

(No Model.)

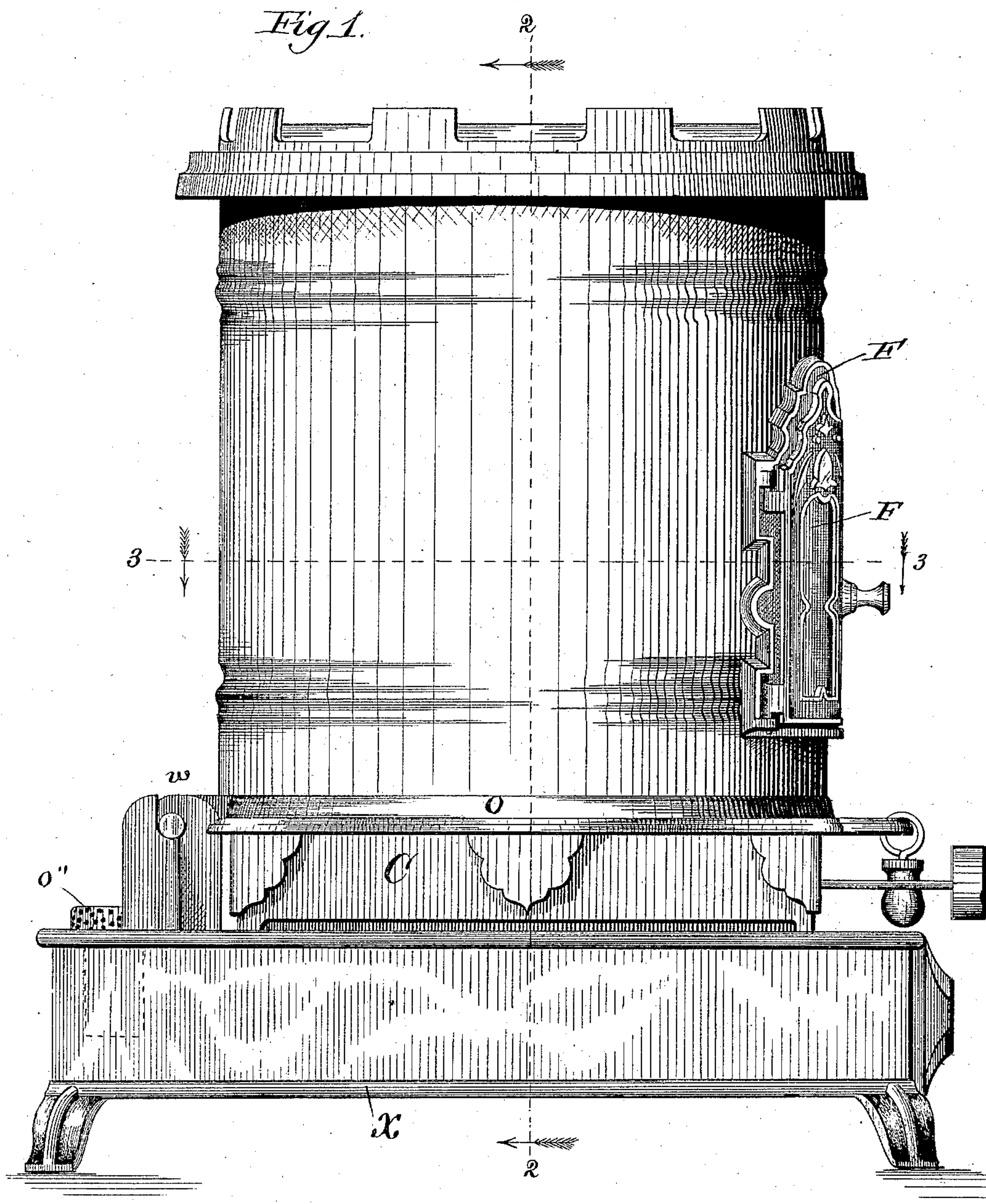
5 Sheets—Sheet 1.

E. R. WALKER.

OIL STOVE.

No. 313,696.

Patented Mar. 10, 1885.



Witnesses:

Chas. E. Gaylord,
Frederick Goodwin

Inventor:

Eugene R. Walker
By *Offield & Sons*
Attorneys,

(No Model.)

