July 14, 1931. P. MORGAN 1,814,949

GAS MIXING DEVICE

Filed June 17, 1929

Fig. I.

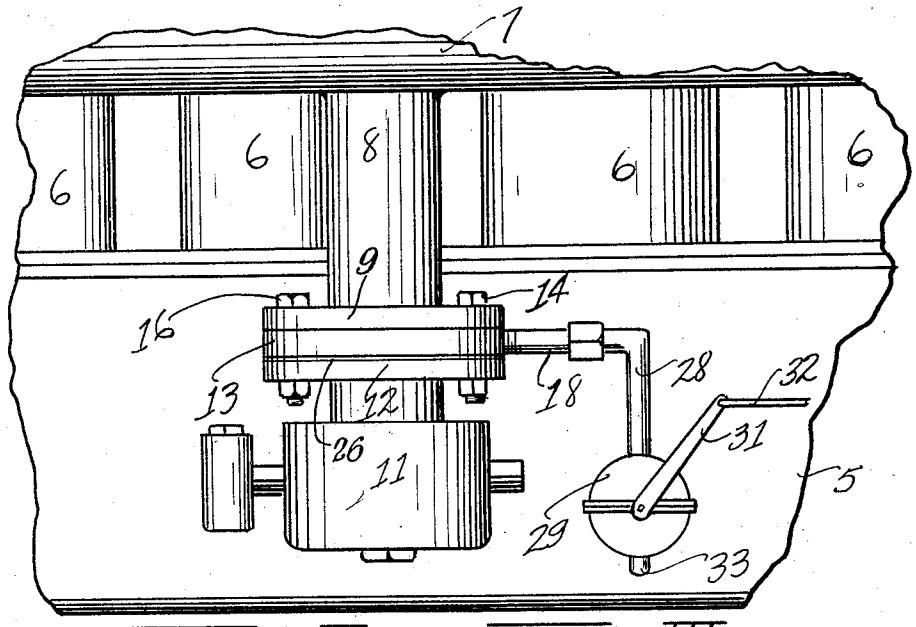

Fig. II.

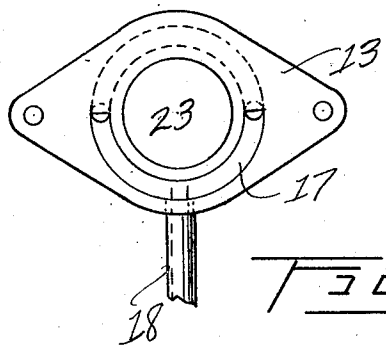

Fig. III

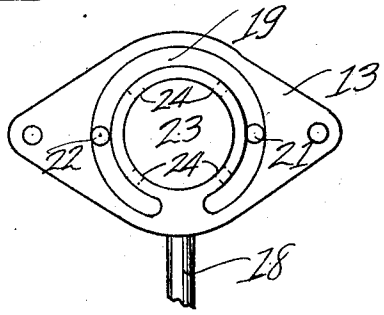

Fig. IV.

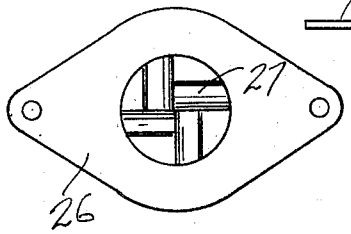

Fig. V.

INVENTOR.
PHILLIP MORGAN
BY Victor J. Evans
ATTORNEYS.

Patented July 14, 1931 1,814,949

UNITED STATES PATENT OFFICE

PHILLIP MORGAN, OF STOCKTON, CALIFORNIA

GAS MIXING DEVICE

Application filed June 17, 1929. Serial No. 371,455.

This invention relates to improvements in gasoline mixing devices and has particular reference to means for increasing the amount of air which is delivered to the carburetor after the engine has become warmed.

Another object of the invention is to produce a device which may be inserted between the usual carburetor and the usual manifold without altering the construction thereof.

A further object is to provide means where by volatile gas is withdrawn from the crank case.

A still further object is to produce a device which is economical to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a fragmentary view of an internal combustion engine having my invention applied thereto,

Figure 2 is a bottom plan view of my device,

Figure 3 is a top plan view of my device,

Figure 4 is a side elevation of the mixture plate, and

Figure 5 is a top plan view thereto.

It is a well known fact that after a vehicle is running and the engine is warmed, it is possible to increase the amount of air delivered to the carburetor and thereby cause a greater efficiency of operation. Applicant has devised a means whereby the warm volatile gas and air contained within the crank case of the motor may be utilized for this purpose and he has therefore devised a structure which is simple and one which will function in the manner described.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 5 designates the crank case of a motor having cylinders 6 and an intake manifold 7. This intake manifold is connected by the usual down-pipe 8 having a flange 9 to a carburetor 11 having a flange 12. It is between the flanges 9 and 12 that I insert my invention, which consists of the plate 13 of the same general shape as the flanges 9 and 12 and adapted to be bolted therebetween by the bolts 14 and 16. The plate 13 has a semi-circular groove 17 formed upon its undersurface as best shown in Figure 2. This groove is connected to a pipe 18 the purpose of which will be later seen. The groove 17 connects with a groove 19 formed on the upper surface of the plate 13 through the medium of ports 21 and 22. From the groove 19 to the central bore 23, I provide radial passages 24. These passages permit the air coming from the pipe 18 to pass from the groove 17 to the ports 21 and 22 to the groove 19 thence through the radial passages, to the interior or bore 23 where it will join in with the flow of carbureted air coming from the carburetor.

In order to form a more perfect mixture I provide a plate 26 which has a plurality of upstanding vanes 27 positioned thereon, which vanes serve to give a whirling motion to the air passing therethrough. This plate 36 is bolted between plate 13 and the flange of the carburetor. A pipe 18 is connected to a pipe 28 which in turn connects to a casing 29 having a valve positioned therein. This valve is actuated through the medium of a lever 31 and a rod 32. A pipe 33 extends from the valve casing 29 to the engine crank case 5. The result is that when the operator actuates the valve through the lever 31 air will be admitted from the crank case through the pipe 33, valve housing 29, pipe 28, pipe 18, to the groove 17 from which point the course has been previously traced.

It will thus be seen that I have produced a device which will accomplish all the objects above set forth.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:—

In a device of the character described, a plate having a central bore formed therein, a groove formed upon one side of said plate and concentric with said bore, a groove formed upon the opposite side of said plate passages extending between said grooves, said second groove being concentric with said bore, passages connecting said second mentioned groove and said central bore, and means for delivering air to said grooves.

In testimony whereof I affix my signature.

PHILLIP MORGAN.