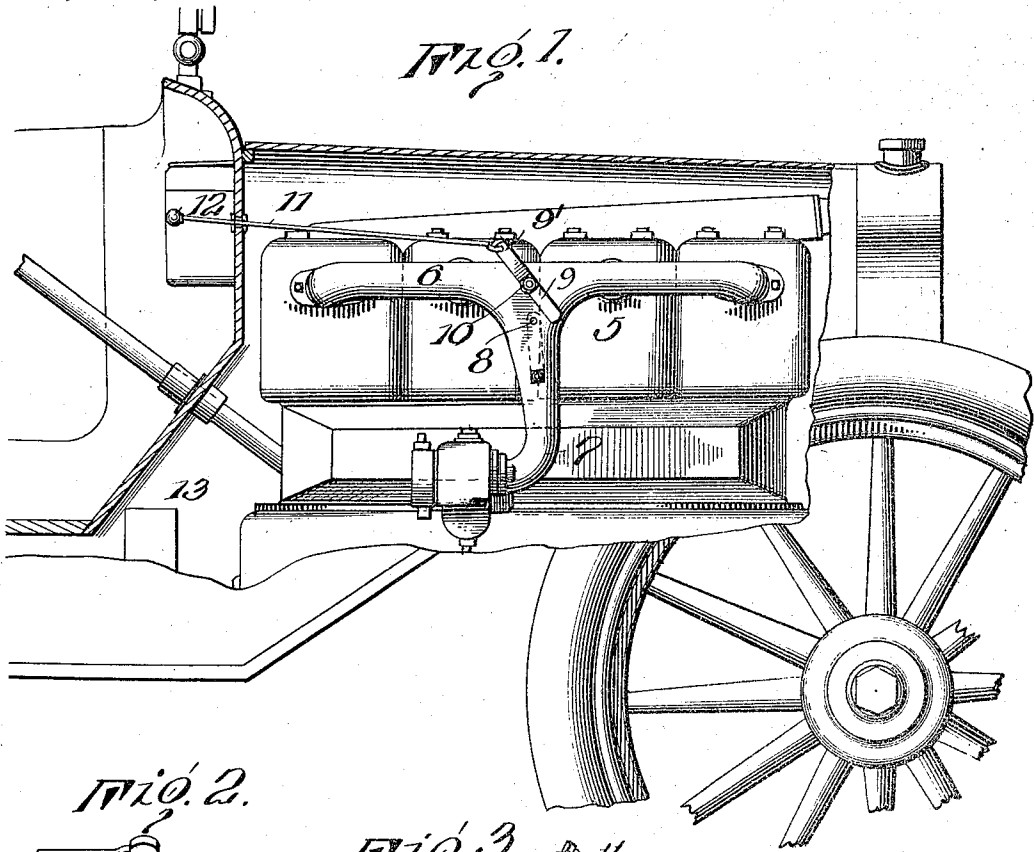
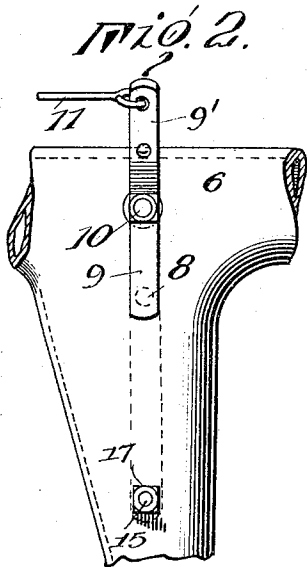
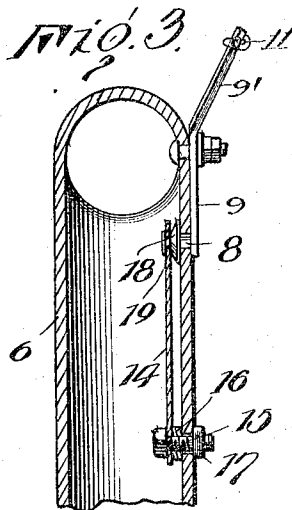
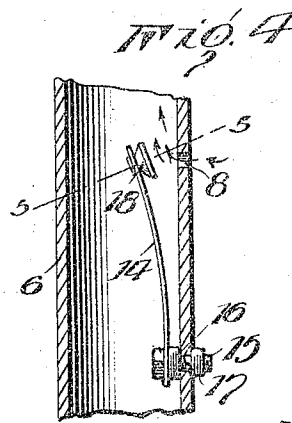


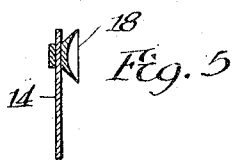
H. HELLER.
 AUXILIARY AIR VALVE.
 APPLICATION FILED JULY 27, 1916.

