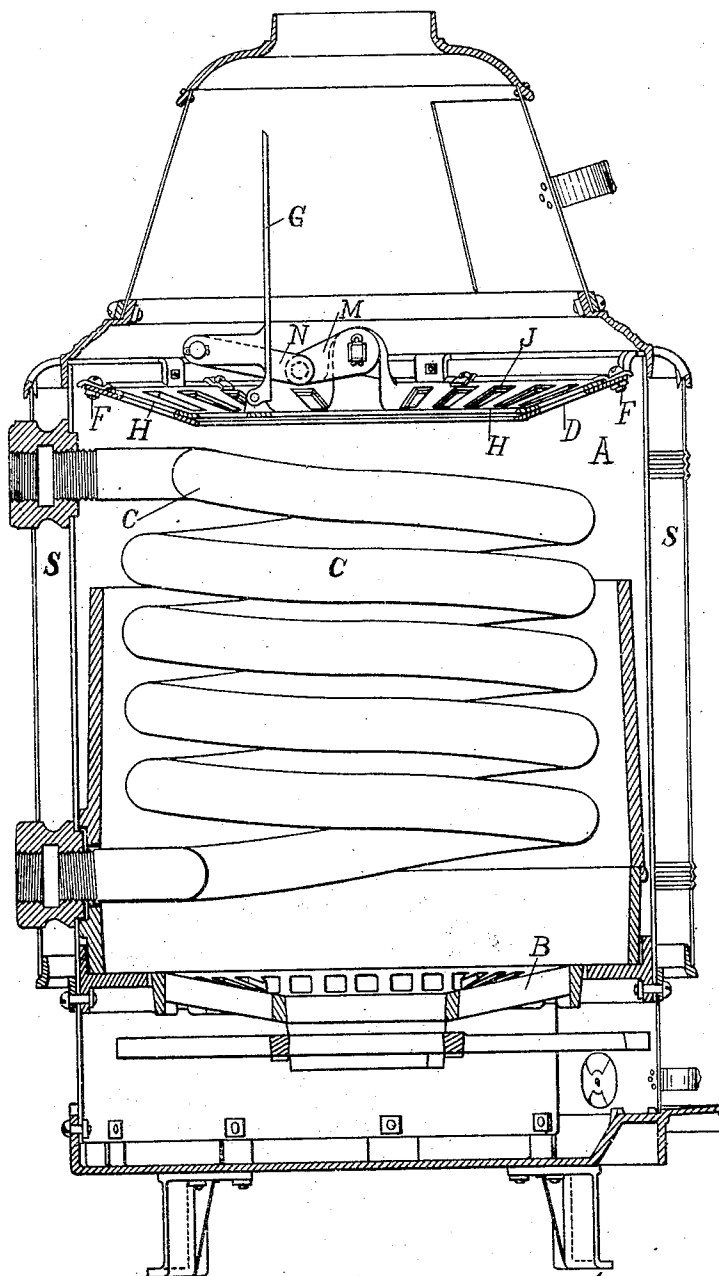


J. F. McELROY.
CAR HEATER.
APPLICATION FILED JULY 5, 1904.

942,040.

Patented Nov. 30, 1909.
3 SHEETS—SHEET 1.



Witnesses.

Beulah Carle
Dudley R. W. W.

FIG. 1

Inventor.

