

(No Model.)

C. G. MARSHALL.
WATER OR LIQUID HEATER.

No. 378,512.

Patented Feb. 28, 1888.

Fig. 1.

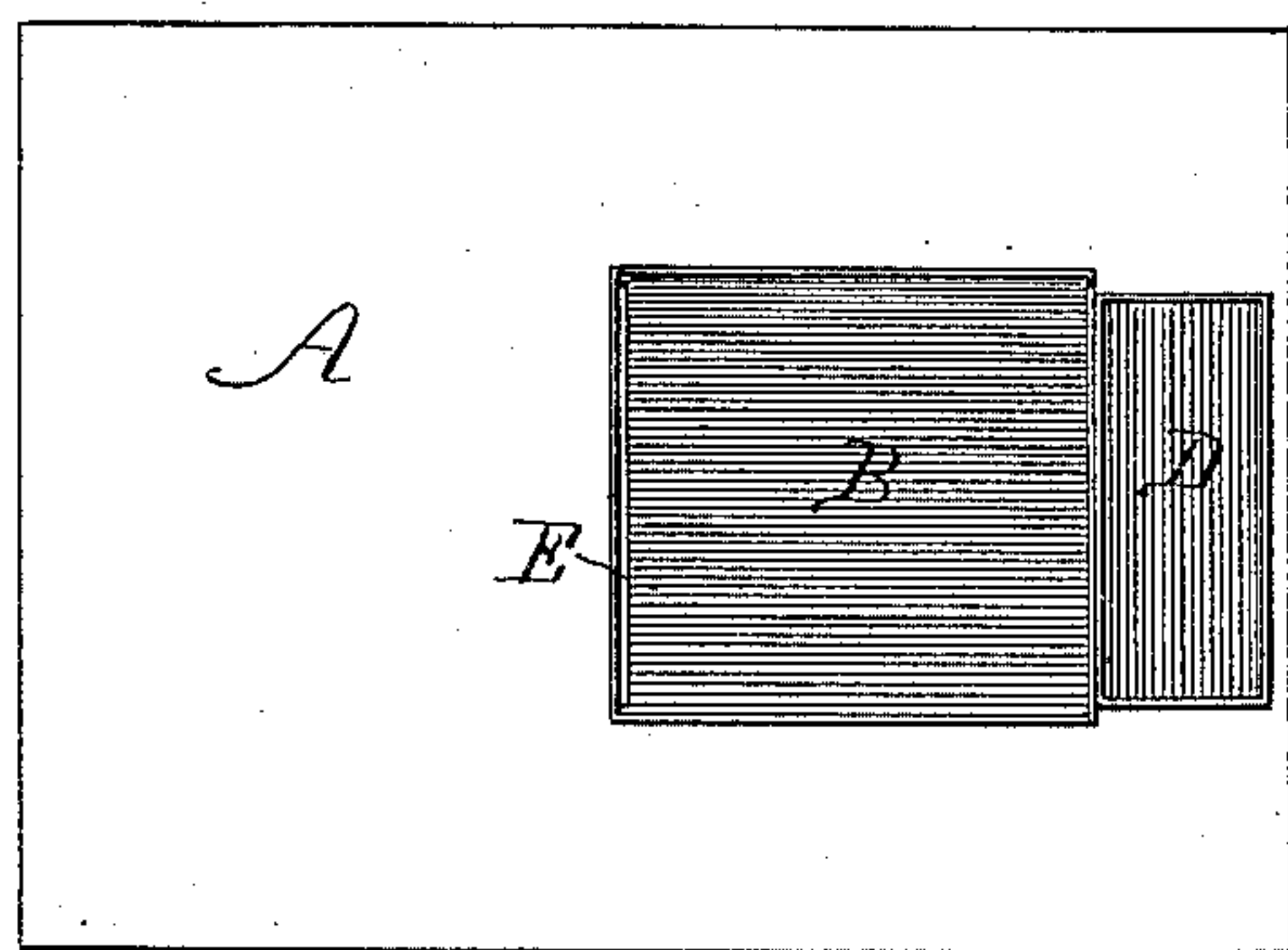


Fig. 2.

