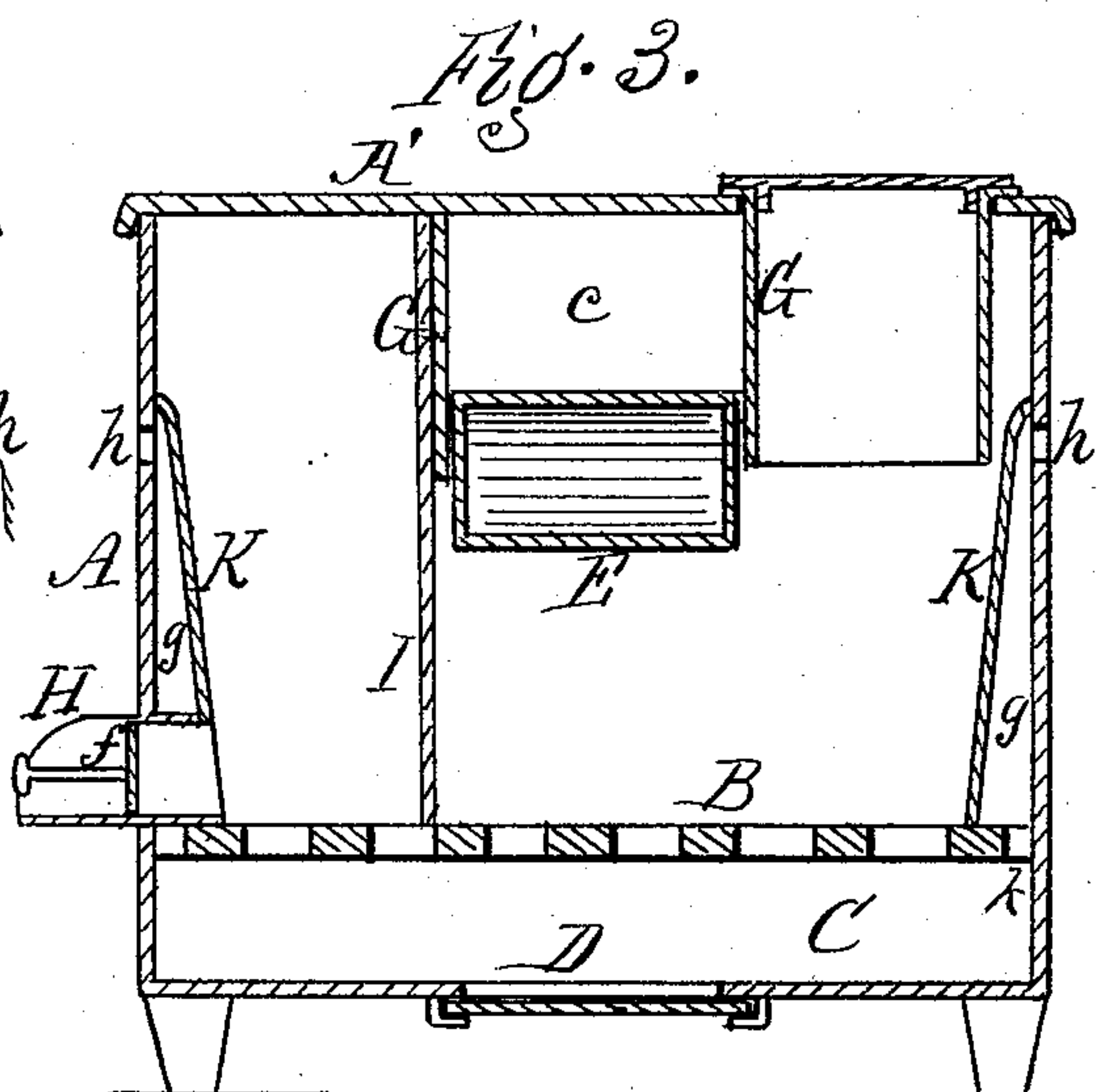
