UNITED STATES PATENT OFFICE.

OSCAR L. NEISLER, OF CHICAGO, ILLINOIS.

INTERNAL-COMBUSTION ENGINE.

1,414,149. Specification of Letters Patent. Patented Apr. 25, 1922.

Application filed October 16, 1914. Serial No. 866,896.

To all whom it may concern:

Be it known that I, OSCAR L. NEISLER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Internal-Combustion Engines, of which the following is a specification.

This invention relates to improvements in internal combustion engines, and has for its object to provide a new and improved device of this description. The invention is illustrated in the accompanying drawings wherein,

Figure 1, is a view showing a device embodying the invention,

Figure 2, is an enlarged sectional view showing one form of super-heater,

Figure 3, is a sectional view taken on line 3—3 of Figure 2,

Figure 4, is an enlarged sectional view showing the controlling valve at the end of the radiator drip pipe,

Figure 5, is an enlarged view showing one method of connecting to the radiator drip pipe,

Figure 6, is a sectional view taken on line 6—6 of Figure 5,

Figure 7, is a sectional view showing a modified form of super-heater,

Figure 8, is a sectional view taken on line 8—8 of Figure 7.

Like numerals refer to like parts throughout the several figures.

Referring now to the drawings herein I have shown my invention as applied to an automobile engine, 1, having a series of cylinders 1^a, a radiator, 2, through which the cooling water for the engine circulates. This radiator is provided with a drip pipe, 3, which may be an ordinary drip pipe. This drip pipe is provided at its lower end with a valve, 4, which is preferably arranged so as to slightly open when the engine is not running, and adapted to be closed by the partial vacuum produced, as hereinafter described, when the engine is running. A pipe, 5, is connected with the interior of the radiator at the top thereof so as to draw vapor therefrom and this pipe is connected either with the air intake, 6, of the carbureter, 7, or with the mixing chamber of said carbureter, so that when the engine is in operation vapor will be drawn from the radiator and discharged into the carbureter so as to mix with the explosive mixture and pass into the cylinders of the engine. The pipe, 5, may be directly connected with the radiator if desired. In the drawing I have shown a method of cheaply and easily connecting it with the drip pipe, 3, so as to make it easy to apply the device to the ordinary automobile. In this construction a hole, 8, is made in the drip pipe, 3, and the pipe 5, connected therewith in any desired manner; as herein shown in order to cheapen or facilitate this connection when used with the ordinary automobile, I have provided a split connecting piece consisting of two parts, 9 and 10, having the flanges, 11. The part 10 is connected with the pipe, 5, see Figure 6, and the two parts, 9 and 10, are then placed around the pipe, 3, and bolted together by the bolts, 12. If the space between the pipe, 3, and the radiator is small, the nuts, 13, may be placed in position between the radiator and the flanges, 11, and the bolts 12, screwed therein by means of a screw driver, wrench, or the like. I have preferred to provide some means for heating or superheating the vapor and other material passing through the pipe 5. Any suitable means for this purpose may be used. As herein shown, I provide what I have termed a super-heater, 14. This super-heater consists of a body portion, 15, which projects into the exhaust pipe or manifold 16, of the engine so as to heat by the hot gases from the cylinders. This super-heater is preferably so positioned as to come into direct contact with the flame in the exhaust pipe. The pipe, 5, is connected with the body portion 15, so that the vapor or other material passing therethrough passes through the superheater. In Figure 2 I have shown one form of super-heater provided with a double connection 17, to be carried in the pipe 5. In this construction the vapor passes in through the opening 18, passes down through the chamber 19, then passes across to the chamber 20, then passes upwardly to the opening 21, and thence across to the chamber 22, and then down again and across at the bottom to the chamber 23, and then up through the chamber 23, and out at 24 into the remaining portion of the pipe 5. The body portion 15, may be provided with the wings 25, to give it more heating surface.

