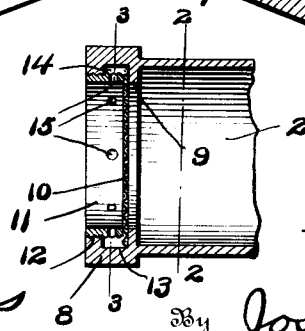
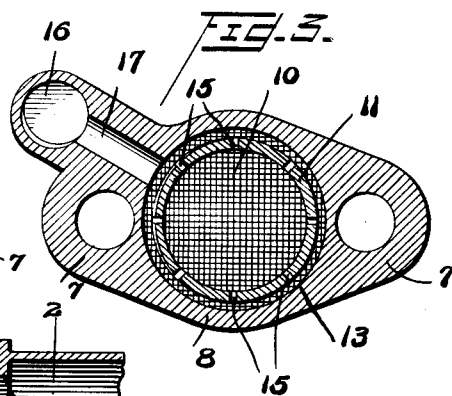
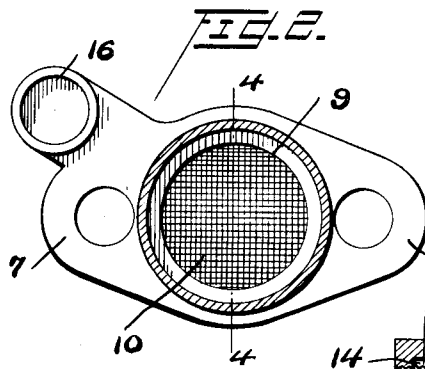
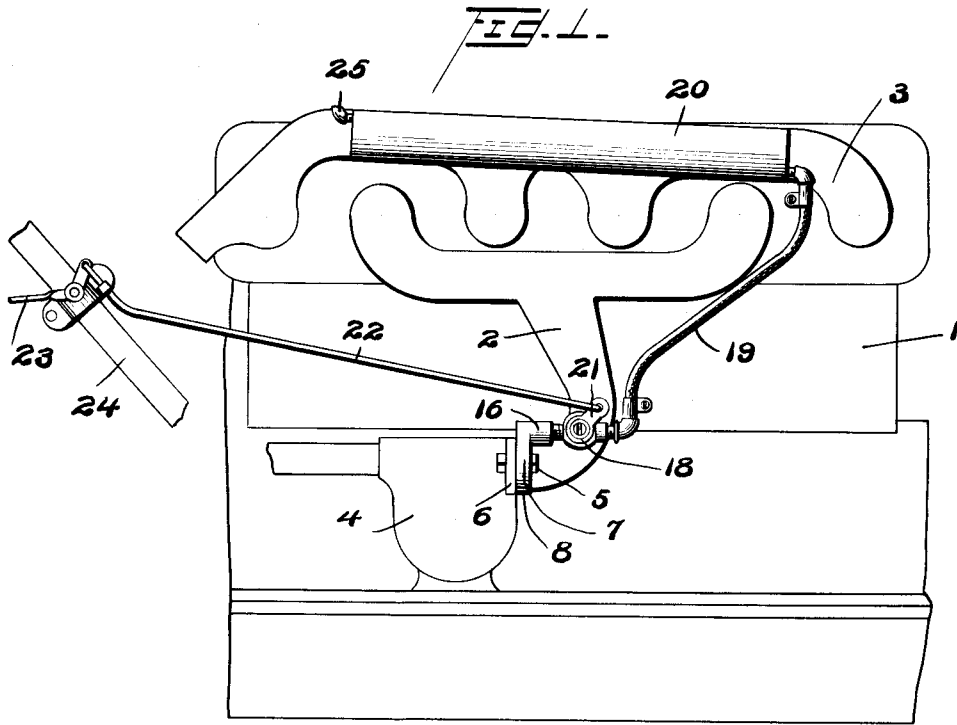


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 AUXILIARY AIR INLET DEVICE FOR INTERNAL COMBUSTION ENGINES.
 APPLICATION FILED MAR. 9, 1914.

1,102,053.

Patented June 30, 1914

2 SHEETS—SHEET 1.



Witnesses

Harold Starnes
C. R. Ziegler.

