F. CONWAY.

COMBINED PRIMER AND HUMIDIFIER FOR AUTOMOBILE ENGINES.

APPLICATION FILED MAY 13, 1920.

1,374,436.

Patented Apr. 12, 1921.

FIG. 1

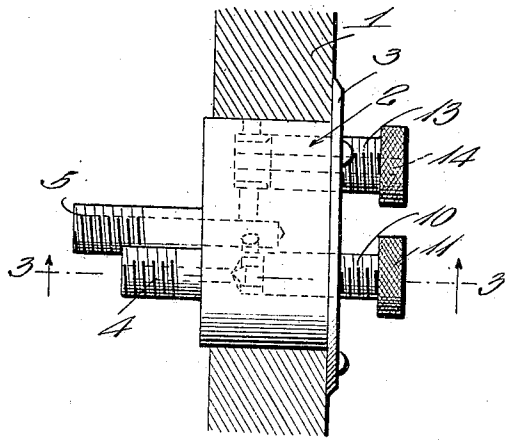


FIG. 2

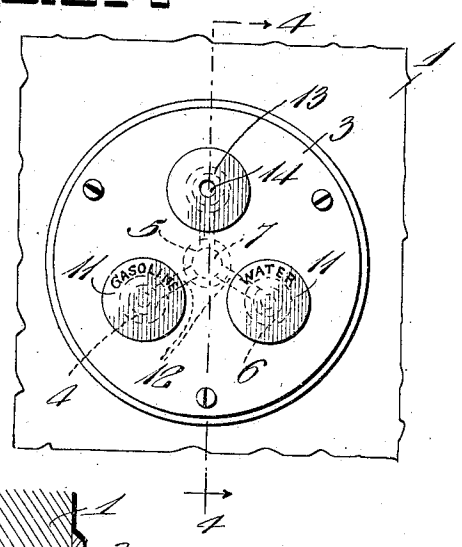


FIG. 3

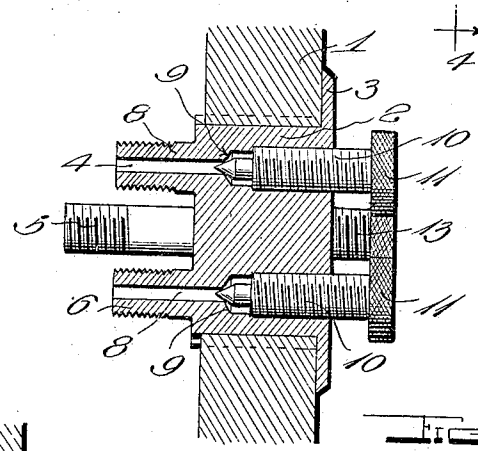


FIG. 4

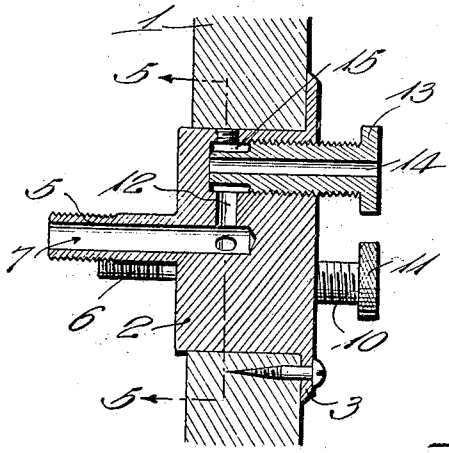
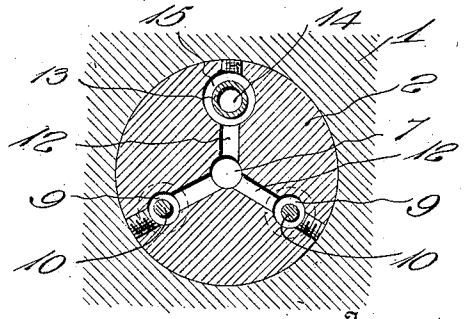


FIG. 5



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COMBINED PRIMER AND HUMIDIFIER FOR AUTOMOBILE-ENGINES.

1,374,436. Specification of Letters Patent. Patented Apr. 12, 1921.

Application filed May 13, 1920. Serial No. 381,139.

To all whom it may concern:

Be it known that I, FRANK CONWAY, a citizen of the United States, residing in the city of Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Combined Primers and Humidifiers for Automobile-Engines; 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.

This invention relates to a device which may be properly termed a combined primer and humidifier, it being adapted for attachment to the instrument-board of an automobile and being of such construction that it serves to supply air, water, gas, or any other fluids to the intake manifold of the engine, either separately or together as may be desired.

A further object of the invention is to provide a device of the above mentioned class which is simple, and novel, one which may be readily and easily installed on the instrument-board by inexperienced persons, one in which the construction is such that it will greatly add to the efficiency of the motor, one which will save gas and which will serve the function of a primer and an auxiliary air supply valve, which type of device will be found extremely useful and advantageous in cold weather.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of the specification and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is an end elevation of a device constructed in accordance with my invention, the same being shown in position on an instrument-board.

Fig. 2 is a front elevation thereof.

Figs. 3, 4, and 5 are sectional views taken on the planes of the lines 3—3, 4—4, and 5—5 of Figs. 1, 2, and 4 respectively.