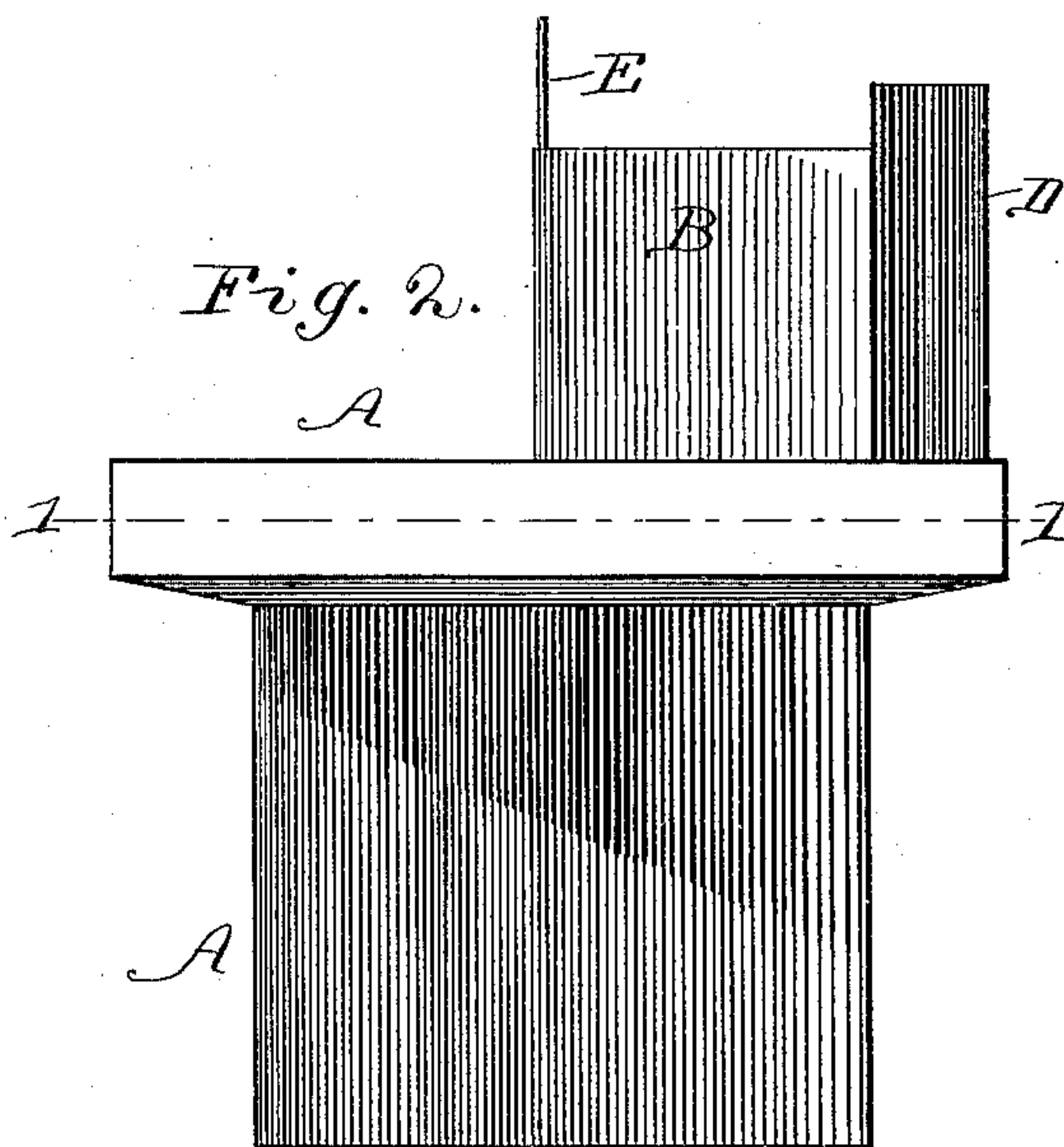


Fig. 3.

