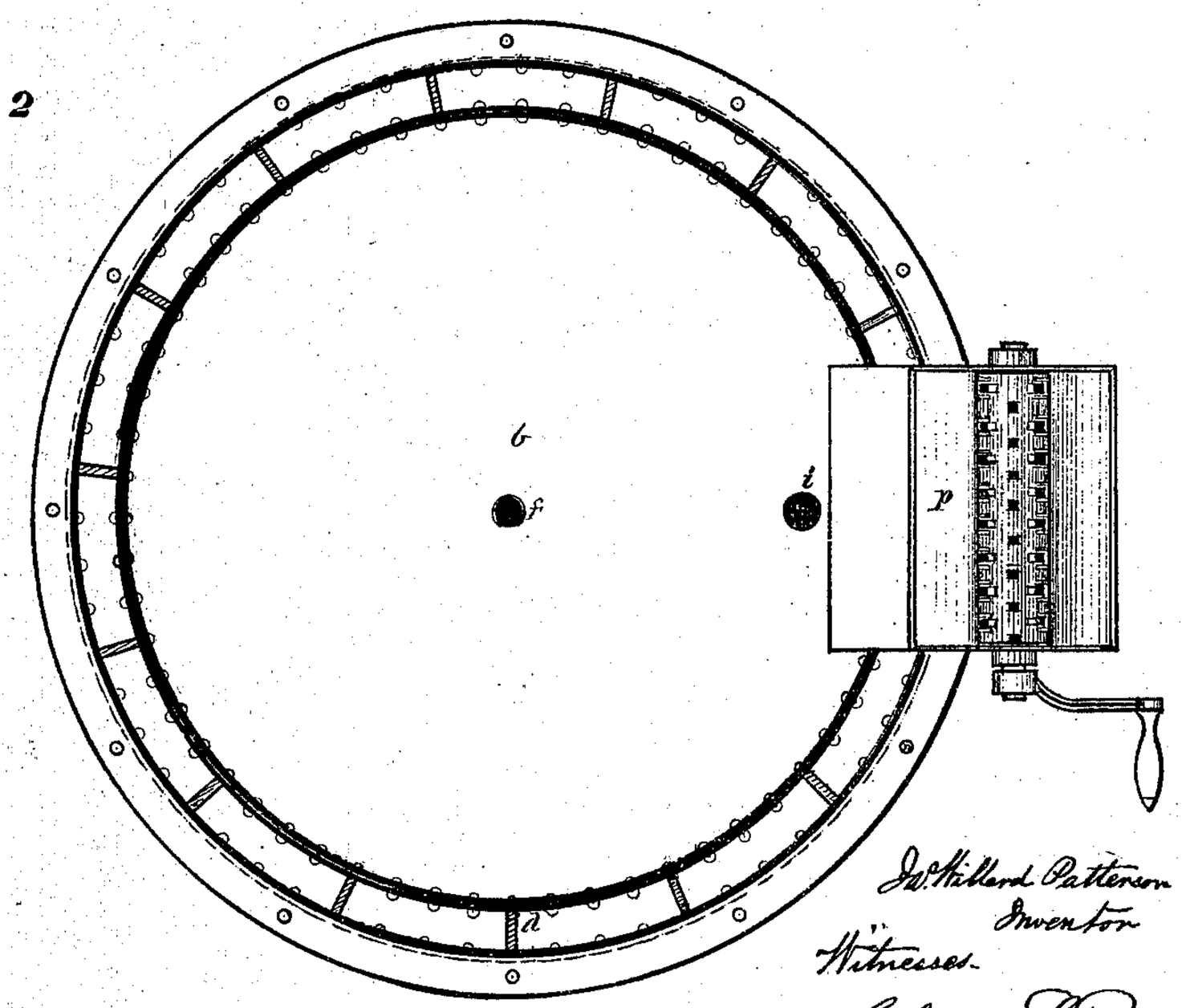
J. W. Patterson,

2 Sheets, Sheet 1.

Rendering Lard.

No. 103234. Patented May 17, 1870.

