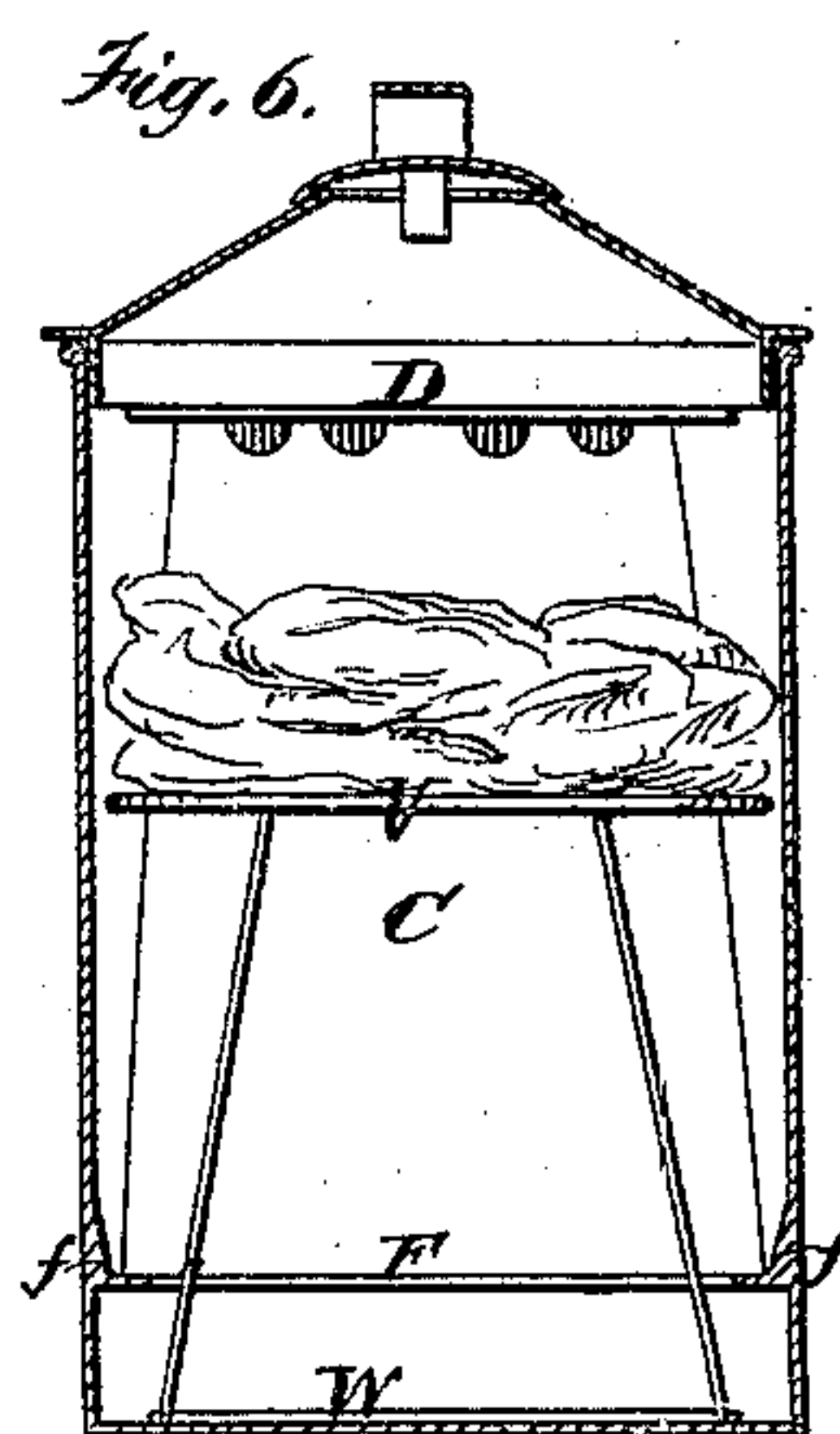