In carrying out my invention, I employ a body member which is designed to be attached to the instrument-board of an automobile. This body member is provided with a single outlet and a plurality of inlets which communicate with the outlet. Each of the inlets is equipped with a valve and is adapted to supply a different kind of fluid to the outlet. With this construction the operator may supply air and water at the same time, or he may supply each of the different kinds of fuel separately. The outlet referred to is in the form of a short pipe, and it is adapted to be connected with a conduit which in turn is connected to the intake manifold of the engine.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 1 designates the instrument-board of an automobile, this board being provided with a circular opening into which the cylindrical portion of my improved device is disposed. My improved device comprises a cylindrical body member 2 which is provided with a circular flange 3 by means of which it is secured upon the instrument-board 1. Extending from one side of the body member is a plurality of externally screw-threaded extensions 4, 5, and 6. Each extension is provided with a longitudinal bore. The bore 7 of the extension 5 is of a greater diameter than the bores of the other extensions and it terminates at the center of the body 2 as shown more clearly in Fig. 4. On the other hand, the bores 8 of the extensions 4 and 6 extend entirely through the body and each bore is enlarged at a point intermediate its ends to provide a shoulder 9 which in turn forms a valve seat. The enlarged portion of the bores 8, is screw-threaded to permit the screw-threads of the needle valves 10 to have engagement therewith. Each of the valves 10 is provided with a knurled head 11 by means of which the valve is rotated. If desired, the outer face of the heads 10 may be labeled to indicate the kind of fuel that each valve controls. In other words, it is desirable to inscribe the word "water" on one of the heads, while on the other head the word "gasolene" will appear. In this way the operator may know which valve to operate to supply a particular kind of fuel to the intake manifold. At this point it may be stated that the extensions 4 and 6 are adapted to be connected to supply lines. For instance, the extension 4 will be connected with a pipe which leads to the gasolene tank, while the extension 6 will be connected with a pipe leading to a water supply tank arranged at a suitable place in

the machine. As has been already indicated, the extension 5 connects with a conduit which leads to the intake manifold of the engine. The bores 8 communicate with the bore 7 by means of radial passages 12.

The body member in addition to being equipped with the already described parts, is also provided with a third inlet opening 15, which is arranged in parallelism with the other inlet openings and opens through a side of the body opposite to that through which the outlet 7 opens. This inlet likewise communicates with the outlet by means of a radial passage 12 and it is likewise provided with internal screw-threads with which the screw-threads of the valve 13 coact. The valve 13 is novel, and is of a different construction from the already described valves. Examination thereof will disclose the fact that this valve is provided with a longitudinal passage 14 which extends therethrough, and this passage serves to permit air to be supplied to the intake manifold. It will be seen that by properly rotating the valve 13, the inner end thereof will abut the closed inner end of the inlet opening 15, and in so doing the passage 14 will be closed and the air shut off. Due to the peculiar construction of this valve, it will be seen that a small quantity of a proper chemical such as ether or some other explosive fluid, may be injected through the opening 14, and sucked into the intake manifold, thus, an effective priming device for the engine is obtained with this construction. While I have referred to this valve as being a priming valve, I wish it to be understood that as a rule, it only serves the function of an additional air supply valve, and the valve 10 which is labeled "gas," serves the function of a primer. It being already understood how the different kinds of fuel are supplied to the body and then to the outlet, it will be seen that in order to use the device it is only necessary to open the desired valve. After the valve is opened the suction of the engine will draw the fluid through the inlet and out of the outlet into the intake manifold. If desired the air valve 13 may be left open constantly to supply a small quantity of air to the intake manifold. The construction of valve which I employ is such that the amount of air supplied to the intake may be effectively regulated.

From the foregoing description it will be seen that I have perfected an extremely useful device which may be used to an advantage as a primer in cold weather, one which serves as an effective auxiliary air valve and one which serves as a humidifier, thus preventing the formation of carbon and causing the engine to run extremely smooth. The device is extremely simple and effective, and is inexpensive to both the manufacturer and the user.

A careful consideration of the foregoing description taken in connection with the accompanying drawings will enable persons skilled in the art to which this invention appertains, to obtain a thorough understanding of the construction, advantages, and operation thereof, therefore, further description is deemed unnecessary.

It is to be understood that the form of my invention herein shown and described is to be taken as a preferred form thereof, and that various minor changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

I claim:

A device of the class described comprising a substantially cylindrical body provided with an attaching flange adapted for connection to an automobile dash-board; a plurality of screw-threaded bored extensions projecting from the outer face of the body, a central extension serving as an outlet and having its bore extending into and terminating at the center of the body, the bores of the remaining extensions extending entirely through the body and being increased in diameter at points intermediate their ends, forming shoulders which constitute valve seats, the enlarged portions of said last named bores being screw-threaded; screw-valves threaded into said bores and coöperating with the seats; said body being also provided with another screw-threaded bore extending from its center and opening through its inner face, and with a plurality of radial passages connecting all of the bores with said outlet bore; and a tubular screw-threaded stem extending into the last named bore, having its inner end reduced in diameter and engaging the closed inner end of this bore.

In testimony whereof I have hereunto set my hand.

FRANK CONWAY