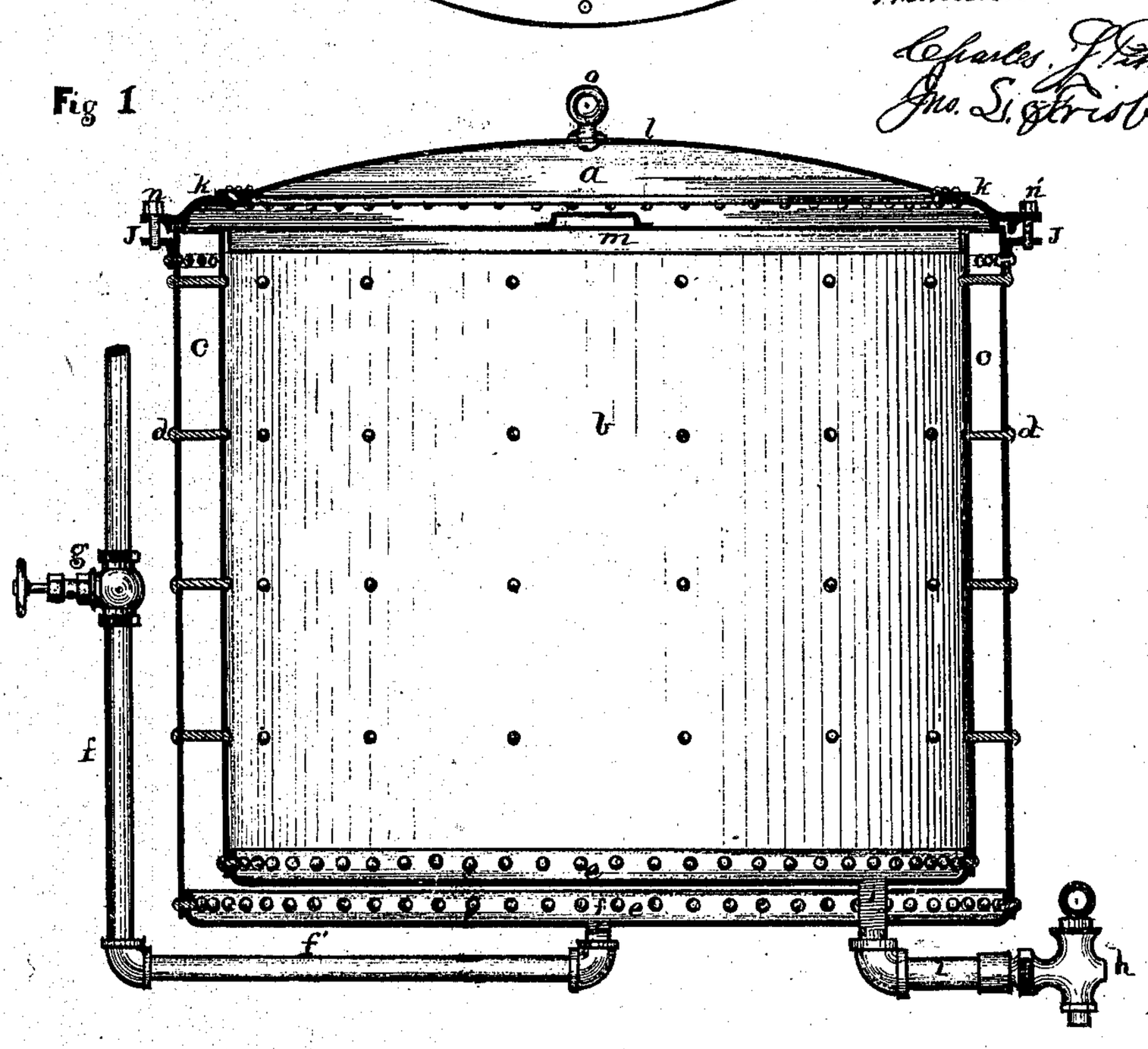
Fig 2



J. Willard Patterson
Inventor

Witnesses.
Charles. J. Pitman
Jno. S. Gribbie

Fig 1



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Rendering Lard.

