

June 12, 1945.

W. J. BLIFFERT

2,377,852

ATTACHMENT FOR INTERNAL-COMBUSTION ENGINES

Filed Jan. 15, 1943

Fig. 1.

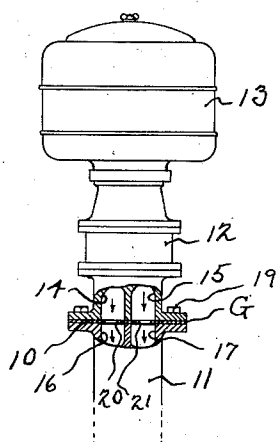


Fig. 2.

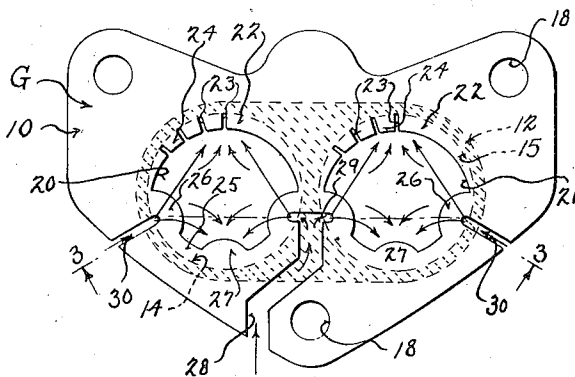


Fig. 4.

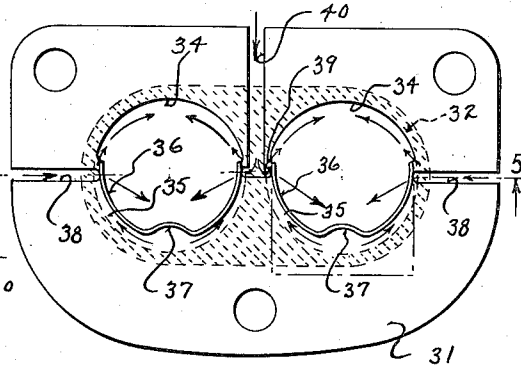


Fig. 3.

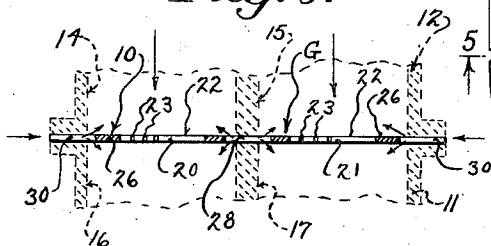


Fig. 6.

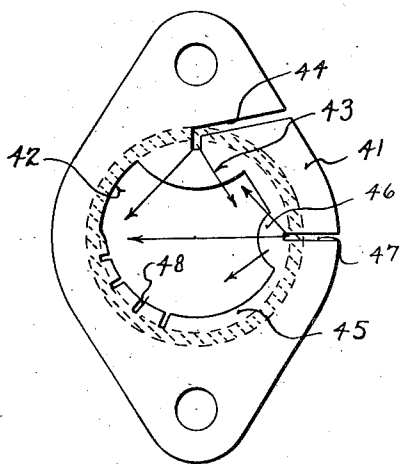
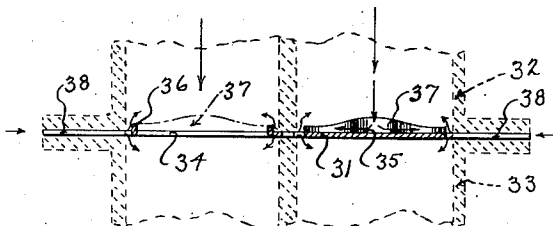


Fig. 5.



INVENTOR
WALTER J. BLIFFERT

BY *Young & Wright*
ATTORNEYS

UNITED STATES PATENT OFFICE

2,377,852

ATTACHMENT FOR INTERNAL-COMBUSTION ENGINES

Walter J. Bliffert, Milwaukee, Wis.

Application January 15, 1943, Serial No. 472,456

3 Claims. (Cl. 48—180)

This invention appertains to internal combustion engines and more particularly to a novel attachment therefor for facilitating the vaporizing and the distribution of the fuel charge to the cylinder of the engine.

One of the primary objects of my invention is to provide a combined vaporizer and auxiliary air inlet device for the intake system of the internal combustion engine and to generally improve the construction shown in my prior Patents 1,501,196 and 1,562,077, issued respectively to me July 15, 1924, and November 11, 1925.

Another salient object of my present invention is the provision of baffles or lips extending into the intake pipe of the fuel system of an internal combustion engine between the carburetor and the intake manifold, whereby to catch and retard the flow of the globules of gasoline condensing on the inner surface of the pipe and to vaporize this gasoline in an efficient manner with air streams leading toward said lips.

