F. W. LAPHAM.

CARBURETING SCREEN FOR INTAKE VALVES.

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1,340,062. **Patented May 11, 1920.**

Fig. 1.

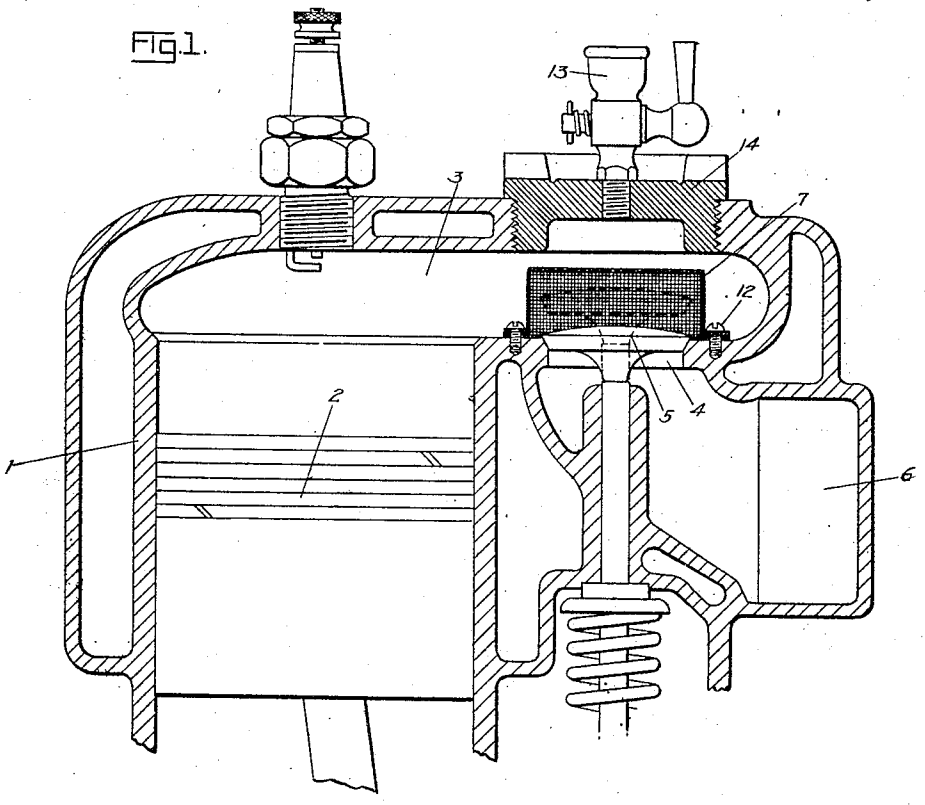


Fig. 2

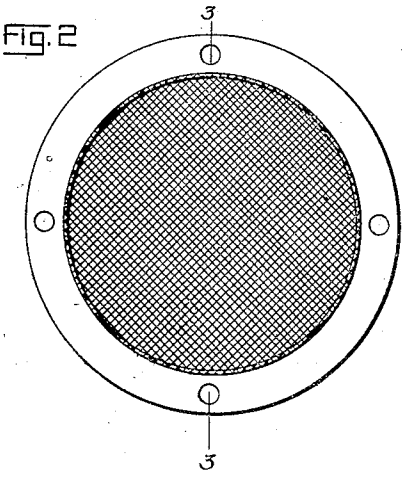
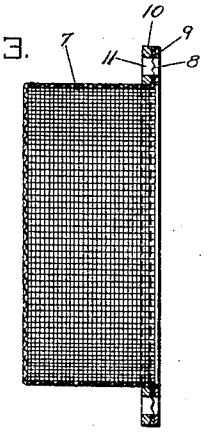


Fig. 3.



WITNESSES

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CARBURETING-SCREEN FOR INTAKE-VALVES.

1,340,062. Specification of Letters Patent. Patented May 11, 1920.

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To all whom it may concern:

Be it known that I, FRANK W. LAPHAM, a citizen of the United States, and a resident of Lake Beulah, in the county of Walworth and State of Wisconsin, have invented a new and Improved Carbureting-Screen for Intake-Valves, of which the following is a full, clear, and exact description.

