

(No Model.)

S. J. McDOWELL & E. O. BICKNELL.

HEATER.

No. 392,162.

Patented Oct. 30, 1888.

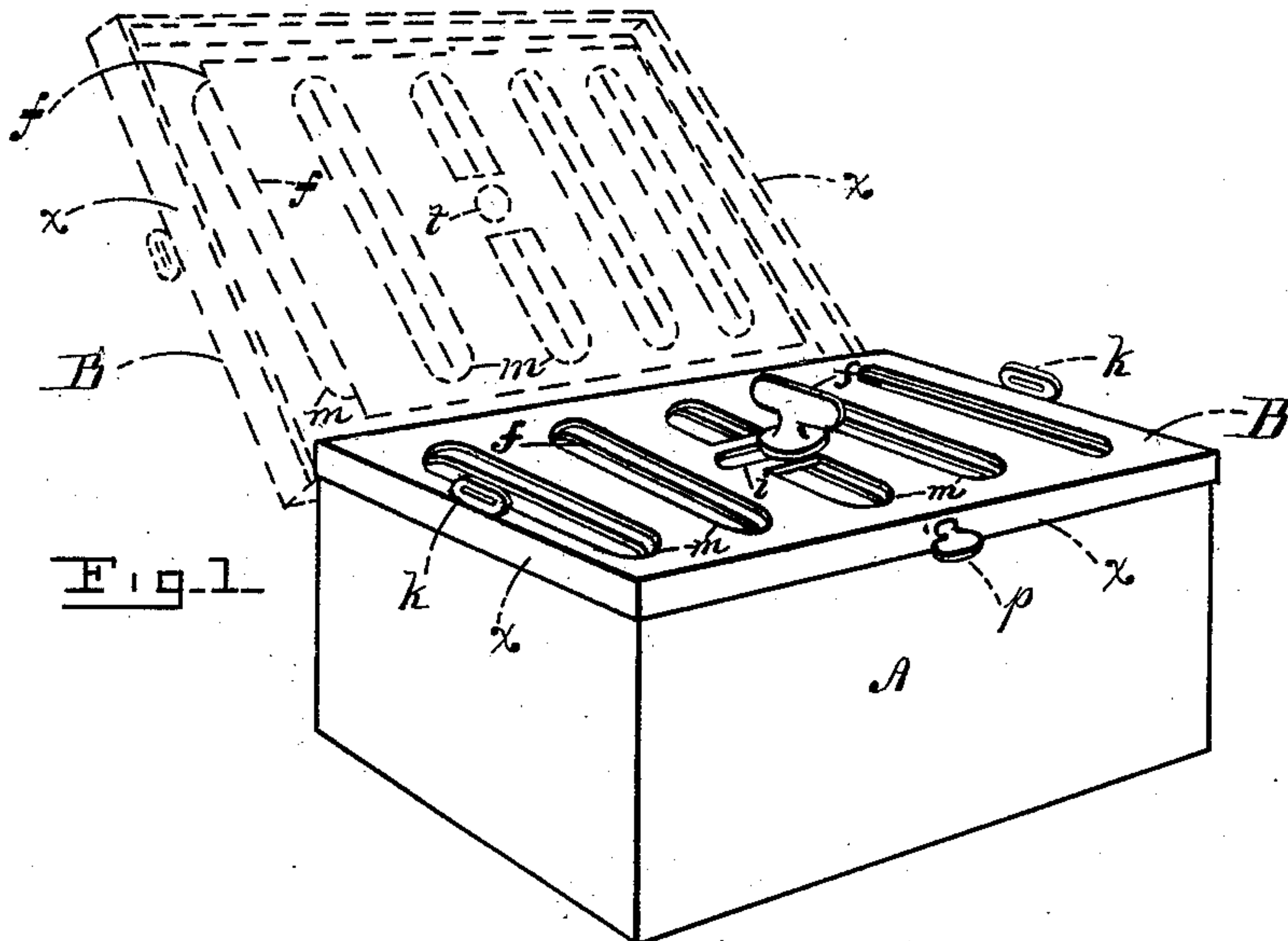


Fig. 1.