A further important object of my invention is the provision of means for advantageously arranging the lips and for supplying additional air to said lips whereby to insure the proper delivery of the fuel charge to the various cylinders of the engine.

A still further object of my invention is the provision of a novel gasket adapted to be placed between the carburetor and the intake pipe having means formed directly thereon and therein for facilitating the entrance of auxiliary air into the intake manifold in definite relation to integral lips or baffles formed on the inner edge of said gasket.

A still further important object of my invention is to provide a novel attachment for internal combustion engines, of the above character, which is of a simple and durable character and which can be placed upon the market and incorporated with a conventional engine at a very small cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawing, in which drawing:

Figure 1 is a fragmentary side elevational view partly broken away and in section showing my novel gasket incorporated with the fuel system of an internal combustion engine.

Figure 2 is a top plan view of the gasket.

Figure 3 is a detail sectional view through the gasket taken on the line 3—3 of Figure 2 looking in the direction of the arrows, a part of the intake pipe and the carburetor being shown in dotted lines.

Figure 4 is a top plan view of a slightly modified form of my gasket which can be advantageously used with the well known Stromberg carburetor.

Figure 5 is a sectional view through the gasket taken substantially on the line 5—5 of Figure 4 looking in the direction of the arrows.

Figure 6 is a top plan view of a further modified form of my gasket which can be advantageously used on certain well known makes of automobiles, such as the Chevrolet.

Referring to the drawing in detail, wherein similar reference characters designate corresponding parts throughout the several views the letter G generally indicates one preferred form of my improved gasket and as illustrated, the same can be constructed from a thin body plate 10 of sheet metal suitably shaped so that the same can be readily interposed between the intake pipe 11 of an internal combustion engine and a carburetor 12. While I have stated that the gasket is made from metal, it is to be understood that the same can be made from other materials. The carburetor 12 is of the dual down-draft type and the carburetor has associated with the upper end thereof the air cleaner 13. As the carburetor 12 is of the dual type the same includes downwardly extending parallel passage ways 14 and 15 which are adapted to communicate with similar spaced parallel passage ways 16 and 17 in the intake pipe 11. This type of carburetor can be advantageously used in V type motors.

The gasket, at spaced points, is provided with openings 18 whereby the same can be effectively held in place by the stud bolts 19 utilized for connecting the carburetor to the intake pipe.

The flat body 10 of the gasket has formed therein spaced openings 20 and 21 which register with the passage ways 16 and 17 in the intake pipe and the passage ways 14 and 15 in the carburetor. At the front edges of the openings 20 and 21, the flat body 10 is provided with inwardly directed crescent shaped baffles 22. These baffles extend into the passage ways in the carburetor and the intake pipe and are provided on one side with spaced radially extending slots 23 which form lips 24. The rear edges of the openings 20 and 21 have formed thereon inwardly projecting baffles 25 and these baffles merge in with the narrow ends of the front baffles 22. Attention is called to the fact that these baffles also extend into the passage ways 14 and 15, 16 and 17 and that the ends thereof have enlarged circular lips 26. The center part of the baffles 25 also have enlarged circular lips 27. The body plate itself, at its rear, is provided with a slot 28, which is of a relatively wide order and this slot 28 extends from the extreme outer edge of the body plate to a point between the openings 20 and 21 and the inner end of this slot communicates with the openings 20 and 21 by narrow end slots 29 which extend into the curved lips 26. Thus when the gasket is correctly disposed in place the passage way 28 forms an auxiliary air inlet for the passage ways 14, 15, 16 and 17 and these slots 29

extend into said passage ways as can be clearly seen by referring to Figure 2.

The opposite edges of the body plate are provided with inwardly directed similar slots 30. These slots are relatively narrow and extend from the side edges of the plate into the enlarged lips 26 and when the gasket is in place the slots form additional air inlets which communicate with the passage ways 14, 15, 16 and 17.

In use of my novel gasket, drops of gasoline collecting on the inner walls of the carburetor passage ways 14 and 15 will be caught on the baffles 22 and 25 and this will prevent the waste of gasoline by preventing the entrance of raw gasoline into the intake manifold. The gasoline thus caught will be effectively mixed with the air taken into the gasket through the slots 28 and 20 and thus this gasoline will be vaporized and thoroughly mixed with such air. This will result in the saving of gasoline and the obtaining of additional power by the insuring of a proper mixture.

