J. E. HETTINGER.

HEATER FOR AUTOMOBILES.

APPLICATION FILED MAR. 20, 1920.

1,369,809.

Patented Mar. 1, 1921.

2 SHEETS—SHEET 1.

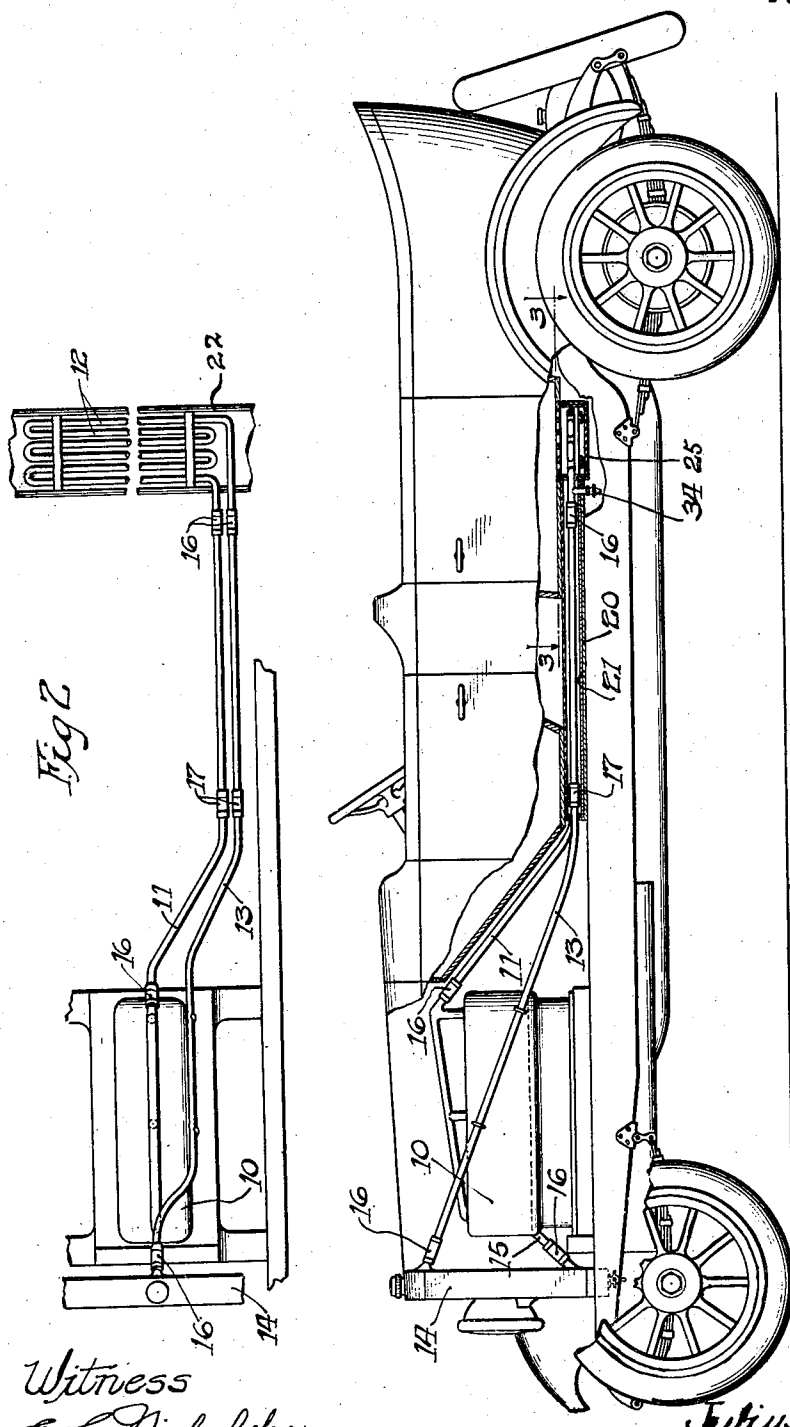


Fig 2

Fig 1

Witness
E. L. Niederhofer

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2 SHEETS—SHEET 2.