This invention relates to screens for intake valves of internal combustion engines and has for an object the provision of an improved structure which is positioned to break up and carburet to a desirable extent incoming fuel.

Another object of the invention is to provide a hood or covering member for the intake valve of an internal combustion engine, the hood being formed of wire mesh and positioned to completely surround the inlet opening so that the fuel must pass therethrough.

A further object of the invention is to provide a hood and means for clamping the same in place over the intake valve of an internal combustion engine, the hood being made of wire mesh having wire mesh sides and a wire mesh top, the structure being such that it will become heated during the use of the engine and will thereby distribute the heat to the incoming fuel so as to gasify the fuel even though the same may be of the more or less heavier kind, as for instance kerosene.

In the accompanying drawing:

Figure 1 is a fragmentary vertical sectional view through an internal combustion engine with an embodiment of the invention shown applied thereto.

Fig. 2 is a top plan view of the carbureting screen shown in Fig. 1, the same being on an enlarged scale.

Fig. 3 is a sectional view through Fig. 2 on line 3—3.

Referring to the accompanying drawing by numerals, 1 indicates the cylinder of an ordinary internal combustion engine, said cylinder accommodating a piston 2. The cylinde is provided with the usual compression chamber 3 into which opens the inlet opening 4 provided with the usual inlet valve 5 operated in any desired or usual manner. A suitable intake manifold 6 is in communication with the inlet 4 so that an explosive mixture is supplied in the usual manner to the cylinder when the engine is in operation. Where gasolene or other rather highly volatile oil is used the carburation is sufficiently perfect after leaving the carbureter to produce the desired results, however, when the engine is cold or when a heavier oil is used, as for instance kerosene, the carburation is not so complete, and consequently the engine will not act in such an efficient manner. To cause the engine to act in a highly efficient manner with not only gasolene, but kerosene or other similar oil, the carbureting screen cap 7 is provided which is fitted over the inlet 4 as well as the valve 5 whereby the explosive mixture must pass through the mesh of this cap before it can enter the chamber 3 of the cylinder 1. This cap may be made of any desired metal, as for instance copper, and of any desired mesh, preferably a fine mesh. The cap may be open at the top, though it is preferably formed with a top structure integral with the sides, whereby it is impossible for any part of the explosive mixture to pass in otherwise than through the cap. The bottom of the cap is provided with a flange 8 clamped between the rings 9 and 10, said rings being metal or other material as preferred. These rings are provided with registering apertures 11 for receiving screws 12 which rigidly secure the cap in place as shown in Fig. 1. When the explosive mixture passes into the cap it will strike the mesh and not only become finely divided, but will be completely carbureted, which carburation is helped greatly by the fact that the cap becomes heated to a certain extent and consequently the small streams of combustible mixture passing through the mesh will be individually heated and consequently raised to such a temperature as to unite mechanically with the air and to thereby produce a better explosive gas for the engine. In addition to carbureting in a better manner the incoming combustible matter the cap acts as a carbureting element for the priming cup 13 which is arranged either directly in the casing 1 or in a suitable fitting 14. As the priming fluid passes from the cup into the chamber 3 it will strike the cap 7 and be finely divided, and in this way become more or less gasified so as to become ignited at the proper time.

What I claim is:

1. The combination with an internal combustion engine having an intake port set off to one side, and a priming cup in line with

the intake port, of a wire mesh cap fitting over said intake port and extending toward the priming cup, and means for rigidly clamping the wire mesh cap in place so that all of the incoming explosive mixture passing through said port must pass through said cap, said cup being arranged so that most of the priming fluid from the priming cup will pass through the cap and become finely divided thereby.

2. The combination with an internal combustion engine having an intake port, of a foraminous member extending above and across the intake port and adapted to be heated by the gases from the cylinder of the engine, and a priming device connected with the cylinder and arranged to discharge the liquid fuel upon the foraminous member.

3. The combination with an internal combustion engine having an intake port, of a cap arranged above and surrounding the intake port and formed of wire gauze, and a priming cup arranged above the cap and adapted to feed the fuel directly upon the cap.

FRANK W. LAPHAM.