James F. McElroy

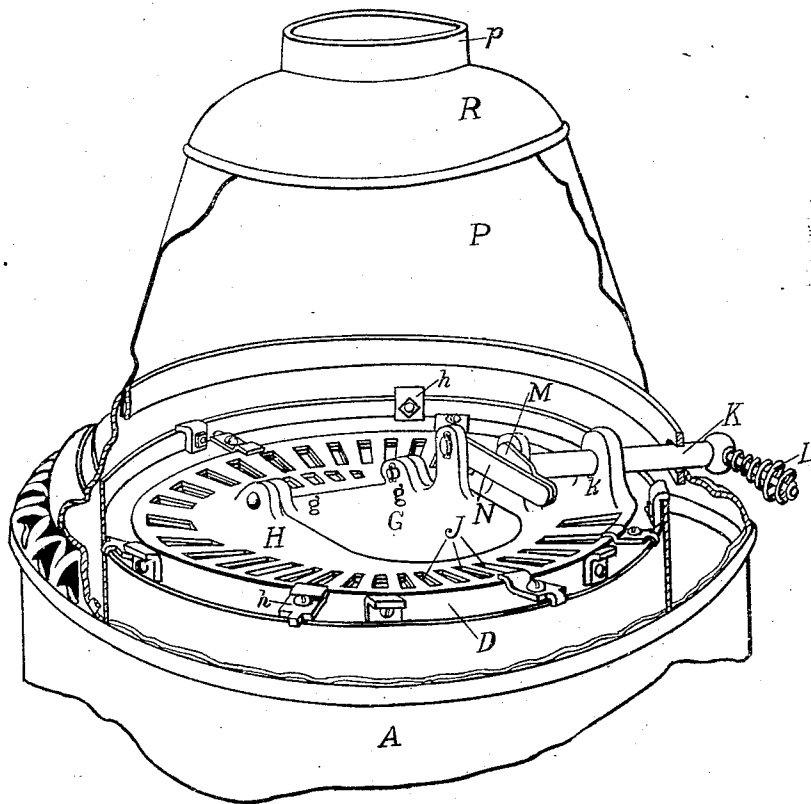
per.

Ward Cameron

Attys.

APPLICATION FILED JULY 5, 1904.

3 SHEETS.—SHEET 2.



Witnesses.

Inventor.

per. *Ward Cameron.*

Atty^{rs}.

J. F. McELROY.
CAR HEATER.
APPLICATION FILED JULY 5, 1904.

942,040.

Patented Nov. 30, 1909.
3 SHEETS—SHEET 3.

