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J. H. KOWITT

2,114,783

SUPER-CHARGER

Filed Dec. 23, 1935

FIG. 1.

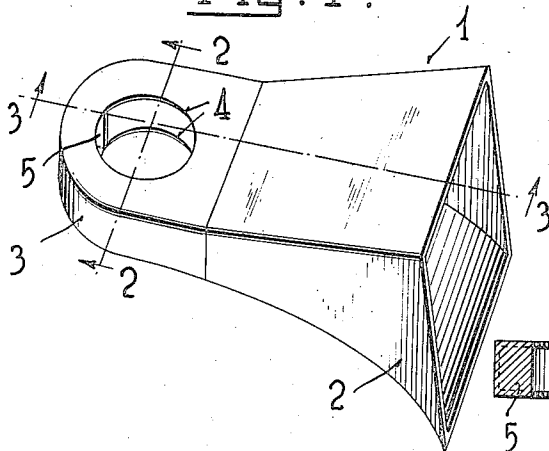


FIG. 2.

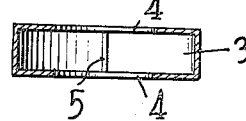


FIG. 3.

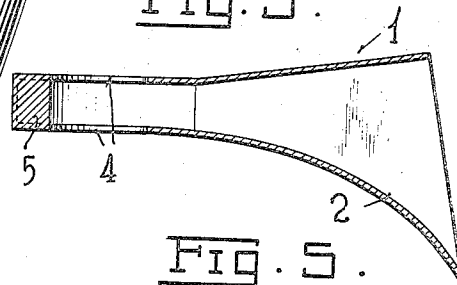


FIG. 4.

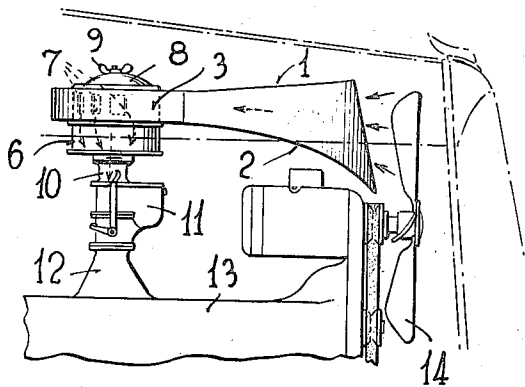


FIG. 5.

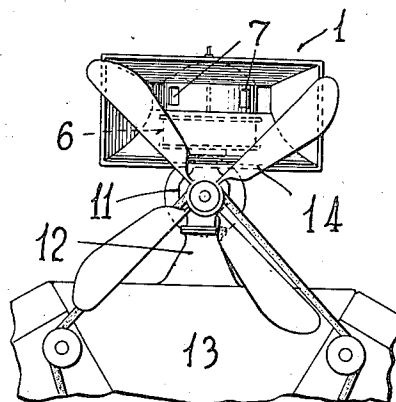
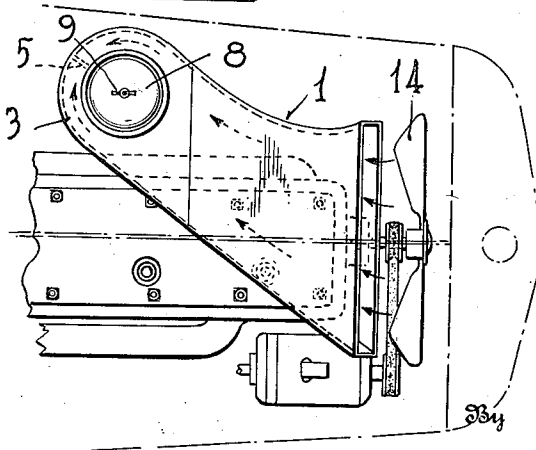


FIG. 6.



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## UNITED STATES PATENT OFFICE

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## SUPER-CHARGER

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3 Claims. (Cl. 123—119)

This invention relates to certain improvements in super-chargers for internal combustion engines and particularly to such a device capable of being manufactured on a quantity production basis and sold as an attachment or accessory for standard types of automobile motors, although it is of course to be understood that the invention is not necessarily limited to any specific motor installation.

The object of the invention is to provide a super-charger, simple in construction and design, and one that can be very cheaply manufactured and easily installed on standard types of motors without materially altering or disturbing the motor parts.

Another object is the provision of a device of the type indicated that will give efficient performance without requiring the addition of moving parts or other devices, the super-charger of the present design being mounted between the air intake of the carburetor and the motor cooling fan and so constructed as to collect a substantial portion of the air from the fan and direct the same into the air intake of the carburetor.

Super-chargers for gas engines are well known as is also the theory of their operation, and the increased efficiency obtained by their use, such as increased revolutions and horsepower and a decrease in gas consumption. Also with the use of super-chargers there is increased acceleration and speed and the maintaining of high speed as well as an increase in sustained horsepower. This is true of all efficient super-chargers, but the particular advantages of the present device are that all of these objects and results are obtained in the most simple manner by a simple device without the usual complicated and expensive additional working parts or devices usually found as necessary elements of the present day super-charging mechanisms and arrangements.

