April 20, 1926. 1,581,761

W. W. MUIR

HOT AIR HEATER FOR AUTOMOBILES

Filed Feb. 15, 1922 2 Sheets-Sheet 1

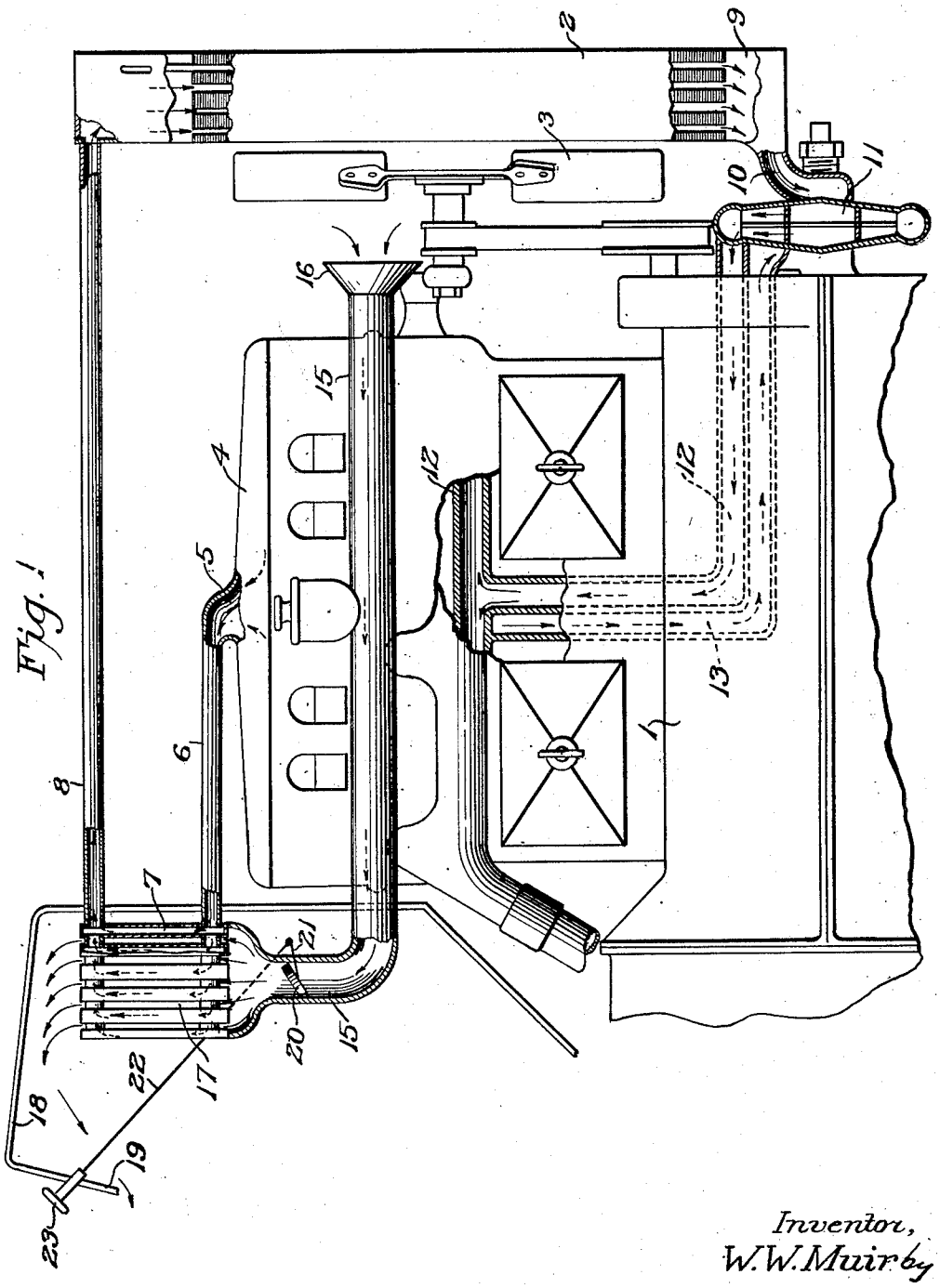


Fig. 1

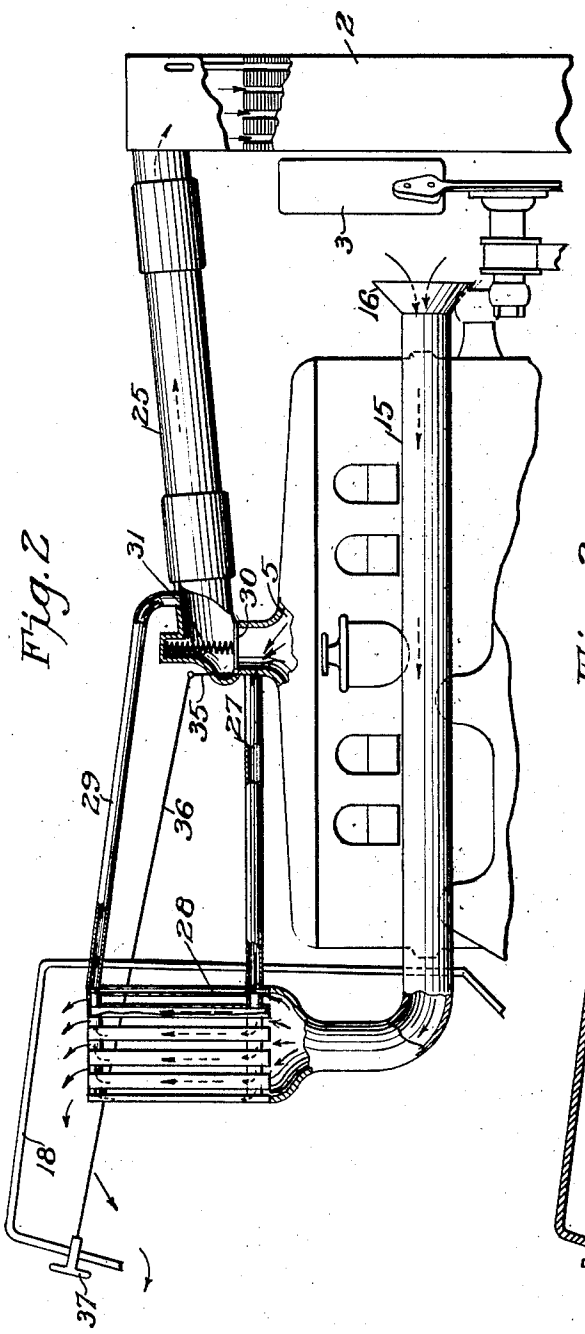