1,235,800.

Patented Aug. 7, 1917.



Witness
[Signature]



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UNITED STATES PATENT OFFICE.

HENRY HELLER, OF WINONA, MINNESOTA.

AUXILIARY AIR-VALVE.

1,235,800.

Specification of Letters Patent.

Patented Aug. 7, 1917.

Application filed July 27, 1916. Serial No. 111,738.

To all whom it may concern:

Be it known that I, HENRY HELLER, a citizen of the United States, residing at Winona, in the county of Winona and State of Minnesota, have invented certain new and useful Improvements in Auxiliary Air-Valves, of which the following is a specification.

This invention relates to an attachment for internal combustion engines and more particularly to that class of such devices adapted to operate as an auxiliary air intake to permit of the addition of a further amount of air to the combustible mixture after leaving the carbureter and has for its primary object the provision of a device of the character set forth which may be applied to the intake manifold and operated by the suction of the intake stroke of the engine, the operation being at all times under the control of the operator.

With the foregoing and other objects in view as will from time to time hereinafter appear this invention consists in the peculiar arrangement, location and combination of the various related elements of an auxiliary air valve as set forth in the following specification and more particularly pointed out in the appended claims.

Referring to the accompanying drawings forming a portion of this specification and illustrating the preferred embodiment thereof and in which the same reference characters indicate the same parts wherever used, Figure 1 is a side view of an engine provided with the device;

Fig. 2 is a detail showing the device in inoperative position;

Fig. 3 is a section through the manifold, showing the device in position;

Fig. 4 is a section through the intake manifold, showing the device operating under the influence of the intake stroke and

Fig. 5 is a detail section on line 5—5 of Fig. 4.

5 designates an internal combustion engine of any type having an intake manifold 6 communicating with the usual carbureter 7, and having an opening 8 in the wall thereof adapted to be closed by a plate 9 having an angular extension 9' and pivoted at 10 to the manifold and operated by a rod 11 terminating in a handle 12 located near the driver's seat 13.

Within the manifold 6 is a leaf spring 14 secured at its lower end by a bolt 15 passing

through the wall of the manifold, the spring 14 being spaced therefrom by a washer 16 and held in place by a nut 17.

The upper end of the spring 14 is free and is provided with a concave valve member 18 upon a shank 19, adapted to normally close the opening 8.

The operation of the device is as follows: Upon each intake stroke of the engine the suction within the manifold 6 will cause the spring 14 to assume the position shown in Fig. 4, thus permitting additional air to enter the manifold 6 through the opening 8 and to mix with the mixture from the carbureter 7.

At the cessation of the intake stroke the spring 14 will return to its normal position as shown in Fig. 3, the valve member 18 closing the aperture 8 until the following intake stroke occurs.

Should conditions be such that the additional air with the combustible mixture is not necessary the plate 9 can be moved to the position shown in Fig. 2, thus closing the aperture 8 and cutting off the supply of additional air until the same is again desired.

By the installation of the above device an efficient auxiliary valve is provided which will operate under all conditions.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made, without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

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

1. In a device of the character set forth, the combination with a manifold provided with an additional air opening, a leaf spring within the manifold, a valve on said spring adapted to normally close said opening, said valve having a concave face, a spacing block within said manifold, a bolt passing through one end of said spring, said spacing block and the wall of said manifold, means located exteriorly of said manifold adapted to close the opening in said manifold, said means comprising a pivoted member provided with an angular extension, and means carried by said angular extension

adapted to operate said pivoted member from a distance.

2. In a device of the character set forth, the combination with a manifold having an additional air opening, of a leaf spring within the manifold, a valve on said spring adapted to normally close the additional air opening but to open under intake suction through the manifold, means for attaching the spring to the manifold wall, means lo-

cated exteriorly of said manifold adapted to close the additional air opening, and means for operating said valve closing means.

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

HENRY HELLER.

Witnesses:

W. J. SMITH,
ELSIE SEIDLITZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."