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O. G. BERG

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BLOWER

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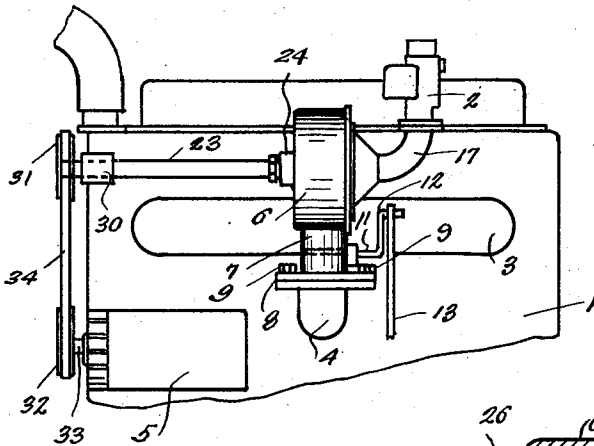


Fig. 1

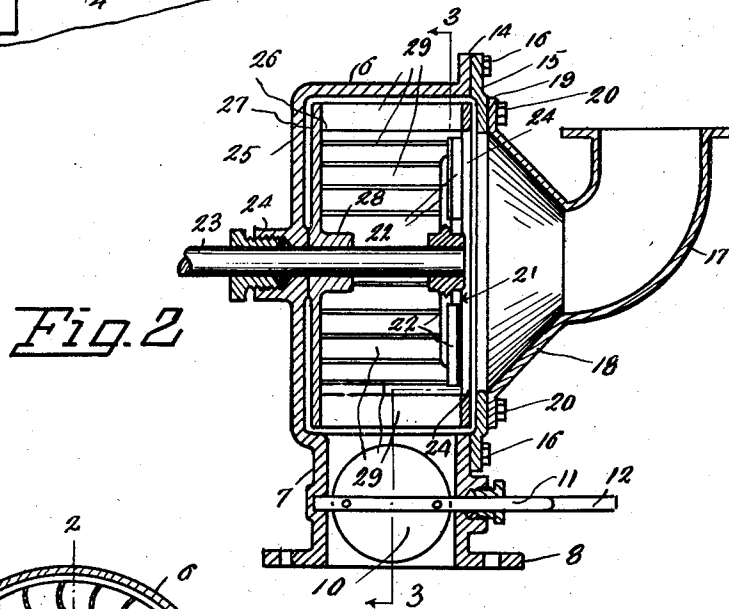


Fig. 2

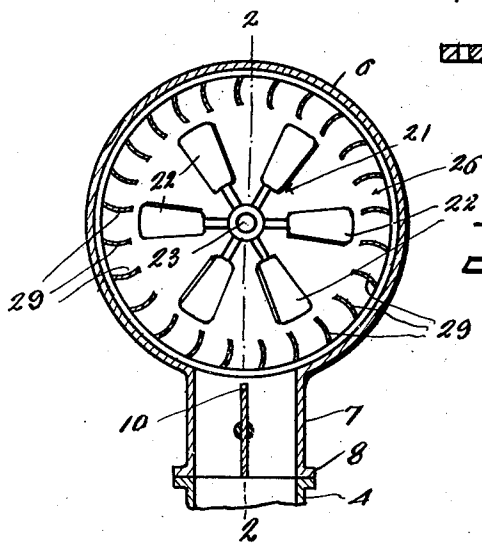


Fig. 3

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1 Claim. (Cl. 230—119)

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This invention relates to an attachment for an internal combustion engine and more particularly to a device adapted to be mounted between the carburetor and intake manifold and serve to break up gas flowing toward the intake manifold into very fine particles and thus increase the efficiency of the fuel mixture.

Another object of the invention is to provide a device of this character wherein a casing mounted between the carburetor and the intake manifold has a side inlet with which an inlet throat connects, the throat being flared toward the side opening of the casing so that the fuel mixture may spread prior to entering the casing.

Another object of the invention is to provide within the casing a fan for drawing the fuel mixture into the casing, together with a second fan surrounding the first fan and serving to very effectively agitate and break up the gas particles in the fuel mixture.

Another object of the invention is to provide a device of this character wherein the second fan is in the form of a cage surrounding the first fan and has its blades extending longitudinally of the casing in a path parallel to the peripheral wall of the casing.