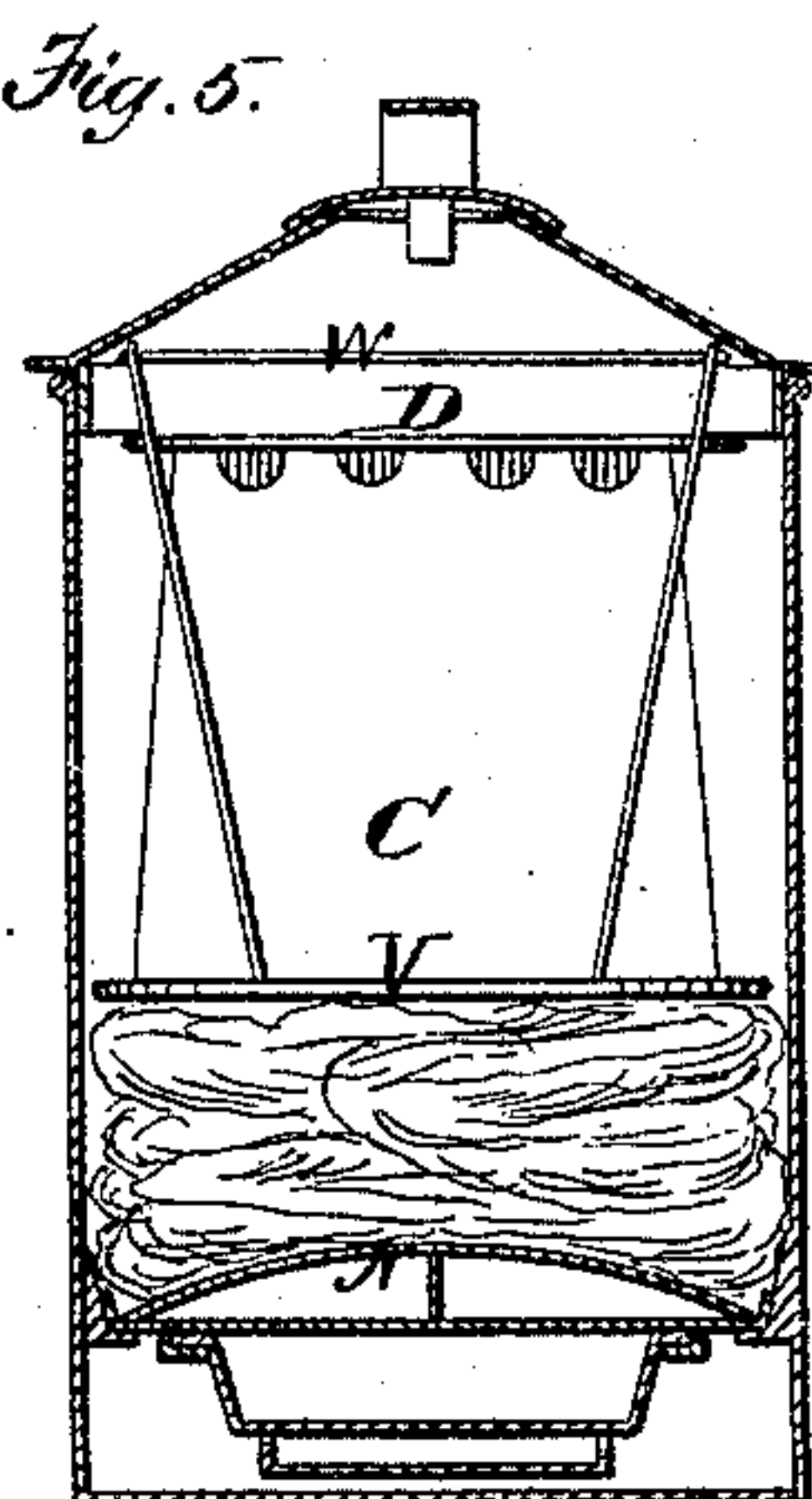
