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F. F. GOSSLER

1,964,663

SLIDING VALVE

Filed Feb. 25, 1933

FIG. 1.

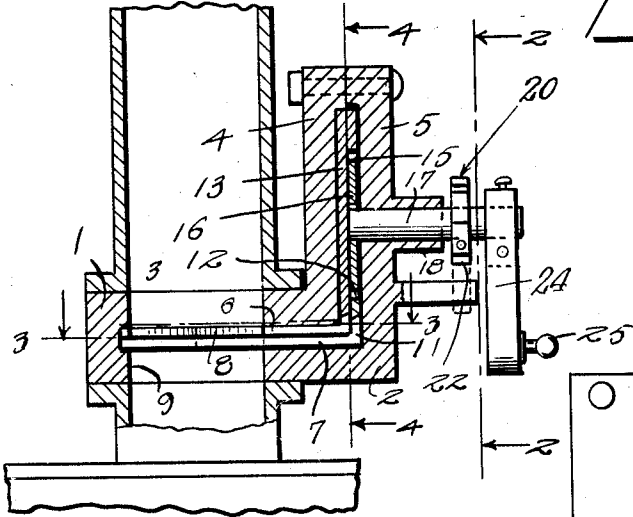


FIG. 2.

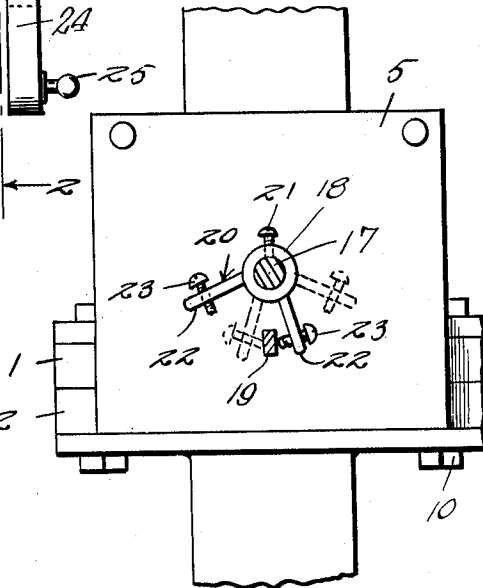


FIG. 3.

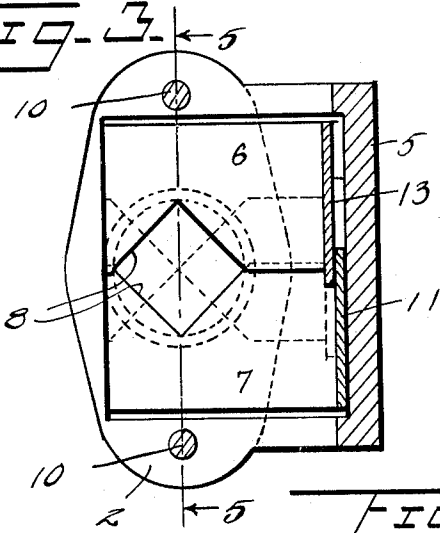


FIG. 4.

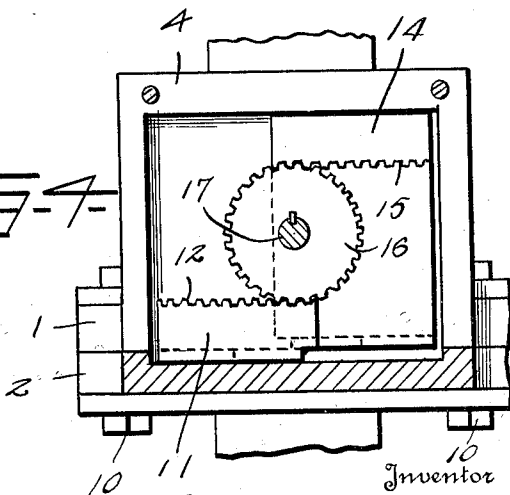
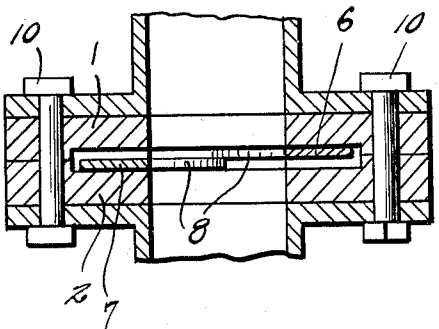


FIG. 5.



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# UNITED STATES PATENT OFFICE

1,964,663

## SLIDING VALVE

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Application February 25, 1933, Serial No. 658,653

2 Claims. (Cl. 251-54)

This invention relates to a valve mechanism and more particularly to a valve designed for use in association with carburetors.

The primary object of this invention is to provide an improved type of valve wherein the passage between a motor vehicle carburetor and the intake manifold may be easily controlled and smoothly enlarged or reduced in size so that the gasoline and air mixture can be passed there-  
 10 through through the center of the passage.

Another object of the invention is to provide a valve of the above described character, by means of which finer adjustments of the gas passage opening may be made, thereby enabling  
 15 the operator of the vehicle in association with which the valve is employed to better regulate the speed of his engine.

The invention broadly contemplates the provision of a pair of plates arranged in over-lapping  
 20 relation and having their adjacent edges provided with V-shaped notches or recesses, the recessed edges of the plates forming a diamond-shaped passage.

Gear means is provided whereby the plates  
 25 may be separated or brought into over-lapping relation, as desired to enlarge or decrease in size the opening, the center of which remains constantly in the center of the passage in which the valve is placed.