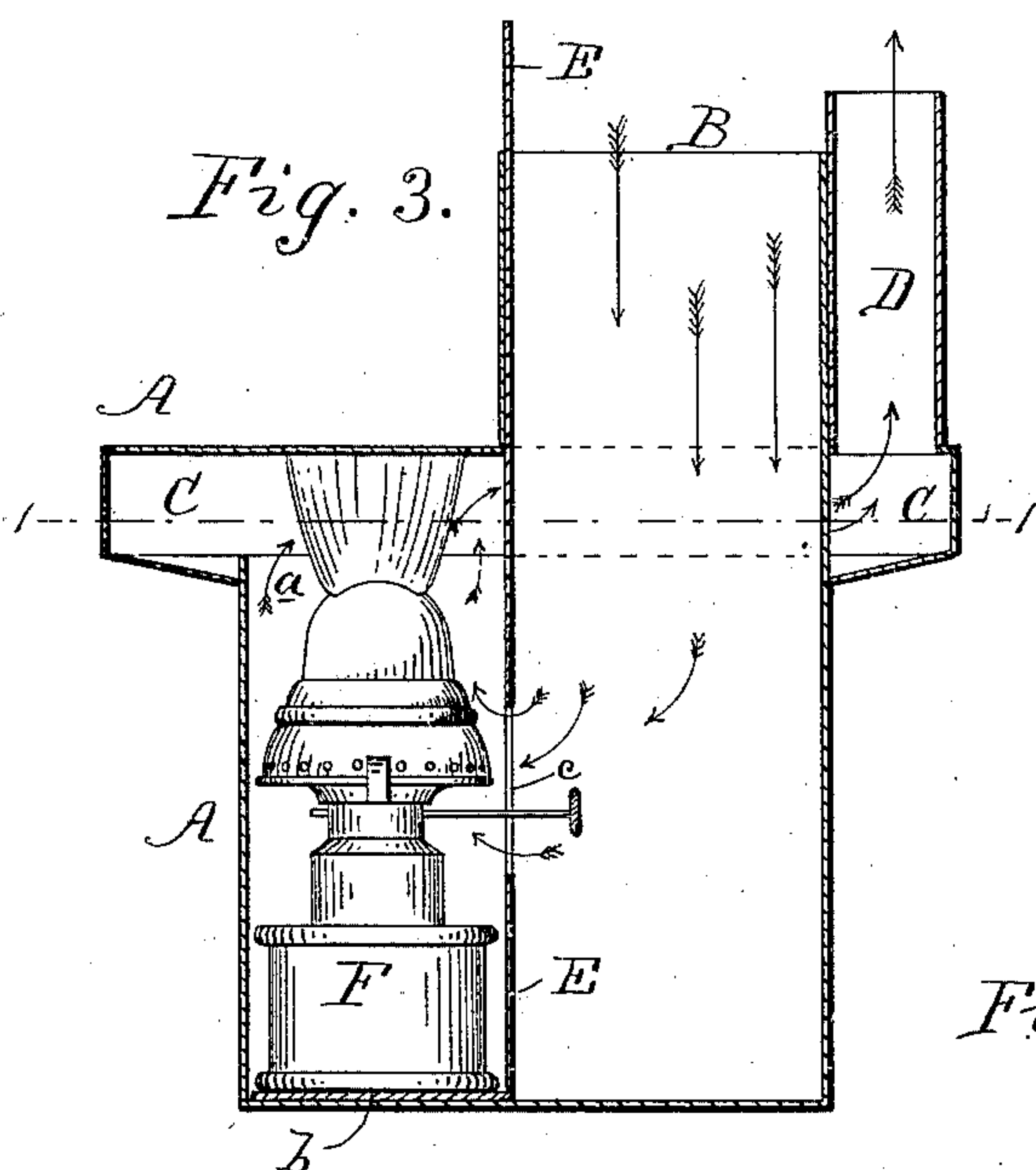


Fig. 4.

