(No Model.)

J. E. McELFATRICK.

PORTABLE HEATING APPARATUS.

No. 493,780. Patented Mar. 21, 1893.

Fig. 1

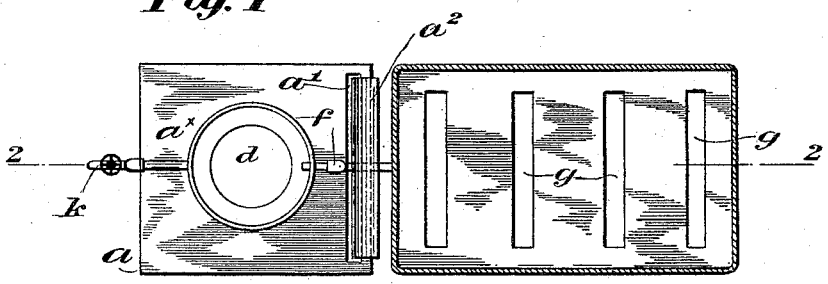
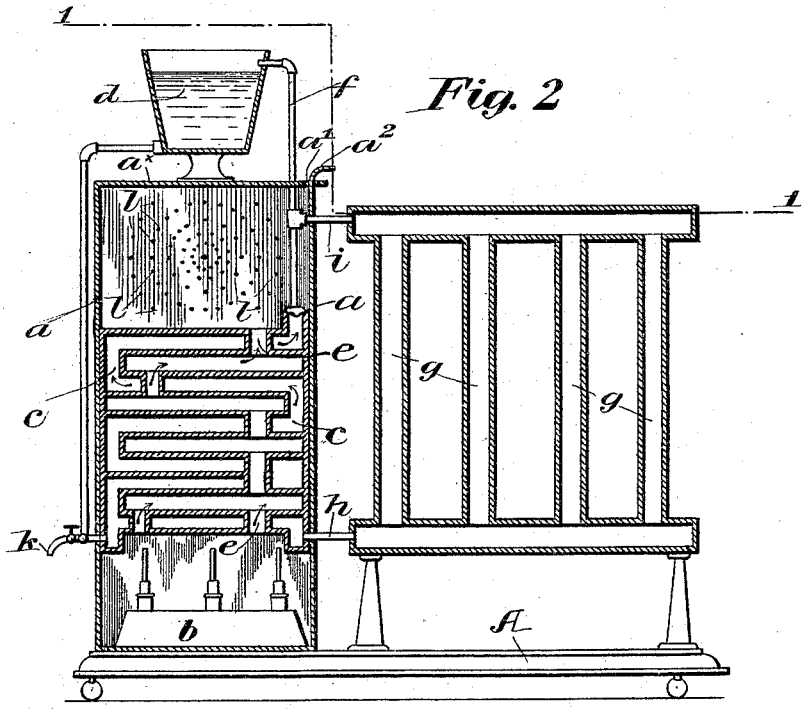


Fig. 2



INVENTOR:

John E. McElfatrick

By C. D. Lewis

Attorney.

WITNESSES:

J. B. Caplinger

Celeste S. Kelley

UNITED STATES PATENT OFFICE.

JOHN E. McELFATRICK, OF TOLEDO, OHIO.

PORTABLE HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 493,780, dated March 21, 1893.

Application filed November 8, 1890. Serial No. 370,801. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. MCELFATRICK, a citizen of the United States, residing at Toledo, in the State of Ohio, have invented certain new and useful Improvements in Portable Heating Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved heater and consists in certain details of construction and combination of parts as will be fully set forth hereinafter.

In the accompanying drawings, Figure 1. is a plan view partly shown in section. Fig. 2. is a central sectional side elevation of the same.

In the drawings, *a* represents a rectangular sheet iron box or furnace, having at the base an oil burning lamp *b*. and directly above. a continuous zig-zag water chamber *c*, which receives a supply of water from a vessel *d* placed on the top of a furnace *a*. This water chamber *c*. is formed with a series of short flues *e*. to permit the heat to travel upward. At the top of this water chamber is a discharge pipe *f* entering the vessel *d*. Located at one side of the heater *a* is a radiator *g*. of any desired construction, and connected at the top and bottom with the water chamber *c*. by short pipes *h*—*i*. At the bottom of the chamber *c* is a drain pipe and cock *k* to empty the apparatus of water when so desired.

In order to simplify and cheapen the construction of my improved portable heater I form the casing of a single sheet of thin metal bent to a rectangular cross section with closed sides, the edges of which sheet may be secured in any preferred manner to form a tight joint. In the front and rear sides of this casing *a* are provided apertures at the proper points for the reception of the several tubes *f*, *k*, *i* and *h*, as will be readily understood. The interior water chamber *c*, or heater is then inserted at the top of the casing, said heater being preferably formed independently of the casing. When said heater *c* has been adjusted to the proper position, the tubes *k* and *h* are inserted through the openings in the rear and front walls of the casing and made fast at their inner ends to said heater *c*. In order to admit of ready exit of the heated products of combustion, vent holes *l*, *l*, are formed in the walls of the casing *a* near the upper end thereof. The casing *a* has also a cover plate $a^{\times}$ formed integrally with its front wall, and of an area to completely cover the upper end of said casing when folded over as seen in Fig. 2, and in this cover plate is formed a perforation to admit the insertion of the tube *f* and also at its rear edge is formed a long slot *a'* through which passes a tongue a^2 formed on the upper end of the rear wall of the casing, as clearly seen in the drawings. When such cover plate has been bent over so that the tongue a^2 takes through the slot *a'* said tongue is bent over as seen in Fig. 2, whereby the cover plate is held in place. The tube *f* is now inserted through the aperture formed in the cover plate to admit it and its inner end is made fast to the heater *c* after which the tube *i* is inserted and made fast to the tube *f*. Thus it will be seen that the heater is supported in place in the casing without the employment of any extraneous bolts or screws and the whole construction is of the utmost simplicity and lightness.

In operation the lamps are lit, which raises the temperature of the water in the heater, which travels to the radiator and when cooled back to the heater *c*.

This apparatus may be conveyed from one room of a building to the other, as the same is made small light. and compact. This use of the apparatus is facilitated by mounting the heater and radiator on a base A, provided with suitable casters or the like. Moreover, the provision of a faucet *k* at the base of the device admits of the drawing off of hot water for household uses at any time and the open topped reservoir *d* admits of the replenishing of the water or the placing of a vessel thereupon for the application of heat.

Another very important feature of my improved heater is its cheapness and lightness, the casing, radiator and heater being formed from light sheet metal. This is made possible by the provision of a free outlet for any steam which may be generated in the apparatus.

Having thus described my invention, I claim—

In a portable heater the combination with a casing having apertures in its front and rear walls, and having vent holes in its walls near its top, of a heater arranged in said casing, tubes inserted through the openings in the front and rear walls of the casing and secured at their inner ends to said heater whereby the same is held in place, one wall of said casing being provided at its upper end with a cover plate having a slot in its rear end and the opposite wall being provided with a tongue adapted to engage said slot, whereby the top of the casing is closed, substantially as set forth.

In testimony that I claim the foregoing I hereunto affix my signature this 13th day of September, A. D. 1890.

JOHN E. McELFATRICK. [L. S.]

In presence of—
CHARLES LARGE,
M. E. HARRISON.