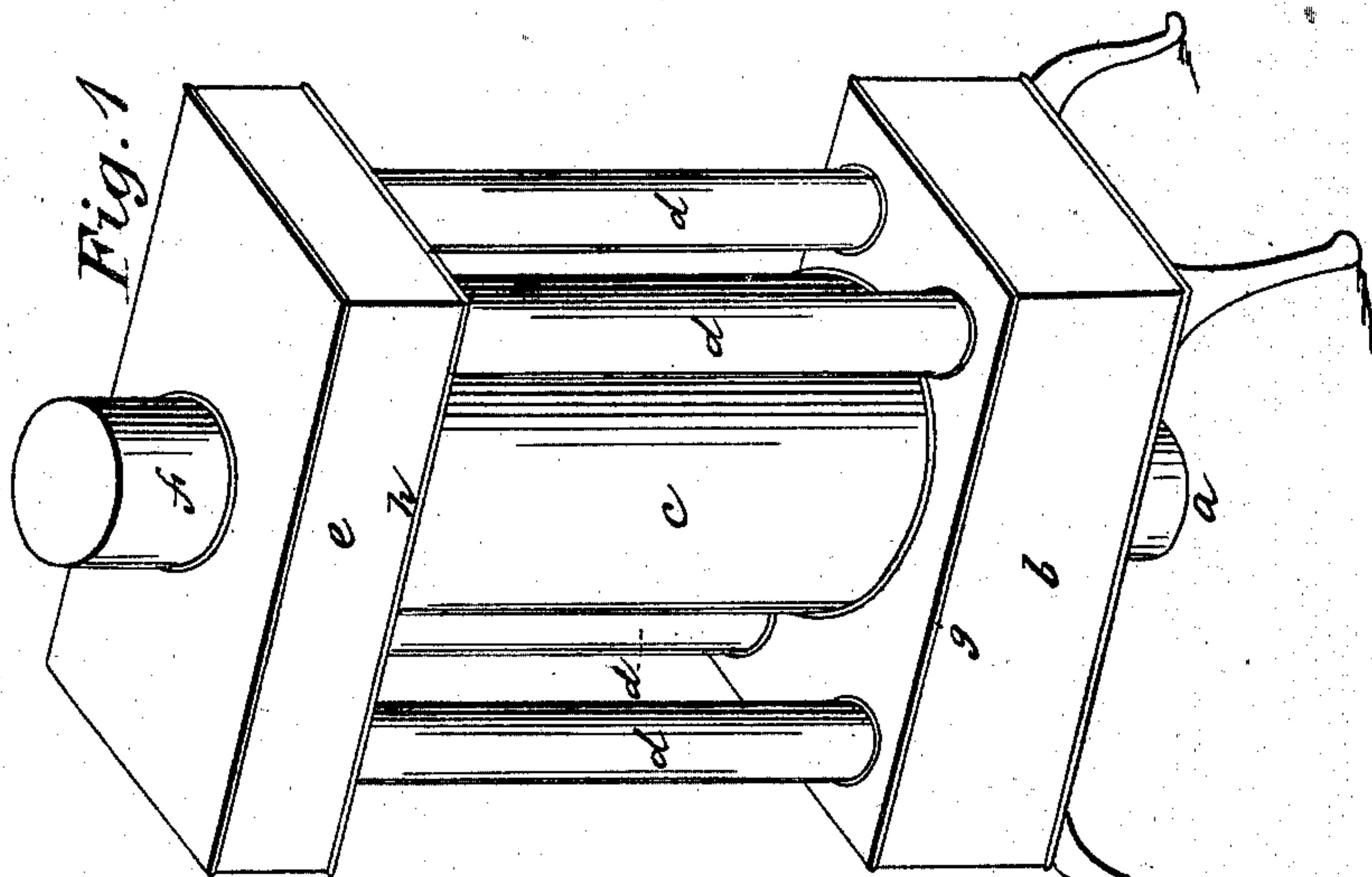