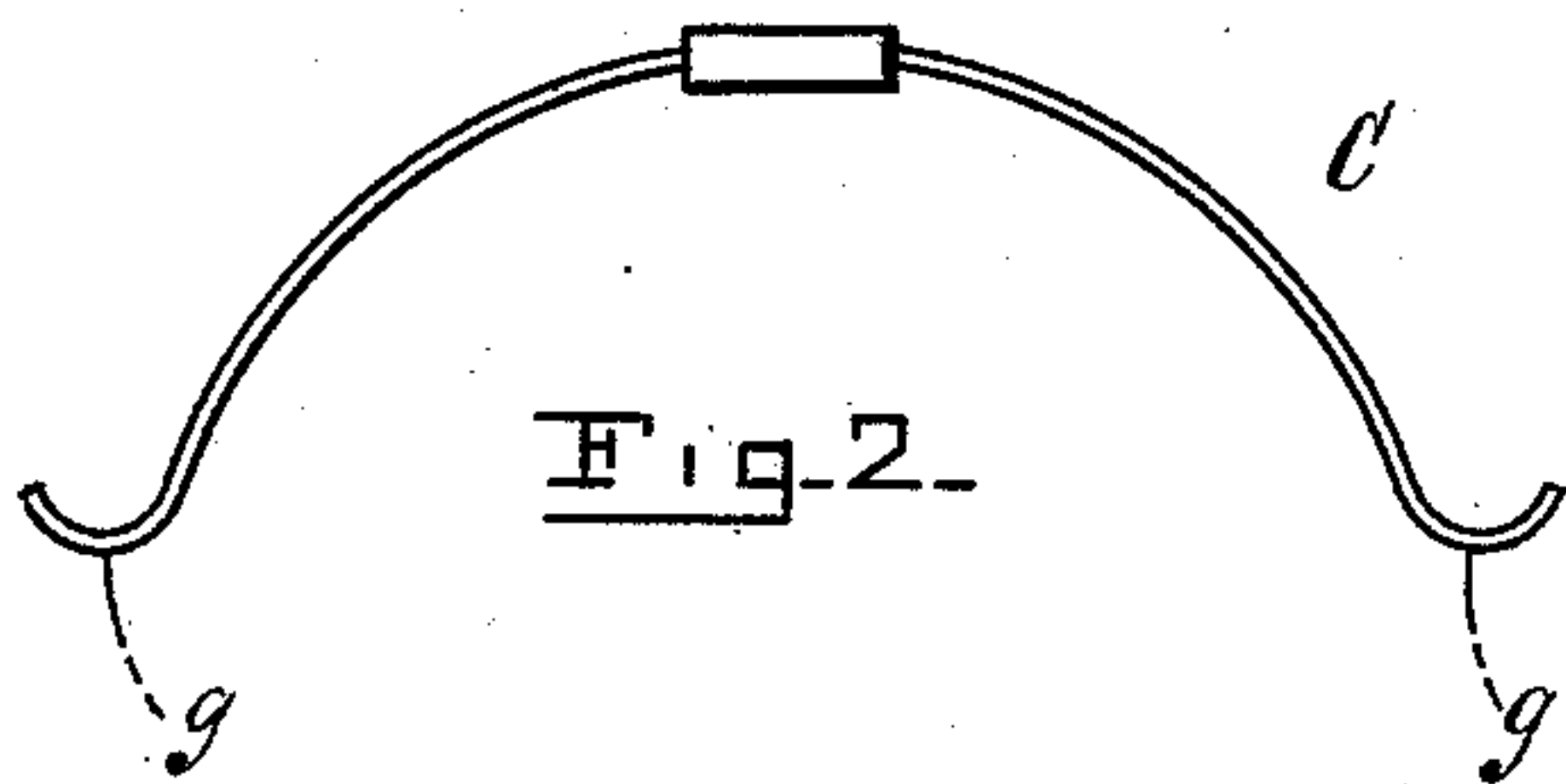


Fig. 2.

Fig. 6.