Another object of the invention is to provide a device which is simple in construction, cheap to manufacture and not liable to become clogged or otherwise get out of order.

In the accompanying drawings:

Fig. 1 is a side elevation showing the improved device applied to an internal combustion engine.

Fig. 2 is a sectional view taken vertically through the device on the line 2—2 of Fig. 3.

Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

This improved device is intended for use as an attachment for an internal combustion engine which may be of conventional construction and is indicated in general by the numeral 1, in Fig. 1 of the drawings. This engine has the usual carburetor 2 from which a fuel mixture is delivered to the intake manifold 3 through the inlet neck 4 thereof and the engine also has a generator 5 mounted at a side of the engine.

The attachment has a casing 6 which is circular, as shown in Fig. 3, and provided with an outlet neck 7 extending downwardly from its peripheral wall and having an outstanding flange 8 through which fasteners 9 are passed to secure the neck 7 to the neck 4 of the intake manifold. A butterfly valve 10 controls flow of fuel mixture through the neck 7 and has its shaft 11 extending outwardly from the neck and formed with a crank

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engaged by an actuating rod 13 so that the valve may be turned to adjusted positions for controlling flow of the fuel mixture through the neck. One side of the casing is open, and this open side of the casing is surrounded by an outstanding flange 14 to which is detachably secured a ring or wall member 15 held to the flange by a suitable number of fasteners 16. A neck or elbow 17 connects the open side of the casing with the carburetor 2, and this neck has an enlarged end portion forming a flaring throat 18 which is surrounded by an outstanding flange 19 through which fasteners 20 are passed to detachably secure the throat to the ring or wall member 15. Since the throat flares toward the casing 6, fuel mixture flowing through the neck 17 toward the casing may spread as it approaches and enters the casing through the open side thereof.

In order to draw fuel mixture through the neck 17 into the casing and expel it through the neck 7, there has been provided a fan 21 having radial blades 22. This fan 21 is fixed upon a shaft 23 which extends through the casing centrally thereof and is mounted through a packed bearing 24 at the center of the permanent side wall 25 of the casing. The shaft also carries an agitating fan which may be referred to as a cage-fan. This agitating fan 26 has a disc 27 at one side formed with a hub 28 which surrounds the shaft 23 and is fixed to the shaft. The disc is disposed close to the permanent side wall of the casing and about its periphery carries a plurality of blades 29 which extend from the disc in a circular path about the suction fan 21 and are braced by a ring 30. The blades 29 are curved transversely, as shown in Fig. 3, and, when the shaft 23 is rotating, fuel mixture is sucked into the casing by fan 21 and rapidly circulated in the casing by the blades 29 of the cage-fan 26 which will thoroughly break up fuel particles and distribute same in the fuel mixture before the fuel mixture is expelled from the casing through neck 7 and into the intake manifold of the engine. The butterfly valve 10 controls flow of fuel mixture through the outlet neck 7 and into the intake manifold. The shaft 23 is quite long and has its outer end portion rotatably mounted through a bearing 31 at a side of the engine with its extremity projecting from the bearing and carrying a pulley 32. A pulley 33 is carried by the shaft 33 of the generator and a belt 34 is trained about the pulleys 31 and 32 so that rotary motion will be transmitted from the generator shaft 33 to the shaft 23.

What is claimed is:

A device of the character described comprising a casing having an annular wall and a side wall and being open at its other side, an outlook neck extending from the annular wall and adapted to be connected with the intake of an engine, a ring removably mounted about the open side of the casing, an inlet neck having its outer end adapted for connection with a carburetor and having its inner end portion flared and removably secured to said ring about the inner periphery thereof, and rotatably mounted through the side wall of said casing centrally thereof, and extending transversely through the casing axially thereof, a cage fan in said casing having a flat side wall formed with a central hub mounted about said shaft adjacent the side wall of the casing and carrying blades having ends secured to the flat side wall in spaced relation to each other about the periphery thereof and braced by a ring secured to ends of the blades adjacent the inner surface of the ring at the open side of the casing, and a suction fan within the cage-fan having a hub firmly mounted about the shaft at

the open side of the cage-fan and blades extending radially from its hub with their outer ends terminating adjacent the ring of the cage fan.

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