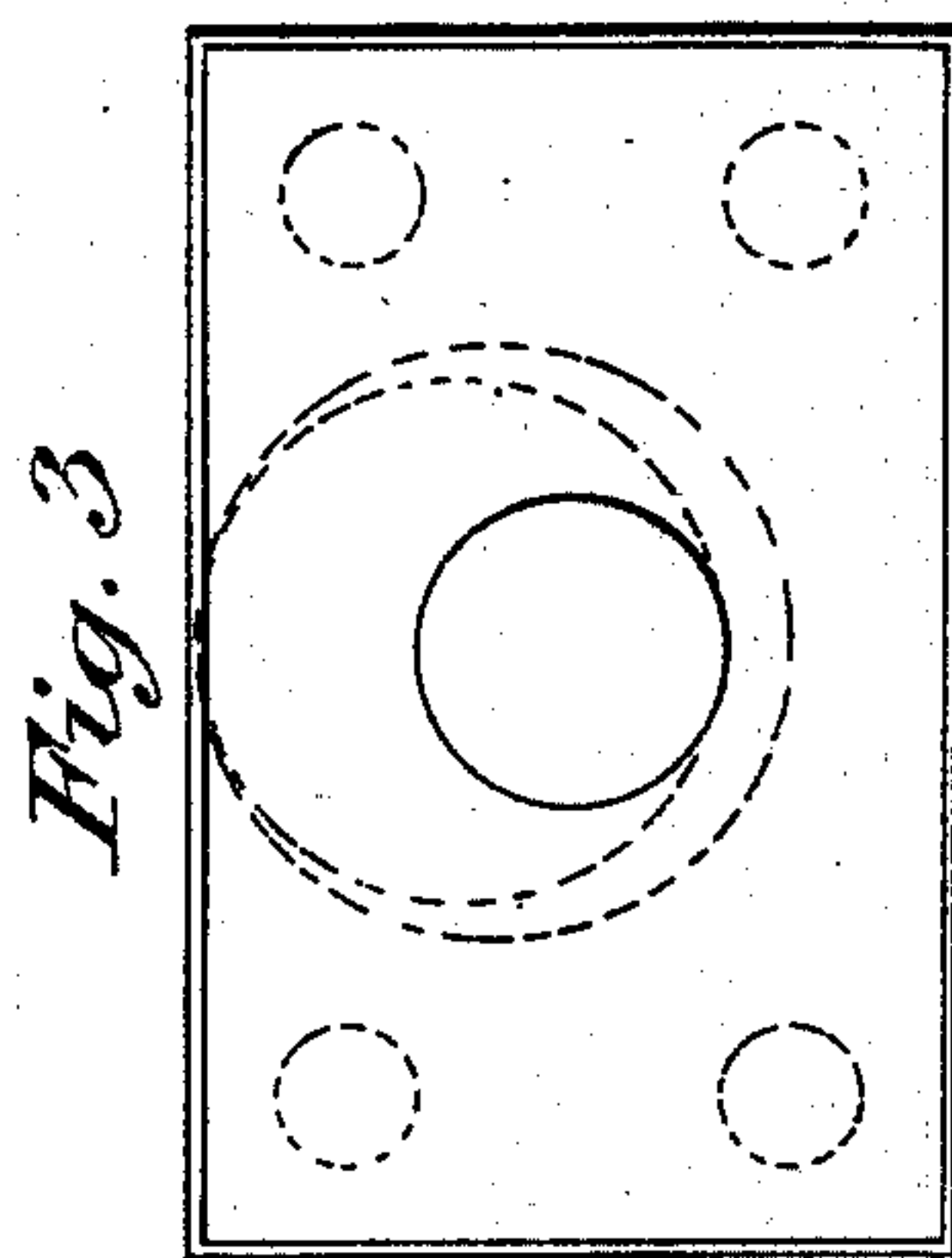
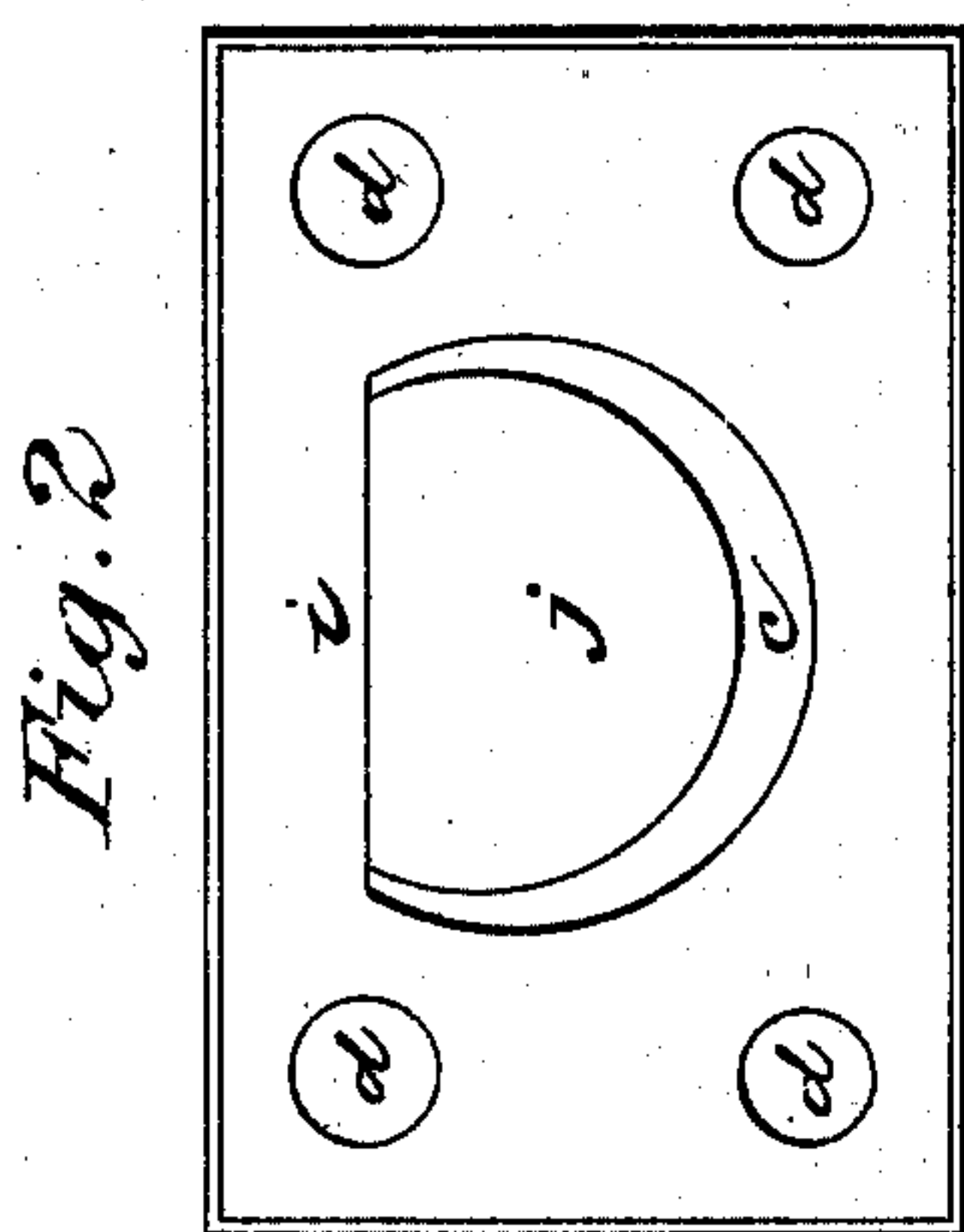
