L. M. YORK.

AUXILIARY AIR INLET DEVICE.

APPLICATION FILED OCT. 6, 1917.

1,303,529. Patented May 13, 1919.

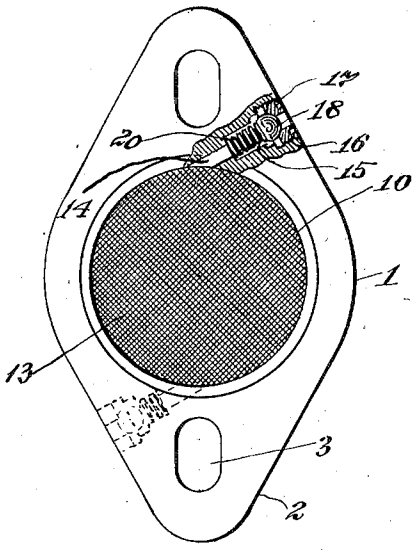


Fig. 1

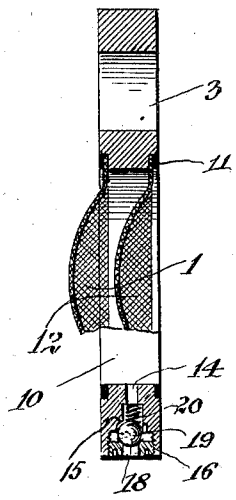


Fig. 2

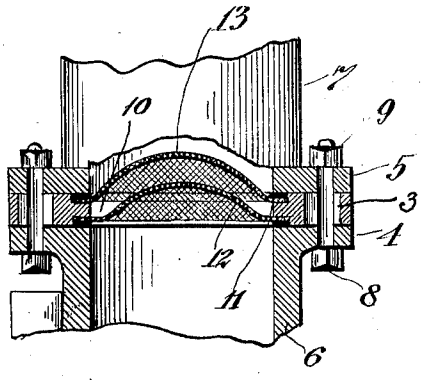


Fig. 3

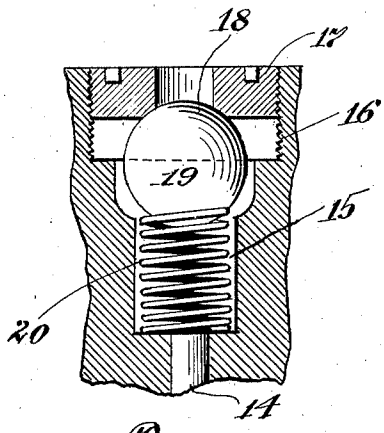


Fig. 4

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UNITED STATES PATENT OFFICE.

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AUXILIARY AIR-INLET DEVICE.

1,303,529. Specification of Letters Patent. Patented May 13, 1919.

Application filed October 6, 1917. Serial No. 195,005.

To all whom it may concern:

Be it known that I, LORNE M. YORK, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Auxiliary Air-Inlet Devices, 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 the intake manifolds of internal combustion engines, particularly those engines forming the power plants of automobiles. The object of my invention is to provide a novel device that may be interposed between the carbureter and the intake manifold of a combustion engine to automatically admit air to the manifold, to commingle with fuel passing therethrough, after the engine has reached a predetermined speed. The device includes spaced screens and air valves for admitting air between said screens, to commingle with fuel that is broken up by passing through said screens.

The device by which I attain the above and other objects will be hereinafter described and then claimed, and reference will now be had to the drawing, wherein—

Figure 1 is a plan of the device partly broken away, and partly in section;

Fig. 2 is a longitudinal sectional view of the device;

Fig. 3 is a similar view of the device as installed relative to a manifold and carbureter, and

Fig. 4 is an enlarged detail sectional view of an air valve adapted to form part of the device.

In the drawings, 1 denotes a comparatively flat member substantially circular in plan, said member having opposed side extensions 2 provided with slots 3. The member is adapted to be interposed between the flanges 4 and 5 of a carbureter 6 and a manifold 7, respectively. Bolts 8, nuts 9 and other fastening means are employed for connecting the flanges 4 and 5 with the member therebetween. The member 1 has a central circular opening 10 and the upper and lower faces of said member, at the marginal edges of the opening 10, are provided with seats 11 for the peripheral edges of immovable convexo-concave screens 12 and 13. These screens are made of finely woven wire and may be similar in mesh, or one screen of a finer mesh than the other. The screens 12 and 13 are retained upon the seat 11 by solder or other fastening means and said screens project away from the carbureter casing, that is with the convexity of the screen 12 extending upwardly in the member 1 and the convexity of the screen 13 extending upwardly in the manifold 7. The screens are adapted to break up or disintegrate fuel passing therethrough and the arrangement of the screens is such as to provide a space therebetween, as best shown in Figs. 2 and 3.

Communicating with the space between the screens 12 and 13 are air inlet ports 14 in the member 1 and these ports may be radially disposed relative to the opening 10, but are preferably tangentially disposed, as shown in Fig. 1, so as to obtain a good body of material, for the ports which have the outer ends thereof enlarged to provide valve chambers 15 and nut recesses 16. The nut recesses 16 have the walls thereof screw-threaded to receive apertured nuts or retaining rings 17 provided with valve seats 18 for ball or spherical valves 19 within the chambers 15. In the valve chambers 15 are coiled compression springs 20 and the expansive force of these springs holds the valves 19 normally seated, but permit of said valves receding to admit air to the ports 14 and the space between the screens 12 and 13.

By adjusting the nuts or retaining rings 17, the tension of the springs 20 may be decreased or increased, in the latter instance making it much harder for reduction of atmospheric pressure in the ports 14 to unseat the valves 19 and admit air to the space between the screens 12 and 13.

In practice, the tension of the springs 20 will be regulated to hold the valves 19 seated until an automobile attains a speed of five miles per hour, or approximately so, and when the speeed of the automobile and consequently the engine is increased, the suction or reduction of atmospheric pressure in the ports 14 is sufficient to unseat the valves 19 and admit air. The air will be drawn into the space between the screens 12 and 13 to commingle with the fuel passing therethrough, and in this manner the volume of the fuel is increased.

What I claim is:—

An auxiliary air inlet device comprising a member adapted to be interposed between

a carbureter and a manifold, superposed immovable convexo concave spaced screens having the edges thereof set in the upper and lower faces of said member, with the upper screen extending upwardly into the manifold and the lower screen extending through said member in proximity to the upper screen, and automatically actuated air intake valves tangentially disposed in said member and adapted to admit air at opposed points to the space between said screens.

In testimony hereof I affix my signature in the presence of two witnesses.

LORNE M. YORK.

Witnesses:

ANNA M. DORR,

CHAS. W. STAUFFIGER.