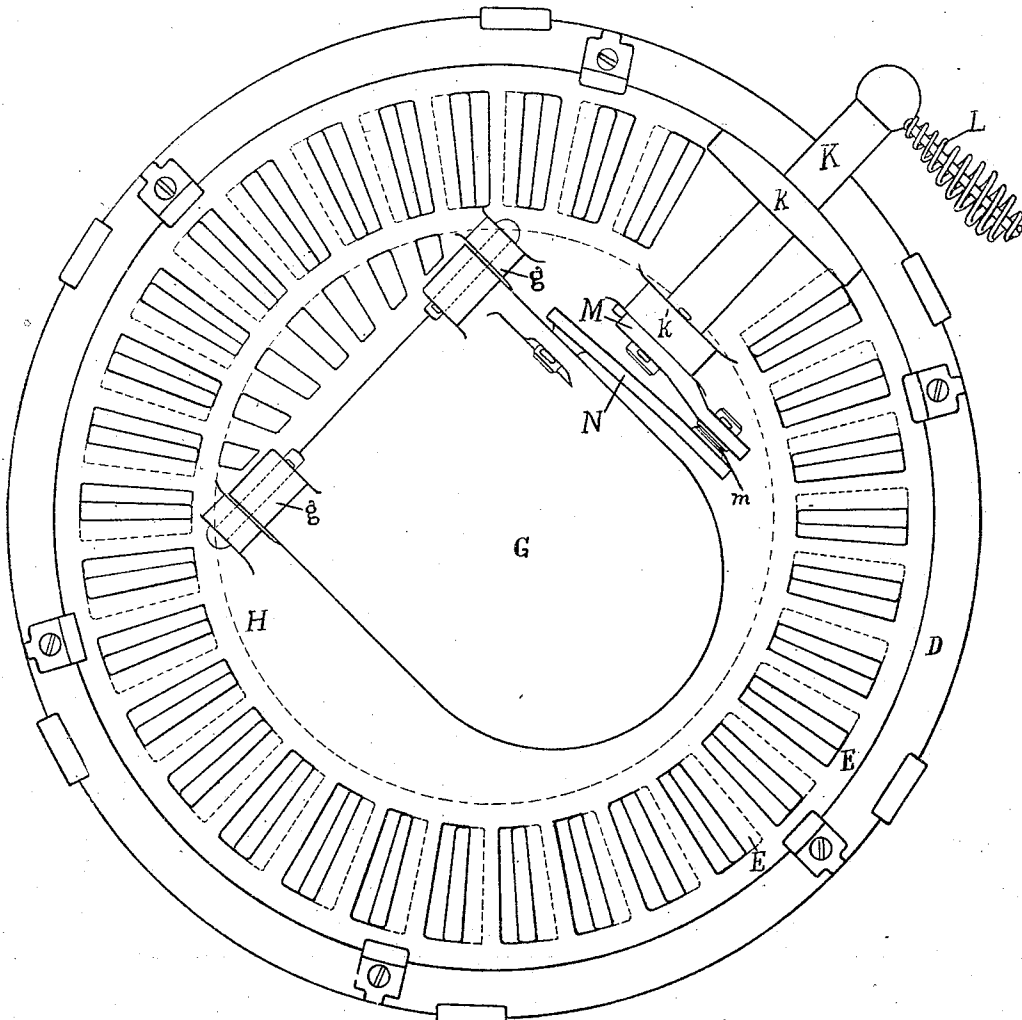


Fig. 3.

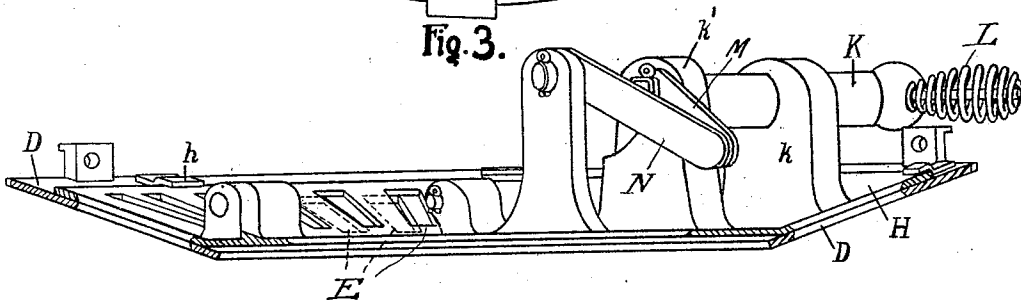


Fig. 4.

Witnesses

Boulah Carle.
Edw. S. Ward

Inventor

James F. McElroy
by *Ward Cameron*
Attys

UNITED STATES PATENT OFFICE.

JAMES F. McELROY, OF ALBANY, NEW YORK, ASSIGNOR TO CONSOLIDATED CAR-HEATING COMPANY, OF ALBANY, NEW YORK.

CAR-HEATER.

942,040.

Specification of Letters Patent.

Patented Nov. 30, 1909.

Application filed July 5, 1904. Serial No. 215,267.

To all whom it may concern:

Be it known that I, JAMES F. McELROY, a citizen of the United States of America, and a resident of Albany, county of Albany, and State of New York, have invented certain new and useful Improvements in Car-Heaters, of which the following is a specification.

My invention relates to heating apparatus and the object of my invention is to provide a heater particularly designed for use in hot water car heating systems, in which the draft is regulated from a point below the connection of the stovepipe of the heater in such a manner that the escape of gas into the car is prevented; together with a means for closing the opening through which the fuel is admitted to the heater and locking the same in its closed position from a point outside the heater, and also providing a means for locking the door in the opening through which fuel is furnished to the heater when in its opened position, together with such other combinations and elements as are hereinafter more specifically set forth and claimed. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of my heater, the coil placed therein being shown in elevation. Fig. 2 is a perspective view with the parts broken away. Fig. 3 is a plan view of the diaphragm and coacting parts. Fig. 4 is a detailed perspective view of a section of the damper plate and diaphragm with the operating lever and its connections secured thereto.

Similar letters refer to similar parts throughout the several views.

I provide a heater A which is supplied with a grate B and preferably with a hot water coil C, in the usual manner, with a diaphragm D which is provided with a series of radial openings E and which is secured to the wall of the heater by means of lugs and bolts F, or in any suitable manner. The diaphragm is also provided with an opening for the admission of fuel, which is adapted to be closed by the door G.