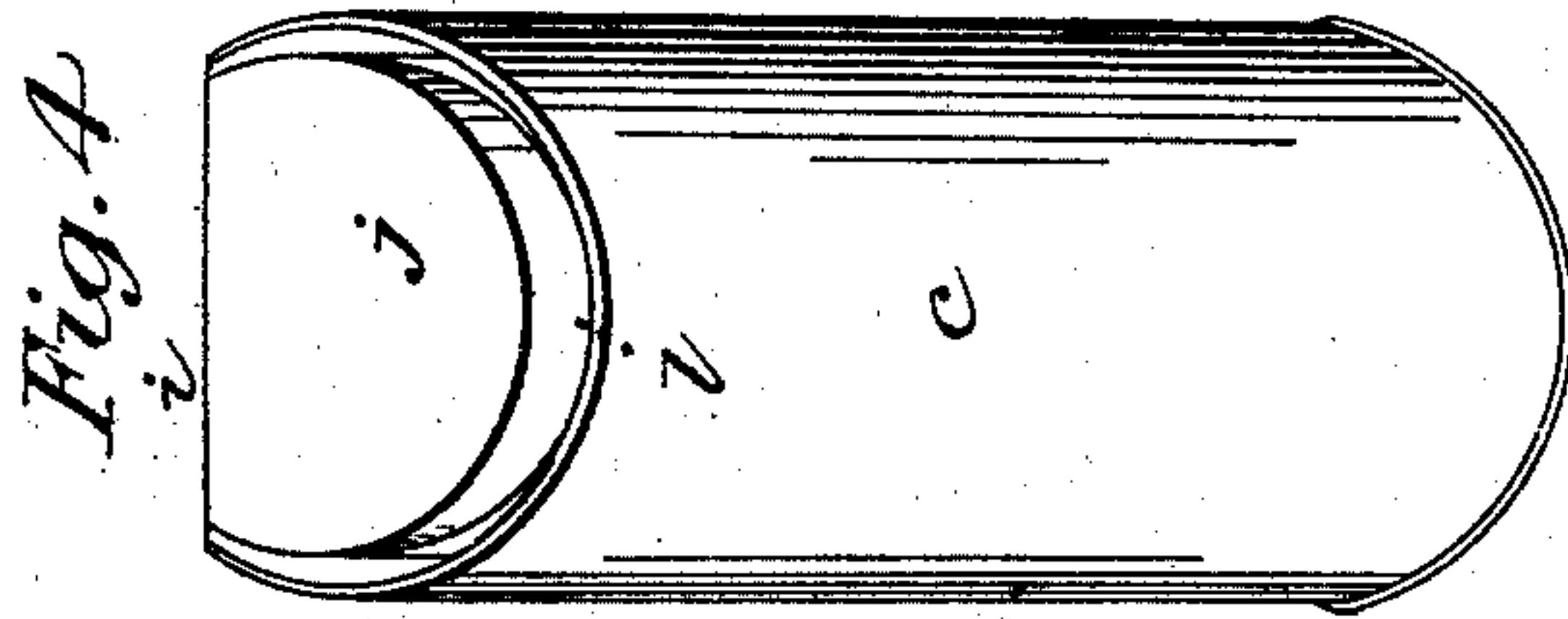


