

(No Model.)

J. C. MACKEY.  
PORTABLE STEAM RADIATOR.

No. 411,159.

Patented Sept. 17, 1889.

Fig. 1.

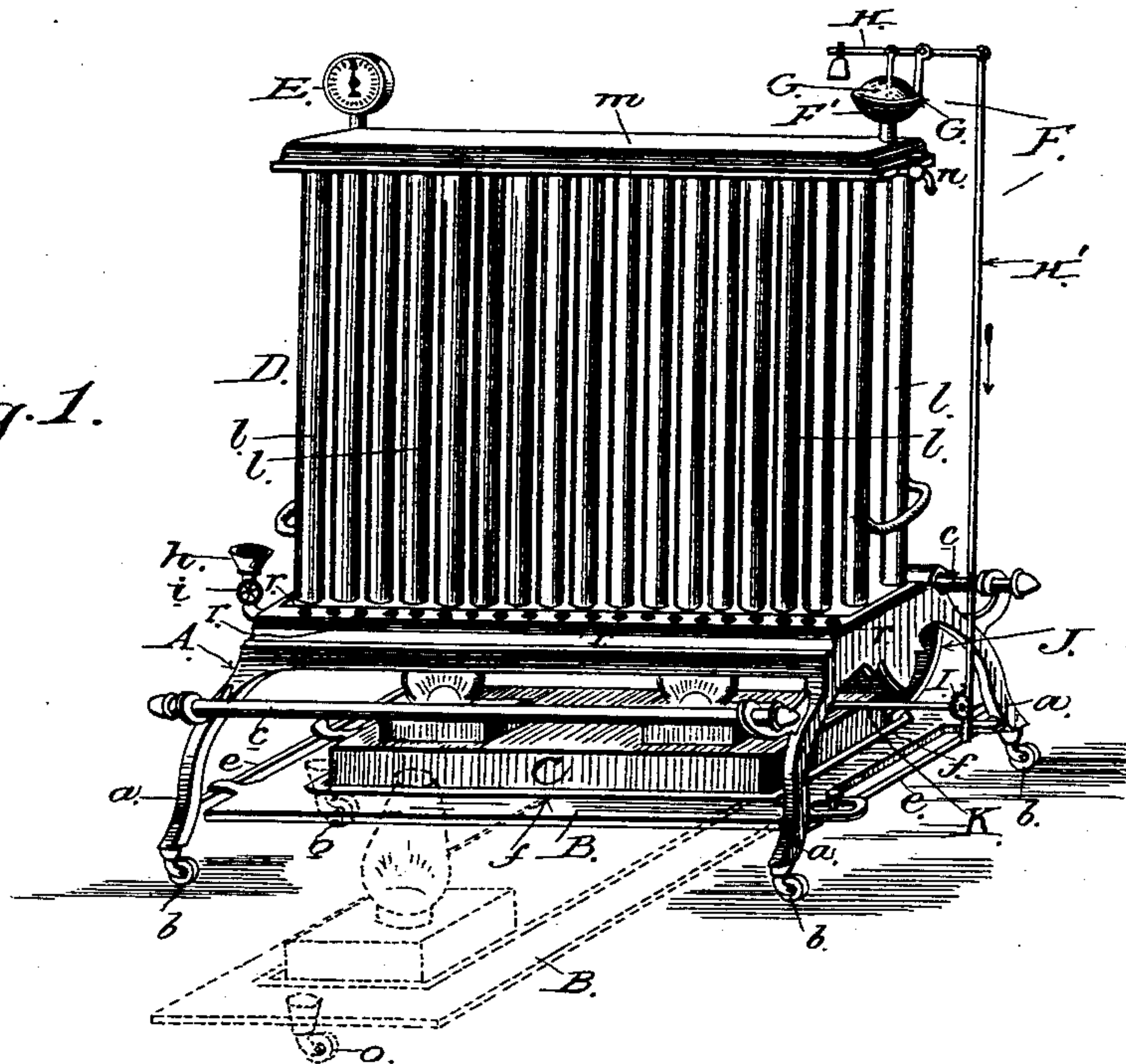


Fig. 2.