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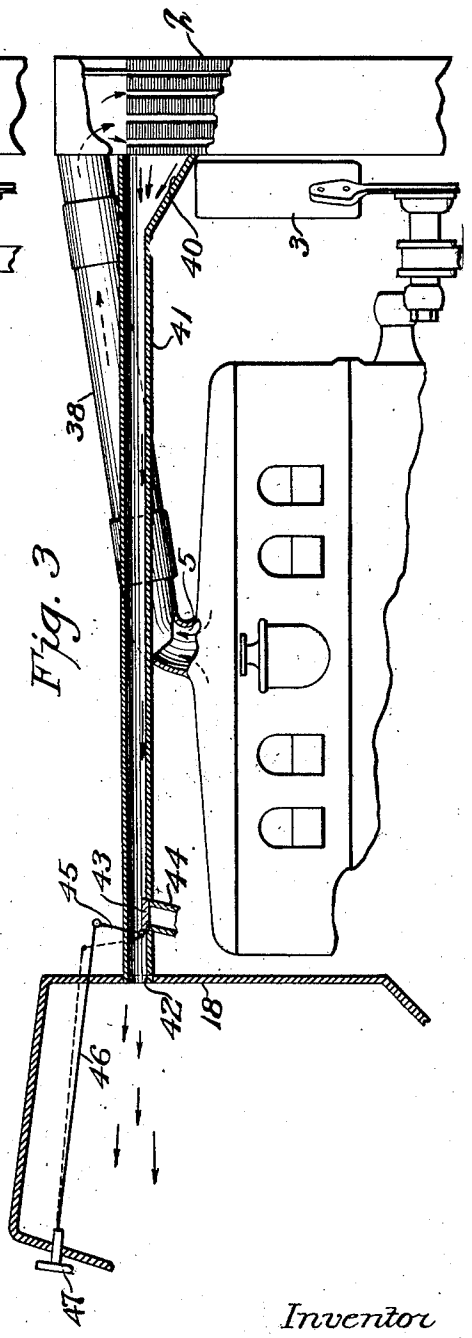
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UNITED STATES PATENT OFFICE.

