Feb. 19, 1924.

1,484,235

E. RABA

MIXING DEVICE

Filed July 12, 1923

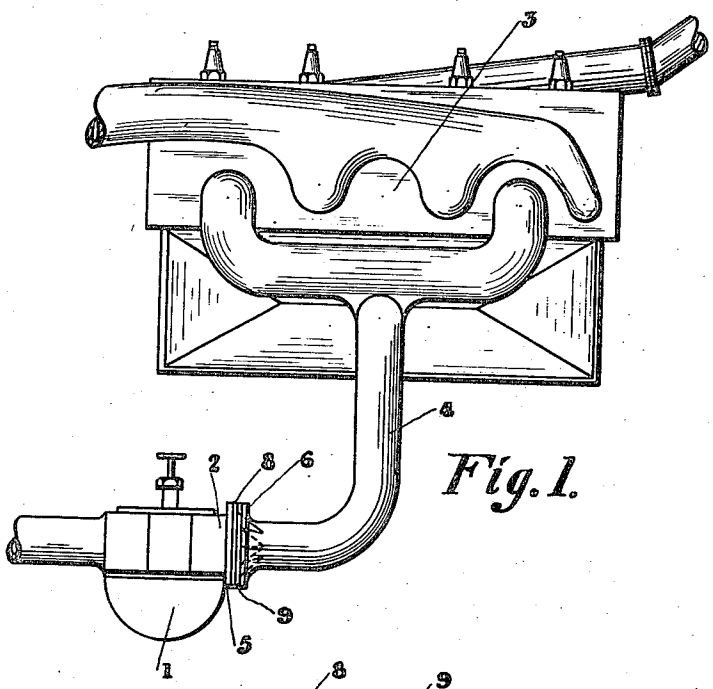


Fig. 1.

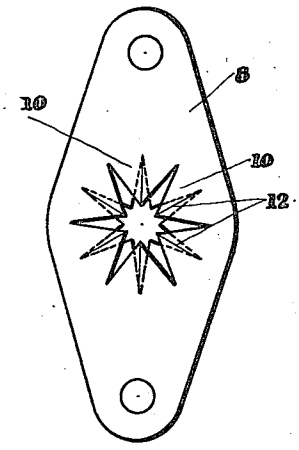


Fig. 2.

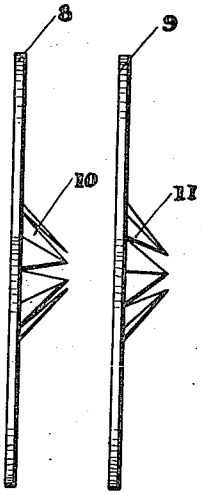


Fig. 3.

Fig. 4.

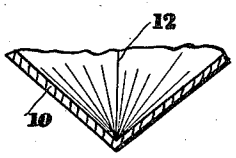


Fig. 5.

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Patented Feb. 19, 1924. 1,484,235

UNITED STATES PATENT OFFICE.

ERNEST RABA, OF PAWNEE, OKLAHOMA.

MIXING DEVICE.

Application filed July 12, 1923. Serial No. 651,102.

To all whom it may concern:

Be it known that I, ERNEST RABA, residing in Pawnee, county of Pawnee, and State of Oklahoma, and a citizen of the United States, have invented certain new and useful Improvements in a Mixing Device, of which the following is a specification, reference being had to the drawing, forming a part thereof.

My invention relates to oil intercepting devices for collecting particles of oil, ungasified gasolene or other fuel oil carried by the explosive mixture formed in a carbureter so that it may be taken up by the explosive mixture on its way to the engine cylinders of an internal combustion engine and be gasified. In the ordinary arrangement employed in automobiles an explosive mixture of vaporized or gasified gasolene and air is formed by the carbureter and while it is intended that the gasolene be so far completely gasified that no particles of uncombined gasolene will be carried by the mixture, in practice it is found that such particles of uncombined oil or gasolene are carried to a greater or less extent.

My invention has for its object to provide a simple and inexpensive device adapted to be inserted in the usual joint between the pipe leading from the carbureter and the pipe leading to the manifold, by which particles of oil or gasolene carried by the explosive mixture as it leaves the carbureter will be caught and spread out in position to be taken up in gaseous form by the current of explosive mixture as it passes to the manifold.