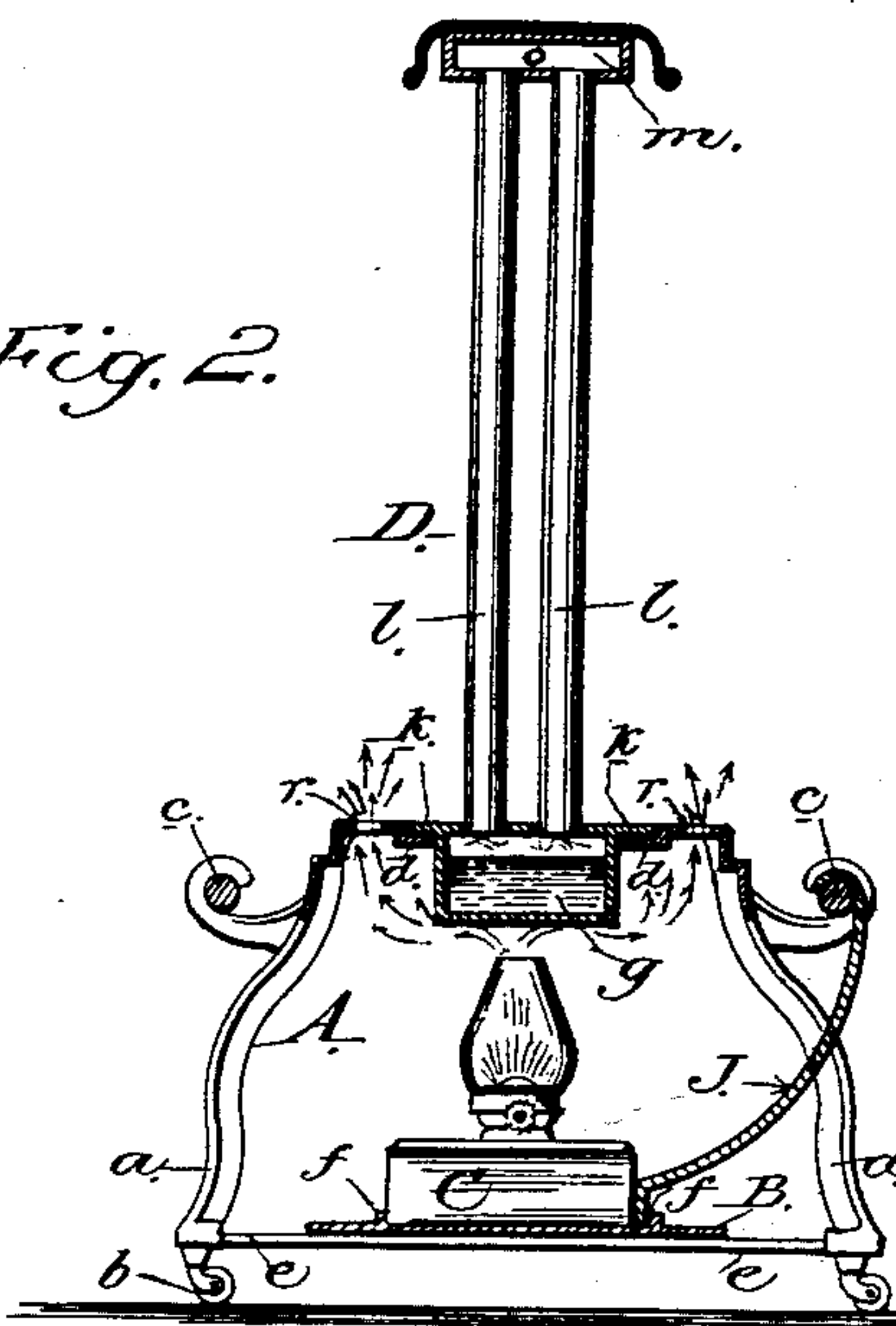
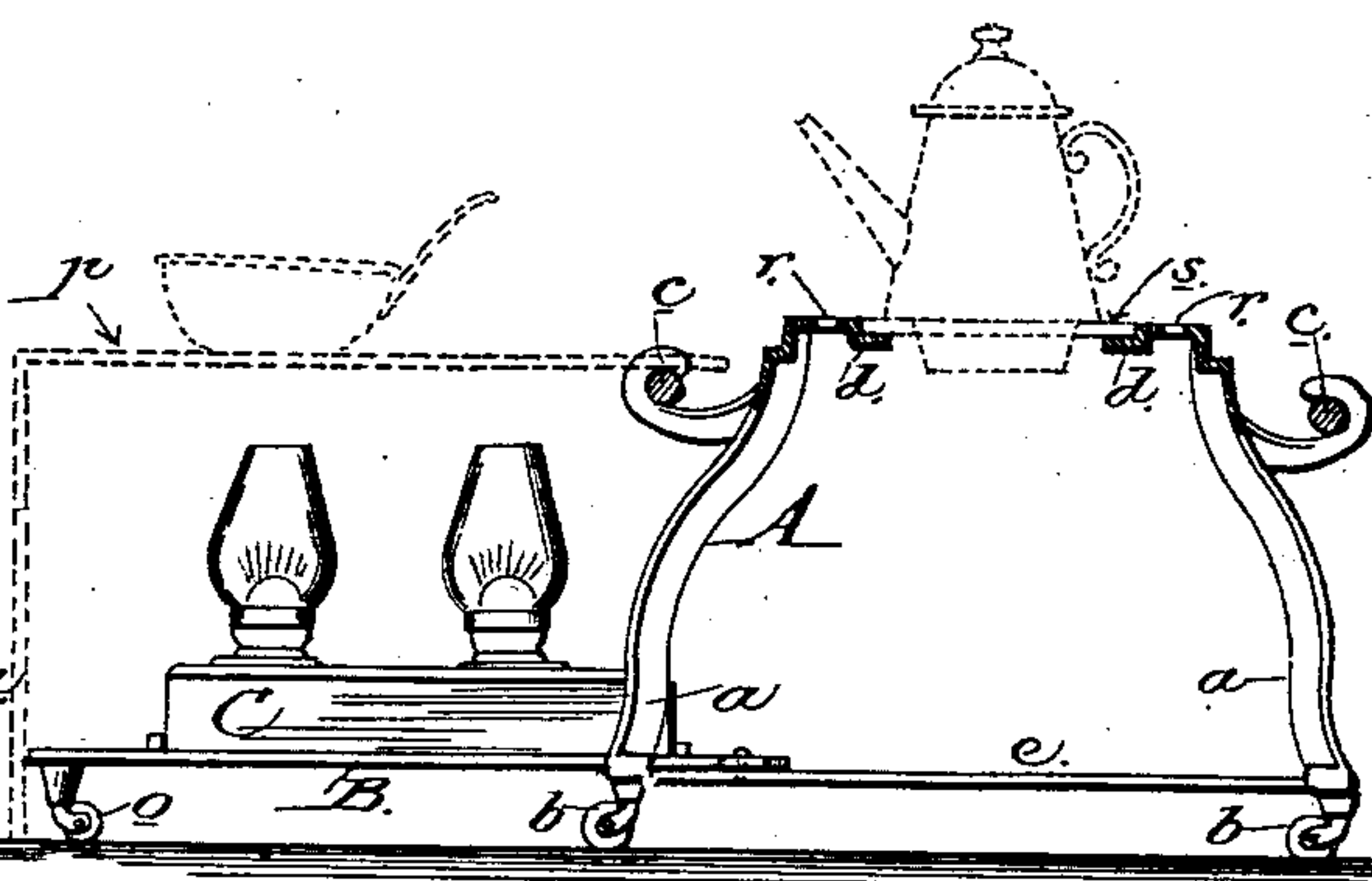