N. E. CORNWALL.

Heating Drum.

No. 59,971.

Patented Nov. 27, 1866.



Witnesses:
Alphahow
Amstrong

Inventor:
N. Cornwall.

United States Patent Office.

HEAT-RADIATING ATTACHMENT FOR STOVE-PIPES.

NATHANIEL E. CORNWALL, OF NEW YORK.

Letters Patent No. 59,971, dated November 27, 1866.

SPECIFICATION.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, NATHANIEL E. CORNWALL, of the city of New York, and State of New York, have invented a new and useful Machine for Collecting and Saving the Surplus Heat from Stoves, Ranges, Furnaces, &c., and using the same for heating other rooms and apartments than that in which the stove, range, or furnace is located; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, in which—

Figure 1 is a perspective view of the exterior of the stove-heat saver and diffuser, which, at *a*, is attached to or set upon the pipe of a stove, range, or furnace, in a lower or adjoining room; *b* represents the lower receiver, into which the heat and smoke from the stove, range, or furnace enter from the pipe of the stove, range, or furnace in the room below; *c* represents the central pipe, which is convexo-concave in its exterior formation, with a close chamber in the rear; and *d d d d*, the four small, round pipes; through which five pipes the heat and smoke pass to the upper receiver *e* and *f*, the pipe through which the residuum of heat and smoke, or draught, passes off.

Figure 2 is a horizontal section of the five pipes *c d d d d*, connecting the lower receiver *b* with the upper receiver *e*, at *g* or *h*, or at any other point in *g* and *h*, in fig. 1; and presents, also, an interior view of the top of the lower receiver, *b*, and of the bottom of the upper receiver, *e*, and of the orifices *c d d d d*, connecting the upper and lower receivers, *b* and *e*, in fig. 1. The line *i* represents the rear plate of the close or air-tight chamber *j*, which extends from the lower to the upper receiver, behind the convexo-concave or crescent pipe, *c*, in figs. 1 and 2.