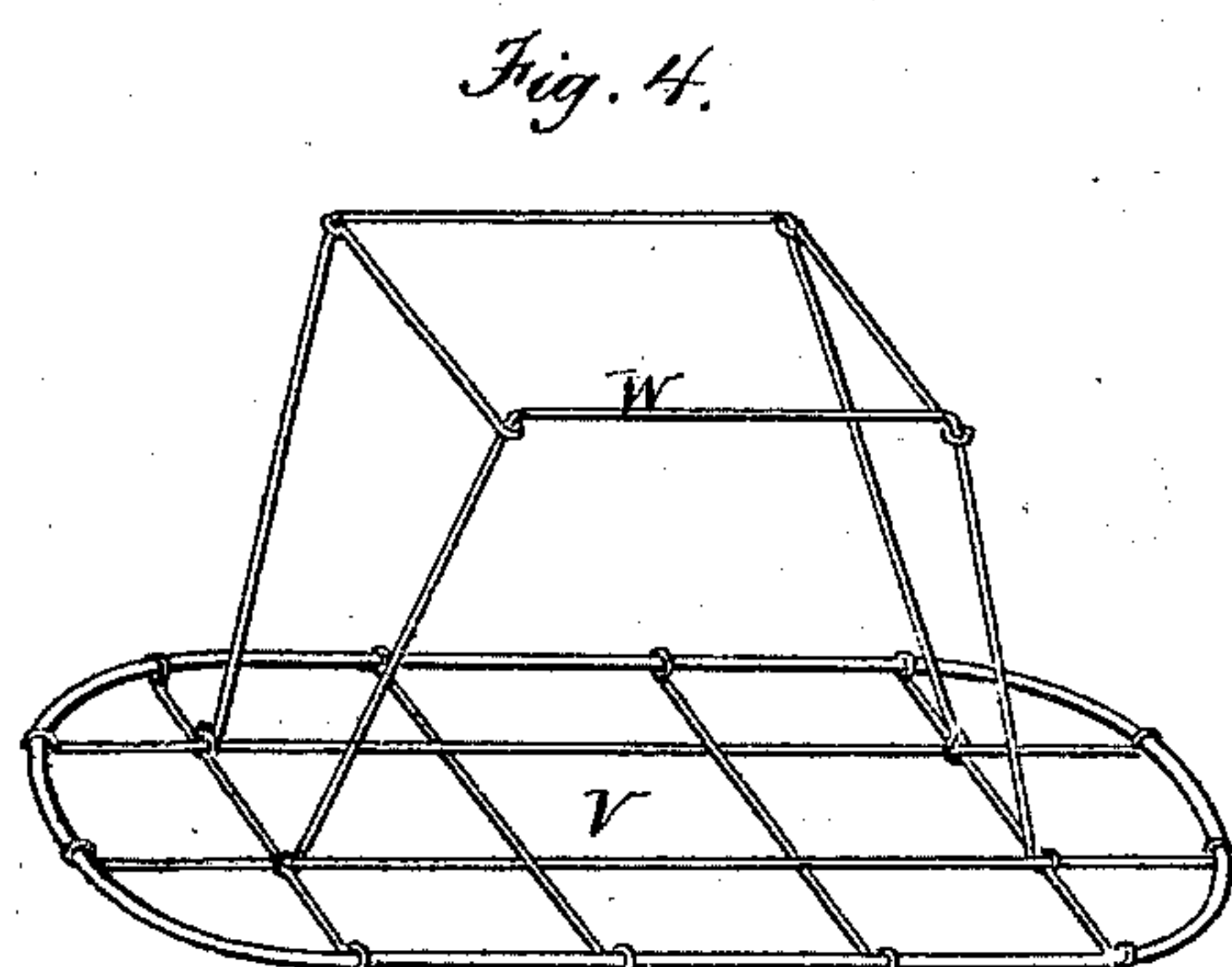
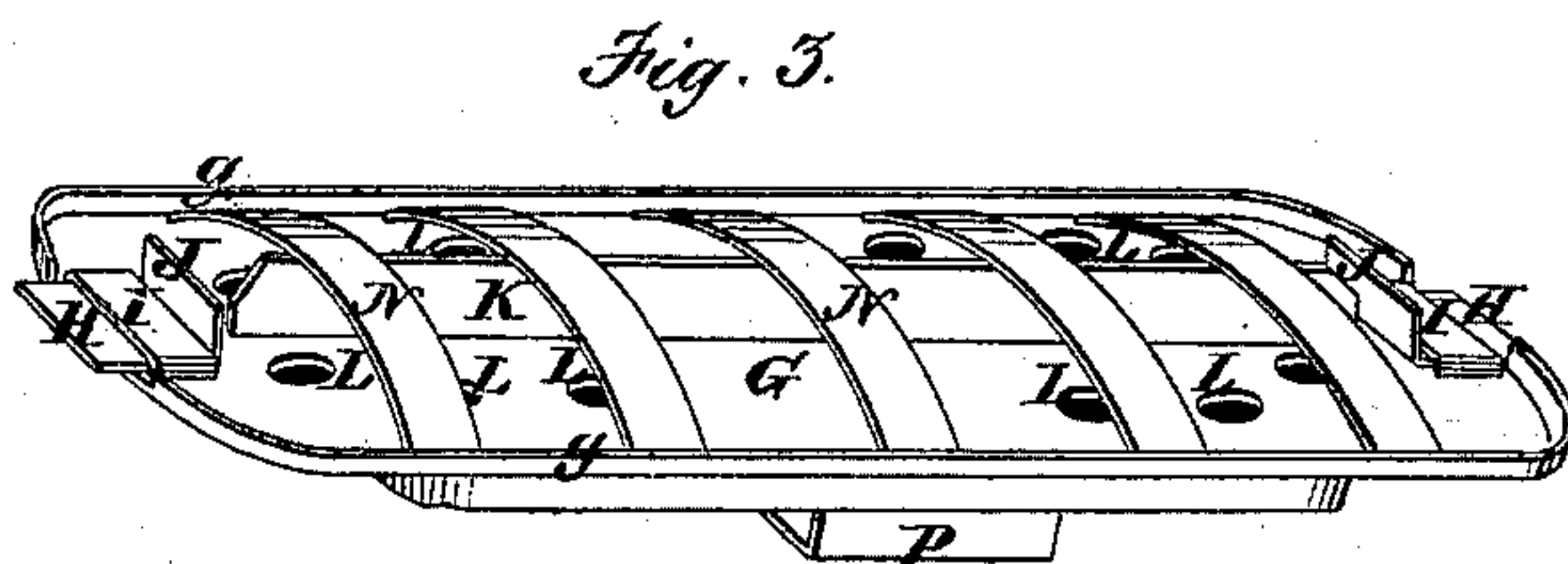