For the purpose of providing a means for opening and closing communication between the interior of the furnace and the dome and smoke-stack above the diaphragm,

I place a damper plate H which is provided with radial openings J. A series of clips $\frac{h}{2}$ are secured to the diaphragm D which engage with the plate H and retain plate H in connection with the diaphragm D. Plate H, however, is arranged to have a rocking motion in reference to the diaphragm D in order that the openings J in the plate H may be made to register with the openings E in the diaphragm D, if desired, or the openings in the diaphragm D may be closed by the movement of the plate H. To thus move the plate H, I mount the operating lever K in the lugs h , h' , secured to the plate H, the lever K extending outward beyond the outer edge of the heater and preferably provided with a handle L. Moving the lever K to the right or left will open and close the radial openings in the diaphragm D, that is, it will bring the openings J in plate H in register with the openings E in diaphragm D when the handle is moved in one direction, and when moved in the opposite direction the said openings will be brought out of register and therefore communication between the interior of the heater and the top of same will be closed.

Secured to the end of the operating lever K, which is within the heater, is a lever M connected by a toggle joint m with a connecting bar N which is secured to the door G, which door is hinged at g to the plate H. As thus arranged, when the operating lever K is rotated it will open the door G causing it to assume the position shown in Fig. 1, and when in that opened position it is locked by means of the lever M and connecting bar N, as shown in said figure in which the lever M and connecting bar N are extended in substantially the same horizontal plane, whereby the movement of the door G is prevented by the connecting bar N acting against the end of the lever M, the lever K being prevented from rotating by the weight of the handle L. When the door is closed, as shown in Figs. 2 and 3, which closing is effected by rotating the handle L attached to the lever K, the door G is locked in its closed position by means of said lever M and connecting bar N and cannot be opened except by rotating the lever K. Lever M and connecting bar N are arranged parallel

to each other in the same horizontal plane and by weight of the handle L are prevented from movement.

It is important in car heating systems that a stove or hot water heater of this character be so constructed that in case of accident the contents thereof shall be retained within the heater and so that at all times the gas escaping from the burning coal shall not be allowed to enter the car. I have provided a means for thus securely locking the door through which coal is transmitted to the heater and also securely sealing the draft openings in the diaphragm, except when it is desired to open them for the purpose of enabling a freer circulation from the fire to the smoke-stack. By placing these openings beneath the connection of the smoke-stack within the dome P there is no opportunity for the gas to escape from around the connection between the pipe (not shown) and the collar *p* on the dome, or around the connection of the cover R and the dome P which might possibly occur if the damper were placed in the pipe.

I have shown the heater A provided with an air space S about the heater, but I do not wish to limit myself to any particular form or construction of heater, nor to one thus provided with a jacket and air space.

What I claim as my invention and desire to secure by Letters Patent, is—

1. A heater; a diaphragm provided with a central and radial openings secured in said heater; a damper plate provided with a central and radial openings adjustably secured to said diaphragm; a door hinged to said plate adapted to close said central openings; a lever secured to said plate; a means for attaching said lever to said door so arranged that by a movement of said lever to the right or left the radial openings in said diaphragm may be closed or opened and a rotary movement of said lever will open or

close said door and lock the same in either its opened or its closed position, substantially as described.

2. A heater; a diaphragm secured therein, said diaphragm provided with radial openings and a central opening through which fuel may be furnished to the heater; a damper plate provided with radial openings adapted to register with the radial openings in the said diaphragm, and also provided with a central opening for the admission of fuel; a door arranged to close said central opening in said plate and diaphragm; a lever secured to said plate by the movement of which in a horizontal plane the radial openings in said plate and diaphragm may be caused to register or the openings in said diaphragm closed; a rotary movement of said lever opening or closing said door, substantially as described.

3. A heater; a diaphragm provided with radial openings therein and a central opening; a damper plate adjustably secured to said diaphragm, provided with openings adapted to register with those in the diaphragm; a door hinged to said plate adapted to cover the central opening in the plate and diaphragm; an operating lever; lugs on said plate in which said lever is mounted; a lever secured to said door; a lever secured to the end of said operating lever; a connecting bar connecting and forming a toggle joint with the lever secured to said door with the lever on the end of the operating lever, said operating lever and its coacting mechanism adapted to operate the damper plate and also the door, all substantially as described.

Signed at Albany, N. Y., this 1st day of July 1904.

JAMES F. McELROY.

Witnesses:

WILLIAM A. MORRILL, Jr.,
ERNEST D. JANSEN.