By referring to Figure 2 of the drawing, it will be noted that the air sucked into the passage ways of the intake pipe will be divided and directed toward the baffles and this is best shown by the arrows in said Figure 2. The slits 23 in the baffles 22 function as means for breaking up the drops of gasoline and for mixing the air with the gasoline.

The baffles are also arranged as to insure the proper disposition of the mixture to the end cylinders of the engine as well as the middle cylinders of the engine and in actual practice the trailing edge of the throttle valve (not shown) is at the front of the gasket.

In Figures 4 and 5 I have shown a slightly modified form of my gasket and it is to be noted that the same includes a flat gasket plate 31 which is adapted to be interposed between the bottom of the carburetor 32 and the top of an intake 33. This plate is provided with a pair of spaced openings 34 which are adapted to register with the dual passage ways of the carburetor and the intake pipe. In this form of my invention the rear edges only of the openings 34 are provided with substantially crescent shaped baffles 35 and these baffles extend into the carburetor and intake pipe passage ways. The outer edges of the baffles 35 are provided with upturned lips 36 which gradually decrease in height from their centers toward their outer ends. The center part of the lips 36 can be slightly placed inwardly as at 37, if so desired. The ends of the baffles have communicating therewith slots 38 and 39. The slots 38 extend from the side edges of the gasket plate while the slots 39 communicate with a centrally disposed slot 40 which leads to the front edge of the gasket plate. When the gasket is in position as shown in Figure 5 these slots form auxiliary air inlets. Drops of gasoline caught by the baffles 35 will be directed toward the ends of the baffles and the air inlet slots and hence this gasoline will be thoroughly co-mingled with the entering air and be effectively vaporized. This type of gasket can be advantageously used on carburetors of the Stromberg type and in this type of carburetor the trailing edge of the throttle valve will be located at the rear of the gasket. Hence any gasoline dropping from this trailing edge will be caught by said baffles.

In Figure 6 I have shown a further modified form of my invention and the same includes a gasket plate 41 which is adapted to be used in connection with carburetors having a single

down-draft passage way. Hence the gasket plate 41 is provided with a single opening 42. The opening 42 at the front is provided with a relatively large inwardly directed baffle 43 and this baffle has communicating therewith or cut therefrom a slot 44 which leads out one side edge of the plate. A relatively narrow baffle 45 is formed on the front edge of the gasket opening and extends into said opening and in the carburetor passage way. At the point of juncture of the baffle 45 with the baffle 43 a side baffle 46 is provided. A slot 47 is formed in the gasket plate and extends from the side edge of said plate into said baffle. These slots 44 and 47 form auxiliary air inlets when the gasket is associated in the fuel charge system of an engine between the carburetor and the intake pipe.

The direction of the air flow is shown by the arrows and it can be seen that a plurality of air streams will be set up which will be directed over the lips to co-mingle with gasoline interrupted by said lips or baffles. The baffle 45 can be slit at spaced points, as at 48 on one side, to provide a plurality of lips to facilitate the mixing of air and gasoline. The relatively large baffle 43 tends to prevent too much gasoline from entering the middle cylinders of the engine and tends to distribute the charge equally to all of the cylinders of the engine. The baffle 45 at the rear prevents too much gasoline from entering the end cylinders of the engine when the motor vehicle is going up a steep grade. The air streams are so located as to effectively carry the charge to the correct cylinders.

Changes in details may be made without departing from the spirit or the scope of my invention, but what I claim as new is:

1. A manifold gasket adapted to be positioned between the carburetor and the intake pipe of the intake system of an internal combustion engine comprising a flat plate having an opening corresponding to the bore of the intake system, an inwardly directed crescent shaped baffle formed on one edge of said opening, an inwardly directed baffle having enlarged lips formed on the other edge of the opening, said crescent shaped baffle being provided with slits to define spaced lips, said plate being slotted at spaced points to define air inlet openings, said slots extending from the outer edge of the plate to said baffles.

2. A manifold gasket for dual carburetors of the down draft type comprising a body plate having a pair of spaced openings registering with the dual passage ways of the carburetor, each of said openings having a crescent shaped baffle at one side and a baffle having spaced enlarged curved lips on the other side, the first mentioned baffle being provided with spaced slits defining lips and means for introducing a plurality of air streams into the openings over the baffles.

3. A manifold gasket for dual carburetors comprising a flat body plate having spaced openings for registering with the dual passage ways of said carburetor, each of said openings being provided with a crescent shaped baffle extending into the opening for interrupting the flow of gasoline particles collecting on the walls of the passage ways of the carburetor, said gasket having air inlet slots extending into the terminals of the baffles for introducing air over the terminals of the baffles, and a right-angularly extending lip on the edge of the baffle terminating adjacent said inlets.

WALTER J. BLIFFERT.