable manner and I have shown it as disposed upon the floor board B of a motor vehicle and comprising a support  $b$  which comprises a circular plate having a depending cylindrical portion  $b^2$  forming an opening to receive the controller. The opening just referred to embraces a cam guide way  $b^3$  which coöperates with the controller now to be described. Said controller preferably consists of a barrel  $b^4$  which has a spiral cam or thread  $b^5$  around its periphery, arranged for engagement with the guide way  $b^3$  whereby rotary movement imparted to the controller will effect corresponding vertical movement to effect the needed adjustment of the needle valve. The controller or barrel  $b^4$  is hollow to receive an operating device in the form of a plunger  $b^6$  mounted on the stem  $b^7$ . The stem  $b^7$  has a stop or nut  $b^8$  at its lower end for limiting the upward movement of the plunger, as shown in Figs. 2 and 3, and  $b^9$  is an enlarged head for limiting the downward movement of the plunger, while  $b^{10}$  is a spring surrounding the stem  $b^7$  and arranged within the barrel  $b^4$ , said spring serving to retain the plunger normally in its uppermost position. Threaded upon the lower end of the stem  $b^9$  is a coupling member  $b^{11}$  which has a universal joint connection with the connecting rod  $b^{12}$ , the latter being pivoted to the bell crank  $a^5$ , previously referred to.

The controller carries a handle or operating member  $b^{13}$  by which it may be rotated to effect different adjustments of the needle valve, and in order to enable the operator to know the extent of adjustment, I provide the support with an indicating dial  $b^{14}$ , consisting of graduated indications which represent standardized degrees of movement of the valve, movement in one direction providing for a rich mixture and movement in the opposite direction for a lean mixture, as indicated by R and L, respectively. It is also desirable to afford means for retaining the controller in the desired position of adjustment, and to this end the barrel  $b^4$  carries a circular extension or flange  $b^{15}$  having a series of recesses  $b^{16}$  on its under face. Arranged for coöperation

with the recesses  $b^{16}$ , is a spring actuated locking pin  $b^{17}$  which is seated in the socket  $b^{18}$  and is held in locking engagement with the controller by the spring  $b^{19}$ .

By this construction, the needle valve may be adjusted in the first instance to obtain any degree of mixture desired, according to the requirements of the engine. The valve will be held in this position, and in case an extremely rich mixture is desired, to effect a quick increase in speed, the plunger  $b^9$  is depressed within the controller, while the latter remains stationary, thus causing the needle valve to be opened as long as the operating device or plunger is held in its lowered position. As soon as it is released, the spring  $b^{10}$  returns it to its normal position and the valve is also carried back to its position of first adjustment.

I claim as my invention:

1. The combination with the needle valve of a carbureter, of adjusting means for the same including a support, an adjustable controller rotatably mounted on the support for determining the normal position of the needle valve, means for retaining the controller in adjusted position, an operating device yieldably mounted on the controller, and connections between the operating device and the valve.

2. The combination with the needle valve of a carbureter, of adjusting means for the same including a support, an adjustable controller rotatably mounted on the support for determining the normal position of the needle valve, an operating device yieldably mounted on the controller, and connections between the operating device and the valve.

3. The combination with the needle valve

of a carbureter, of adjusting means for the same including a support, said support having a camway therein, a controller adjustably arranged in said support for determining the normal position of the needle valve and having a cam in engagement with said camway, a plunger in yieldable engagement with said controller, and connections between the plunger and the valve.

4. The combination with the needle valve of a carbureter, of adjusting means for the same including a support, said support having a camway therein, a controller adjustably arranged in said support for determining the normal position of the needle valve, having a cam in engagement with said camway, means for retaining the controller in adjusted position on the support, a plunger in yieldable engagement with said controller and connections between the plunger and the valve.

5. The combination with the needle valve of a carbureter, of adjusting means for the same including a support, said support having an opening with a camway therein, a controller comprising a cylindrical barrel having a cam in engagement with said camway, a spring actuated plunger passing through said barrel, connections between the plunger and the valve, an indicator carried by the barrel, an indicating scale on the support cooperating with the indicator on the barrel, and a spring actuated locking pin in engagement with the controller.

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