5 Sheets—Sheet 2.

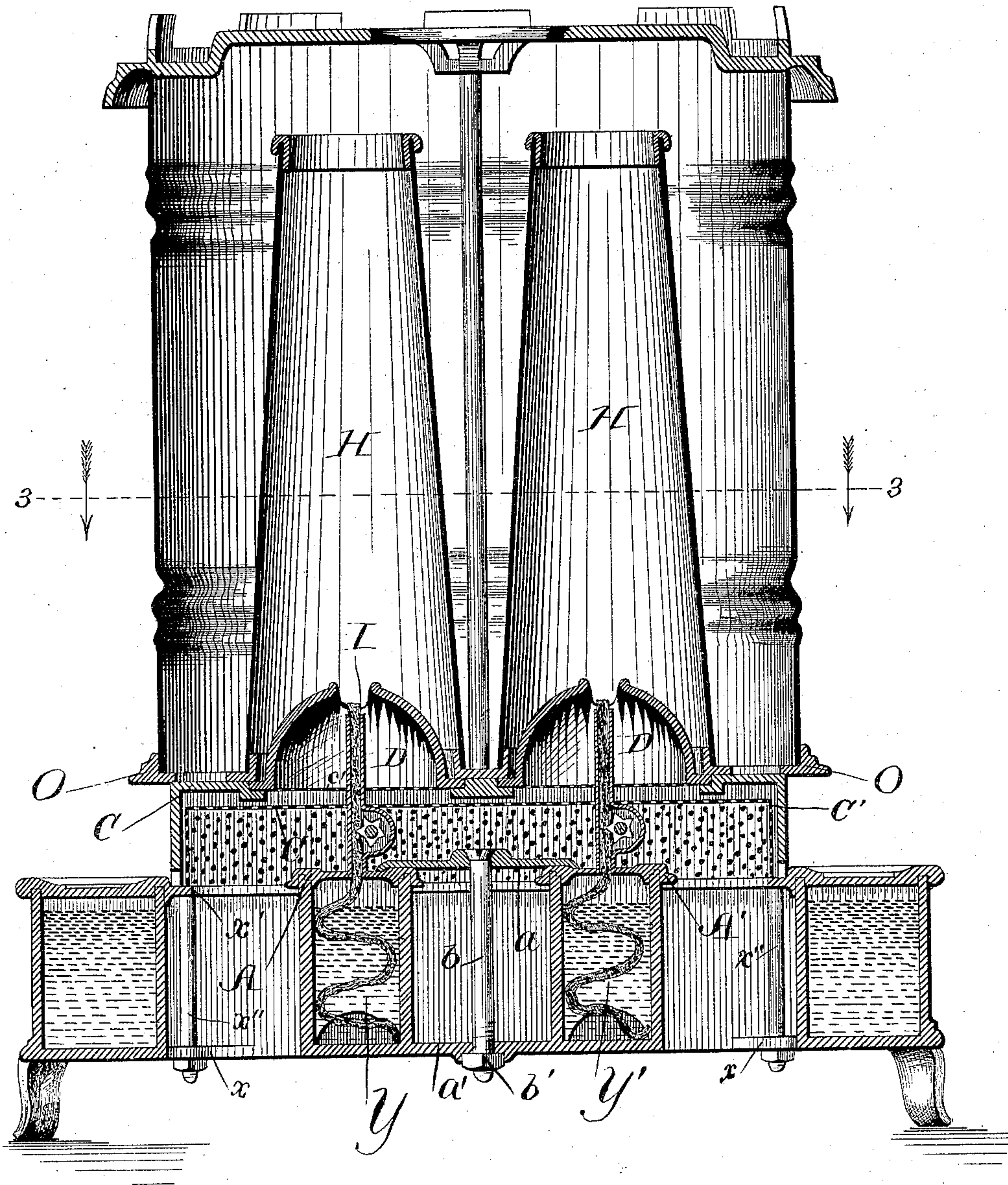
E. R. WALKER.

OIL STOVE.

No. 313,696.

Patented Mar. 10, 1885.

Fig. 2.



Witnesses:

Chas. C. Gaylord.
Frederick Goodrum

Inventor:

Eugene R. Walker
By *Offield & Sons*
attorneys,

(No Model.)

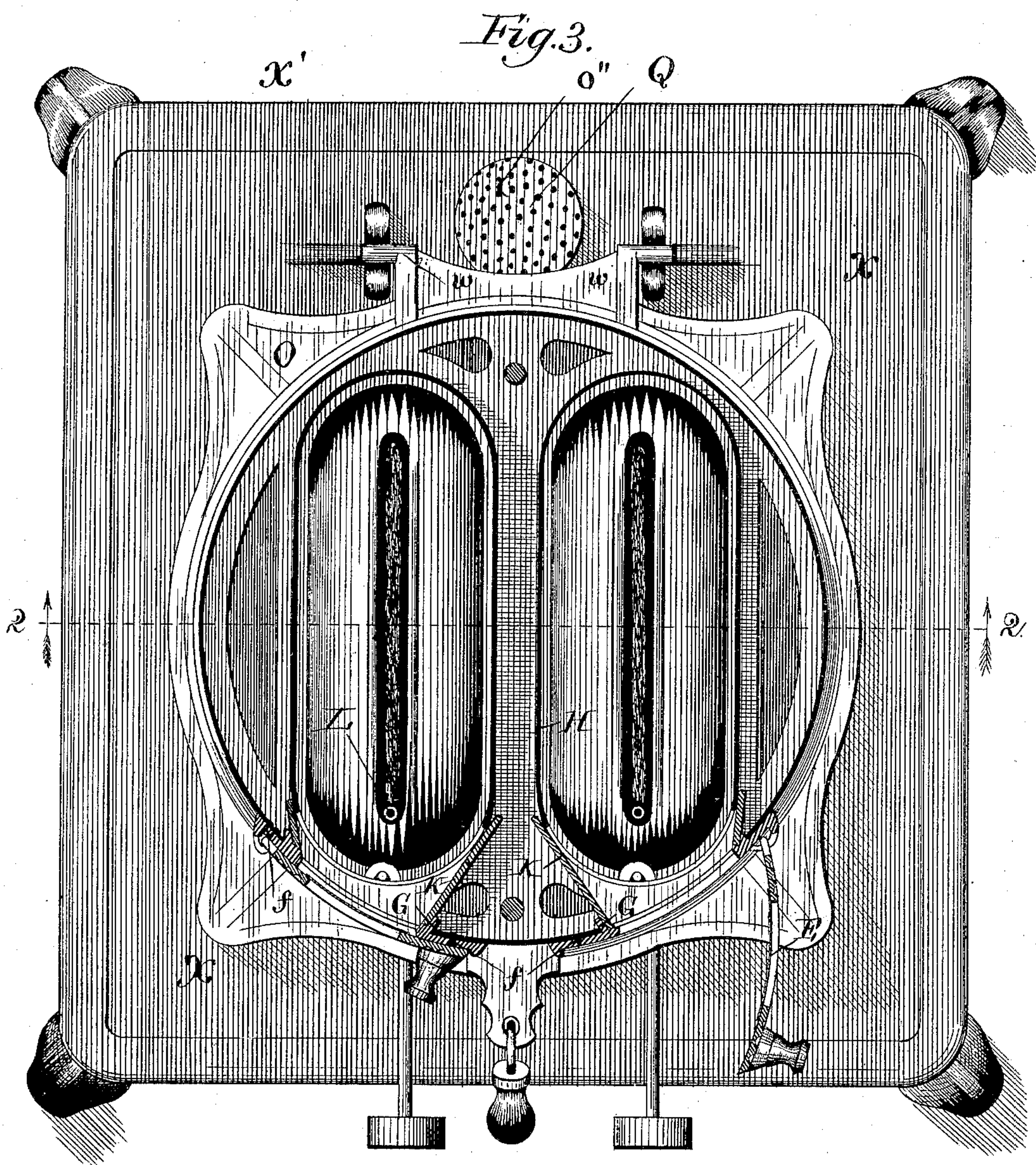
5 Sheets—Sheet 3.