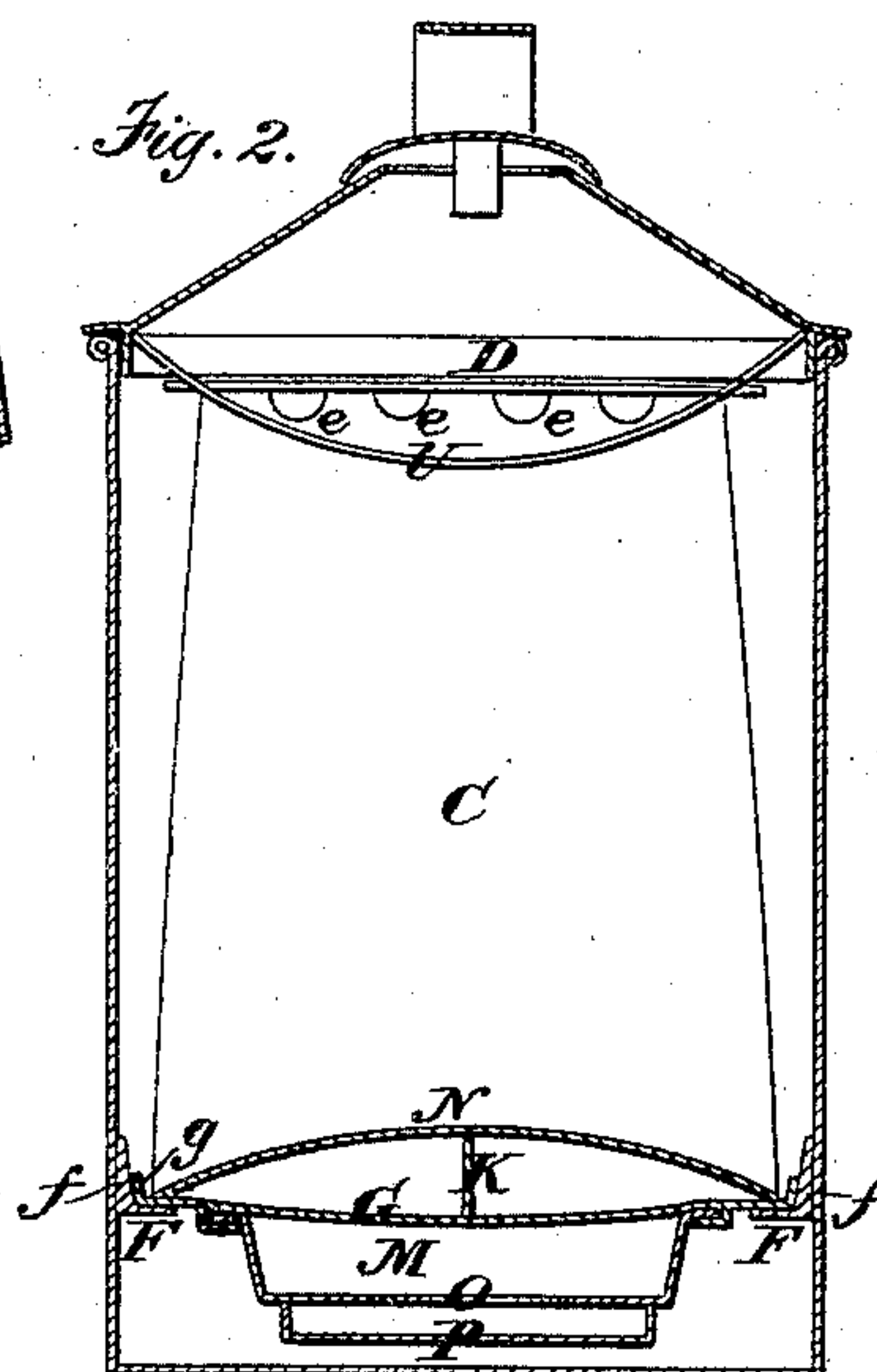
