June 13, 1939. T. BRENNER 2,161,895

EXHAUST SCAVENGER

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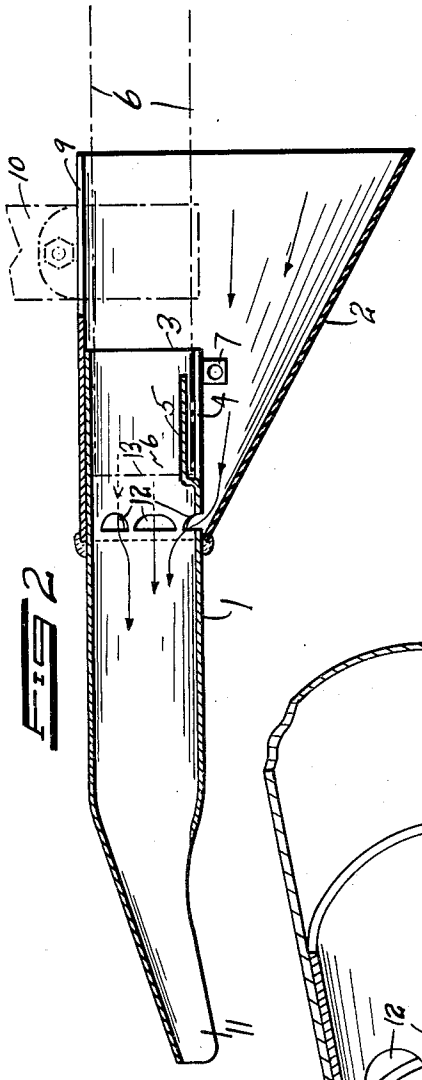

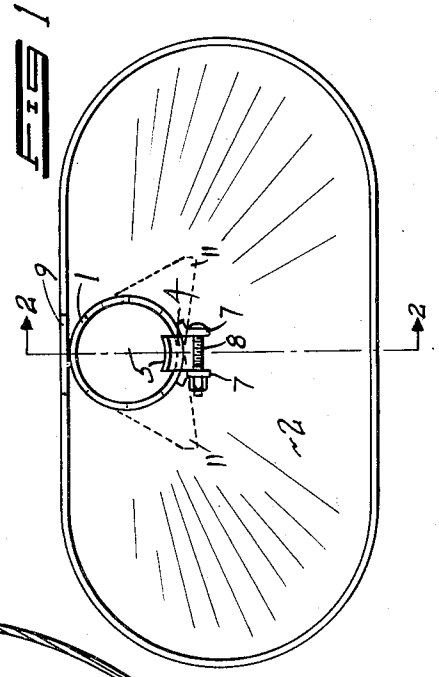

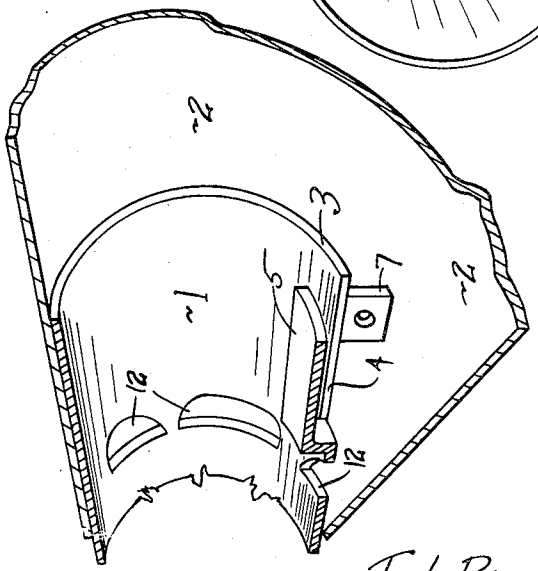

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# UNITED STATES PATENT OFFICE

2,161,895

## EXHAUST SCAVENGER

Tod Brenner, Youngstown, Ohio

Application June 25, 1937, Serial No. 150,280

4 Claims. (Cl. 60—32)

This invention relates to an exhaust scavenger for internal combustion engines.

The principal object of this invention is the provision of a scavenging device adapted to be placed on the exhaust pipe of a motor vehicle to lessen the back pressure on the motor.

A further object of this invention is to provide a simple and inexpensive device which may be readily attached to the exhaust pipe of a motor vehicle whereby suction may be developed for the purpose of quickly emptying the exhaust gases from the exhaust pipe and deflecting them away from the motor vehicle.

It is well known that the use of a muffler on a motor vehicle, while necessary to quiet the motor exhaust, sets up considerable resistance to the exhaust gases, thus forming a back pressure which the motor must overcome, thereby using a portion of the developed power for that purpose alone. In my invention I have provided a scavenging device that will partially overcome this back pressure, thus saving that portion of the developed power.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is an end view of the device taken from the end adapted to fit over the exhaust pipe.