E. R. WALKER.

OIL STOVE.

No. 313,696.

Patented Mar. 10, 1885.



Witnesses:
Chas. E. Gaylord.
Frederick Goodrum

Inventor:
Eugene R. Walker
By Offield & Smith
Attorneys,

(No Model.)

5 Sheets—Sheet 4.

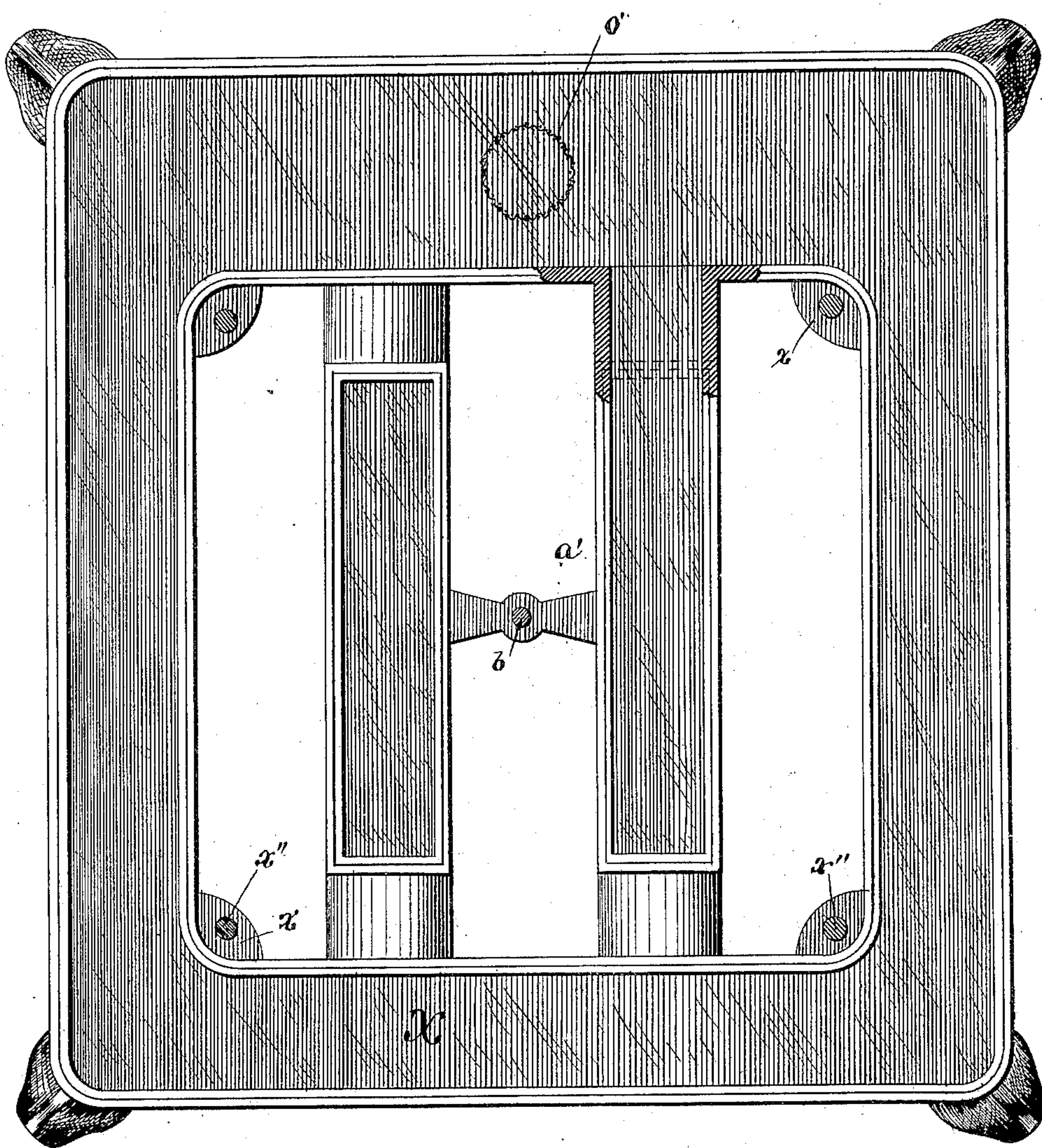
E. R. WALKER.