Inventor

Henry B. Johnson

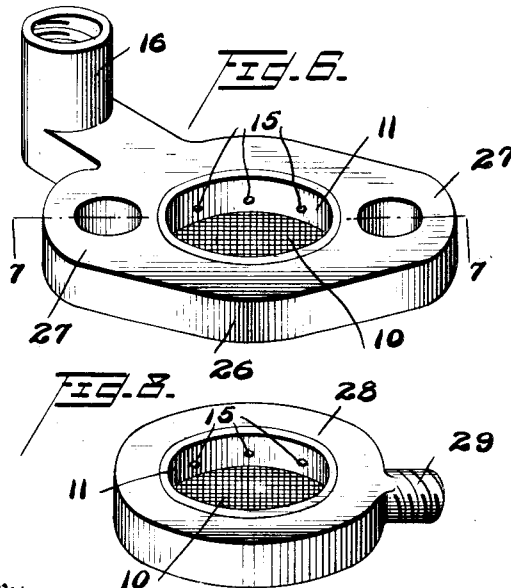
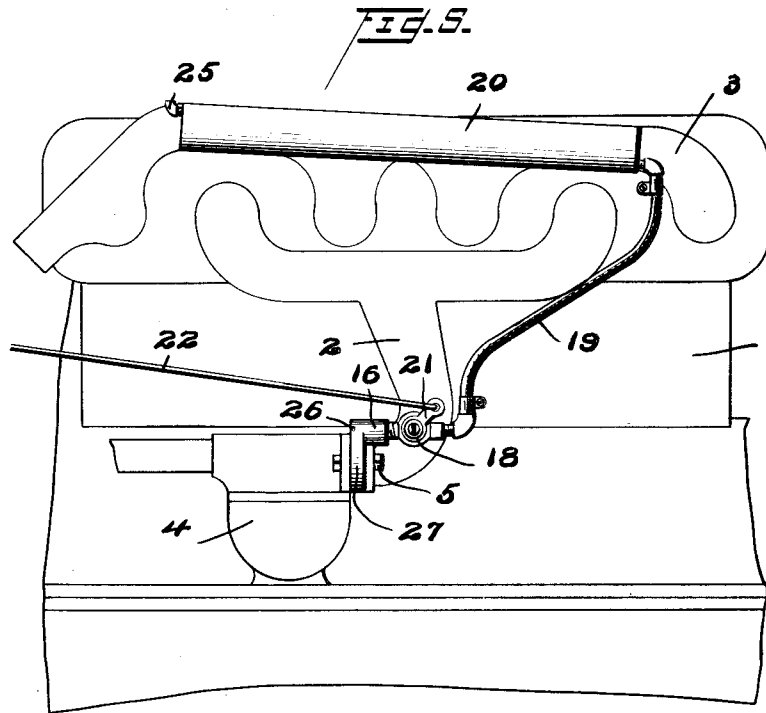
By Joshua R. H. Potte
 Attorney

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UNITED STATES PATENT OFFICE.

HENRY B. JOHNSON, OF PHILADELPHIA, PENNSYLVANIA.

AUXILIARY AIR-INLET DEVICE FOR INTERNAL-COMBUSTION ENGINES.

1,102,053.

Specification of Letters Patent.

Patented June 30, 1914.

Application filed March 9, 1914. Serial No. 823,604.

To all whom it may concern:

Be it known that I, HENRY B. JOHNSON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Auxiliary Air-Inlet Devices for Internal-Combustion Engines, of which the following is a specification.

My invention relates to improvements in auxiliary air inlet devices for internal combustion engines, the object of the invention being to provide improved means for supplying heated air to the gas in its passage from the carbureter to the engine and evenly distribute the air and prevent any globules from passing to the engine.

A further object is to provide improvements of this character which may be attached to any ordinary engine without injuring or altering the engine in the slightest.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings: Figure 1 is a view in elevation illustrating my improvements in connection with an internal combustion engine. Fig. 2 is a view in cross section through the manifold intake on the line 2—2 of Fig. 4. Fig. 3 is a view in transverse section on the line 3—3 of Fig. 4. Fig. 4 is a fragmentary view in longitudinal section on the line 4—4 of Fig. 2. Fig. 5 is a view in elevation illustrating my improvements as an attachment independent of the intake and clamped between the intake and the carbureter. Fig. 6 is a perspective view of the attachment shown in Fig. 5. Fig. 7 is a view in longitudinal section on the line 7—7 of Fig. 6, and Figs. 8 and 9 are views similar to Figs. 6 and 7 illustrating another modification.

1 represents an internal combustion engine having a manifold intake 2 and the manifold exhaust 3.

4 is an ordinary carbureter to which the manifold intake is secured by bolts 5 which

project through ears 6 on the carbureter, and laterally projecting extensions 7 on the intake.

The manifold intake comprises a casting having an integral enlargement 8 at its entrance end which enlargement is formed with an opening therethrough for the passage of gas. This opening is of three different diameters. The smallest diameter located a distance from the end of the intake constitutes an internal annular shoulder indicated by the reference numeral 9, against which a wire screen 10 is securely clamped by a ring 11.