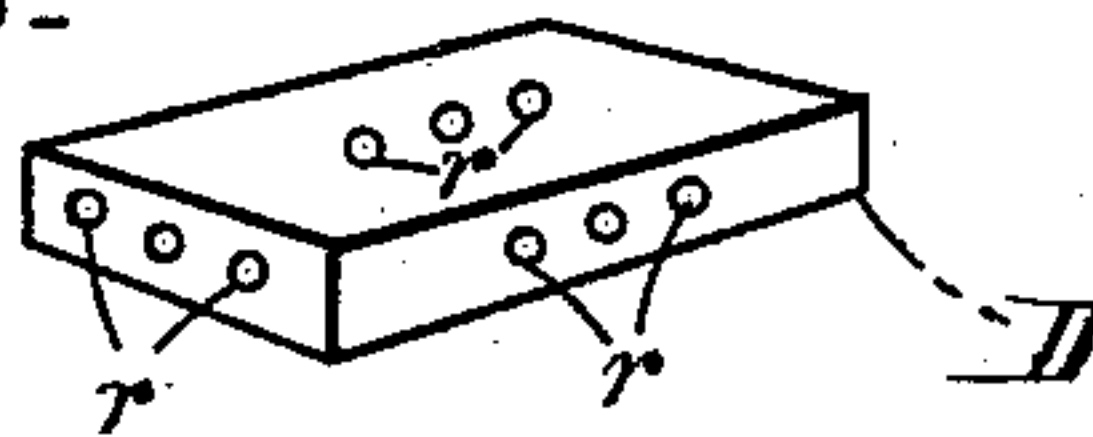


Fig. 5.