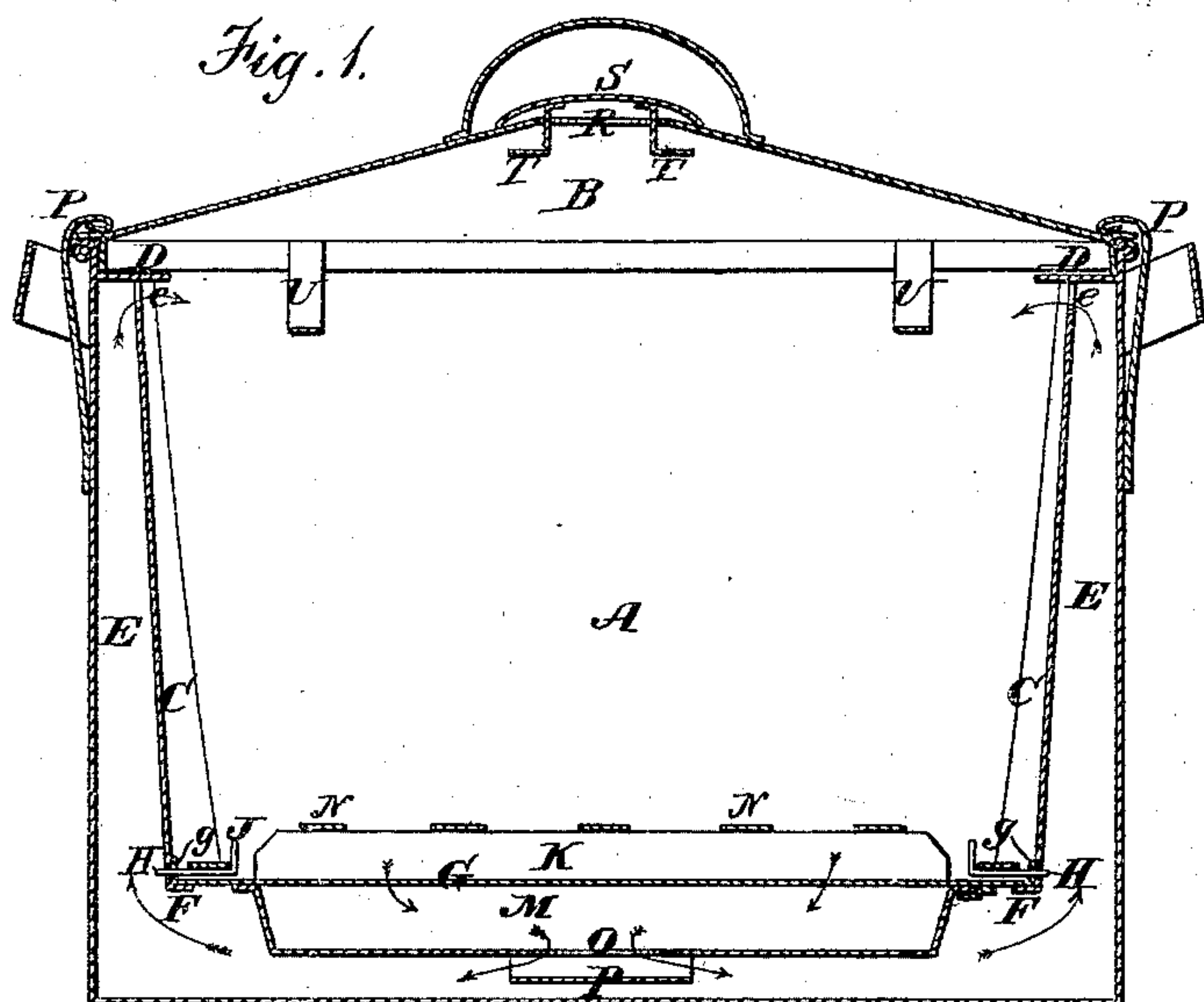


