April 23, 1929. F. L. BAILEY 1,710,601

GAS MIXER

Filed Dec. 15, 1927

FIG. 1

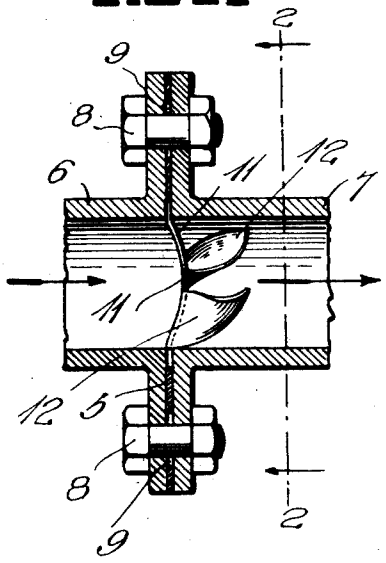


FIG. 2

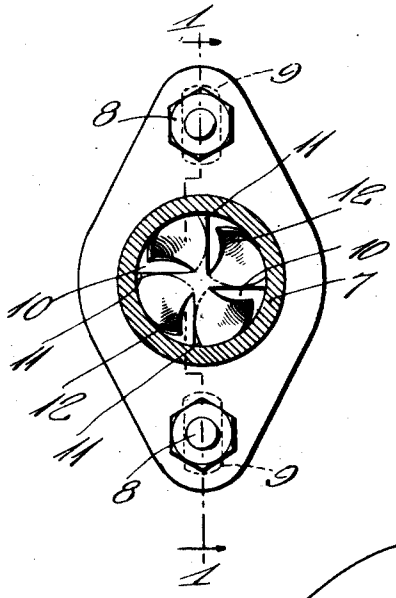
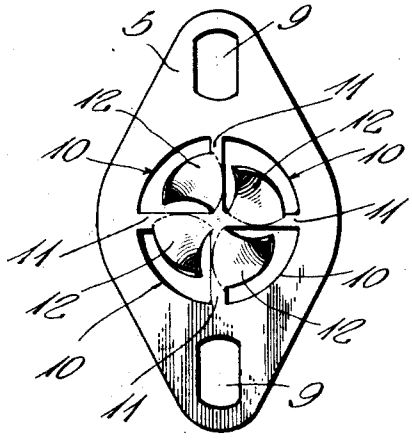


FIG. 3



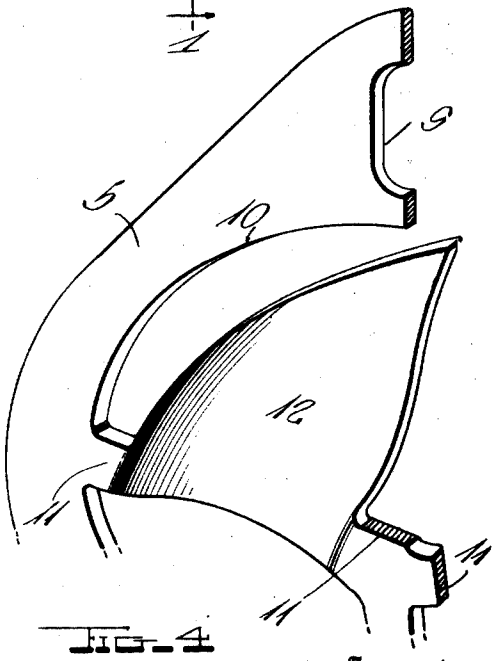


FIG. 4

Inventor

F. L. Bailey

Witness

By H. B. Williamson & Co

Attorneys

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UNITED STATES PATENT OFFICE.

FRANK L. BAILEY, OF OKMULGEE, OKLAHOMA.

GAS MIXER.

Application filed December 15, 1927. Serial No. 240,262.

The invention relates to improvements in gas mixers of a type designed to be clamped between a carbureter outlet neck and an intake manifold, and it is the object of the invention to provide a device of this class which is extremely simple and inexpensive, yet will be unusually efficient, permitting no gas to pass without contact with pitched, gas-whirling vanes which cyclonically whirl the gas and thus insure the formation of a homogeneous mixture before passage to the engine cylinders.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, description being accomplished by reference to the accompanying drawing.

Fig. 1 is a longitudinal sectional view through adjacent portions of a carbureter outlet neck, an intake manifold and the improved mixer installed between them.

Fig. 2 is a vertical sectional view on line 2—2 of Fig. 1, and by the line 1—1, this view illustrates the plane on which Fig. 1 is cut.

Fig. 3 is a side elevation of the mixer.

Fig. 4 is an enlarged fragmentary perspective view.

In the drawing above briefly described, the numeral 5 denotes a flat sheet metal plate to be clamped between the outlet neck 6 of a carbureter and an intake manifold 7, by means of the usual bolts 8, the plate being formed with slots 9 to receive said bolts. At its central portion, plate 5 has a plurality of segmental openings 10 stamped therein, leaving a plurality of radial bars 11. The metal from the openings 10, forms a plurality of gas-whirling vanes 12 adapted to extend into the manifold 7 and to contact throughout at least a portion of their outer edges with said manifold. These vanes 12 are narrowed toward their free ends and at their opposite ends are integral with the bars 11, substantially throughout the lengths of the latter. Each vane 12 has a helical trend and is transversely curved, with its concave side disposed toward the carbureter. Each bar 11 is provided with a longitudinal curvature corresponding to the transverse curvature of the connected vane 12 and each of these bars is pitched transversely to an extent corresponding to the helical trend of the connected vane, so that the contiguous surfaces of the vanes and bars, merge into each other and no abrupt surfaces are presented to the gas. It is thus insured that as soon as the gas strikes the vanes, it shall be cyclonically whirled without excessive retardation and shall consequently be thoroughly mixed, to produce better results than are otherwise obtainable.

While the exact details herein presented are preferably followed, it is obvious that within the scope of the invention as claimed, slight variations may be made.

I claim:

A gas mixer comprising a sheet metal plate having a plurality of segmental openings stamped therein, leaving radial bars between said openings, the metal stamped from said openings forming pitched gas-whirling vanes equal in number to said bars and integrally connected at one end with said bars substantially throughout the lengths of the latter, said vanes each having a helical trend and being transversely curved; said bars being each curved longitudinally in conformity with the transverse curvature of the connected vane and being transversely pitched in conformity with the helical trend of said vane.

In testimony whereof I have hereunto affixed my signature.

FRANK L. BAILEY.