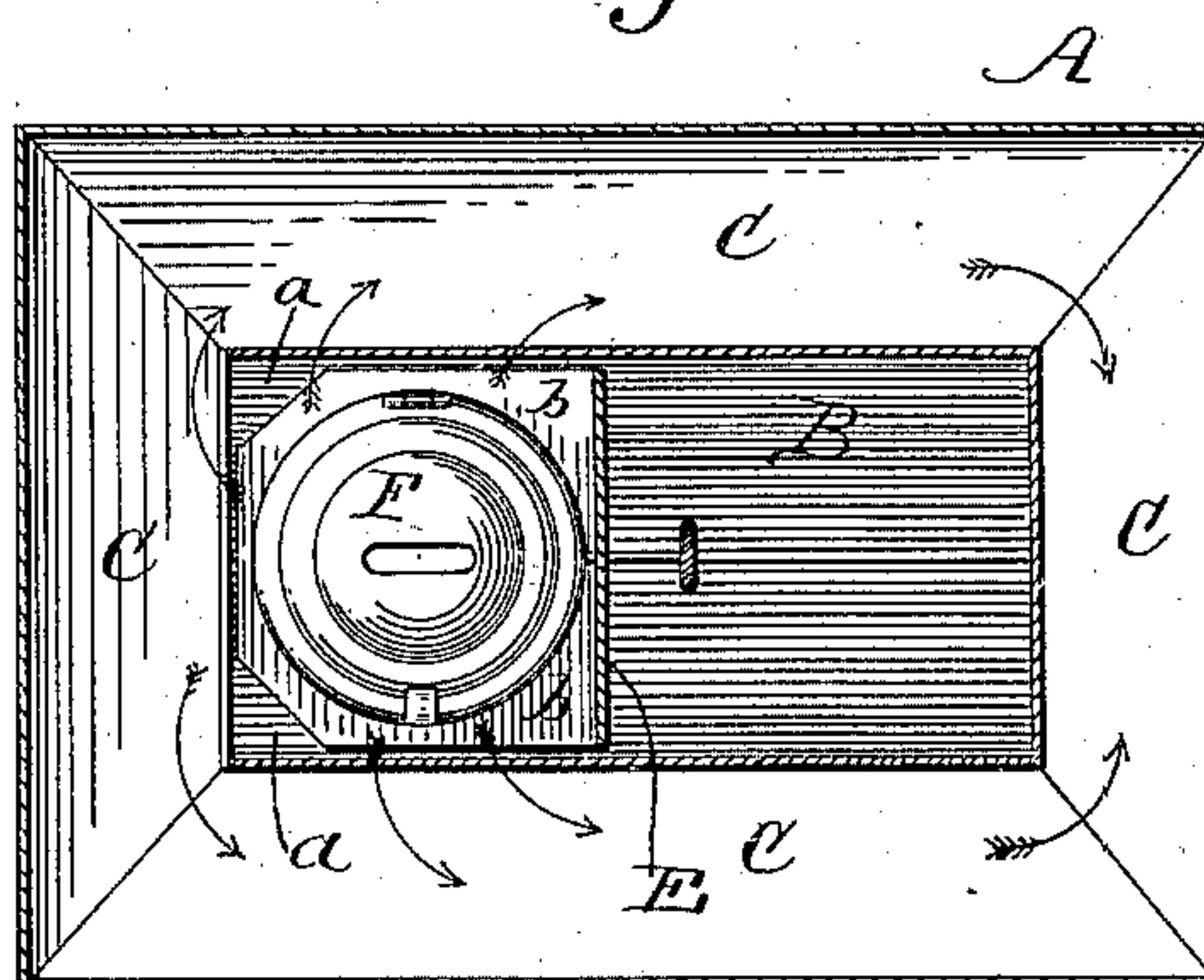