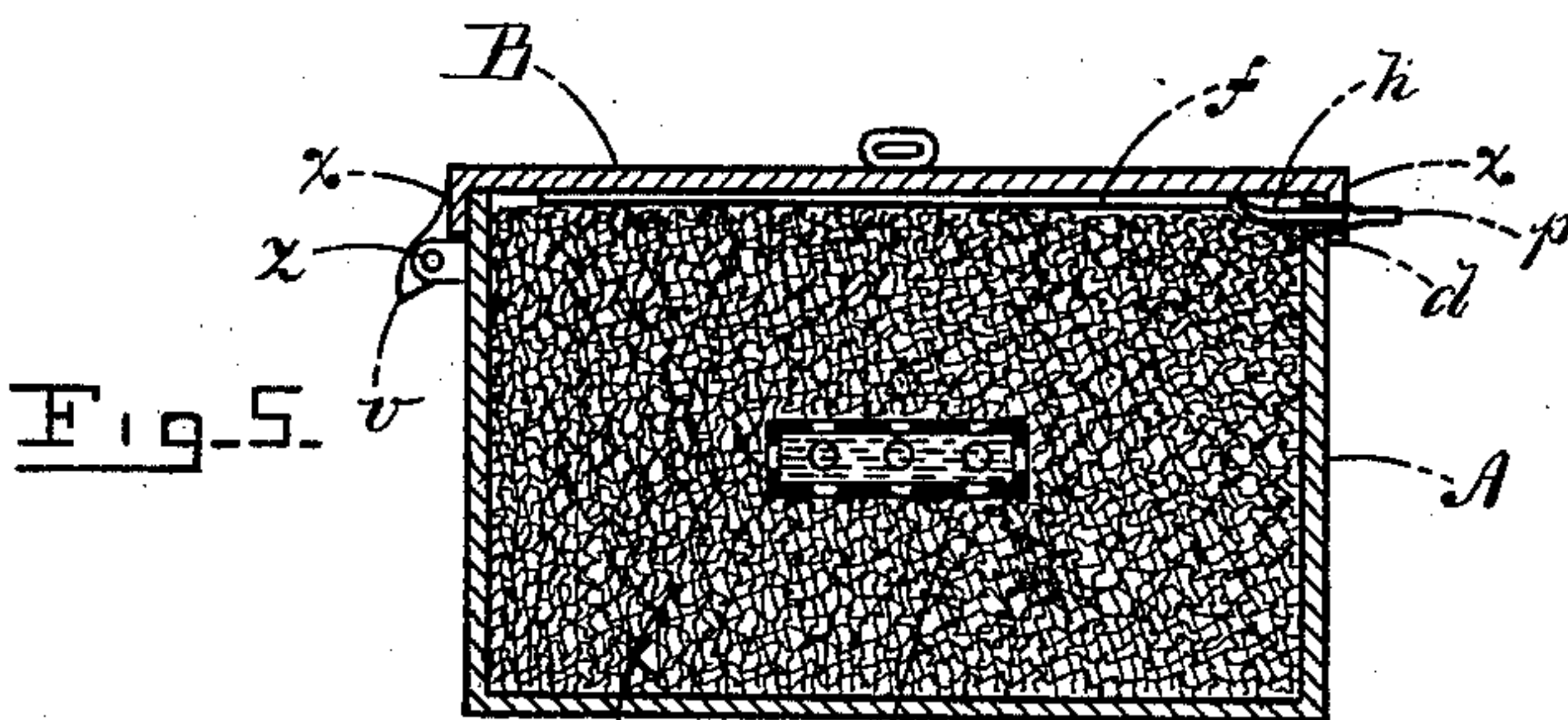
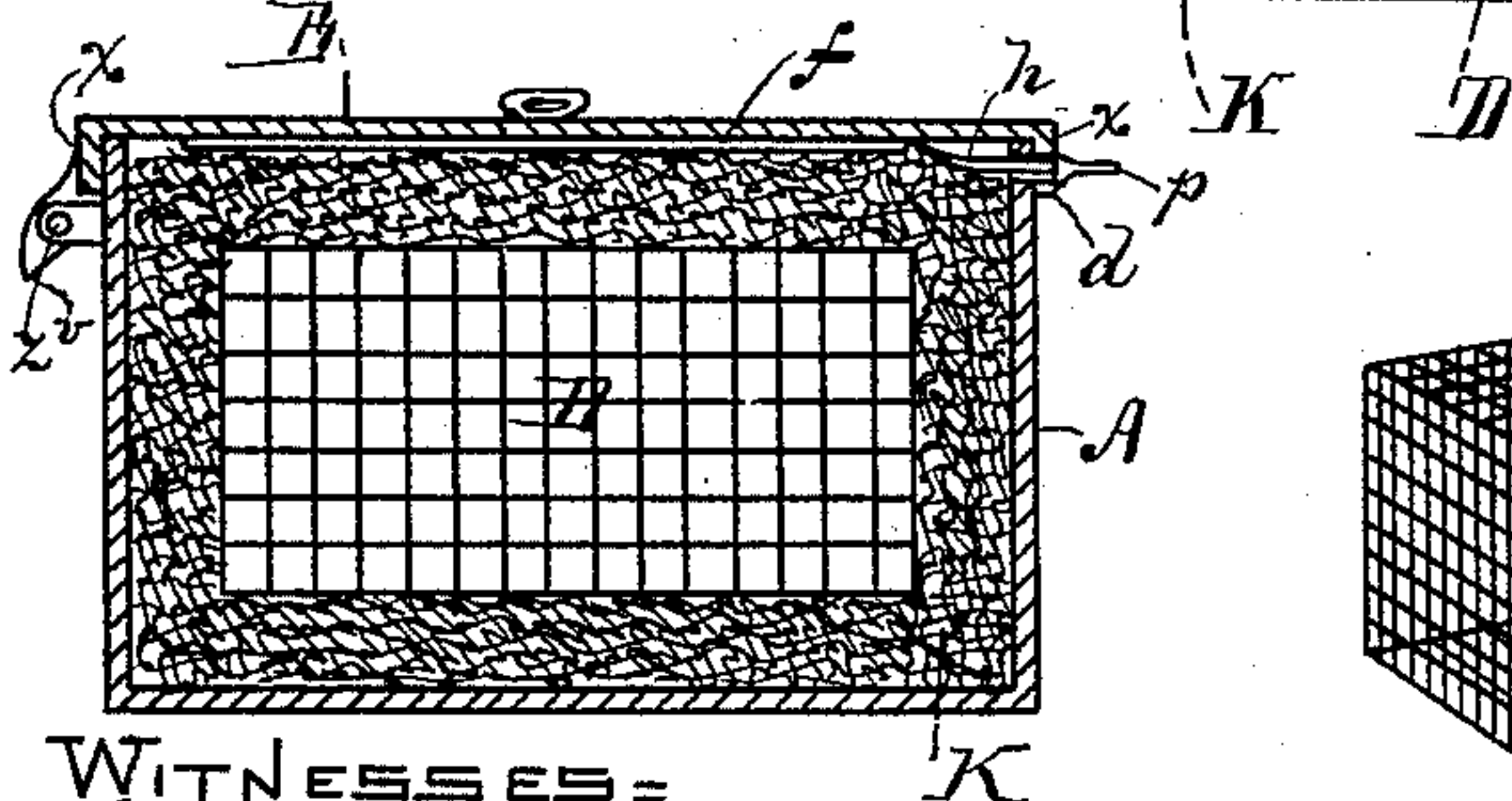