Generally stated the super-charging device herein described, comprises substantially one part, preferably made of sheet metal, having a forward outwardly flared portion preferably positioned closely adjacent the upper half of the engine cooling fan, said device converging at its rear portion providing an annular channel adapted to embrace the upper portion of the usual or conventional air filter found as standard equipment on most standard make of cars today, this annular channel being in communication with the interior of the air filter so that a substantial portion of the air from the engine fan is forced or driven under pressure into said device and into the said air filter and in turn into the mixing

chamber of the carburetor. It will of course be understood that the size of the fuel jets in standard carburetors will have to be reduced owing to the increased air pressure entering the carburetor so that there will not be an excessive use of gas and a loading up of the mixture, but to the contrary, more power, acceleration, and speed on a smaller consumption of gas.

The preferred embodiment of the invention is illustrated in the accompanying drawing, in which

Figure 1 is an enlarged perspective view of the device;

Figure 2 is a transverse vertical section on the line 2—2 of Figure 1;

Figure 3 is a longitudinal vertical section on the line 3—3 of Figure 1;

Figure 4 illustrates the manner of assembling the device in operative position;

Figure 5 is a front view of the assembled device; and

Figure 6 is a top plan view illustrating a modification.

Referring to the drawing in detail 1 indicates the improved device which is preferably made angular in cross section and of funnel shape having an enlarged forward end 2 and a flattened reduced rear end portion 3. The rear end portion 3 is provided with circular top and bottom openings 4 defining a substantially annular passage, which passage is divided at the rear of the device by a baffle or the like 5 for the purpose to be hereinafter described.

Referring to Figure 4 the reduced rear end portion of the device 1 is adapted to be positioned over and around an air filter 6 of the type in common use employed in connection with a well known V type of motor. This air filter 6 is of a cylindrical shape and around the upper outer periphery thereof is provided with air inlet openings 7, said openings being in communication with the annular pasageway of the device 1 defined by the openings 4 in the rear end of said device, as hereinbefore referred to. The device when in the position just described is secured and held in place by the removable cap 8 secured by a wing nut 9, which cap is of standard construction found on the particular type of air filter as illustrated. This air filter 6 is vertically disposed and connected to the air intake 10 of the carburetor 11 in communication with the fuel intake 12 of the motor 13.

This construction and arrangement of air filter and carburetor as shown is the construction and arrangement of parts employed in connec-

tion with a well known V type of motor, said motor being provided with an air cooling fan 14.

As illustrated in Figure 4 the device 1 when mounted in position is rigidly supported by the air filter 6 and the forward end 2 of said device is closely adjacent the fan 14, the size of the enlarged end of said device being sufficient to receive the major portion of the air directed rearwardly from the upper half portion of the fan.

The construction as just described has reference to a V type of motor wherein the carburetor and air filter are vertically disposed between the cylinders and directly behind the fan.

In Figure 6 a slightly modified construction is illustrated in which the rear portion of the device 1 is offset to one side of the center line of the motor and is used on motors wherein the carburetor and air filter are vertically arranged to one side of the motor block.

The operation and construction of the device 1 is substantially the same in both forms, the said device in Figure 6 extending across the top of the motor with its enlarged forward end closely adjacent the upper half portion of the fan and adapted to function in the same manner as the construction as illustrated in Figure 4.

The baffle 5 hereinbefore referred to is for the purpose of preventing a continuous circulation of air around the annular channel defined by the openings 4 so that the air directed into the device 1 will be directed into the openings 7 formed in the opposite sides of the air filter so that all of the air forced into the funnel shaped device 1 will be in turn directed into the air filter through the openings 7 and from thence into the air intake of the carburetor. Without the baffle 5 it will be apparent the air will be inclined to circulate around the outer walls of the air filter rather than directed into said air filter.

The device is not to be limited to the specific construction as shown for obviously other modifications are possible according to the particular design and type of motor, said other modifications being within the scope of the present invention so long as the said device is of unitary construction as illustrated and arranged substantially in the manner as shown with respect to the air intake of the carburetor and air cooling fan.

What I claim is:

1. A super-charger adapted to be attached to carburetors and air cleaners of carburetors, said super-charger comprising a funnel-shaped device having an enlarged end for collecting air and a reduced end for delivering the collected air, the walls of the reduced end being cut away to provide a passage therethrough, through which the collected air is delivered, the axis of said passage being substantially transverse to the longitudinal axis of said super-charger.

2. A super-charger comprising a funnel-shaped device for collecting air, said device having a reduced end for delivering the collected air, the walls of the reduced end thereof being cut through to provide a passage therethrough adapted to embrace the air inlet of an air cleaner, the axis of said passage being substantially transverse to the longitudinal axis of said super-charger.

3. A super-charger comprising a funnel-shaped device, the walls of the reduced end thereof being cut through to provide a passage therethrough adapted to embrace the air inlet of an air cleaner, the axis of said passage being substantially transverse to the longitudinal axis of said super-charger, and a baffle positioned in said reduced end adjacent said transverse passage to deflect air into said transverse passage.

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