June 5, 1923. 1,457,403

C. N. SNAGG

AUXILIARY AIR INLET DEVICE FOR INTERNAL COMBUSTION ENGINES

Filed Oct. 23, 1922

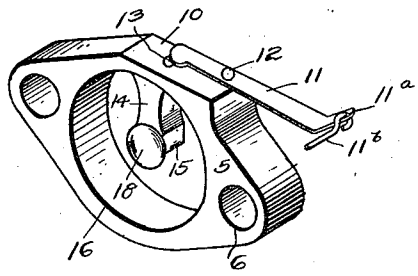


Fig. 1.

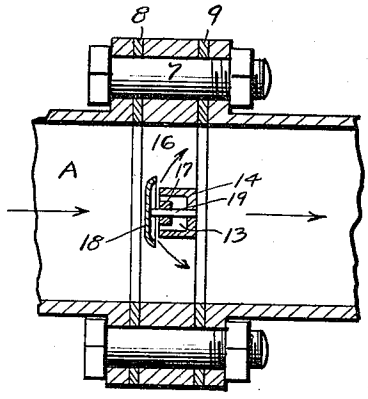


Fig. 2.

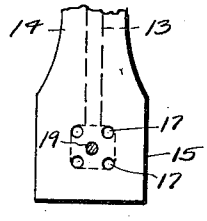


Fig. 3.

Inventor

Cornelius N. Snagg.

By Stephen N Campbell

Attorneys

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UNITED STATES PATENT OFFICE.

CORNELIUS N. SNAGG, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE SIMONSVILLE MANUFACTURING COMPANY, OF WATERBURY CONNECTICUT, A CORPORATION OF CONNECTICUT.

AUXILIARY AIR-INLET DEVICE FOR INTERNAL-COMBUSTION ENGINES.

Application filed October 23, 1922. Serial No. 596,498.

To all whom it may concern:

Be it known that I, CORNELIUS N. SNAGG, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Auxiliary Air-Inlet Devices for Internal-Combustion Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an auxiliary air inlet device for internal combustion engines and it has for its object to provide, as an article of manufacture, a simple and inexpensive element adapted to be placed between the carbureter and the intake manifold of the engine and serving to admit an auxiliary air supply to the column of carburetted air leaving the carbureter, and to deliver such auxiliary air supply in such manner as to cause an intimate and complete mixing of the same with the fuel supply.

Further objects and advantages of the invention will be set forth in the detailed description which follows.

In the accompanying drawing:

Fig. 1 is a perspective view of an auxiliary air inlet device constructed in accordance with the invention;

Fig. 2 is a horizontal sectional view therethrough showing the associated parts of the carbureter and intake manifold; and

Fig. 3 is a fragmentary sectional view illustrating the air delivery port hereinafter described.

Like numerals designate corresponding parts in all of the figures of the drawing.

The device of the present invention comprises a body 5 having openings 6 formed therethrough for the passage of the usual securing bolts 7 which ordinarily secure the flange of the carbureter to the flange of an intake manifold. In the installation of this device it is only necessary to slip the body 5 into place between the flange of the carbureter and the flange of the intake manifold, though I preferably insert gaskets 8 and 9 to prevent air leakage. The top of the body 5 is preferably flattened, as indicated at 10, and a valve lever or plate 11 is pivoted at 12 to the body 5 and the inner end of this lever is movable to and from closing position with respect to a port 13 which opens at the surface of the flattened portion 10 and extends thence downwardly through a neck 14, the head 15 of which lies substantially centrally of the bore 16 through which the charge passes in the direction of the arrow A, see Fig. 2, on its way from the carbureter to the intake manifold. A plurality of axial ports 17 communicate at their inner ends with the port 13 and terminate at the outer face of head 15. A baffle plate 18 of concavo convex formation is supported by its shank 19 from the head 15 and its concave side faces toward the ports 17. The extremity of the valve plate 11 is provided with a perforated end 11^a which may be connected by a rod or other operating device 11^b with the dash or instrument board of the automobile upon which the device is to be used. Thus the driver may, from the driver's seat, shift the valve plate 11 to admit more or less air to port 13 according to the conditions existing at any given time.

The rush of air from the carbureter to the intake manifold on the way to the engine cylinders creates a suction adjacent head 15 and this draws air forcibly through ports 13 and 17, the incoming air being deflected by the baffle plate 18 and directed laterally of the bore 16 so that it is caught and intimately mixed with all portions of the column of incoming charge. It will be observed that all of the foregoing advantages are achieved by the provision of an element which may be placed upon the market as an accessory and as an article of manufacture complete in itself and it may be slipped into operative position with very little work, in a short time and without the necessity of drilling any holes or otherwise making any radical change in the existing mechanism of the engine to which it is to be applied.

It is to be understood that the invention is not limited to the precise construction set forth but that it includes within its purview whatever changes fairly come within either the terms or the spirit of the appended claims.

Having described my invention what I claim is:

1. In combination with the intake manifold and carbureter of an internal combus-

tion engine, a device of the character described comprising a body portion having a bore formed therethrough alined with corresponding portions of the carbureter and intake manifold and having a portion projecting into said bore, there being a port leading from the exterior thereof through said projecting portion, an axial port communicating therewith and discharging longitudinally of the bore and a spaced concavo convex baffle plate carried by said portion and having its concave side disposed toward said port and its convex side disposed toward the carbureter.

2. A device of the character described comprising a body portion fitting between the carbureter and the intake manifold and having a bore formed therethrough which alines with the bore of the carbureter and the intake manifold and having an extension which terminates substantially centrally of said bore, said extension carrying a spaced concavo convex baffle plate there being a port formed through said extension and there being ports communicating with the first named port and discharging at that face of the extension and longitudinally toward the concave side of said baffle plate and valvular means for controlling the passage of air to the first named port.

3. A device of the character described comprising a body portion shaped to fit between a carbureter and its intake manifold and having a bore formed therethrough for alinement with the bore of the carbureter and intake manifold, said body portion comprising a neck extension which terminates substantially centrally of said bore there being a port formed through said extension from the outer face of the body portion and there being ports formed in the neck extension which extend longitudinally of the bore and discharge longitudinally at a face of said extension and a baffle plate supported from said extension and lying in spaced relation thereto which deflects said air laterally across said bore.

4. A device of the character described comprising a body portion adapted to fit between the carbureter and its intake manifold and having a bore formed therethrough adapted to aline with the bore of the carbureter and the intake manifold and having its upper portion flattened, an elongated valve plate pivoted to said body portion and having an end movable over said flattened portion there being a port formed in said body portion which opens at the surface of said flat part and the mouth of which is covered and uncovered by said valve plate, an extension carried by the body portion and projecting into said bore and terminating substantially centrally thereof through which extension said port extends, longitudinally extending ports formed in said extension and communicating with the first named port and discharging at a transverse face of said extension, a baffle plate of concavo convex formation having a shank which is secured in said extension and which holds the baffle plate in spaced relation to said extension, the air discharged from the last named ports being caught by said baffle plate and deflected laterally across the bore.

In testimony whereof I hereunto affix my signature.

CORNELIUS N. SNAGG.