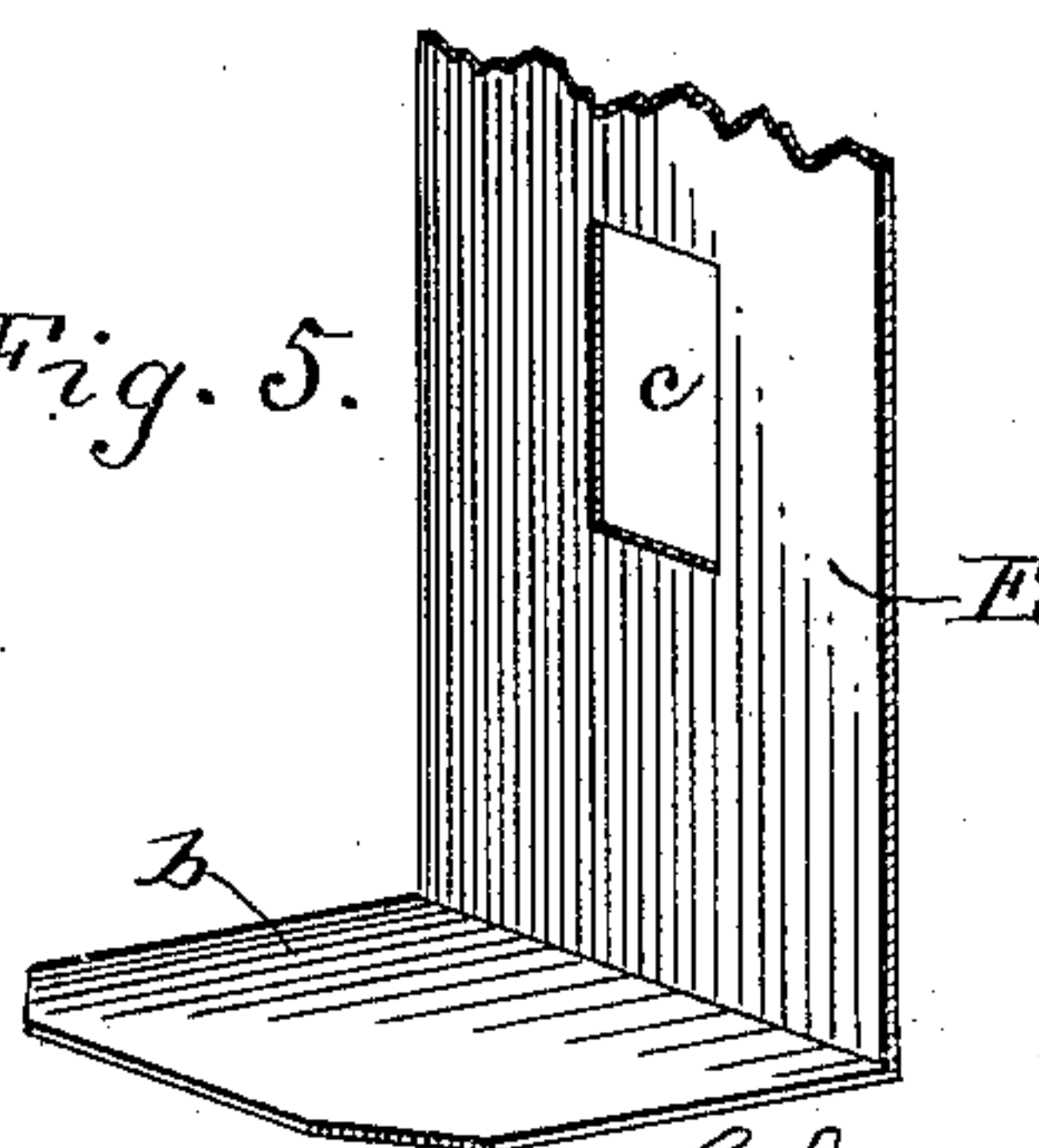