## Wash-Boilers.

No. 144,336.

Patented Nov. 4, 1873.



**WITNESSES**

WITNESSES  
C. F. Brown  
Machau R. Ellsworth

*By*

INVENTOR

*R. J. Harrison*  
By *Hill & Ellsworth*  
*His Attorneys.*



# UNITED STATES PATENT OFFICE.

ROBERT J. HARRISON, OF RALEIGH, NORTH CAROLINA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES Q. WILLIAMS, OF SAME PLACE.

## IMPROVEMENT IN WASH-BOILERS.

Specification forming part of Letters Patent No. **144,336**, dated November 4, 1873; application filed August 11, 1873.

*To all whom it may concern:*

Be it known that I, ROBERT J. HARRISON, of Raleigh, in the county of Wake and State of North Carolina, have invented a new and Improved Wash-Boiler; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a longitudinal vertical central section of my invention. Fig. 2 is a transverse vertical section. Fig. 3 is a perspective view of the inner or removable bottom. Fig. 4 is a perspective view of the removable clothes frame or weight; and Figs. 5 and 6 are transverse sections, showing the application of the frame in different positions.

Similar letters of reference in the accompanying drawings denote the same parts.

This invention relates to the class of "fountain" wash-boilers; and has for its object to provide for public use a boiler of improved construction and increased efficiency, and, also, to provide an attachment for the boiler whereby the fabrics boiled can be confined on the bottom or elevated above the same. To these ends the invention consists, first, in the general construction of the boiler; and, secondly, in a peculiar frame adapted to rest on the fabrics in the boiler and hold them down, or to rest on the bottom of the boiler and constitute an elevated platform, on which the fabrics may rest, all of which I will now proceed to describe.

In the drawings, A represents the boiler, which is of the usual elongated form with rounded ends, and provided with the conical cover B. C C represent inner partitions at each end of the boiler, extending across the same transversely from horizontal shelves D near the top to about two inches above the bottom, and inclining inward from the top, as shown, Fig. 1, narrow spaces E E being thus formed at each end, communicating with the boiler at the top through orifices *e* immediately under the shelves D. A flange, F, is turned inward at the lower edge of each partition, C, and similar flanges are attached to the inner sides of the boiler, the whole constituting a continuous horizontal flange, extending en-

