A. A. JACKSON.

MEANS FOR INTRODUCING AUXILIARY AIR.

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1,340,228. **Patented May 18, 1920.**

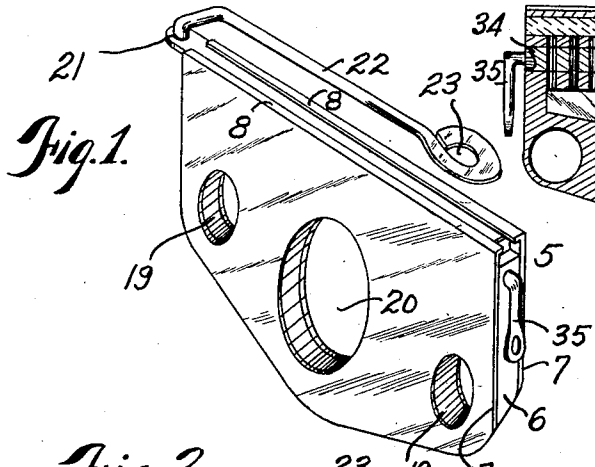


Fig. 1.

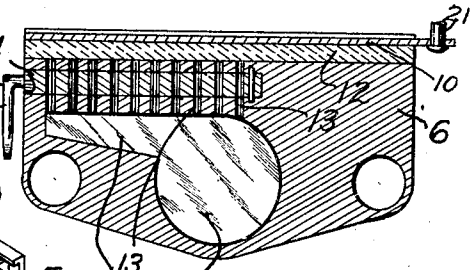


Fig. 6

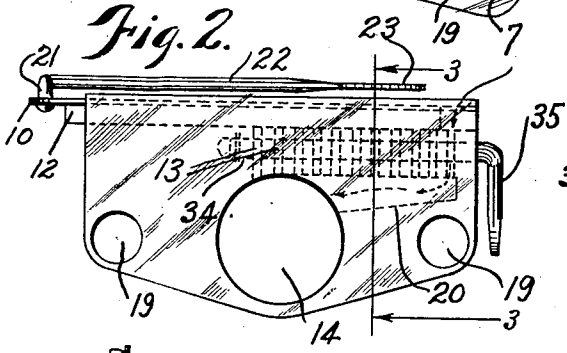


Fig. 2.

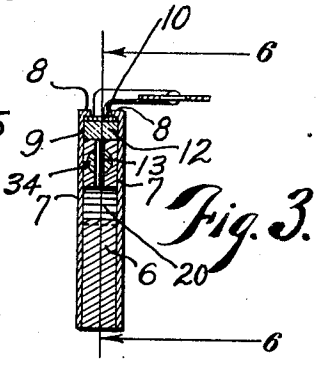


Fig. 3.

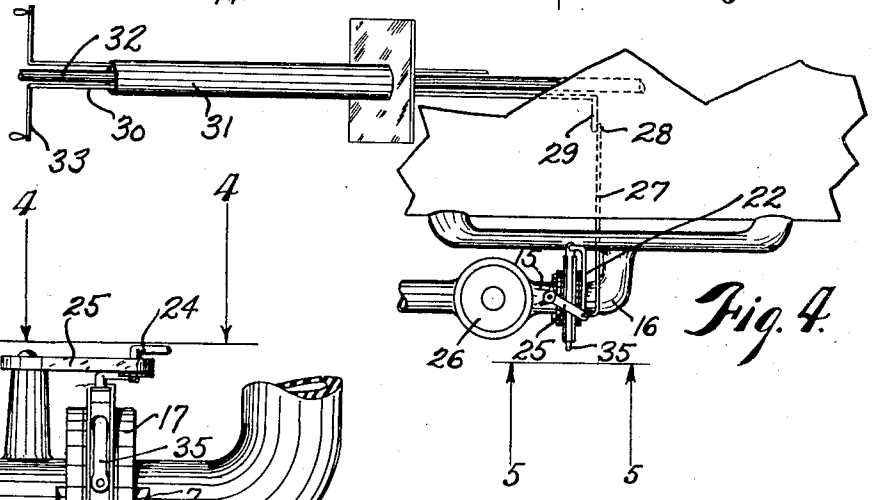


Fig. 4.

Fig. 5.

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MEANS FOR INTRODUCING AUXILIARY AIR.

1,340,228. Specification of Letters Patent. Patented May 18, 1920.

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To all whom it may concern:

Be it known that I, ALFRED A. JACKSON, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Means for Introducing Auxiliary Air; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in means for introducing auxiliary air to internal combustion engines, my object being to provide a simple, efficient and easily controlled device of this character. As illustrated in the drawing, this device is located in the conduit leading from the carbureter to the intake manifold of the engine and may be so connected that it is simultaneously actuated when the throttle valve is operated, though my improvement may be disconnected so that no auxiliary air will be introduced if desired.

My improvement generally speaking consists of a sort of block apertured to register with the pipe leading from the carbureter to the intake manifold of the engine, the block being perforated along its upper edge and provided with casing plates which extend beyond the perforated edge and from a guide groove for a slide valve normally closes the perforations against the entrance of air, but which when actuated for the purpose exposes one or more of the series of perforations to the air, whereby the explosive mixture is properly diluted, the perforations being in communication with a passage formed in the body of the block and leading to the pipe carrying the explosive mixture in which pipe the device is interposed, as heretofore explained.