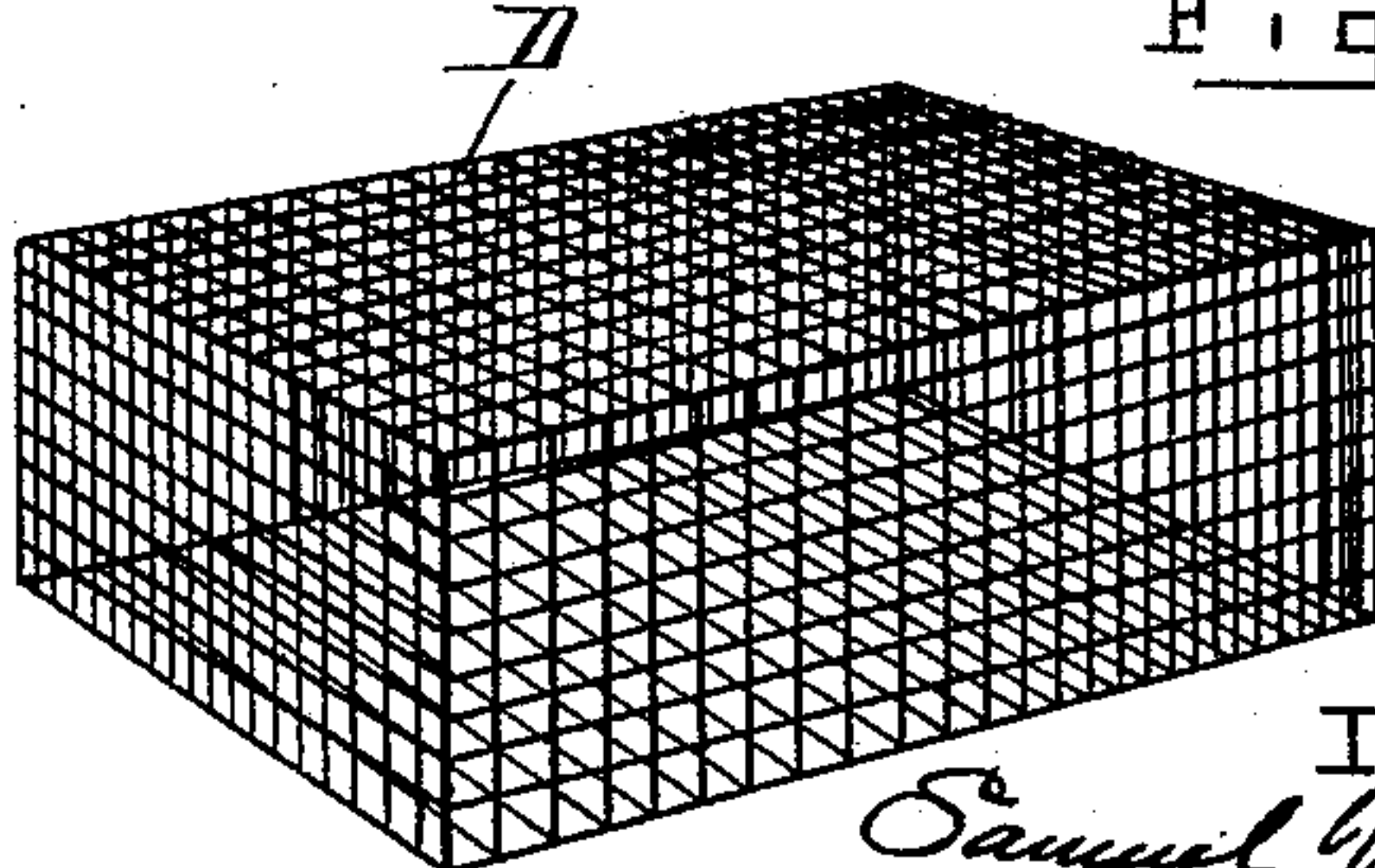