OIL STOVE.

No. 313,696.

Patented Mar. 10, 1885.

Fig 4.



Witnesses:

*Chas. C. Gaylord,
Frederick Goodwin*

Inventor:

*Engine R. Walker
By Affield and Searle
Attorneys,*

(No Model.)

5 Sheets—Sheet 5.

E. R. WALKER.

OIL STOVE.

No. 313,696.

Patented Mar. 10, 1885.

Fig. 5.

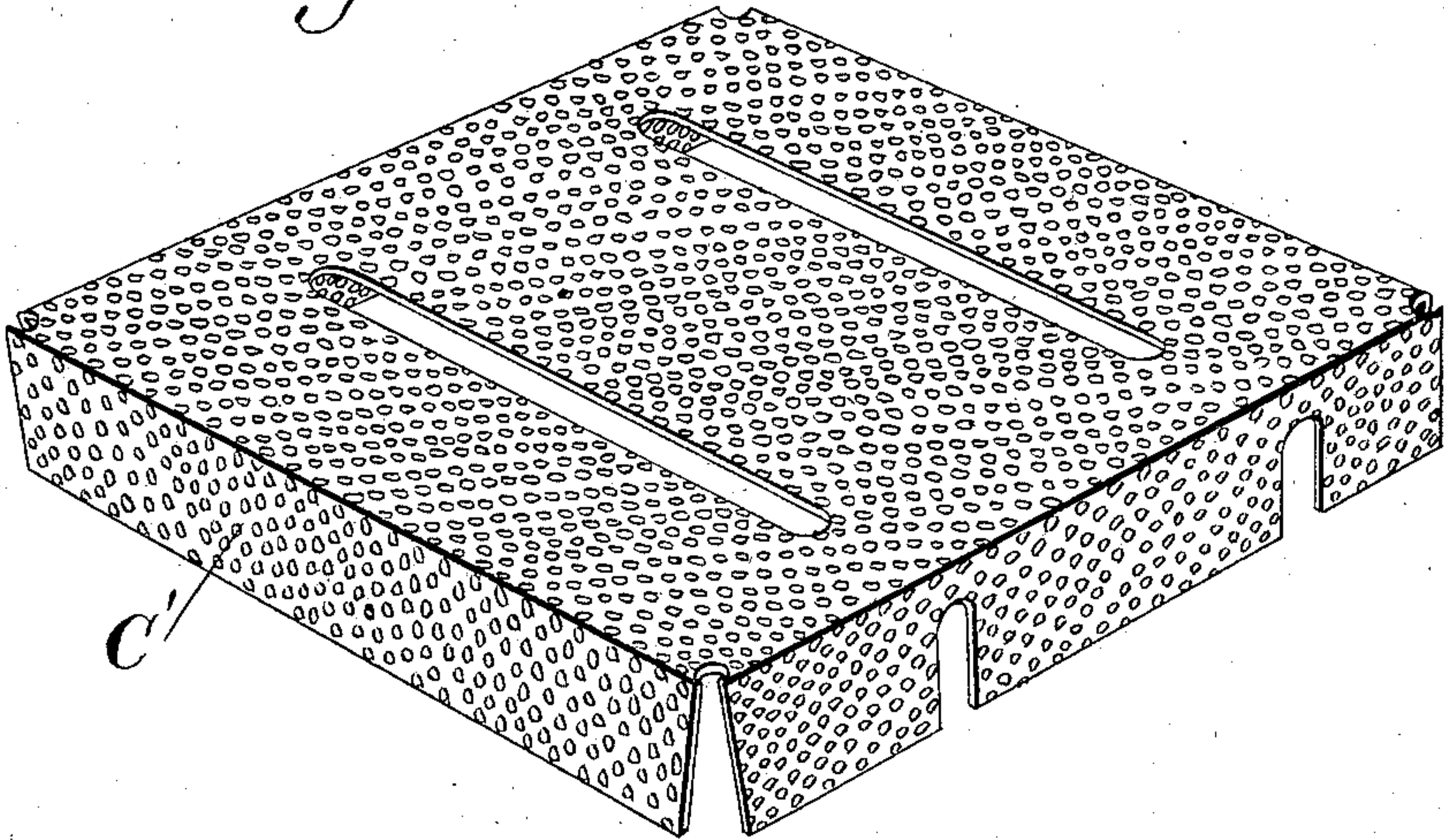


Fig. 6.