The ring 11 is externally screw-threaded and engages internal screw-threads 12 in the opening 8. This screw-threaded portion 12 constitutes the next larger diameter of the opening, while the largest internal diameter of the opening is formed between the screw-threaded portion 12 and the shoulder 11 which is preferably formed by cutting an annular groove 13 to provide an annular air chamber 14 around the outside of ring 11, the latter having a circular series of perforations 15 through which the air escapes into the gas. The air is supplied to the chamber 14 through a passage 17 communicating with an internally screw-threaded inlet 16 formed on one of the extensions 7 of enlargement 8. The inlet 16 is connected to a valve 18, and the latter is connected by a flexible pipe connection 19 with an air heater 20. The valve 18 has an arm 21 which is connected by a rod 22 with a hand lever 23 on the steering post 24, so that the valve may be readily operated to control the admission of air. The air heater 20 forms the subject matter of a separate application executed on even date herewith, and hence need not be described in detail except to say that it serves to heat the air entering at the point 25, and before it enters the pipe 15 so that the air in the highly heated condition is supplied to the gas.

In Figs. 5, 6, and 7, I illustrate a modification in which the air distributor comprises an attachment which is clamped between the intake pipe and the carbureter by means of the bolts 5. In this form of my

invention, the attachment consists of a body or casting 26 having perforated extensions 27 for the reception of the bolts 5, and said body or casting formed with an opening therethrough with the exact same arrangement of parts as described in connection with the preferred form of my improvement, and hence I have given like parts the same reference numerals because they are the same.

In the modification illustrated in Fig. 8, the body portion 28 is circular, and the inlet 29 is at one edge and externally screw-threaded, but in other respects the construction is precisely the same as that above described.

In all forms of the invention, the opening or passage is of three distinct diameters to provide a flange or ledge against which the screen is clamped by the ring, and provide around the ring an annular air chamber which discharges the air through perforations in the ring adjacent the screen.

With all forms of my improvement, air in a highly heated condition commingling with the gas adjacent the screen insures a highly combustible mixture free from all globules of liquid, and by reason of the construction the air is supplied uniformly to the entire area of gas, so that a uniform mixture is had.

Various other slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An auxiliary air inlet for internal combustion engines, comprising a body having an opening therethrough, said body having an annular air chamber formed in the wall of said opening, said body having an air inlet communicating with the annular air chamber, an annular shoulder formed in the wall of said opening at one side of the air chamber and having a smaller diameter than the wall of the opening at the other side of the chamber, a screen located against the shoulder, and a ring fitting the said opening and clamping the screen against the shoulder, said screen having a circular series of perforations communicating with the chamber, substantially as described.

2. An auxiliary air inlet for internal combustion engines, comprising a body having an opening therethrough, said body having an annular air chamber formed in the wall of said opening, said body having an air inlet communicating with the annular air chamber, an annular shoulder formed in the

wall of said opening at one side of the air chamber and having a smaller diameter than the wall of the opening at the other side of the chamber, a screen located against the shoulder, and an externally screw-threaded ring engaging screw-threads in the said opening and clamping the screen against the shoulder, said ring having a circular series of perforations communicating with the chamber, substantially as described.

3. An auxiliary air inlet for internal combustion engines, comprising a body having an opening therethrough, said body having an annular air chamber formed in the wall of said opening, said body having an air inlet communicating with the annular air chamber, an annular shoulder formed in the wall of said opening at one side of the air chamber and having a smaller diameter than the wall of the opening at the other side of the chamber, a screen located against the shoulder, a ring fitting the said opening and clamping the screen against the shoulder, said screen having a circular series of perforations communicating with the chamber, said body adapted to be positioned between the carbureter and intake of an internal combustion engine, and having bolt receiving openings at opposite sides of said first-mentioned opening, substantially as described.

4. The combination with an intake pipe having an extended body portion at its intake end, said body having an opening therethrough, and at one side of the body having an internal annular flange forming a shoulder in the opening, said opening having its wall adjacent one side of the body screw-threaded, a screen located against the inner face of the flange, an externally screw-threaded ring engaging the threads in the opening and clamping the screen against the flange, said body in the wall of the opening having an annular groove back of the ring, the walls of said opening in the ring constituting an annular air chamber, said ring having perforations communicating with the chamber, and said body having an air inlet directing air into the chamber, substantially as described.

5. The combination with an intake pipe having an extended body portion at its intake end, said body having an opening therethrough, and at one side of the body having an internal annular flange forming a shoulder in the opening, said opening having its wall adjacent one side of the body screw-threaded, a screen located against the inner face of the flange, an externally screw-threaded ring engaging the threads in the opening and clamping the screen against the flange, said body in the wall of the opening having an annular groove back of the ring, the walls of said opening in the ring

constituting an annular air chamber, said
ring having perforations communicating
with the chamber, said body having a lat-
eral extension with a passage therethrough
5 communicating with the chamber, and an
air supply pipe communicating with said
passage, substantially as described.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

HENRY B. JOHNSON.

Witnesses:

M. E. DITTS,

CHAS. E. POTTS.