Fig. 3

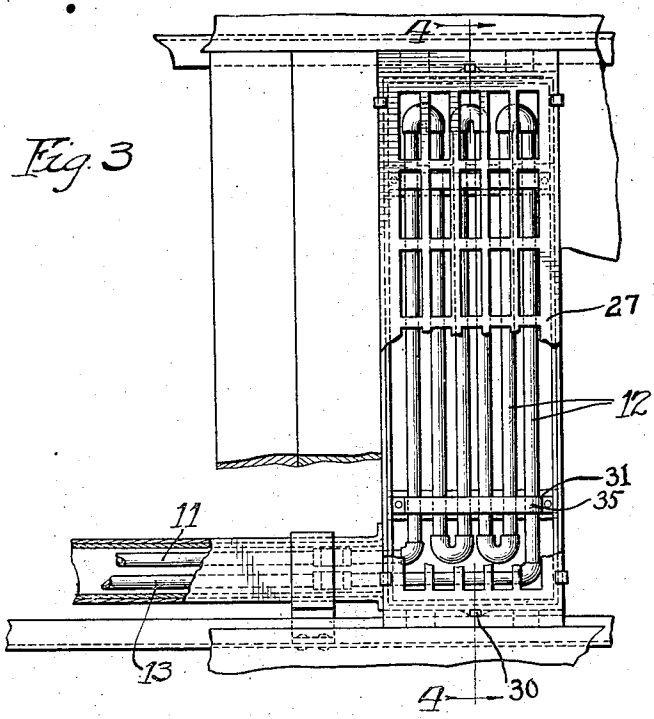


Fig. 8

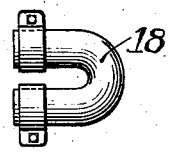


Fig. 5

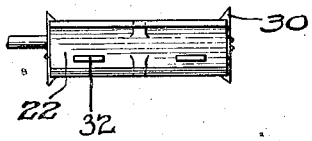


Fig. 4

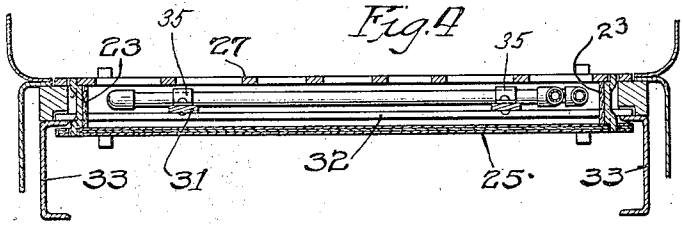


Fig. 6

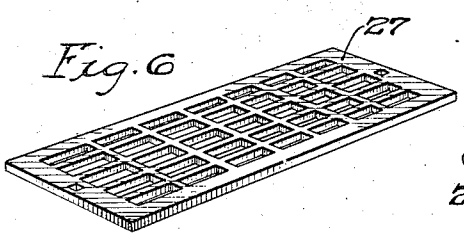
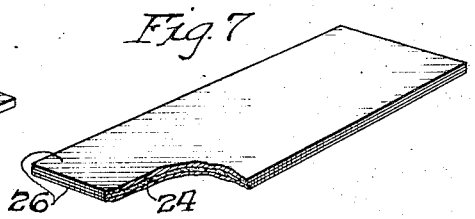


Fig. 7



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UNITED STATES PATENT OFFICE.

JULIUS E. HETTINGER, OF CHICAGO, ILLINOIS.

HEATER FOR AUTOMOBILES.

1,369,809. Specification of Letters Patent. Patented Mar. 1, 1921.

Application filed March 20, 1920. Serial No. 367,350.

To all whom it may concern:

Be it known that I, JULIUS E. HETTINGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Heaters for Automobiles, of which the following is a specification.

This invention relates to heaters for heating vehicles or cars such as trucks or automobiles which are driven by internal combustion engines, and which have water jackets for cooling the engines and radiators for cooling the water. One of the objects of the invention is to provide means for transferring the waste heat of the engine, by means of the water, or other suitable liquids, to the body of the machine, so as to warm the persons in the machine, or to protect any perishable goods which may be in the trucks from injury by becoming too cold. Other objects of the invention are to provide means for increasing the radiating surface used in cooling the water, and to provide suitable means for using the apparatus either for heating purposes or for additional radiating purposes, as may be desired. Other objects of the invention will be apparent from a consideration of the accompanying drawings and the following description thereof.

Of the accompanying drawings Figure 1 is an elevation of an automobile, with portions broken away, which has mounted therein certain means for carrying out my invention; Fig. 2 is a plan view of the engine and radiator of the machine, together with the heater which I use; Fig. 3 is an enlarged plan view of the heater or radiator; Fig. 4 is a section along the line 4—4 of Fig. 3; Fig. 5 is an end view of the heater casing; Fig. 6 is a perspective view of one side of the inclosing casing; Fig. 7 is a perspective view of another side of the casing; and Fig. 8 is a perspective view of a device which may be used with a portion of the apparatus.

As is well understood, it is common with automobiles and trucks to have a water jacketed engine and to have a radiator in the machine which is directly connected with the water jacket, and to which the water flows, and from which the heat thereof is radiated away, so that the water in the jacket may be kept sufficiently cool. However, in the apparatus which I use in carrying out my invention I connect the heater with the water jacket 10 of the motor of the automobile, or the truck, by means of a pipe 11, which leads directly back to the seating portion of the vehicle, and which connects with a series of pipes 12 in the body of the vehicle, the pipes 12 being connected to each other in any suitable manner and forming a radiator of heat. I prefer to connect the pipes in series, as indicated. I then connect the heater formed by the pipes 12 by means of a pipe 13, to the top of the ordinary radiator 14 of the machine, and then by means of a pipe 15 I connect the bottom of the radiator 14 with the bottom of the water jacket of the engine.