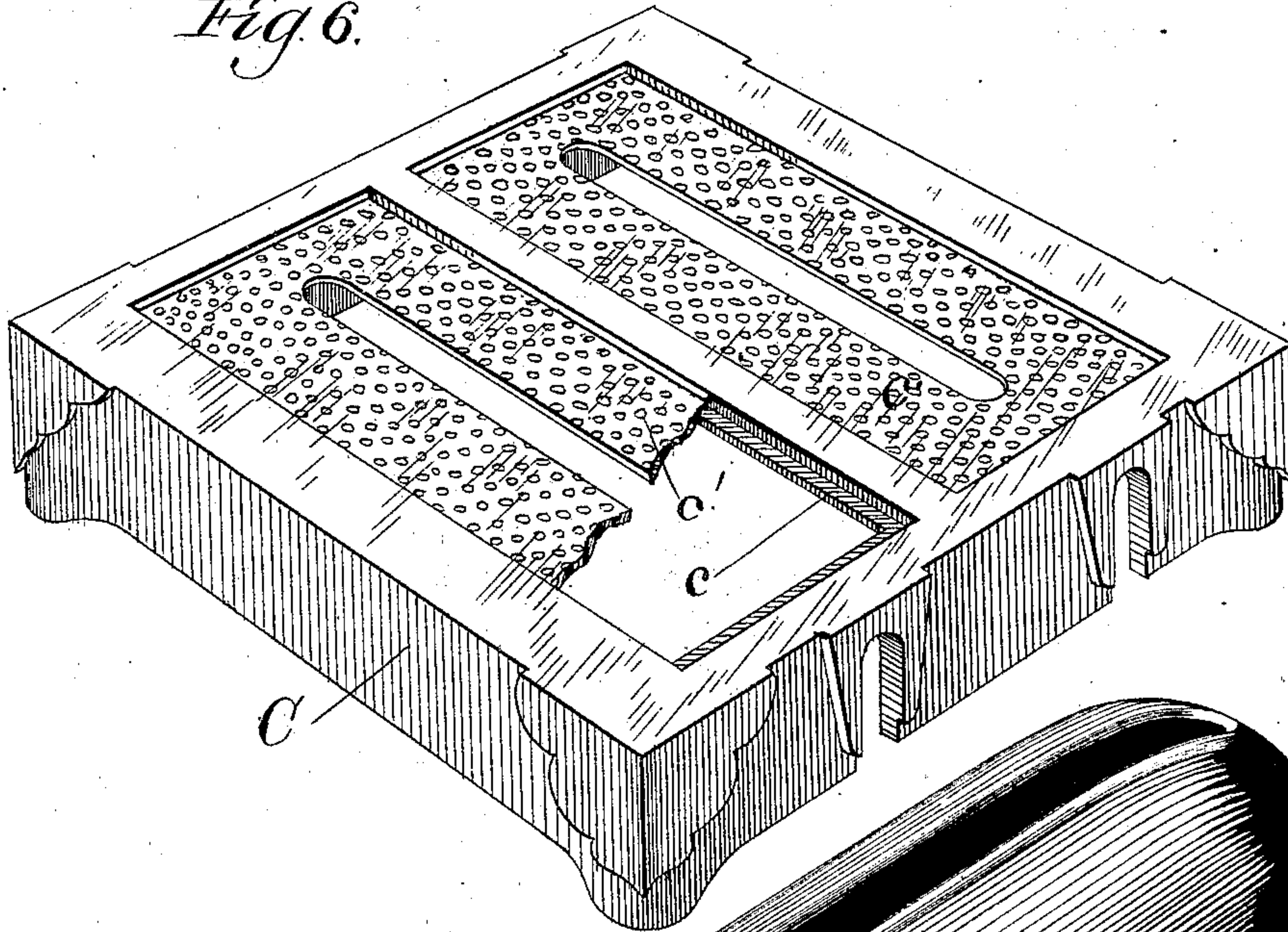
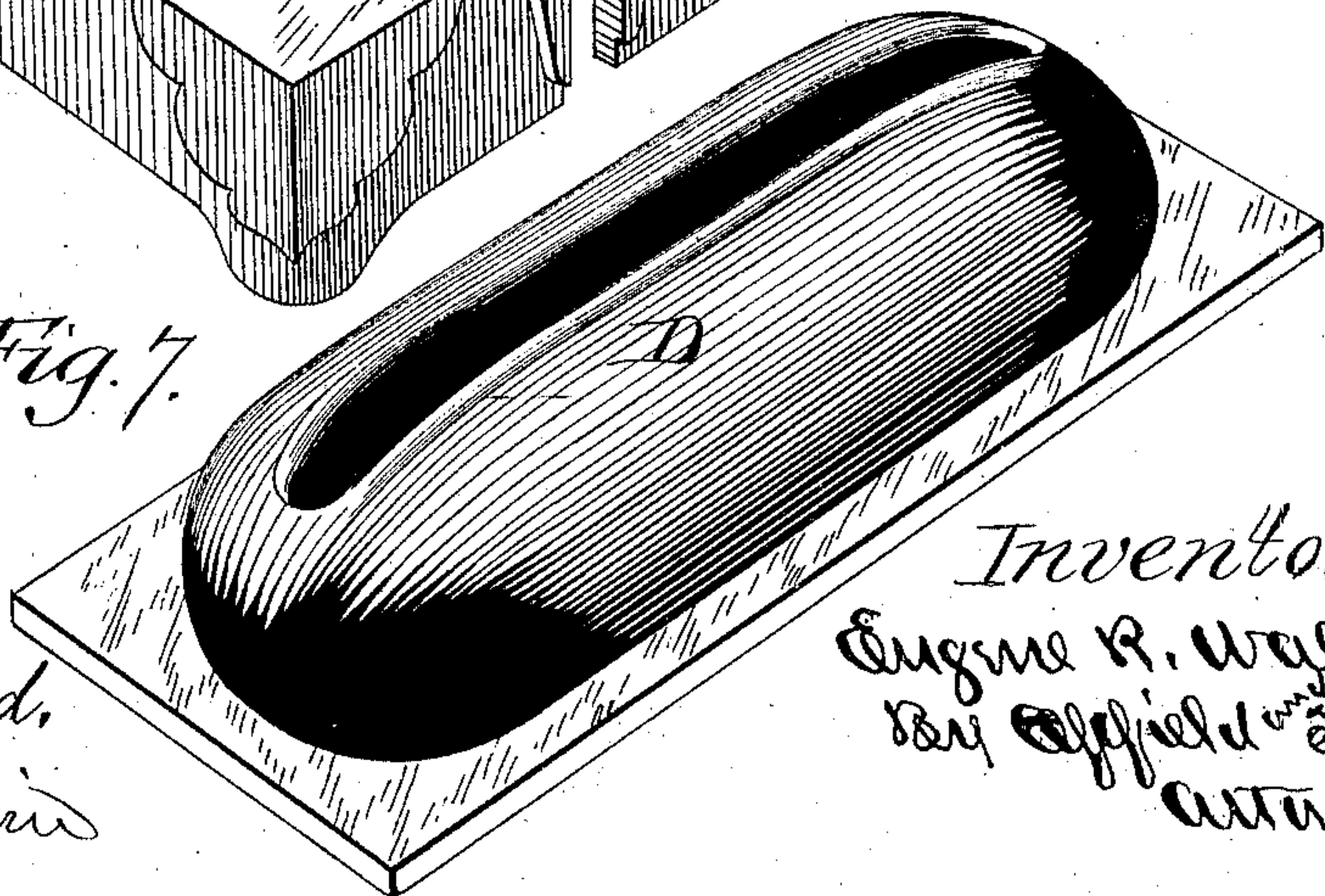