Figure 3 represents an interior view of the bottom of the lower receiver, *b*, in fig. 1, with the orifice of the stove-pipe *k* in the centre. This figure also represents an interior view of the upper receiver, *e*, in fig. 1, and the orifice *k* would represent the flue-pipe, *f*, in fig. 1; but this flue-pipe may be shifted, in this position, to suit taste, ornament, convenience, and with due regard to draught. The dotted lines in this figure represent the relative positions of the stove-pipe, *a*, in fig. 1, conducting the heat and smoke into the heat-saver and diffuser, and the five pipes, *c d d d d*, in fig. 1, which circulate the heat throughout the heat-saver and diffuser.

Figure 4 represents a front exterior of the convexo-concave or crescent pipe, *c*, with its upper orifice, *l*, and the top of the close or air-tight chamber *j*.

The stove-heat saver and diffuser is constructed of sheet iron, or any other material of which stoves are made, and consists of a short pipe, *a*, in fig. 1, which is made to fit upon the pipe from the stove, furnace, or range, in the lower or adjoining room; of the lower chamber, *b*, into which said stove-pipe enters; of the four round pipes, *d d d d*, and the convexo-concave pipe, *c*, communicating between the upper and lower receivers; of the close or air-tight chamber, *j*, in fig. 2; of the upper receiver, *e*, and the flue-pipe, *f*, in fig. 1. The heat and smoke coming up from the stove, range, or furnace enter the lower chamber, *b*, of the stove-heat saver and diffuser, in fig. 1, and instead of passing immediately to the upper chamber, *e*, out at the flue-pipe, *f*, strike against the bottom of the closed chamber, *j*, in fig. 2, and are thus detained and dispersed throughout the lower chamber, *b*, and then passing up through the five pipes, *c d d d d*, in fig. 1, to the upper chamber, *e*. Here the heat is also detained a moment, and diffused throughout the upper chamber *e*, and the smoke and residuum of heat pass off through the flue-pipe *f*, which, in order to detain the heat as much as possible, is not placed immediately over any one of the five pipes, *c d d d d*, conducting the heat up, but is placed relatively to them, as the stove-pipe *a* is placed in relation to the lower ends of the five pipes in the lower receiver. The close or air-tight chamber, *j*, figs. 2 and 4, against the bottom of which the heat first strikes, and which is nearly encircled by the heated convexo-concave or crescent pipe, *c* and *l*, in figs. 2 and 4, becomes heated, as well as the five pipes, *c d d d d*, in fig. 1, and thus the whole heat-saver becomes heated, and radiates and diffuses the heat thus saved and husbanded throughout the room or chamber intended to be heated, which thus becomes as thoroughly warmed as the room or chamber in which is located the range, stove, or other apparatus in which the heat was originally generated. The close chamber, in fig. 2, being sealed, and having no outlet to carry off the heat, when once heated, remains so a long time, and greatly contributes to keeping the whole apparatus warm.

A practical test of this stove-heat saver and diffuser has been made by the inventor, who has constructed one of an ordinary stove size, in his own house, which has proved a perfect success in heating a good-sized

parlor, and thus saving the expense, labor, and dirt of another fire, which is the great object of my invention. By continuing the pipe *f* up to another room, and placing on it another stove-heat saver and diffuser, such other room may also be heated in the same way.

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

1. The convexo-concave or crescent-shaped pipe, *c*, arranged and combined with the chambers *b* and *e*, and the pipes *d d d*, in the manner and for the purposes set forth.

2. In connection with the pipe *c*, the close chamber *j*, constructed substantially as described, and for the purposes shown.

3. The chambers *b* and *e*, connected by pipes *d d d* and *c*, together with the close chamber *j*, constructed and arranged to operate in connection with a stove-pipe, in the manner described.

N. E. CORNWALL.

Witnesses:

EDW. J. WILSON,

B. RUSH STODDARD.