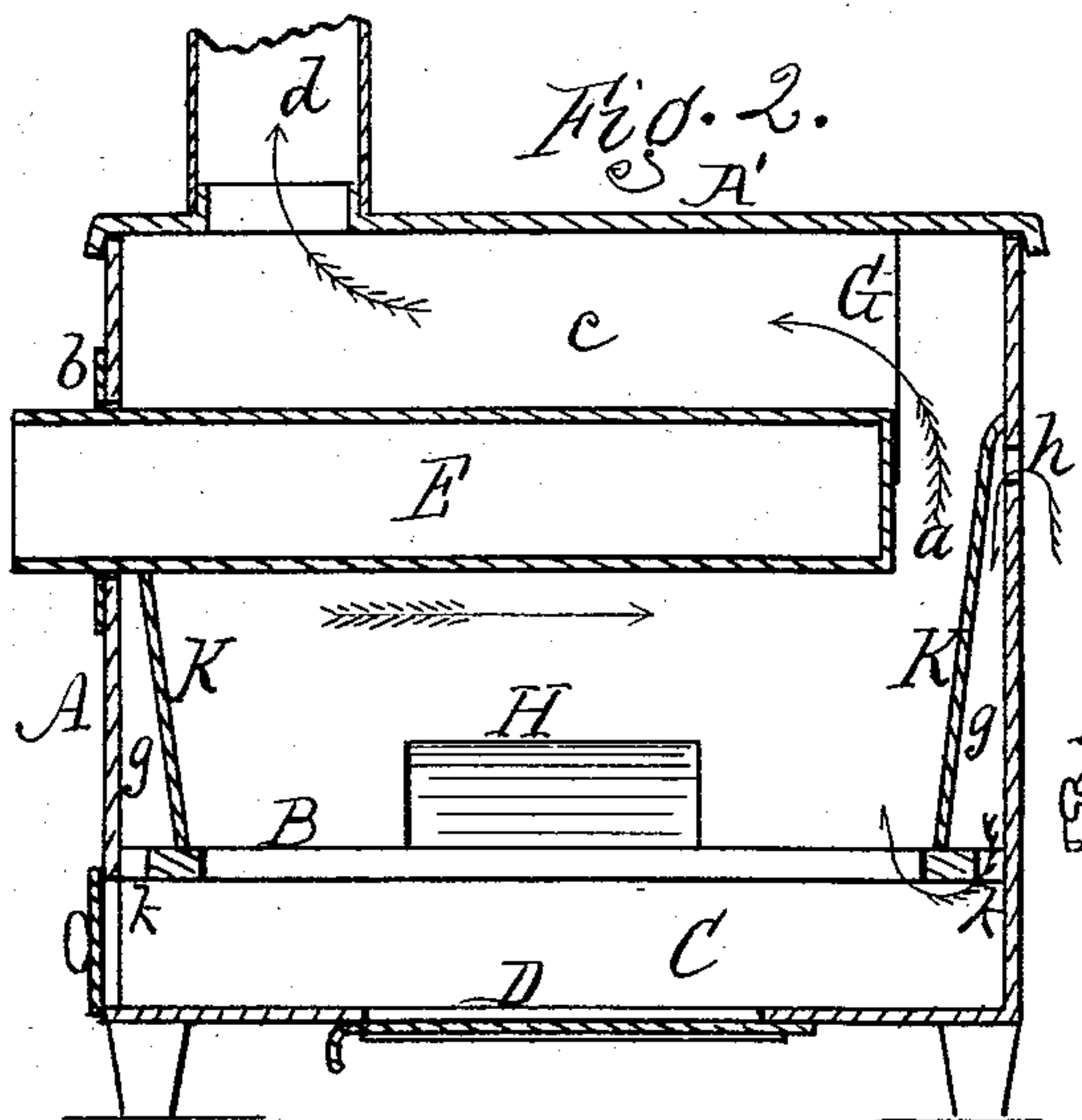