Fig. 7.



Witnesses:
Chas. C. Gaylord,
Frederick Goodwin

Inventor:
Eugene R. Walker
By *Offield & Smith*
Attorneys

UNITED STATES PATENT OFFICE.

EUGENE R. WALKER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE MICHIGAN STOVE COMPANY, OF DETROIT, MICHIGAN.

OIL-STOVE.

SPECIFICATION forming part of Letters Patent No. 313,696, dated March 10, 1885.

Application filed July 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, EUGENE R. WALKER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Oil-Stoves, of which the following is a specification.

The object of my improvements is to secure the perfect combustion of the oil; to do away with the peculiar odor produced by the oil-stoves as now made while in use; to obtain a steady and constant flame, not subject to fluctuation through outside influences or the placing of cooking utensils on the same; to secure perfect safety from explosion and from leakage; to so construct the oil chamber or reservoir that the wick-reservoirs holding the burners are separated from the oil chamber or reservoir, so that the oil shall not be heated by the flame of the stove, and to so construct the whole stove that it may be easily taken to pieces, and thus kept in a perfectly clean condition; and the means by which I obtain these results is as follows:

The oil chamber or reservoir is composed of cast-iron formed in the shape of a hollow square, in the inside of which hollow square are placed the wick-reservoirs holding the burners, which are separated and so detached from the surrounding oil-reservoir or oil-chamber that a free circulation of air is permitted at all times, and the heating of the oil in the larger oil chamber or reservoir is thus reduced to the smallest possible amount. These wick-reservoirs are connected at their ends with the oil chamber or reservoir, and receive a constant supply of oil from said oil chamber or reservoir. The bottom, the outer wall or side, and the inner wall or side of the said oil chamber or reservoir and the bottom and sides of the wick-reservoirs, together with the connection between the wick-reservoirs and the said oil chamber or reservoir, are all cast in one solid piece, having suitable flanges or lugs cast on the outer surface of the inside square of the said oil chamber or reservoir, at the four corners thereof, whereby the top of the said oil chamber or reservoir may be firmly secured to the same without passing bolts or screws through the said oil chamber or reservoir, or tapping, drilling, or otherwise disturbing the

walls thereof, and having the top of the wick-reservoirs held in position by a bolt or screws passing through clamps or iron lugs outside of said wick-reservoirs, avoiding, in like manner as in the main oil-chamber, the necessity of passing bolts or screws through the wick-reservoir or tapping the walls thereof. The flame is protected by a double-netting gauze or perforated metal placed over the square formed by the inner walls of the hollow oil-reservoir, and the flame is further protected by a suitably-shaped dome placed upon a frame covering the aforesaid perforated metal or gauze, which said frame rests upon a suitable flange cast on the inside opening of the cover of the oil chamber or reservoir. The use of an independent chimney to each burner, which is supported in position by the door-frame or casing of the door, and a suitably-shaped casting fastened to the chimneys in such a manner that the chimneys may be held in position independently of the top or bottom plate of the drum, and may therefore be of less height than the surrounding casing or drum of the stove; also, that the use of a bolt to hold the chimney in position may be dispensed with; also, so that the wick of the stove may be exposed when the door placed on said casing is open.