WELLINGTON W. MUIR, OF LOCKPORT, NEW YORK.

HOT-AIR HEATER FOR AUTOMOBILES.

Application filed February 15, 1922. Serial No. 536,826.

To all whom it may concern:

Be it known that I, WELLINGTON W. MUIR, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Hot-Air Heaters for Automobiles; and I do hereby 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 heaters for the interior of automobiles, and has for its object to provide a means for supplying fresh warm air to the interior of an automobile, which will be simple in construction, comparatively inexpensive to manufacture, and more efficient in action than those heretofore proposed.

With these and other objects in view, the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification, in which like numerals designate like parts in all the views;

Figure 1 is a diagrammatic partially sectional view of an automobile engine and its associated parts, equipped with the heater made in accordance with this invention;

Figure 2 is a view similar to Figure 1, showing a somewhat modified form of the heater mechanism; and

Figure 3 is a view similar to Figure 2, showing a still further modified form of the heater mechanism.

1 indicates an automobile engine, 2 a radiator or condenser therefor, 3 the usual fan located behind the radiator, 4 the upper portion of the engine jacket, 5 a passage leading from the jacket 4 into the pipe 6 adapted to convey hot water or steam to a second radiator or steam coil 7 located behind the dash board within the automobile body, and 8 a pipe leading from said coil 7 to the top of the condenser or radiator 2, all as will be clear from the arrows.

It is customary in automobile engines to either employ the ordinary radiators 2 as coolers for hot water passing therethrough or as condensers for steam which passes through the pipe 8 into the top of said condensers 2. In this latter case, the steam would be condensed and find its way through the tank 9 and connections 10 into the pump 11. From the pump 11 the condensed steam or hot water would be forced through the connection 12 back into the jacket and in the case illustrated a portion of the jacket water would be circulated out of said jacket and back into the pump through the connection 13, all as will be clear from Figure 1.

The foregoing features, however, may be widely varied in carrying out this invention, which involves the following construction: A pipe or conduit 15, preferably having a flared intake 16, receives heated air after it has passed through the radiator or condenser 2, and the temperature of said air is further raised after it passes through the passages 17 of the radiator 7, all as will be clear from the arrows in Figure 1. After this air has passed the second radiator or heater 7, it is deflected by the cover member 18, rigid with the dash board, down past the point 19 in front of the driver's seat and enters the automobile proper, thus constituting a constant supply of fresh warm, twice heated air to the occupants.

The control of the warmed air passing through the pipe 15 is effected by manipulating the valve 20 in said pipe, which valve is operated by the lever 21 joined by the connection 22 to the operating means 23 in front of the driver's seat.

In the somewhat modified form of the invention shown in Figure 2, steam or hot water from the jacket 5 passes through the connection 25 down through the condenser or radiator 26 and back into the jacket through a means which is or may be similar to the means illustrated in Figure 1, and thus is the radiator 26 kept warm. From the jacket 5, a branch pipe 27 also leads through the auxiliary heater or radiator 28, and out of said heater through the pipe 29, back into the connection 25.