tirely around the boiler, that portion which is attached to the sides having an inclined rim or seat, *f*, by which it is soldered in place, as shown in Fig. 2. G represents a false or removable bottom, of suitable size and shape to rest upon the flange F, and fit the boiler closely when in a horizontal position. The bottom G has an upturned flange, *g*, extending entirely around it, said flange being somewhat inclined outward, and fitting closely against the inclined partitions C and rims *f* of the flange F. At each end of the false bottom G is a sliding catch, H, which slides horizontally in a guide, I, and engages with a slot in the lower edge of the partitions C. Each of the catches H is provided at its rear end with an upturned flange, J, which serves as a handle for operating the same, and a stop for limiting its motion, said flange striking the guide when sliding outward, and a longitudinal plate, K, when sliding inward, and is thus kept from being displaced. The bottom G is provided with perforations L near each end, the perforations communicating with a chamber, M, attached to the lower side of said bottom. The upper surface of the bottom G is somewhat concave, and is held in this shape by curved ribs N N, extending across the bottom G, and supported at the center by the plate K. The chamber M has a central opening, O, at its bottom, and a plate, P, bent upward at its ends, is attached to the bottom of the chamber immediately under the opening O. The cover B is held in place by spring-catches P, one at each end of the boiler, and at the center or apex of the conical cover is an orifice, R, covered by a cup-shaped valve, S, resting over the orifice, and provided with bent lugs T, which project downward and upward, and prevent the valve from being removed, at the same time allowing it to be raised by the pressure of steam inside. U U represent curved cross-bars extending across the cover B, near each end, as shown in Figs. 1 and 2, the function of which is to keep the orifices *e* of the partitions G from becoming clogged by the contents of the boiler.

When the boiler is partially filled with water and fabrics, and heat applied, the water in contact with the bottom of the boiler, below



the false bottom G, becoming rapidly expanded, rises through the end spaces E, and is forced out through the orifices e, the projecting shelves D deflecting it, and causing it to fall on the contents of the boiler.

The ribs N keep the orifices L unobstructed by holding the fabrics above the bottom G, and also strengthen the latter, helping it to maintain its concave shape; consequently the water, after percolating through the fabrics and becoming somewhat cooled, passes through the orifices L, which are the center of the bottom, into the chamber M, from whence it flows, through the central opening O, to the bottom of the boiler, as indicated by arrows in Fig. 1.

The plate P, the horizontal part of which is interposed between the bottom of the boiler and the orifice O, deflects the water toward each end of the boiler, and prevents the reaction of the heated water from the bottom, which would otherwise obstruct the downward currents. Two independent currents are thus kept up, one at each end of the boiler.

The flange F of the boiler and the flange g of the bottom render the connection watertight, while the catches H hold the bottom securely in place. The heated water cannot, therefore, flow upward in any direction but through the end spaces E.

The spring-catches P of the cover are soldered to the sides of the boiler, and the cover can be put in place by inserting one end under its spring and drawing back the other, which springs over the cover when the same is in place.

Fig. 4 shows a frame, V, composed of wire or other suitable material, and so formed as to enter the boiler easily and rest on the fabrics, as shown in Fig. 5, acting as a weight, or by being inverted to constitute an inverted platform, on which the fabrics are supported, as shown in Fig. 6. In the former case the pro-

jecting portion W bears against the cover B, and in the latter supports the frame V, in which position the latter is adapted for bleaching fabrics after they are boiled and washed, clean water treated with bleaching chemicals being used, and the operation of bleaching being greatly facilitated.

The chamber M is attached to the false bottom G in such manner as to be readily removed for cleaning or drying its interior and the lower side of the bottom G.

The inclined rim or seat f of the flange F not only prevents the water from escaping between the flanges F g, but protects the sides of the boiler from the wear resulting from the frequent insertion and removal of the removable bottom.

Having thus described my invention, what I claim is—

1. The boiler A, having the continuous horizontal interior flange F, the latter provided with inclined seats f, in combination with the false bottom G, having the upturned inclined rim or flange g, substantially as and for the purpose specified.

2. In combination with the boiler A, having the end passages E, the cover A, having the transverse curved ribs U, substantially as and for the purpose specified.

3. The concave valve S, resting over the orifice R, and provided with depending bent lugs T, in combination with the cover B, substantially as and for the purpose specified.

4. The frame V, provided with the projecting portion W, and adapted to confine the fabrics on the bottom of the boiler, or elevate the same above the bottom, substantially as described.

R. J. HARRISON.

Witnesses:

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