Fig. 3.



WITNESSES

J. D. Fowler,  
W. H. Patterson

INVENTOR

John C. Mackey  
by A. H. Evans & Co  
His Attorneys



# UNITED STATES PATENT OFFICE.

JOHN C. MACKEY, OF DETROIT, MICHIGAN.

## PORTABLE STEAM-RADIATOR.

SPECIFICATION forming part of Letters Patent No. 411,159, dated September 17, 1889.

Application filed January 18, 1889. Serial No. 296,712. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN C. MACKEY, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Portable Steam-Radiators, of which the following is a full and clear description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a perspective view of a steam-radiator when constructed according to my invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a similar view, showing the radiator section removed.

My invention relates to certain improvements in portable steam-radiators; and my invention consists in the constructions and combinations of devices which I shall hereinafter fully describe and claim.

To enable others skilled in the art to which my invention appertains to make and use the same, I will now describe its construction and indicate the manner in which the same is carried out.

Referring now to the drawings, A indicates a suitable base, preferably of skeleton form and comprising the supporting-legs *a*, each provided with a caster or roller *b*, thereby adapting the device to be transported from place to place, the said base being also provided with one or more foot-rails *c* and at its top with heat-discharging apertures *r* and inwardly-turned ledges *d*, the purpose of which I will hereinafter fully indicate.

On suitable cross-bars or rods *e*, near the bottom of the base and connecting the legs together, is secured or supported a swinging plate B, having a ledge or rib *f*, and on this plate, and held in place by said ledges or ribs *f*, is a removable oil-reservoir C of a lamp or heater, into which may be let any desired number of wicks, the said wicks being each provided with means for raising and lowering them, as I shall hereinafter indicate.