When the pipes are arranged in the manner specified it will be seen that there will be a continuous flow of water from the water jacket around through the heater pipes 12, back to the top of the radiator 14, and finally to the bottom of the water jacket, due to the cooling of the water in the radiator 14 and in the pipe 11 and the downward flow thereof. At the same time the water in the heater pipes 12 will be continually losing heat by radiation from the pipes, and this heat will be used in heating the car.

In order to prevent danger of breaking the pipes from vibrations and otherwise, and to provide simple means for connecting or disconnecting the pipes, I provide flexible couplings 16 and 17 to connect various portions of the pipes. In this manner any strains due to improper placing of the pipes, or to strains on the automobile itself, will be avoided, and also danger of fracture by vibrations will be eliminated, and the pipes can be conveniently detached when desired. For instance if it is desired to disconnect the heater itself from the system it is necessary only to disconnect the couplings 16 and 17 from the pipes and to connect the two ends of the pipes which are joined to the front radiator and the engine by means of the flexible tube 18 (Fig. 8) and the circulation of the water will continue as before, while the heater itself may be entirely removed.

In order to prevent waste of heat, I inclose a portion of the pipes 11 and 13 in a conduit 20 having a lining 21 of non-conducting substance, and I also inclose the heater itself in a casing 22, the walls of which have, in the sides thereof, non-conducting sheets 23, the bottom 25 of the casing being composed

of a sheet of suitable metal 26 on each side of a sheet of non-conducting substance 24, such as asbestos. When the heater is to be used for heating purposes the upper surface of the casing 22 is covered by a sheet 27, through the openings of which the heated air from the pipes is allowed to pass.

However, the sheets 27 and 25 are interchangeable, so that, while in cool weather the sheet 27 may be used on the upper surface of the casing 22, so as to allow the heated air to pass into the machine, and the sheet 25 may be used for the lower surface so as to prevent heat from passing downwardly, yet in warm weather the two sheets may be reversed, so that no material amount of heat can pass upwardly into the machine, but the heat may be radiated down freely through the sheet 27 and also by the sheet itself. In this manner the insulated ends and sides of the casing 22 not only prevent the waste of heat in the winter, but, in warm weather, the radiator will not cause discomfort to the passengers of the car, or injure perishable material contained in the car.

In order to conveniently interchange the sides they are fixed in place in the casing 22 by means of catches 30, so that by simply springing these catches off from the sheets the sheets may be removed and very easily interchanged.

The heater may be composed of any suitable form of pipes or chambers. I have shown in this instance round pipes for the purpose, but it is to be understood that oval or flat pipes may be used if it is desired. The pipes are supported in the casing by means of cross pieces 31 which rest upon beams 32 extending across the machine from one side of the chassis to the other, and resting upon the chassis beams 33, the beams 32 projecting through the ends of the casing 22, as indicated. Cross pieces 35 hold the various pipes firmly in place. By these means the heater pipes may be conveniently removed from the casing or the entire casing may be removed from the machine, whenever desired. And when the casing is removed the opening may be closed by means of the cross bars 32 and the plates 25 and 27 resting thereon. A pet cock 34 is provided for running the water out of the pipes whenever desired.

By this means a very effective and convenient heating apparatus is provided. The hottest water passes immediately from the water jacket back into the machine, the hottest portion of the pipe 11 passing immediately beneath the floor of the front seat, and from this the water immediately flows to the heater, so that the heat is radiated into the machine from the water before the water passes to the radiator where it is still further cooled.

I claim as my invention:

1. In a vehicle a heater comprising a series of pipes, means for passing hot water through said pipes, a casing inclosing said pipes, said casing having a detachable heat non-conducting bottom and a detachable metal open work top, the shape and size of said bottom being substantially the same as the shape and size of said top, whereby said bottom and top are interchangeable.

2. In a vehicle a heater comprising a series of pipes, means for passing hot water through said pipes, a casing inclosing said pipes, said casing having a detachable heat non-conducting bottom and a detachable metal open work top, the shape and size of said bottom being substantially the same as the shape and size of said top, whereby said bottom and top are interchangeable, and similar means for fastening said bottom and top onto said casing.

3. In a vehicle a heater comprising a series of pipes extending across the body of said vehicle, means for passing hot water through said heater, a casing inclosing said pipes, and means for supporting said pipes in said casing, said means comprising beams running transversely of said pipes under said pipes, and beams running longitudinally of said pipes under said transverse beams, said longitudinal beams extending through the walls of said casing and adapted to rest on the chassis beams of said vehicle.

4. In a vehicle a heater comprising a series of pipes extending across the body of said vehicle, means for passing hot water through said heater, a casing inclosing said pipes, and means for supporting said pipes in said casing, said means comprising beams running transversely of said pipes under said pipes, and beams running longitudinally of said pipes under said transverse beams, said longitudinal beams extending through the walls of said casing and adapted to rest on the chassis beams of said vehicle, the top and bottom of said casing being easily removable.

In testimony whereof, I hereunto set my hand.

JULIUS E. HETTINGER.