With the object thus indicated, and other objects hereinafter described, in view my invention consists in the construction and combination hereinafter described and claimed.

Referring to the drawings:

Figure 1 is a side view of an automobile engine having my invention embodied in the passage through which explosive mixture is supplied to it.

Figure 2 is a front view of the oil intercepting device of my invention.

Figures 3 and 4 are edge views of the two plates separated, and

Figure 5 is a detail cross sectional view of one of the tongues.

In the drawings 1 indicates a carbureter of any usual construction, 2 indicates the pipe leading from the carbureter, 3 indicates the manifold of usual construction and 4 indicates the pipe leading from pipe 2 to the manifold. The pipes 2 and 4 are provided with the usual flanges 5 and 6 and these flanges are secured together by the usual bolts so that a continuous passage from the carbureter to the manifold is formed by which the explosive mixture formed in the carbureter is delivered to the manifold and distributed to the engine cylinders.

Between the flanges 5 and 6 I insert plates 8 and 9, preferably of sheet metal constructed to operate to catch any particles of oil or gasolene which may be carried by the explosive mixture, and to so present the oil or gasolene so caught to the current of explosive as it continues to be drawn through the passage formed by pipes 2 and 4 that it will be taken up in gaseous form and aid in forming an effective mixture.

From a point in each of the plates 8 and 9 in line with the centre of the interior of pipes 2 and 4, I cut radial slits extending to, or approximately to, the periphery of a circle coincident with the line of the interior wall of the pipes 2 and 4, thus forming in plate 8 a series of triangular tongues 10, and in plate 9 a series of triangular tongues 11. In each of the plates 8 and 9 the slits are spaced equal distances apart so that the tongues 10 of plate 8 are all of the same width at their bases, and the tongues 11 of the plate 9 are also all of the same width at their bases. The number of radial slits in the two plates should be the same, and, of course, the number of tongues will be the same, but the slits in plate 8 should be in line with the central lines of the tongues 11 of plate 9.

In assembling the device plate 9 is arranged against the flange 6 of pipe 4 and its tongues 11 are bent on their bases so as to extend at an angle away from the carbureter and towards the manifold. By so bending the tongues their points are so separated as to leave the central portion of the passage unobstructed. The plate 8 is arranged against plate 9 and its tongues 10 are bent on their bases in the same direction as are the tongues 11 of plate 9 so that they project in part through the opening in plate 9 and lie nearly parallel with

tongues 11, their points, however, being in line with the spaces between the points of tongues 11.

It will, of course be understood that the bending of the tongues just described should be done before assembling the parts in position.

The tongues 10 and 11 are each preferably bent on the line 12 midway between its edges to form a trough open towards the carbureter as shown in Figures 2 and 5.

The plates 8 and 9 being in position, as the explosive mixture from the carbureter is drawn through pipes 2 and 4 it will pass in part through the unobstructed centre of the passage and in part will pass through the openings between the tongues 10, through the spaces between the tongues 10 and the tongues 11, and then through the spaces between the tongues 11. In this way the explosive mixture will be brought in contact with the surfaces of the tongues and any particles of oil or gasolene carried by it will tend to be caught on these surfaces and to spread on these surfaces and to be taken up by the current of explosive mixture as it continues to be drawn into the manifold. If the oil so caught by the tongues is of considerable volume so that it is not readily taken up from their surfaces it will, on the tongues which are above the plane of the centre, run down the tongues and drip across the centre opening and thus be subjected to a strong draft which will tend to vaporize it and take it up in volatilized form.

Having thus described my invention what I claim is:

In a mixing device, a pair of plates placed together adapted to be inserted in the passage leading from the carbureter to the manifold, each radially slitted from its centre to form tongues and having the tongues so formed inclined in a direction towards the manifold, the tongues being each bent into trough shape along the line midway between its edges, the central lines of the tongues of one plate being in line with the spaces between the tongues of the other plate.

In testimony whereof I hereunto affix my signature.

ERNEST RABA.