I have illustrated my invention by the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is an elevation of my improved stove. Fig. 2 is a cross-section on line 2 2 of Fig. 1. Fig. 3 is a cross-section on line 3 3 of Fig. 1. Fig. 4 is a plan of the base of my improved stove. Fig. 5 is a perspective view of the perforated tin-gauze, together with the plate and dome protecting and guiding the flame. Fig. 6 is a perspective view, partly broken away, of the plate supporting the upper flame-screen and burner-cone. Fig. 7 is a perspective view of the burner-cone.

X is the base of the large reservoir or oil-chamber. Y Y' are the wick-reservoirs, cast with and forming a part of X. x x x x are flanges cast on the inside of X to receive the bolts x'', whereby the top X' of reservoir X is fastened to the same, and lugs x' x' x' x' are cast upon X' to receive or allow the said bolt x'' to pass through them. These bolts x'' have

a nut placed upon them, and by means of this nut the top plate, X', is firmly fastened to the base X. These lugs and bolts are placed in the hollow square formed by the large oil chamber or reservoir, in order to protect the lug and bolt from being broken or in any way injured, and also that they may be out of the way and not present an unsightly appearance. This construction of an internal hollow square surrounded by an oil-reservoir, and the casting of these lugs as described, admits of an easy inexpensive way of fastening the cover to the oil chamber or reservoir.

It is evident that any number of wick-reservoirs may be placed in this hollow square.

In order to more fully prevent leakage or oil vapor escaping from this reservoir, the top X' is also cemented to the base X, in addition to being held by bolts and nuts *x' x' x' x'*. The oil is placed in this reservoir through hole Q in top X'; and in order to prevent clogging between the wick-reservoir and the main reservoir, and to prevent other injurious effects, due to the presence of dirt and other impurities in the oil, I place a removable screen or well, *o'*, composed of wire-gauze or other suitable material, within the hole Q. The well *o'* may be of any suitable construction, its location being indicated in Fig. 4. I also place screen or gauze *o''*, composed of perforated tin, over Q, to prevent the admission of impurities or dust in said hole Q, and to allow of the admission of air to supply the place of the oil consumed.

Wick-reservoirs Y Y' are cast in one piece with base X and covered by plates A A', upon which are placed the ordinary wick-tube. Plates A A' are secured to wick-reservoirs Y Y' by means of suitable packing, and further secured by means of cross-bars *a a'*, connected together by means of bolt *b* and nut *b'*. It will be seen that bar *a'* is cast with or placed underneath the bottom of wick-reservoirs Y Y', and bar *a* is laid upon plate A, and thus the turning of nut *b* upon bolt *b'* firmly presses or holds plates A A' upon wick-reservoirs Y Y', thus avoiding the necessity of drilling or casting holes in any wick-reservoirs Y Y', and securing perfect and complete connection of the top A of said wick-reservoirs with the same.

On the inner edge or square of X' there is cast a molding or flange, which serves to receive and hold in position cast-iron frame C, and also the perforated diaphragm or perforated tin sheet C'. Cast-iron frame C has perforated countersunk seats *c* surrounding the wick-tubes, in each of which is placed the perforated tin diaphragm *c'*, and also the flame dome or cone D.

The use of two pieces of perforated tin, through which the air has to pass before it reaches the flame, secures more finely-divided sprays of air, and also prevents constant fluctuations in the amount or size of the current of air supplied to the flame when the air in the room is agitated by drafts, or by the opening or closing of doors, &c., and thus a flaring or flickering of the flame in my im-

proved oil-stove is to a great extent avoided and a more uniform and more perfect combustion secured. By making these perforated tin diaphragms C' *c'* separate and independent, each of a single thickness of perforated tin, and easily removable, the same may be readily cleaned. The cones surrounding the flame are placed in and rest upon the perforated countersunk seats in the cast-iron frame C, and are also easily removable, there being openings in the drum-bottom plate shutting or closing down over said cones, thus making continuous drafts through the slots in the cones into and through the chimney of the stove.

The body of the stove is composed of sheet-iron or other suitable material secured to a cast-iron top or gridiron, and to a cast-iron rim or drum-bottom plate, O, by means of rods and bolts in the ordinary manner, the said cast-iron rim or drum-bottom plate being cast with large openings which close down over the cones or flame-domes, and with a suitable flange on its upper surface to receive and more firmly secure the chimneys. These openings admit of the chimneys being easily cleaned. This cast-iron plate has lugs placed thereon, by which it is supported or rests upon suitable lugs, W, forming hinges cast on top X'.

As thus constructed the drum-bottom plate is of a form easily cast, and presents many advantages over the forms heretofore in use.

