F. C. SMITH.

HEATER.

APPLICATION FILED DEC. 16, 1915.

1,185,849. Patented June 6, 1916.

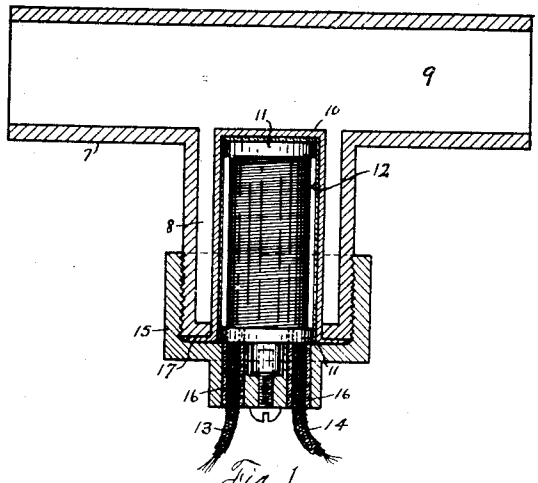


Fig. 1.

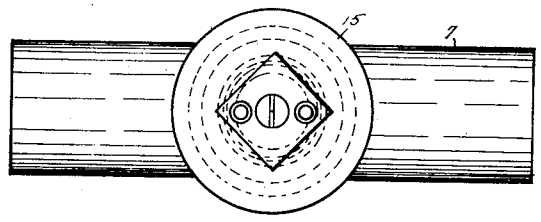


Fig. 2.

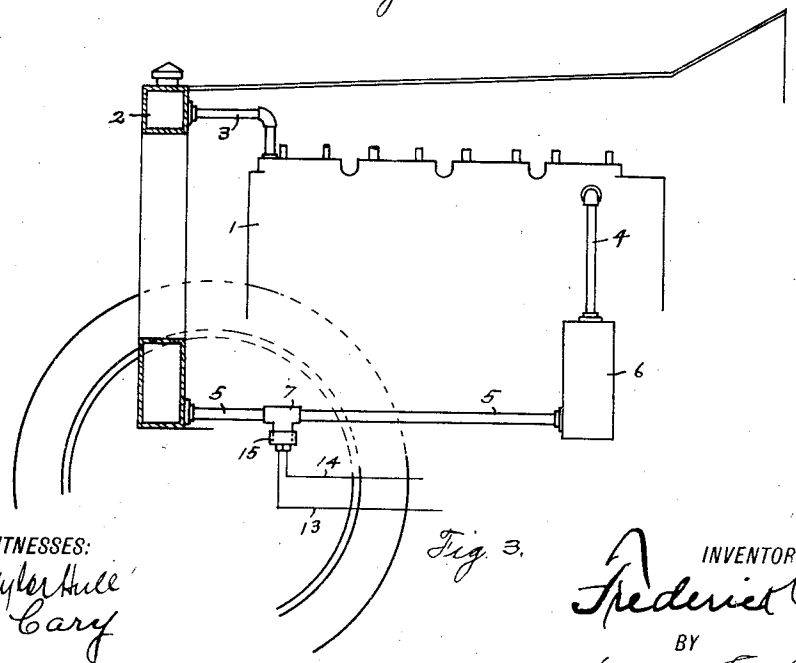


Fig. 3.

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UNITED STATES PATENT OFFICE.

FREDERICK C. SMITH, OF PORT ARTHUR, TEXAS.

HEATER.

1,185,849. Specification of Letters Patent. Patented June 6, 1916.

Application filed December 16, 1915. Serial No. 67,150.

To all whom it may concern:

Be it known that I, FREDERICK C. SMITH, a citizen of the United States, residing at Port Arthur, in the county of Jefferson and State of Texas, have invented certain new and useful Improvements in Heaters, of which the following is a specification.

This invention relates to new and useful improvements in a heater, and is designed particularly for heating the water in the circulating system of internal combustion engines, such as are used in automobiles.

In cold weather when the engine is not running the water in the circulating system is liable to congeal and burst the pipes or water jacket and this device is provided in order to keep said water at a temperature above freezing point when the motor is not running.

With the above and other objects in view the invention has particular relation to certain novel features of construction, arrangement of parts and use, an example of which is given in this specification and illustrated in the accompanying drawings wherein:—

Figure 1 is a sectional view of the device, Fig. 2 is a plan view thereof, and Fig. 3 is a side elevation thereof as applied to one of the circulating pipes of an automobile engine.

Referring now more particularly to the drawings wherein like numerals of reference designate similar parts in each of the figures the numeral 1 refers to the engine motor, the numeral 2 refers to the radiator and the numerals 3, 4 and 5 refer, respectively, to the water circulating pipes through which the water is driven by means of the pump 6 when the motor is running. When the motor is idle the water in this circulating system is at rest and should the temperature fall below freezing point said water is liable to congeal and burst said pipes or some other part of the water circulating system. To keep said water above freezing point the heater herein described has been provided. This heater includes a T-connection 7 connecting the sections of the pipe 5, 5 as shown in Fig. 3, said pipe 5 being formed in sections so that the heater may be easily attached thereto by means of threads, flexible hose, or any other desirable means. This T-connection forms a cylindrical chamber 8 in communication with the water passage-way 9 and fixed in said chamber is a copper thimble 10 forming a ground joint at the point 17 with the T-connection. A spool 11 is fitted within this thimble and is covered and insulated by mica or other insulating material and the spool is wound with positive and negative current conducting wires 13 and 14 and a cap 15 incloses the outer end of said chamber 8 and said wires pass through said cap and are insulated therefrom by any suitable insulating material as 16, 16. Current conducting wires 13 and 14 are connected with suitable batteries or with the ordinary electric light socket or with any other suitable source of electrical supply.

As is obvious the water will circulate in the chamber 8 around the thimble 10 and when the current is on will be heated thereby. The hot water being lighter than the cold will gradually rise and the cold water will take its place in the chamber 8 thus setting up a circulating current which will maintain or gradually raise the temperature of the water throughout the circulating system of the motor, thus preventing the congealing of the water therein.

What I claim is:—

A heater including a fluid conductor, a fluid chamber in communication therewith, a thimble fixed to the outer end of said chamber but inclosed within and spaced from the chamber walls, a spool fitted closely within the thimble, a covering for said spool composed of insulating material interposed between the spool and thimble, a cap threaded on and inclosing the outer end of said chamber, current conducting wires passing through said cap and being insulated therefrom and coiled around said spool.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK C. SMITH.

Witnesses:
ANNIE L. CARY,
RUBY GLAZNER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."