A. S. MEADOFF.

AUXILIARY HEATING SYSTEM.

APPLICATION FILED FEB. 15, 1918.

1,341,144.

Patented May 25, 1920.

2 SHEETS—SHEET 1.

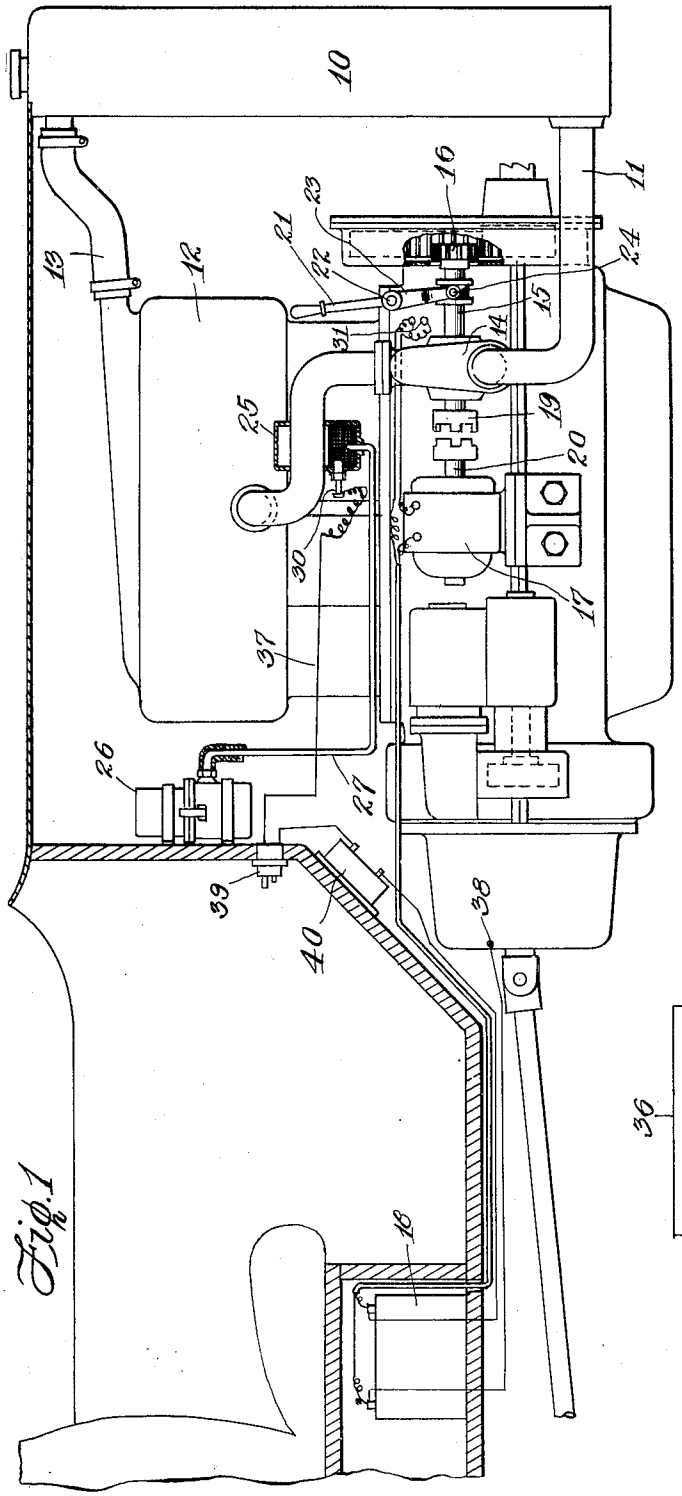


Fig. 1

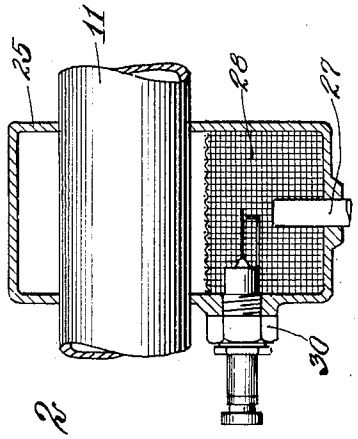


Fig. 2

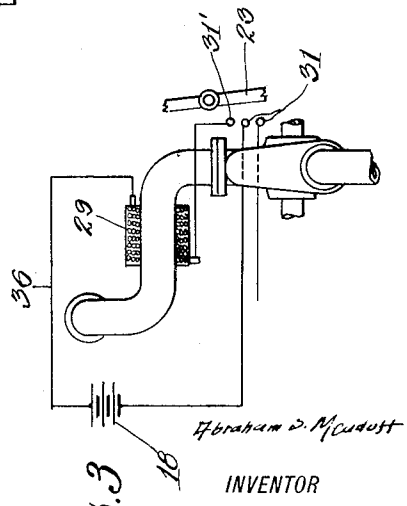


Fig. 3

Abraham S. Meadoff

INVENTOR

BY Marcus Kirchstein

ATTORNEY

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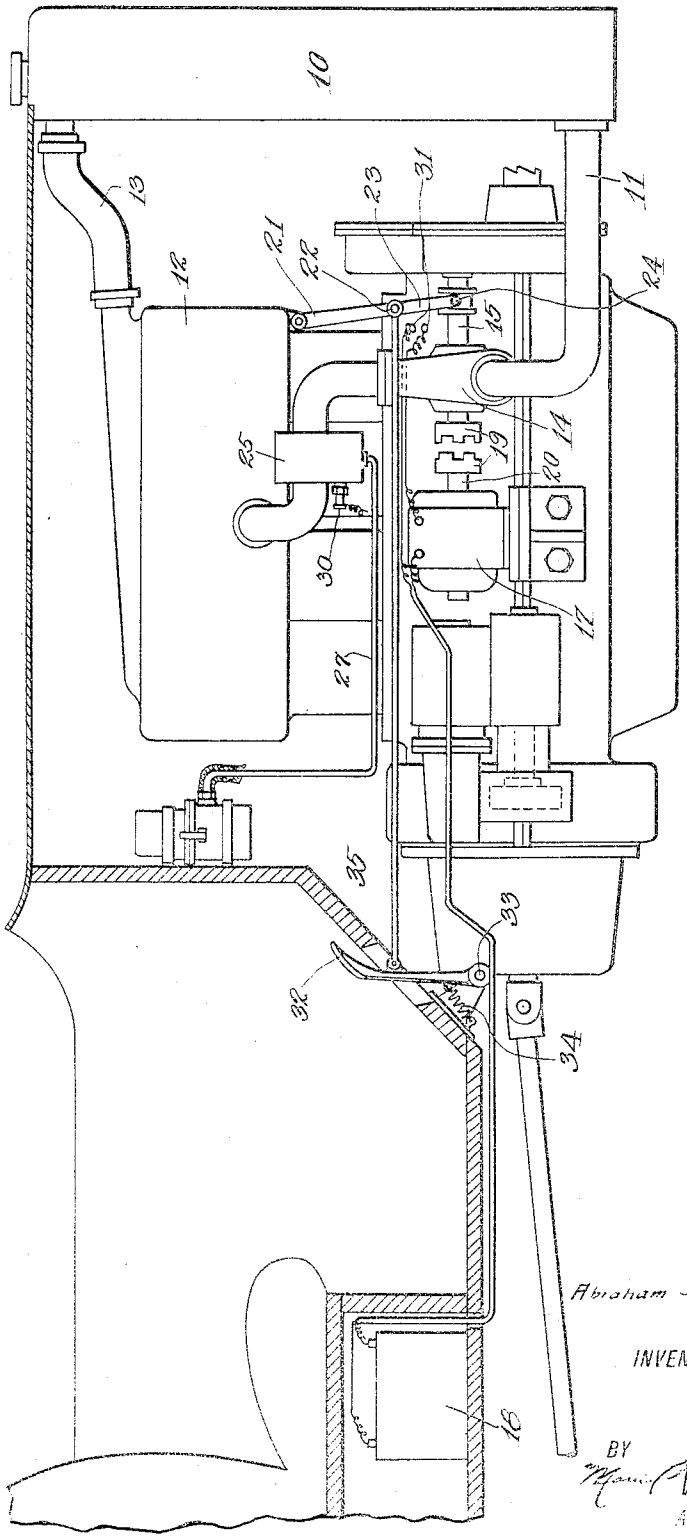


Fig. 1.

Abraham S. Meadoff

INVENTOR

BY

ATTORNEY

UNITED STATES PATENT OFFICE.

ABRAHAM S. MEADOFF, OF NEW YORK, N. Y., ASSIGNOR TO HUDSON METAL BED CO., INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

AUXILIARY HEATING SYSTEM.

1,341,144. Specification of Letters Patent. Patented May 25, 1920.

Application filed February 15, 1918. Serial No. 217,450.

To all whom it may concern:

Be it known that I, ABRAHAM S. MEADOFF, a citizen of the United States, and resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Auxiliary Heating Systems, of which the following is a specification.