Figure 2 is a cross section taken on line 2—2 of Figure 1 showing the device in greater detail.

Figure 3 is an enlarged detail view of a section of the device shown in Figure 2 and showing the form and position of the pressure jets of the device.

By referring to Figure 2 of the drawing it will be seen that this invention comprises a tubular body portion 1 having an oval funnel shaped body member 2. The inner end 3 of the tubular body portion 1 is provided with a slot 4. The material of this tubular body portion 1 is stamped in such manner as to form an up-turned flange 5 which, in connection with the inner surface of the tubular body portion 1, is adapted to receive an exhaust pipe 6. A pair of clamps 7 are spot-welded to the body member 1, one on either side of the slot 4. A threaded bolt 8 is provided to pull the clamps together, thus firmly clamping the device upon the end of the exhaust pipe 6. Formed in the upper section of the funnel shaped body member 2 there is a slot 9 which is designed to allow the device to be installed on exhaust pipes when they are provided with a support bracket 10. The tubular body portion 1 is provided at an end 11 with a deflecting flange so that the exhaust gases will be directed downwardly and away from the device. A plurality of jet like openings 12 are positioned around the body portion 1 adjacent to the end 13 of the exhaust pipe 6, and just within the tapered inner end of the funnel shaped body member 2. Arrows on Figure 2 of the drawing indicate the flow of air from the funnel shaped body member 2 through these jet like openings 12. When the motor vehicle to which the device is attached is placed in motion, the funnel shaped body member 2, facing forward as it does, scoops in air and tends to build up considerable pressure at its tapered inner end. The only outlet for this air is through the plurality of jet like openings 12 which, being located just past the inner end 13 of the exhaust pipe 6, cause a satisfactory scavenging action on the gaseous contents of the exhaust pipe 6, thus sucking the exhaust gases from the exhaust pipe and effectively lowering the back pressure on the motor.

Under actual operating conditions, at a speed of fifty miles an hour, the device will cause an increase of from ten to fifteen percent in gasoline mileage. The operating economy effected is but one of the advantages of the device, as it also causes the motor to run cooler due to the reduced back pressure on the motor and tends to overcome the formation of carbon within the motor as the reduced back pressure enables the motor to more completely exhaust the waste gases.

It is obvious that a slot could be substituted for the plurality of jet like openings 12, as a slot would give about the same results in directing the air into the tubular body portion 1.

What I claim is:

1. In a device of the class described comprising a tubular body portion having a slot therein, and means for holding said body portion on an exhaust pipe, in combination with a funnel shaped body member attached to said tubular body portion, a slot in said funnel shaped body member to permit installation over a bracket on said exhaust pipe, a series of jets formed in said tubular body portion, the said jets adapted to inject air under pressure into the said body portion so as

to cause a rapid flow of the air and the contents of the said body portion from the device, an upturned inner end and flange adjacent to said jets adapted to determine the position of the device upon an exhaust pipe so that the jets become positioned just past the end of the said exhaust pipe substantially as described for the purpose set forth.

2. In an exhaust scavenging device comprising a tubular body portion having a slot therein, and a pair of clamps positioned on said tubular body portion adjacent to the said slot and adapted to clamp the said tubular body portion to an exhaust pipe, in combination with a funnel shaped body member attached to said tubular body portion, the said jets adapted to inject air under pressure into the said body portion so as to cause a rapid flow of the air and the contents of the said body portion from the device, a series of jets formed in said tubular body portion, means for positioning the device upon an exhaust pipe in such a manner that the inner end of the said exhaust pipe is adjacent to the said openings substantially as described for the purpose set forth.

3. In an exhaust scavening device comprising a tubular body portion having a slot therein, and a pair of clamps positioned on said tubular body portion adjacent to the said slot and adapted to clamp the said tubular body portion to an exhaust pipe, the combination of a deflector formed on one end of said tubular body portion and adapted to deflect exhaust gases downwardly therefrom, a funnel shaped body member attached to said tubular body portion, a series of jets formed in said tubular body portion, the said jets adapted to inject air under pressure into the said body portion so as to cause a rapid flow of the air and the contents of the said body portion from the device, an upturned inner end and flange adjacent to said jets adapted to determine the position of the device upon the exhaust pipe so that the jets become positioned just past the end of the said exhaust pipe substantially as described for the purpose set forth.

4. A new article of manufacture comprising a tube having a series of jets stamped therein, the said jets adapted to direct air into the said tube so as to cause a rapid movement of air through the said tube, an oval scoop shaped body member positioned on the said tube and adapted to direct air into the said jets for the purpose of causing a suction on the contents of an exhaust pipe upon which the device is positioned, a slot in said tube formed by stamping a section of the tube upwardly, a flange formed by said stamping for the purpose of locating the device upon the exhaust pipe, clamping means positioned on said tube adjacent to said slot for holding the device upon the exhaust pipe, substantially as described.

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