Instead of the oil-reservoir and wicks, I may use any other desired and well-known form of heater—gas-jet or otherwise—without departing from the spirit of my invention.

The upper section D of my device is formed with a chamber *g* in its lower portion, into

which water is introduced through a pipe *h*, extending to the outside and provided with a cock or valve *i*, and said section is formed or provided with lugs or flanges *k*, which are designed to rest upon the ledges *d* on the top portion of the base A, whereby said portion D is removably held in place.

The water-chamber *g* in the lower part of the section D communicates with a series of vertical radiating-tubes *l*, the upper ends of which lead into a chamber *m*, provided at one end with a blow-off cock or valve *n*, by means of which the cold air in the tubes, which is forced upward into the chamber *m* by the ascending heat, is discharged.

The upper section D may be provided with a steam-gage E and automatic wick-regulator F, the latter comprising a chamber F', in which is secured a flexible diaphragm G, which is connected with a weighted lever H, one end of which is attached to a rod H', having a rack at its lower portion, which engages a pinion I on the end of the rod K, whereby all the wicks may be raised or lowered in unison. This construction is desirable in my device, for when the temperature in the tubes reaches a predetermined pressure the diaphragm operates to move the rod H' in the direction of the arrow and to lower the wicks, so that the temperature may be accordingly reduced.

The plate B, which supports the oil reservoir or heater C, is by preference hinged or pivoted at one side or corner on one of the connecting bars or rods *e*, and its opposite end is supported upon a roller *o*, whereby the said plate B may be swung sidewise to facilitate the removal and introduction of the lamps or heaters, and when so swung outward this plate, with its heaters, may be utilized, in connection with an angle-plate *p*, (shown in dotted lines in Fig. 3,) as a means for cooking, the said plate, when so used, being supported at its upper end on one of the foot-rails and at its lower end on the floor.

As the base A is of skeleton form, it is obvious the light from the lamps, when used, may be utilized for lighting the room, for I have found that where two eight-inch wicks were used I obtained sufficient light from the lamps to illuminate a room of medium size; but to in-



crease the power of the light thus obtained I employ a curved radiating-surface J, one end of which is curved or hook-shaped to fit over the foot-rail, while the opposite end has a downturned flange, which is fitted on the plate B between the rib *f* and the wall of the oil-reservoir. This reflecting-surface is therefore removable, and may be fitted on either side of the device, the light therefrom being reflected upward at an angle through the opposite open side of the base.

From the foregoing description it will be obvious that in operating my heater a small amount—say one quart—of water is introduced into the water-chamber *g* through the pipe *h*, and the lamps, which had previously been placed in position on the plate B, lighted. The heat from the latter will strike against the bottom surface of the water-chamber *g* and tend to boil the water therein, the surplus heat escaping into the room through the perforations *r* in the top surface of the base. When the water in the water-chamber reaches the boiling point, the steam generated thereby will ascend into the tubes, driving the cold air upward, so that it may be discharged through the cock or valve *n*. The steam therefore heats the tubes, and they in turn radiate said heat into the room, thereby enabling me not only to utilize the heat from the lamps, but also the heat from the steam which is generated by lamps.

Another very essential feature of my invention is that it combines the functions of a radiating device and also a cooking-stove, for it is obvious that when the upper section is removed the lower section is readily used as a cooking-stove by placing upon the ledges *d* a plate *s*, which will accompany the device,

the said plate, if desired, having holes whereby various kinds and sizes of cooking utensils may be placed therein, so that the direct heat from the lamps may be brought against their bottoms.

A combined radiator and cooking-stove of the form described may be transported on its casters from place to place without difficulty, and the upper section, which is provided with handles, may be removed or placed in position on the base A whenever desired.

The combined device is capable of a high degree of ornamentation, and constitutes a very desirable and attractive article of household furniture.

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

1. The combination of the skeleton base having the transverse supporting-rods *e*, a plate or shelf pivoted to one of said rods at one side and supported at its free end upon the opposite rod, a caster at the free end of the plate or shelf, and a heater adapted to be supported upon said plate, substantially as described.

2. The skeleton base, the lamp-supporting plate having a raised rib, and the lamps supported on the plate between the inner walls of the rib, in combination with a curved reflector having its lower end confined between the rib and body of the lamp and its upper end curved or hook-shaped, whereby it may be fitted over the foot-rail, substantially as herein described.

JOHN C. MACKEY.

Witnesses:

W. H. PATTERSON,  
T. WALTER FOWLER.