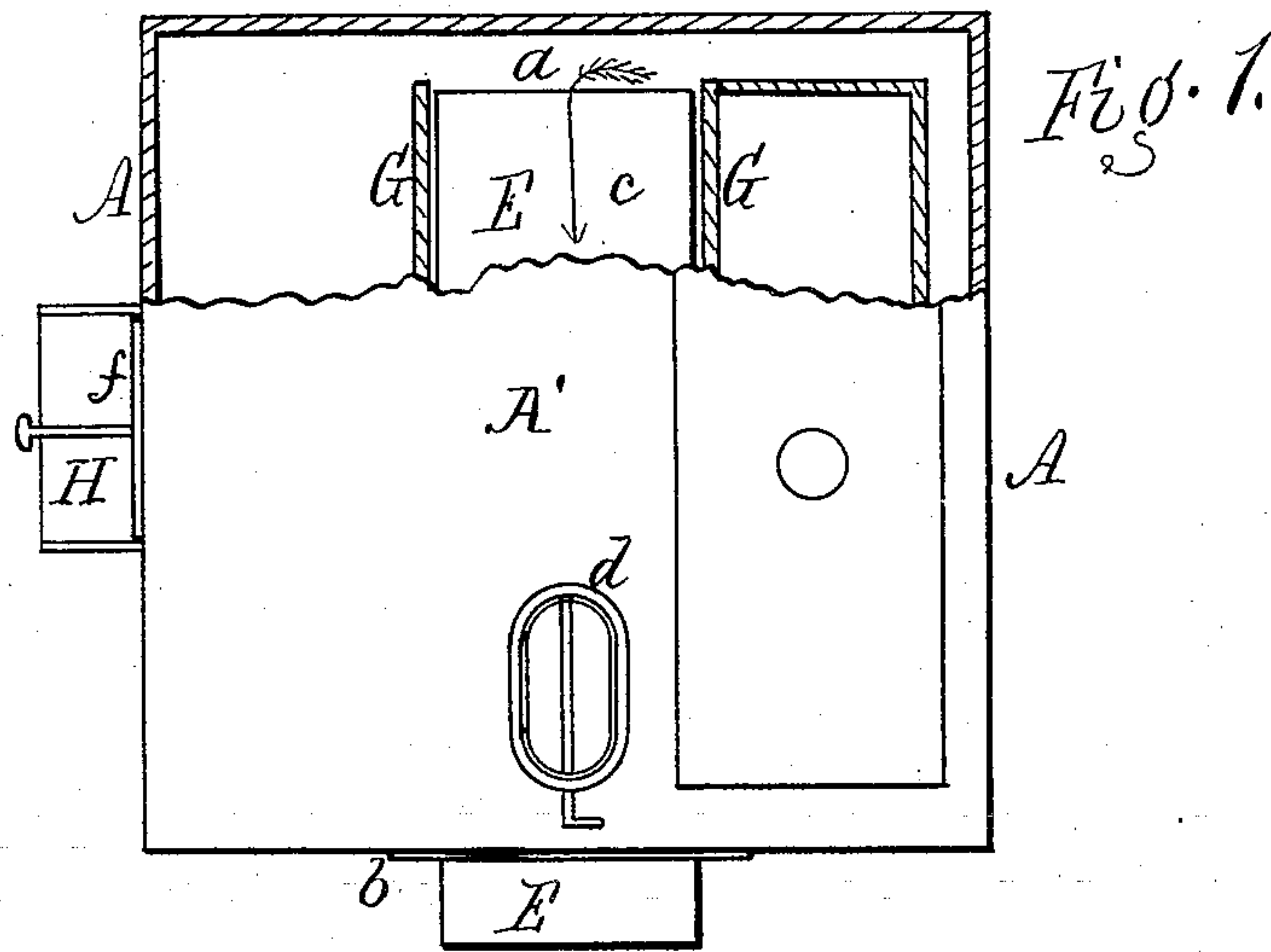