The invention will be best understood from a  
 30 consideration of the following detailed description taken in connection with the accompanying drawing forming a part of this specification, with the understanding, however, that the in-  
 35 vention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed  
 40 in the appended claims.

In the drawing:—

Figure 1 is a vertical sectional view through the valve embodying the present invention showing the same in applied position;

45 Figure 2 is a sectional view taken upon the line 2—2 of Figure 1, showing the body in the valve in side elevation;

Figure 3 is a sectional view taken upon the line 3—3 of Figure 1;

50 Figure 4 is a sectional view taken upon the line 4—4 of Figure 1;

Figure 5 is a sectional view taken upon the line 5—5 of Figure 3.

Referring more particularly to the drawing  
 55 wherein like numerals of reference indicate cor-

responding parts throughout the several views, the numerals 1 and 2 indicate the inner and outer members of a casing of substantially L-shaped cross sectional design, the portion 3 thereof being designated as the bottom and the portion 4  
 60 as the side. As shown, the inner face of the part 2 of the casing has the bottom and side thereof recessed, as indicated at 5 and in the recess in the bottom portion of part 2 there is positioned upper and lower valve plates 6 and 7, respectively,  
 65 the adjacent over-lapping edges of which are provided with relatively deep recesses 8.

Through the central part of the bottom portion 3 of the valve casing is formed a circular aperture 9 and at diametrically opposite points  
 70 on the side of the aperture are bolt openings or passages 10. The bottom portion 3 of the valve casing is designed to be interposed between the outlet side of a carburetor and the end of an engine intake manifold to which the carburetor  
 75 is normally attached so that the opening 9 will align with the manifold passage and carburetor outlet opening and the usual bolt members employed for securing the carburetor to the manifold passed through the passages 10 of the casing  
 80 in the manner shown.

The lower valve plate 7 has extending upwardly from one side edge a flange 11, the upper edge of which is formed to provide a toothed rack  
 85 12, this flange positioning in the recess in the inner face of the side 4 of the member 2.

The valve plate 6 is provided at one edge with a similar flange 13 which positions against the flange 11 and extends to the top of the recess 5,  
 90 having formed along its top edge the shoulder 14, the under face of which is formed to provide a gear rack 15, designed to overlie the rack 12 in the assembled unit.

Positioned between the racks 12 and 15 in the  
 95 recess 5 is a gear 16 carrying a shaft 17, which passes through the bearing sleeve 18 projecting from the outer face of the side portion 4 of the valve casing. This outer face also has projecting therefrom beneath the sleeve 18, the stop  
 100 arm 19.

The shaft 17 has secured thereto an inverted substantially V-shaped movement limiting member 20, the shaft extending through the apex portion of the member in the manner shown,  
 105 and adjustably secured thereto by a set screw 21. The legs 22 of the member 20 depend from the shaft, the opposite sides of the stop 19 and each leg carrying a movement limiting screw 23 which, when the member 20 oscillates with  
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the shaft 17 contacts with the stop 19 to limit the oscillatory movement and to consequently limit the relative movement between the valve plates 6 and 7.

5 At its outer end, the shaft 17 carries a crank arm 24, the free end of which is provided with a suitable means for connecting the arm with a control rod, as for example, with a ball unit 25, by means of which a ball and socket connection can be made between an accelerator control rod and this crank.

10 From the foregoing description it will be readily seen that when the present valve device is mounted in position between a carburetor and an intake manifold, oscillation of the shaft 17 through the medium of the crank 24, will rotate the gear 16 and cause relative movement between the valve plates 6 and 7, causing them to be separated or brought into superposed relation, as desired, thereby bringing about an opening or closing of the aperture formed by the coacting V-shaped recess 8.

15 It will be readily seen that from its fullest open position to nearly closed position, the opening formed will be centered in the passage 9 so that free central passage of the explosive gases through the intake manifold may be had. It will also be readily appreciated that with a valve mechanism of the character herein described, 20 finer adjustment of the passageway may be made so that better control of the engine feeding through this valve will be had.

Having described my invention, what I claim is:—

35 1. A carburetor control valve, comprising a casing of substantially L-shaped cross sectional design, one portion thereof being designed to be horizontally arranged between the carburetor

and an intake manifold, a pair of valve plates, each of substantially L-shaped cross sectional design and arranged in superposed relation and fitted into said casing, adjacent edges of the horizontal portions of said plates being provided with recesses coacting to form an aperture opening through a passage in the horizontal portion of the casing, a pair of rack members each carried by one of the valve plates in superposed tooth opposed relation, an operating gear arranged between said racks, a shaft carried by the gear and extending through one side of the casing, and a control crank upon the outer end of said shaft.

2. A carburetor control valve, comprising a casing of substantially L-shaped cross sectional design, one portion thereof being designed to be horizontally arranged between the carburetor and an intake manifold, a pair of valve plates each of substantially L-shaped cross sectional design and arranged in superposed relation and fitted into said casing, adjacent edges of the horizontal portions of said plates being provided with recesses coacting to form an aperture opening through a passage in the horizontal portion of the casing, a pair of rack members each carried by one of the valve plates in superposed tooth opposed relation, an operating gear arranged between said racks, a shaft carried by the gear and extending through one side of the casing, a control crank upon the outer end of said shaft, a stop arranged adjacent the outer end of said shaft, and a two arm member carried by the shaft having adjustable means upon each arm designed for contact with said stop for limiting the oscillation of the shaft.

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