The drum of the stove has placed in the front thereof doors E, which are suspended from or placed on the cast-iron frame or box F. This box or door-casing F is cast of a suitable form or shape, that it may be fastened to the drum of the stove at points *f f*, and has also the projection or flange G extending or reaching in toward the center of the stove at one end of the wick-tube. Flange G is made of the proper shape to receive a cast-iron box, K, fitting onto the chimney H. Chimneys H are thus held in proper position in the drum by cast-iron box K, fastened to said chimneys and fitting into flange G of the door-frame or box. These chimneys H extend from said drum-bottom plate upward to within a short distance of the top of gridiron, casting, which is placed on the top of the drum of the stove. By this arrangement, when door E is closed, the chimney from each burner extends from the cone to near the top of the stove. By this means the stove may be lighted by opening the door E, and the necessity of double doors is obviated. By reason of the chimneys not extending to the top of the stove the draft of any given burner or wick is not interfered with by the placing of any cooking utensil upon the top of the stove and over the said chimney.

By the use of the main reservoir, of the shape and form here shown, and constructed as I have described, the air by which the flame is fed passes under this reservoir, and upward between it and the wick-reservoirs,

thus creating at all times when the stove is in operation a current of cool air, which prevents the heating of the oil in the oil-reservoir. At the end of the wick-tubes I, I place a small hollow tube, L, extending from the top of wick-tube I down through the wick-tube plates into the wick-reservoir. The object of this tube is to allow of the escape of the vapors arising from the heated oil in the wick-reservoir and the burning of the same. By this means I still further decrease the amount of odor caused by the burning of oil in my improved stove, as all odor is due, to a large extent, to the heating of oil and the vapor arising from the same without securing the combustion of this vapor.

Wick-tube plates A' A' of the wick-reservoirs Y Y' are made concave upon their top surfaces to hold oil which may drop or become condensed on the burners.

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

1. In a coal-oil stove, the combination of an oil chamber or reservoir forming a hollow square, one or more wick-reservoirs located within said hollow square, and connected therewith by oilways, the sides and bottom of the oil chamber or reservoir, the sides, ends, and bottoms of the wick reservoir or reservoirs, and the oilways connecting the latter with the oil chamber or reservoir, being formed in one piece and provided with projecting lugs, and a top for said chamber or reservoir provided with corresponding lugs, whereby the top may be firmly and securely bolted to the reservoir, substantially as described and shown.

2. In a coal-oil stove or range, the combination of an oil-reservoir forming a hollow square, wick-reservoirs located within said hollow square, and connected therewith by oilways, burner-carrying covers for the wick-reservoirs, a cross-brace joining the latter, a fastening-plate resting upon the covers, and screw-bolt connection between the cross-brace and fastening-plate, whereby the latter may be clamped down upon the covers, securing them firmly in position, substantially as shown and described.

3. In a coal-oil stove or range, the combination, with a burner or burners, each burner provided with an independent wick-reservoir placed in the inside of and connected by oilways with an oil chamber or reservoir surrounding said wick-reservoirs, of a flange or lugs on the top of said oil chamber or reservoir, and a diaphragm of one thickness of perforated metal resting thereon, having a slot cut therein for said burner or burners, and a

cast-iron box or frame provided with an opening or openings cast therein, in which are also placed a diaphragm or diaphragms of a single thickness of perforated metal, provided with a slot for the burner, the said cast-iron box or frame also resting upon the said flange or lugs on the top of the oil chamber or reservoir, the whole substantially as described, and for the purpose specified.

4. In an oil-stove, the combination of a double diaphragm composed of two single diaphragms, each one of but one thickness of perforated metal, one of said diaphragms resting upon a suitable lug or lugs cast on the top of the oil chamber or reservoir, and the other of said diaphragms resting upon a cast-iron frame, also supported by said flange or lugs on the top of said oil chamber or reservoir, with a flame cone or cones placed on said cast-iron box or frame and fitting over one of said diaphragms, the whole substantially as described, and for the purpose specified.

5. The combination, in an oil-stove, of a drum or casing having a door or doors placed in the front thereof by means of cast-iron door-casings, with a chimney or chimneys placed therein, and held in proper position by the said door-casings, through an intermediate cast-iron box, the said chimneys extending from a bed-bottom plate fitting over and surrounding the flame cone or cones of the burner or burners of said stove to near the top plate of said drum, the whole substantially as described, and for the purpose specified.

6. In an oil-stove or range, the combination of a drum having a top and a bottom casting fastened thereto, and flanged burner-cones resting upon a basal supporting-plate with perforated countersunk seats, and extending upwardly through openings in the bottom casting, said bottom casting resting upon the flanges of the cones, and being itself provided with upwardly-extending flanges for the reception of the burner-chimneys, substantially as shown and described.

7. In an oil-stove or range, the combination, with the wick-reservoirs, of a burner-cone-supporting plate having openings above the said reservoirs, and provided with perforated countersunk seats, the flanged burner-cones resting upon said seats, and the superjacent drum-bottom plate above which the cones project, said bottom plate resting upon the flanges of the cone, substantially as shown and described.

EUGENE R. WALKER.

Witnesses:

FREDERICK C. GOODWIN,
E. F. RUNYAN.