J. DAY.
Soldering-Furnaces.

No. 157,316.

Patented Dec. 1, 1874.



Witnesses.
E. B. Scott:
Jesse Spahn

Inventor.
Justus Day,
per R. F. Osgood,
att'y.

UNITED STATES PATENT OFFICE.

JUSTUS DAY, OF HOLLEY, NEW YORK.

IMPROVEMENT IN SOLDERING-FURNACES.

Specification forming part of Letters Patent No. **157,316**, dated December 1, 1874; application filed April 21, 1874.

To all whom it may concern:

Be it known that I, JUSTUS DAY, of Holley, in the county of Orleans and State of New York, have invented a certain new and useful Improvement in Soldering-Furnaces; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

My improvement relates to furnaces for the heating of tinnern's soldering-irons, in which hard coal is employed.

The invention consists in the combination, with a stationary tube suspended in or above the fire, of plates or partitions on each side of the tube, whereby the heat is caused to pass over the top of the tube, as well as beneath it, before escaping to the exit-pipe, thereby equalizing the temperature upon the tube which contains the irons. It also consists in the employment of an interior jacket or lining, in combination with air-holes in the casing and the grate of the furnace and passages around the grate, for the purpose of producing a downward draft, all as hereinafter described.

In the drawings, Figure 1 is a plan with a portion of the top of the furnace broken away. Figs. 2 and 3 are vertical sections at right angles to each other.

A is the exterior case of the furnace, which may be square or of other form. A' is the top plate of the furnace. B is the grate. C is the ash-pit; and D is an opening in the bottom, covered by a slide, by which means the ashes may be removed. E is the tube, in which the soldering-irons are placed for heating. It may be made of any desired size and form, the outer end being open, and the inner one closed to prevent the passage of the draft through. The inner end does not reach to the back of the furnace, but leaves a space, *a*, for the passage of the heat upward and over the tube, as will presently be described. The tube is suspended a suitable distance above or in the fire, and has no vertical adjustment, but may be adjusted out and in endwise. I prefer to attach it to the furnace by a plate, *b*, riveted in place, through which it passes loosely. On each side of the tube E is a plate or partition, G, projecting down from the top of the fur-

nace, so as to form, in connection with the top plate A' of the furnace, a flue-space, *c*, over the top of the tube. This flue communicates at the rear end with the space *a*, and at the front end with the exit-pipe *d*, which rises from the top of the furnace, as shown. The heat from beneath, therefore, passes under the tube, thence through the space *a*, and thence through the flue *c* over the top, thereby heating both sides of the tube in nearly an equal degree. The plates G G may be made either permanent with the top of the furnace, or they may be made removable. If desired, also, these partitions may form a part of a magazine on each side for holding a supply of coal, as shown at the right hand in Fig. 3. In such case a cover is made over the top of the magazine.

One or more apertures, H, are made near the bottom of the furnace, on one or more sides, for the purpose of heating soldering-irons, by inserting them directly in the fire in the usual manner.

In kindling the fire charcoal is used, the hard coal being placed on top. In such case, while the charcoal is burning, and before sufficient heat is produced in tube E, the irons may be heated in the usual way. When not in use the aperture H is closed by a damper, *f*. In such use of the aperture H I also prefer to employ a diaphragm, I, which shuts down vertically across the furnace-space on one side of the tube E, thereby dividing said furnace-space into two compartments, and thereby contracting the fire-chamber where the irons are inserted. By this means the heat can be greatly increased. The diaphragm is fitted loosely in place, so as to be inserted or removed at pleasure.

On the inside of the furnace is a lining or jacket, K, of angular form, which shuts down on the grate B, and leaves a jacket-space, *g*, between it and the sides of the furnace. At the top of the jacket-space are holes *h h*, opening outward through the sides of the furnace, for supplying the cold air. At the bottom the edges of the grates are cut away, leaving passages *k k*, through which the air passes from the jacket-space beneath the grate beneath the fire. By this means the draft-air is heated

before it reaches the fire, and the sides of the furnace are also prevented from burning out. The lining can be replaced at any time.

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

1. The combination, with the furnace, of the partitions G G, projecting downwardly from the top plate A', and with the longitudinal tube E, the said parts forming the flue c above the tube E, substantially as and for the object specified.

2. The combination in a soldering-furnace of

the interior lining K, resting on the grate, with the casing A, having the air-holes h, and the grate B having the air-holes k, substantially as described, and for the purpose specified.

In witness whereof I have hereunto signed my name in presence of two subscribing witnesses.

JUSTUS DAY.

Witnesses:

B. J. PERRIGO,
C. J. CHURCH.