Referring in detail to the drawing, 10 is the radiator, 11 the pipe connection which leads the water from the bottom of the radiator into the cylinder jacket 12. In circulating about this jacket the water rises into the header of the radiator through the pipe connection 13. Located, preferably at a point between the pipe connection 11 and the water jacket, is a centrifugal pump 14 provided with the shaft 15. Normally this shaft is driven by an engine from the main shaft through gearing 16. In order that the centrifugal pump may be operated when the engine is not running, I provide an auxiliary motor 17, preferably adapted to be run by the usual storage batteries 18. Some suitable connecting means, such as the jaw clutch 19 may be provided whereby the centrifugal pump may be driven from the auxiliary motor shaft 20. I also provide the lever 21 to which is pivoted as at 22 a link 23 secured as at 24 to the pump shaft. By throwing this lever to the right the centrifugal pump may be thrown out of engagement with the engine drive and simultaneously into engagement with the motor shaft, as will be clear from the drawing. Of course the storage battery may be connected in the usual manner so that it may be charged while the machine is running.

To heat the circulating water I provide a burner 25 fed from a fuel tank 26 by means of the preferably insulated pipe or lead 27. Any suitable burner such as those burning kerosene vapor, alcohol, calcium carbid, or the like may be used. A wire gauze 28 is provided to prevent ignition of the engine exhaust gases.

In operating the burner I prefer not to apply the flame directly, and to that end I provide a spark plug 30 which may be operated from the battery, and the circuit therefor, may be closed by the link 23 when the lever 21 is thrown to the right, either the link itself or a connector thereon short-circuiting the terminals 31.

This invention relates to heating systems and is directed particularly to providing auxiliary means for heating water in the water jacket of internal combustion engines while the engine itself is not in operation.

Every automobilist is familiar with the difficulties that arise in automobile operation because of the freezing of the radiator in cold weather. It is the object of my present invention to overcome this difficulty by providing an auxiliary heating arrangement which requires little power for its operation, does not involve much additional expense and yet is efficient and effective in operation.

To accomplish my object I provide a burner or a heating coil for heating the pipe that leads the cooling water from the lower portion of the radiator into the water jacket of the engine. For small engines the natural circulation that would be thus set up by convection would be sufficient for circulating warm water around the engine while the latter is not operating. For larger engines the circulation may be materially assisted by including a pump in the pipe system. This pump may be operated by an auxiliary motor connected to a storage battery.

In the drawing accompanying this specification and forming a material part thereof,

Figure 1 shows a general lay-out embodying my invention;

Fig. 2 is a detailed view of one form of auxiliary burner or heater;

Fig. 3 is a similar view showing another form of heater, and

Fig. 4 is a modified lay-out in which the auxiliary heating system and the pump are put into operation simultaneously by means of a foot lever.

According to the lay-out shown in Fig. 1 the hood must first be raised in order that the lever 21 may be manipulated to drive the pump from the auxiliary motor and start the burner. In Fig. 4 I show how the same result may be accomplished by means of a foot lever 32 located, preferably adjacent the brake levers and starting levers of the machine. This lever 32 is pivoted as at 33 and held in normal position by means of the spring 34. Adjacent the top of the lever is secured the rod 35 secured to the link 23 at the pivot 22 connecting the latter to the lever 21. It will be clear that upon pushing the foot lever 32 down the rod 35 moves back

and the lever 21 is thrown to the right and the link 23 operates to bring the parts of the friction clutch into engagement and at the same time close the circuit for the spark plug 30 or for the heating coil 29.

In Fig. 3 I have shown a heating coil 29 which may be fed from a battery or from a suitable source of current so that when found preferable, electric heating may be resorted to.

Where an electric heating coil is made use of for the auxiliary heating means a third terminal 31′ may be provided and another lead wire 36 to provide a circuit for the heating coil which may be closed at the same time with the motor circuit so that the heating means are set into operation and the circulating means simultaneously in one operation of the lever. Where any of the other types of burners are used a separate circuit 37 is provided for the spark plug. This circuit may be supplied from the battery 18 and grounded at one end as at 38 and comprises the usual push button 39 and the spark coil 40.

It will be, of course, understood that with proper modifications and adaptations the auxiliary heating system provided may be used where it is desired, in general to prevent a fluid circulating system from freezing.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. An auxiliary heating system for the circulating fluid in automobile engines comprising a heater adapted to heat the lead pipe for the cooling fluid at a point near the water jacket, a pump to help circulate the fluid, means for starting said heater, and means coöperating with said heater starting means for operating said pump.

2. An auxiliary heating system for the circulating fluid in automobile engines comprising a heater adapted to heat the lead pipe for the cooling fluid, a pump to help circulate the fluid, means for operating said pump, and means for setting into operation said pump operating means simultaneously with said heater.

Signed at New York city, in the county of New York and State of New York, this 5th day of February, A. D. 1918.

ABRAHAM S. MEADOFF.

Witnesses:
DINAH LACHENSKY,
GEORG IVAN RUSSELL.