Fig. 3.



WITNESSES:
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Fig. 4.



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UNITED STATES PATENT OFFICE.

SAMUEL J. McDOWELL AND EMERY O. BICKNELL, OF BOSTON, MASSACHUSETTS; SAID McDOWELL ASSIGNOR OF HIS RIGHT TO WILLARD O. ARMES, OF SAME PLACE.

HEATER.

SPECIFICATION forming part of Letters Patent No. 392,162, dated October 30, 1888.

Application filed December 12, 1887. Serial No. 257,688. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL J. McDOWELL and EMERY O. BICKNELL, of Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Heaters, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an isometrical perspective view of our improved heater; Fig. 2, a side elevation of the handle detached; Fig. 3, a vertical transverse section of the heater; Fig. 4, a perspective view of the box removed, and Figs. 5 and 6 views showing a modification of our improvement.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

Our invention relates more especially to that class of heaters which are portable and adapted to burn naphtha, kerosene, alcohol, or any similar combustible fluid; and it consists in certain novel features, as hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body of the heater; B, the cover; C, the handle, and D the box.

The body is preferably composed of iron, but may be made of any other suitable non-combustible material. It may also be of any suitable shape or size in accordance with the position in which it is to be used.

The cover is provided with a downwardly-projecting flange, *x*, adapted to fit closely over the upper edges of the body, and is secured thereto by means of hinges *z*, said hinges being provided with projections *v*, which engage the body and serve as stops to prevent the cover from opening too far, as shown in Figs. 3 and 5. The cover is also provided with a series of transversely-arranged elongated slots

or openings, *m*, and with a plate, *f*, having a corresponding series of slots, said plate being suspended from the under side of the cover by a thumb-screw, *t*, which is fitted to work in a longitudinally-arranged slot, *i*, and constitutes a register or damper for regulating the combustion or size of the flame. The front portion of the flange *x* is provided with a centrally-arranged hole, *d*, (see Fig. 3,) and the front of the body A with a similar hole adapted to register therewith. A key, *h*, consisting of a tapering piece of metal having a head, *p*, is inserted in said holes to lock the heater when the cover is closed, the inner end of said key being curved or bent laterally, as shown in Fig. 3, to prevent its accidental escape therefrom.

The handle C consists of a piece of stout wire which is bent or curved upward at each end, as shown at *g* in Fig. 2, said ends being inserted in centrally-disposed eyes *k* at the ends of the cover B, for the purpose of lifting, carrying, and otherwise manipulating the heater.

The box D is preferably composed of stout wire-cloth or similar reticulated fabric, as shown in Fig. 4, said box being adapted to be inserted centrally in the body of the heater, for the purpose hereinafter specified.

In the use of our improvement the body A is filled with a non-combustible absorbent, K, preferably asbestos, which may be disposed therein loosely or in ropes or sheets, the box D being placed in the center of said filling and so that the asbestos will completely surround it on all sides, as best seen in Fig. 3. The cover B is then closed and locked by the key *h*, its damper being left open and the handle C inserted in the eyes *k*. The body A is then filled with kerosene, naphtha, alcohol, or some other combustible fluid by pouring such fluid through the top layer of asbestos within said body. The packing K becomes thoroughly saturated with the fluid. The device is then placed in the grate, fire-place, stove, fire-pot, furnace, range, or other place where it is to be used and the fluid ignited, thereby causing the flame to rise through the slots in the cover and the heater to operate in a manner that will be readily understood by all conversant with such matters without a more explicit description. The heat from the burning oil at

the top of the body causes the oil within said body to become vaporized and to rise through the upper layer of the packing in the form of vapor, as well as by capillary attraction, and the asbestos packing at the sides, bottom, and ends of the body serves the double purpose of a capillary material and as a non-conductor for retaining the heat within the body.

It will be obvious that the amount of flame or heat may be readily regulated by the damper in the cover, or the flame entirely extinguished, if desired, by closing said damper; also, that when more heat is required than can be obtained with the cover closed it may be opened, thereby allowing the whole upper surface of the asbestos to become ignited.

By the use of the box D a chamber is formed in the interior of the body A for holding the fluid employed in bulk, thereby permitting a much larger quantity of said fluid to be placed in the heater at any one time than would otherwise be possible. The box also subserves another important purpose, in that it reduces the quantity of filling used in the heater.

Instead of the wire-cloth box shown in Fig. 4, a foraminous sheet-metal box may be employed, if preferred, as shown in Figs. 5 and 6. The box may also be made of any desired size, the one shown in Fig. 4 being preferable in that respect to the one shown in Fig. 6.

The form of the apertures in the damper may be varied as desired, those shown being deemed preferable.

The construction of the damper, as well as its position, may also be varied, provided it performs its functions properly.

Any suitable devices for locking the cover and hinging it to the body may also be employed.

One or more of the walls of the box forming the chamber may be closed or unprovided with openings for the fluid, provided there is one or more sufficient openings through which the fluid may enter and leave said chamber.

Having thus explained our invention, what we claim is--

1. An apparatus for burning liquid fuel, consisting of a hollow body for containing the liquid fuel to be burned, the walls of said body being composed of incombustible material, an inner box of reticulated non-combustible material within said body, a layer of asbestos within said body and completely surrounding said box on all sides, and a slotted top provided with a regulating-damper, substantially as described.

2. An apparatus for burning liquid fuel, consisting of a hollow body for containing the liquid fuel to be burned, the walls of said body being composed of incombustible material, an inner box of reticulated non-combustible material within said body, a layer of asbestos within said body and completely surrounding said box on all sides, and a slotted lid hinged to said box and provided with a regulating-damper, substantially as described.

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Witnesses:

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