

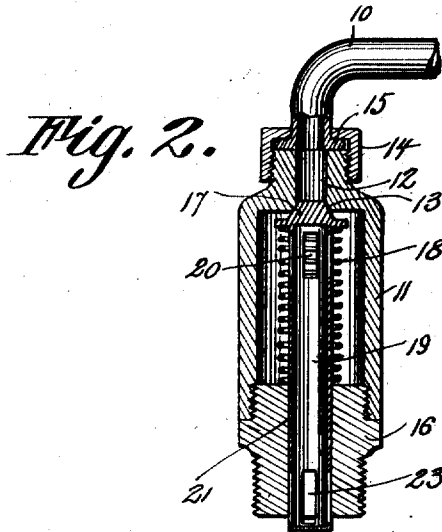
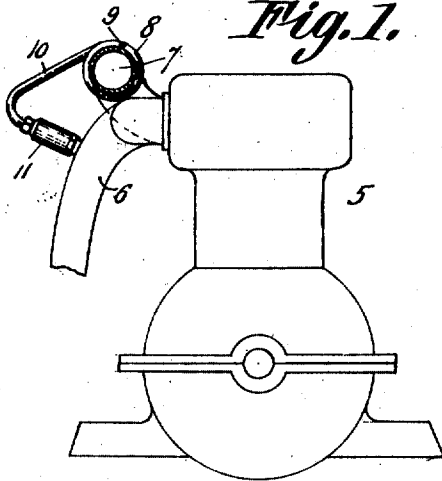
T. PEPLER.

VAPORIZING ATTACHMENT FOR INTERNAL COMBUSTION ENGINES.

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1,302,844.

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UNITED STATES PATENT OFFICE.

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VAPORIZING ATTACHMENT FOR INTERNAL-COMBUSTION ENGINES.

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Specification of Letters Patent.

Patented May 6, 1919.

Application filed July 7, 1916, Serial No. 108,018. Renewed September 12, 1918. Serial No. 253,803.

To all whom it may concern:

Be it known that I, THOMAS PEPLER, a citizen of the United States, residing at Iowa City, in the county of Johnson and State of Iowa, have invented new and useful Improvements in Vaporizing Attachments for Internal-Combustion Engines, of which the following is a specification.

This invention relates to appliances for internal combustion engines and more particularly to that type of such devices which have as their object to economize in the consumption of fuel.

It is one aim of the present invention to provide a device of the class above mentioned so constructed that in the operation thereof heated air will be admitted to the intake manifold for the purpose of more thoroughly vaporizing the gasoline or other fuel.

The invention has as a further object the provision of a device of the class mentioned including a valve which will be entirely automatic in its action for the purpose of controlling the admission of heated air to the intake manifold, and a pipe coil which is connected with the said valve and which is so assembled with the exhaust manifold as to provide for economical heating of the air which is to pass through the said valve.

In the accompanying drawings, Figure 1 is a side elevation of the device embodying the present invention in use.

Fig. 2 is a vertical sectional view through the valve of the device.

In the drawings, the numeral 5 indicates the engine in connection with which the device is to be employed, 6 being the intake manifold, and 7 the exhaust manifold. The device includes, as before stated, a valve for automatically controlling the admission of heated air to the intake manifold and a pipe coil which is assembled with the exhaust manifold for the purpose of heating the air, and in the drawings the numeral 8 indicates the said pipe which surrounds the exhaust manifold 7 and which has an intake end 9 and an extension 10 which leads to and communicates with the valve above mentioned.

The valve includes in its structure a casing which is indicated in general by the numeral 11, and which is interiorly reduced at its upper end to provide an inlet port 12 communicating at its lower end with a valve seat 13. The upper end of the casing is ex-

teriorly threaded and has fitted thereto a cap 14 securing in place the flanged end 15 of the extension 10 of the pipe coil, the said extension communicating with the port 12 as clearly shown in Fig. 2 of the drawings. The casing of the valve is interiorly threaded at its lower end to receive the upper threaded end of a plug 16, the lower end of which plug is fitted into the wall of the intake manifold 6 as shown in Fig. 1. The numeral 17 indicates the head of the valve which normally rests against the seat 13 and which is held in such position by means of a spring 18 which is fitted around the stem of the valve and which bears at its upper end against the under side of the valve head 17, and at its lower end against the upper end of the plug 16. The stem of the valve is indicated by the numeral 19, and the said stem is tubular and is provided directly beneath the head of the valve with side inlet ports 20 of which there may be any desired number. The lower end of the stem fits slidably through a bore 21 formed axially within the plug 16 and the lower end of the said stem is closed as indicated by the numeral 22. Immediately above its closed lower end, the stem is formed with side outlet ports 23 of which there may be any suitable number.

As above stated, the valve head 17 is normally held to the seat 13 by the spring 18. However, when suction is created within the intake manifold the valve will open to admit heated air from the coil 8 through the port 12, and the inlet ports 20 of the valve stem, the air passing through the valve stem and the outlet ports 23 into the said intake manifold where it acts to more completely vaporize the gasoline prior to admission to the engine cylinders. It will be understood of course that the volume of heated air admitted at each opening of the valve will be governed by the extent to which the outlet ports 23 are uncovered below the lower end of the plug 16.

I claim:

1. In an appliance of the class described, a casing having an air inlet, a valve seat within the casing, and a valve including a head normally held against the said seat, and a stem slidably fitted through the casing and projecting therefrom, the said stem being hollow and being provided adjacent to

the valve head with an inlet port and at its portion which projects from the casing with an outlet port, the end of the casing from which the stem projects having means for attachment to the part to which the valve delivers.

2. In an appliance of the class described, a casing having an air inlet, a valve seat within the casing, the casing having a port establishing communication between the air inlet and the valve seat, a valve having a head fitting the said seat, means yieldably holding the head of the valve to its seat, and a hollow stem for the valve extending from the head through the casing and projecting therefrom, said stem being provided adjacent to the head with an inlet port and at its portion which projects from the casing, with an outlet port, the end of the casing from which the stem projects having means

for attachment to the part to which the valve delivers.

3. In a device of the class described, a casing having an air inlet, the casing being provided interiorly with a valve seat and with a bore, and a valve arranged within the casing and having a head normally engaging the seat and provided with a tubular stem fitting slidably through the bore and projecting therefrom, the said stem being provided adjacent the head of the valve with an inlet port, and being also provided with an outlet port the effective area of which varies with the movement of the stem with relation to the end of the said bore, the end of the casing from which the stem projects having means for attachment to the part to which the valve delivers.

In testimony whereof I affix my signature.

THOMAS PEPLER.

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