Fig. 5.



Witnesses

Thos. Houghton.

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By his Attorneys

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UNITED STATES PATENT OFFICE.

CHARLES GRANDISON MARSHALL, OF LANGDON, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HIMSELF, AND JAMES W. BASCOME, OF ALSTEAD, NEW HAMPSHIRE.

WATER OR LIQUID HEATER.

SPECIFICATION forming part of Letters Patent No. 378,512, dated February 28, 1888.

Application filed June 23, 1887. Serial No. 242,232. (No model.)

To all whom it may concern:

Be it known that I, CHARLES GRANDISON MARSHALL, of Langdon, in the county of Sullivan and State of New Hampshire, have invented a new and useful Improvement in Water or Liquid Heaters; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a side elevation, and Fig. 3 a vertical longitudinal and median section, of an apparatus of my invention, the nature of which is defined in the claim hereinafter presented. Fig. 4 is a horizontal section taken through its rectangular flue, or on line 1 1 of Fig. 2. Fig. 5 is a perspective view of the removable partition E.

The apparatus is specially designed to be immersed in a tub or watering-trough for the purpose of keeping from freezing, or warm at an agreeable temperature for farm stock in cold weather, the water of such tub or trough.

In the drawings, A denotes a box closed at top, except in there having a tubular induct, B, leading into and extending upward from it, near one end of it, in manner as represented. Surrounding the said box at its upper part is a rectangular flue, C, into which, at the top and at one end of the box, is an opening, *a*. This flue, at the opposite end of the box, opens into an educt or a chimney, D, which in the drawings is represented as extending upward from and aside of and somewhat above the induct B. Within the box is a removable partition, E, which extends down through the induct B and across the interior thereof and that of the box, such partition at its lower end having a shelf, *b*, projecting from it at a right angle to it, there being placed on such shelf a lamp, F. Just above the shelf there is an opening or passage, *c*, through the partition. The induct has a width corresponding to that of the box, and the partition when in place in them projects somewhat above the top of the induct. By means of the partition and its shelf the lamp may be readily introduced into the induct and box or removed therefrom, as occasion may require. Instead

of the shelf, any other suitable means of supporting the lamp relatively to the partition, so as to be movable therewith, may be substituted.

After having inflamed the wick of the lamp and inserted the partition and lamp into the induct so that the shelf shall rest on the bottom of the box, the partition, with the lamp, should be moved forward within the induct and box until the partition may be carried against that end of the induct which is next to the opening *a*, from which it will be seen that the box, by means of the partition, will be divided into two chambers, in one of which will be the lamp. Air for the supply of combustion will pass down the induct into the chamber next below it, and thence will flow to the lamp through the opening in the partition. The volatile products of combustion from the flame of the lamp will be disseminated through the box, from which they will pour through the opening *a* into the surrounding flue C and escape therefrom through the educt or chimney D, heat from such products being absorbed by the sides of the box and the flue and radiated therefrom into the water of the trough on the heater being immersed therein nearly to the top of the induct.

The apparatus is very efficient for the purpose for which it is intended. It can be employed to advantage in heating water in tubs, cisterns, or reservoirs, whether for simply heating it for any useful object, or for preventing it from freezing in winter.

I claim—

The water or liquid heater, substantially as described, consisting of the box, its induct leading into said box, flue surrounding said box, and educt or chimney into which the flue opens, and the removable perforated partition within the induct and with its shelf and lamp, all arranged essentially in manner and for use as set forth.

CHARLES GRANDISON MARSHALL.

Witnesses:

MARTIN BASCOM,
IMOGENE BASCOM,