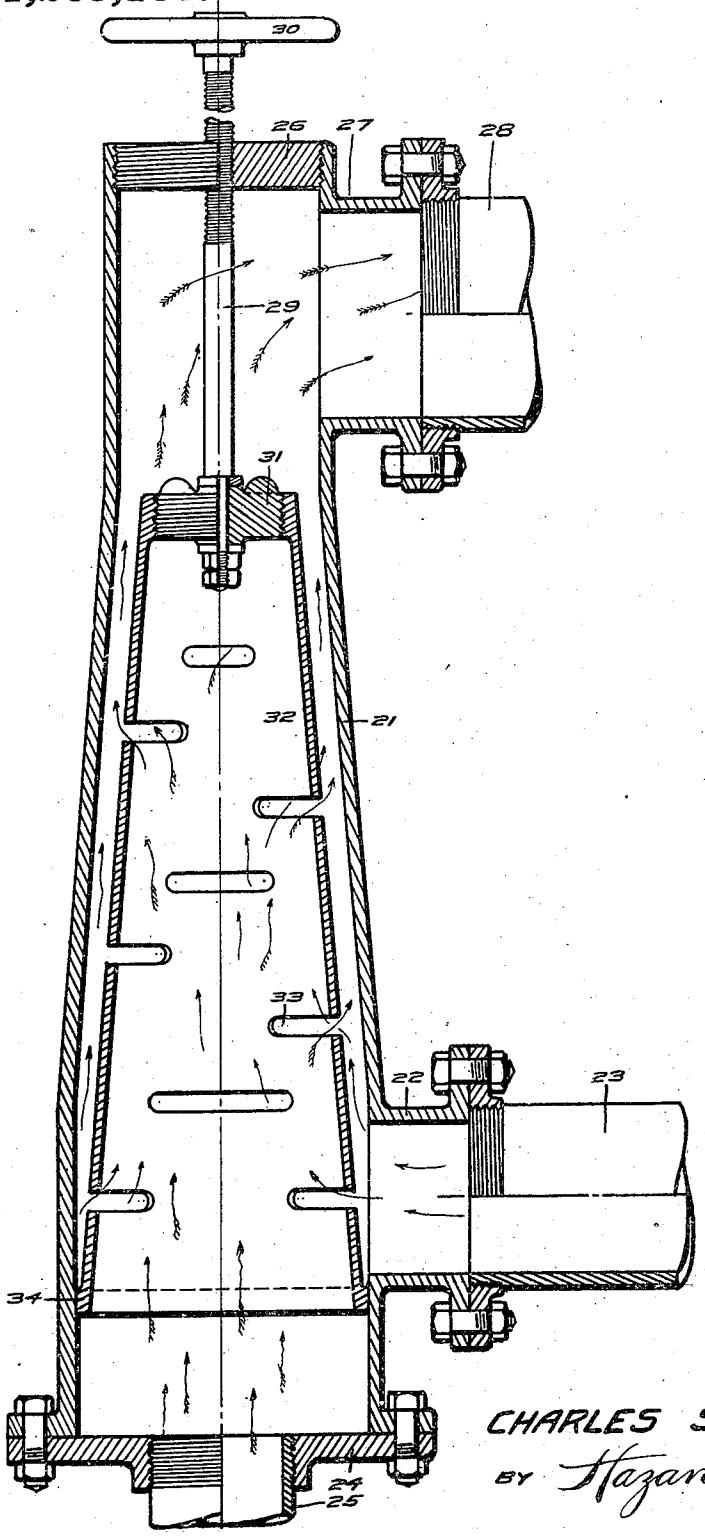
C. S. ALLEN.

FUEL AND AUXILIARY AIR HOMOGENIZER.

APPLICATION FILED AUG. 14, 1917.

1,263,188. Patented Apr. 16, 1918.



INVENTOR

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UNITED STATES PATENT OFFICE.

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FUEL AND AUXILIARY-AIR HOMOGENIZER.

1,263,188. Specification of Letters Patent. Patented Apr. 16, 1918.

Application filed August 14, 1917. Serial No. 186,200.

To all whom it may concern:

Be it known that I, CHARLES S. ALLEN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Fuel and Auxiliary-Air Homogenizers, of which the following is a specification.

My object is to make an improved auxiliary air mixer for internal combustion engines and my invention consists in the novel features herein shown, described and claimed.

The figure is a vertical central sectional detail of a homogenizer embodying the principles of my invention.

A tapered outer casing 21 is provided which is formed with an inlet opening 22 in connection with an auxiliary air conduit 23. The lower portion of the casing is cylindrical and is closed by a bolting plate 24 through which an inlet manifold pipe 25 extends. This pipe, as will be understood, is connected with the carbureter. The upper end of the casing is also cylindrical in diameter and is closed by a screw plug 26. An outlet extension 27 is formed at the side of this portion of the casing and is provided with a bolting flange to which the main manifold pipe 28 is secured.

Extending downwardly through a central threaded opening in the screw plug 26, is an adjusting screw 29. This screw is fitted at its upper end with a hand wheel 30 by which it may be turned. The lower end of the screw is rotatably secured within a plug 31 forming the upper end of the frustoconical mixing member 32. This member has slotted openings 33 formed through its walls at various points. A lip 34 is formed at the lower end of the mixing member and is slidably mounted within the lower cylindrical portion of the casing. The lip 34 fits closely in the casing for a considerable distance up and down and is normally located below the auxiliary air passage through the opening 22, and the screw-thread upon the adjusting screw 29 extends a considerable distance up and down through the plug 26, so that by manipulating the hand-wheel 30 the mixing member 32 may be moved up and down for a considerable distance and when the hand-wheel 30 is operated to raise the lip 34 above the lower part of the opening 22 a corresponding amount of air will pass through the opening 22 under the lip 34 and upwardly through the mixing member 32 and when the hand-wheel 30 is operated to move the lip 34 into position to reduce the size of the passage 22 the passage within the casing 21 outside of the mixing member 32 will also be reduced, thereby increasing the suction through the mixing member and decreasing the supply of auxiliary air.

In operation the homogenizer is mounted at a point between the intake manifold of an internal combustion engine and its carbureter. When the engine operates, carbureted fuel will be drawn in at the lower end of the casing and upwardly through the mixing member. Simultaneous with this operation an auxiliary supply of air will pass in through the pipe 23 and around the mixing member. The auxiliary air will circulate through the mixing member when the hand-wheel has been operated to raise the lip 34 above the lower part of the opening 22 and will also further unite with the carbureted mixture after it passes from the mixing member into the upper portion of the casing. Due to the manner in which the gaseous fuel is admitted to the homogenizer and subjected to the action of the auxiliary air, a finely divided gas will be produced and will pass through the top of the casing to the cylinders of the engine within which it is exploded. By regulating the mixing member within the casing, the volume of auxiliary air may be controlled in proportion to the gaseous fuel.

I claim:

A fuel and air homogenizer comprising a tapered cylindrical outer casing having a straight lower end the lower end being adapted to be connected to a carbureter and there being a side opening at the upper end adapted to be connected to a manifold and

a side opening at the lower end for auxiliary air, a foraminous frusto-conical mixing member mounted in the casing, a lip upon the lower end of the mixing member sliding in the straight lower end of the casing below and at the auxiliary air opening, and an adjusting screw swiveled in the upper end of the mixing member and extending through the head of the casing and adapted to move the mixing member up and down.

In testimony whereof I have signed my name to this specification.

CHARLES S. ALLEN.

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