Having briefly outlined my improvement, I will proceed to describe the same in detail, reference being made to the accompanying drawing, in which is illustrated an embodiment thereof. In this drawing:

Figure 1 is a perspective view of my improved device shown in detail.

Fig. 2 is a side elevation of the same.

Fig. 3 is a cross section taken on the line 3—3, Fig. 2 looking toward the left.

Fig. 4 is a top plan view showing a fragment of the engine with my improved device in place, the parts being shown on a larger scale.

This is a view looking in the direction of arrow 4, Fig. 5.

Fig. 5 is a side elevation of the carbureter, the conduit leading therefrom for carrying the explosive mixture to the intake manifold, showing my improvement in place and connected to be operated simultaneously with the opening of the throttle valve.

Fig. 6 is a vertical section taken on line 6—6 of Fig. 3.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate my improved device considered in its entirety and including a block 6 arranged between two outer plates 7, these plates projecting above the body of the block and having inturned flanges 8 forming a groove in which is located a slide valve 9 composed of a metal part 10 and a strip of packing material 12 which fits closely over a series of perforations 13 extending from the upper edge of the plate vertically downward and communicating with an opening 14 formed in the block and which is arranged to register with the openings in the pipe members 15 and 16 which are flanged, as shown at 17, and spaced to receive the device which is held in place by bolts 18 passed through registering perforations 19 formed in the device and similar perforations formed in the flanges 17 outside of the pipe through which the explosive mixture passes to the carbureter.

The two casing plates 7 are perforated to register with the perforations in the block, the perforations in the plates, however, being circular, whereby they close a passage 20 formed in the block 6 and communicating with the lower extremities of a number of the perforations 13 which in the absence of the passage 20 would not be in communication with the main opening 14 which registers with the openings in the pipe members 15 and 16.

The slide valve 9 of the device is pivotally connected at its outer extremity, as shown at 21, with a rod 22 whose opposite extremity 23 is connected with a pin 24 which also passes through a crank arm 25 which controls the throttle valve located in the pipe between the carbureter 26 and my improved device. The pin 24 is formed on one

extremity of a rod 27 whose opposite extremity is connected, as shown at 28 with a crank arm 29 formed on the lower end of a rod 30, which is shown in the drawing passing through the casing 31 of the steering post 32 and is provided at its upper extremity with a crank arm 33 which is accessible to the person in charge of the car for controlling the throttle valve for regulating the passage of the explosive mixture from the carbureter to the engine intake. The rod 22 is so arranged (see Fig. 4) that when the rod 30 is actuated to open or close the throttle valve, a corresponding movement is imparted to the slide valve of my improved device, whereby auxiliary atmospheric air is admitted to or cut off from the pipe leading from the carbureter to the engine intake. When desired, the pin 24 may be disconnected from the rod 22 and the latter swung out of position, whereby no auxiliary air will be admitted.

The admission of auxiliary air through the instrumentality of my improved device may be further regulated by means of a spindle valve 34 which is rotatable in a passage intersecting all of the perforations 13 and is, itself, provided with perforations which register with the perforations 13. The outer or exposed extremity of this valve spindle is provided with a crank arm 35 to facilitate hand manipulation, and whereby the perforations in the spindle valve may be thrown partly out of communication with the perforations 13, whereby the admission of auxiliary air to the engine intake may be regulated as desired when the slide valve is open. Hence, by the proper adjustment of the slide valve, one or more of the perforations 13 may be exposed to the atmosphere for the entrance of auxiliary air to the engine intake, but if it is desired to partly close the perforations 13 when their upper ends are exposed to the atmosphere by the proper adjustment of the slide valve, the spindle valve may be adjusted for this purpose.

Having thus described my invention, what I claim is:

1. Means for controlling the supply of auxiliary air for internal combustion engines comprising a block provided with an opening adapted to communicate with the passage through which the explosive mixture flows from the carbureter to the engine, said block having perforations communicating with said openings at their inner extremities, and two valves for controlling the passage of atmospheric air through said perforations, one being a slide valve covering said perforations and adapted to expose one or more of said perforations, as desired, and the other a rotatable spindle valve intersecting said perforations and itself provided with openings adapted to register with said perforations of the block and rotatably adjustable for regulating the passage of air.

2. Means for controlling the supply of auxiliary air for internal combustion engines comprising a block provided with an opening adapted to communicate with the passage through which the explosive mixture flows from the carbureter to the engine, said block having perforations communicating with said opening at their inner extremities and two valves for controlling the passage of atmospheric air through said perforations, one being a valve adapted to successively expose the outer extremities of said perforations, and the other a spindle valve intersecting said perforations and itself provided with openings adapted to register with said perforations of the block and adjustable for air regulating purposes.

3. Means for controlling the supply of auxiliary air to internal combustion engines, comprising a block provided with an opening communicating with the passage through which the explosive mixture flows to the engine, said block having a plurality of perforations communicating at their inner extremities with said opening and at their outer extremities with the atmosphere, a valve to expose one or more of said perforations to the atmosphere, as desired, and a rotatable spindle valve intersecting said perforations and having openings adapted to register therewith, said valve being rotatably adjustable to regulate the supply of air.

In testimony whereof I affix my signature.

ALFRED A. JACKSON.