It will be seen that when the gas passes through the super-heater it is spread out into a comparatively thin layer and brought near the heated surfaces of the super-heater,

O. L. NEISLER.

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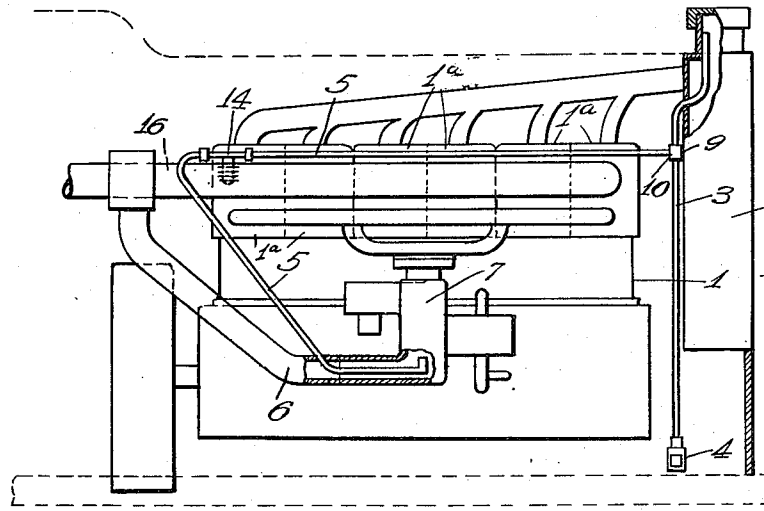


Fig. 1

Fig. 2.

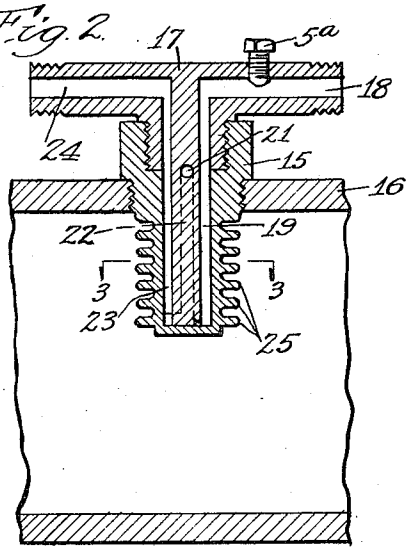


Fig. 4

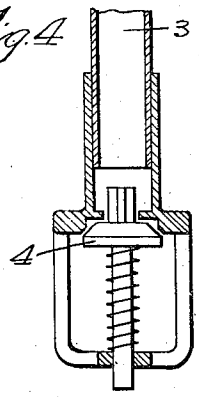


Fig. 6

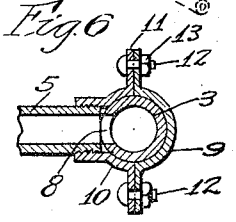


Fig. 5

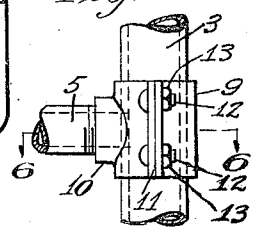


Fig. 3.

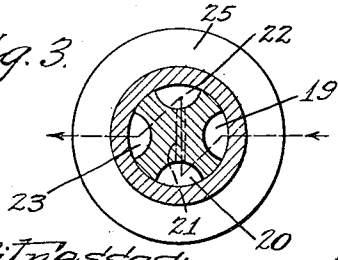
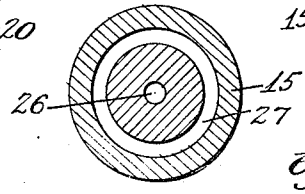


Fig. 8.



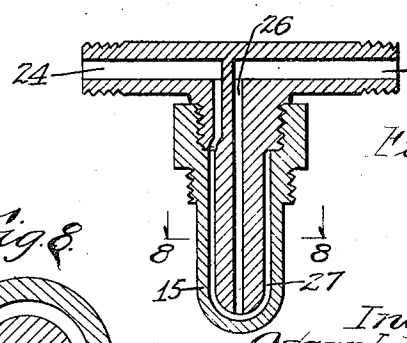


Fig. 7

Witnesses:

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