Hot air is received in the flared opening 16 of the pipe 15, and passes through the auxiliary heater 28 underneath the cover or hood member 18 and down in front of the driver's seat, all as has been disclosed in connection with Figure 1. The supply of fluid through the auxiliary heater 28 is controlled by the valve 30 which governs the amount of hot fluid which will pass directly into the connection 25, or into the connection 27. That is to say, when said valve 30 is in

its normally closed position under the influence of the spring 31, substantially all the steam or hot water from the jacket 5 will pass through the connection 27, the auxiliary heater 28, the connection 29, and the connection 25, into the condenser 26. On the other hand, when the pressure of steam in the jacket 5 is sufficient to overcome the spring 31, the valve 30 lifts and a substantial proportion of the hot fluid is passed directly into the connection 25 and thus the temperature of the auxiliary heater 28 is lowered. The valve 30 is also under the control of the lever 35 joined by the connection 36 to the operating means 37 located above the driver's seat, so that the chauffeur may readily control the temperature of the air which reaches the interior of the automobile.

In the still further modified form of the invention shown in Figure 3, the jacket 5 is joined by the connection 38 to the condenser or radiator 39, and the condensed or cooled fluid is or may be circulated through said jacket by a means similar to that disclosed in connection with Figure 1. The hot air is received in the flared mouth 40 of the pipe 41, and is passed directly under the cover member 18 at the point 42. A valve 43 is located near the front of said cover 18 immediately above the engine jacket 5, and controls a pipe 44 which leads into the atmosphere. Said valve 43 is controlled by the lever 45 joined by the connection 46 to the operating means 47 located immediately above the driver's seat.

It results from the construction just disclosed that when the valve 43 is lifted it closes off the passage of air through the delivery 42 under the cover 18 and opens wide the pipe 44, so that hot air from the radiator or condenser 39 will pass through the connection 41 and pipe 44 out into the atmosphere and thus little or no air will be admitted to the automobile proper. On the other hand, when the valve 43 is in the position shown in Figure 3, the pipe 44 is closed and substantially all of the hot air from the top of the radiator 39 will pass into the automobile proper.

It will now be clear that any suitable closed motor cooling system may be employed in this invention, in order to furnish a continuous supply of fresh warm air to the interior of the automobile body. In other words, it will be seen that in all the forms of the invention shown, I am enabled to supply fresh warmed air directly to the automobile body.

In the forms shown in Figures 1 and 3 the driver is enabled to regulate the amount of air which will enter the automobile body while in the form shown in Figure 2, he is enabled to regulate the temperature of the auxiliary heater 28 and therefore the temperature of the air reaching the interior of the automobile.

It is obvious that those skilled in the art may vary the details of construction, as well as the arrangement of parts without departing from the spirit of the invention, and therefore I do not wish to be limited to the above disclosure except as may be required by the claims.

What I claim is:

1. In a hot air heater for automobiles the combination of an engine jacket adapted to develop a hot fluid; a radiator; means for passing air through said radiator to cool said fluid and incidentally to heat the said air; a second radiator located within the automobile; connections between the said radiators and the said jacket to convey the hot fluid from the jacket to and through the said radiators, said second radiator adapted to further heat a portion of said air from said first named radiator; means for conveying said portion of said heated air to the second radiator; and means for controlling the flow of heated air to the interior of the automobile.

2. In a hot air heater for automobiles the combination of an engine jacket adapted to develop a hot fluid; a radiator; means for passing air through said radiator to cool said fluid and incidentally to heat the said air; a second radiator located within the automobile and under the cowl thereof; connections between the said radiators and the said jacket to convey the hot fluid from the jacket to and through the said radiators, said second radiator adapted to further heat a portion of said air from said first named radiator; means for conveying said portion of said heated air to the second radiator; and means for controlling the flow of heated air to the interior of the automobile and to said cowl.

3. In a hot air heater for automobiles the combination of an engine jacket adapted to develop a hot fluid; a radiator; means for passing air through said radiator to cool said fluid and incidentally to heat the said air; a second radiator located within the automobile, and under the cowl thereof; connections between the said radiators and the said jacket to convey the hot fluid from the jacket to and through the said radiators, said second radiator adapted to further heat a portion of said air from said first named radiator; means for conveying said portion of said heated air to the second radiator; and means operable from said coil for controlling the flow of heated air to the interior of the automobile.

In testimony whereof I affix my signature.

WELLINGTON W. MUIR