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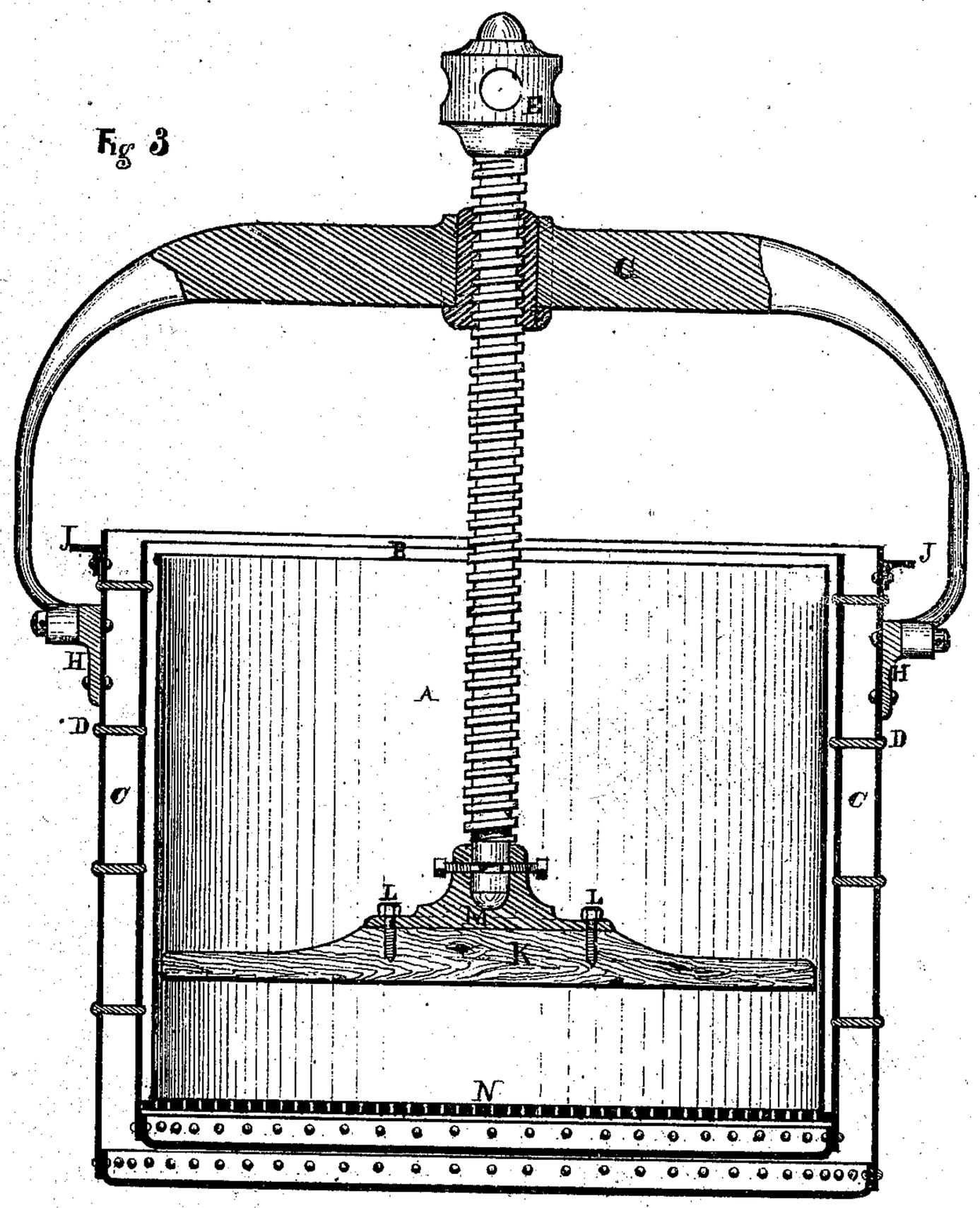
Fig 3



Witnesses
Charles J. Pitman
Jno L. Boisbie

Jno Willard Patterson
Inventor.

United States Patent Office.

JAMES WILLARD PATTERSON, OF NEW YORK, N. Y., ASSIGNOR TO SARAH ELLEN PATTERSON AND JOHN ASHCROFT, OF SAME PLACE.

Letters Patent No. 103,234, *dated May* 17, 1870.

IMPROVEMENT IN RENDERING LARD.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES WILLARD PATTERSON, of the city, county, and State of New York, have invented a new and Improved Process of Rendering, Refining, and Straining Lard, Tallow, Cod-liver Oil, and other like substances, by the heat of steam acting upon the external surface of a closed cylinder or vessel in which the process is performed, said closed cylinder or vessel being suspended inside of another cylinder or vessel, forming a steam-chamber around the entire external surface of the inside cylinder or vessel; and I do declare that the following is a clear and exact description of the process, and the construction and operation of the mechanical device with which the operation is performed, reference being had to the accompanying drawings and the letters of reference marked thereon.

My invention consists, first, of the process of extracting and refining and rendering lard, tallow, cod-liver oil, and the like substances, in partial vacuo, by using the heat of steam operating upon a closed cylinder or vessel, so constructed as to prevent both steam and air from reaching the interior of the cylinder or vessel containing the substance operated on during the process.

By this process I obtain a larger yield or production of these articles, and effect a more complete and thorough refining process of the same, than by any other process of which I have any knowledge.

The mechanical device which I have adapted to this process consists of a steam-cylinder or vessel, with a movable head, provided with packing, rendering it steam-tight.

I then provide a smaller cylinder or vessel, so constructed that the same can be suspended in the steam-cylinder, and therein supported by braces, leaving a corresponding space around the entire sphere forming a steam-chamber, so that an equal amount of heat shall be dispensed to all portions of the inside cylinder. This cylinder is also provided with a close-fitting head or cover, and it is in this vessel that the material for extracting, rendering, and refining is confined during the process, being placed in a metallic case the full size of the inside surface of the cylinder. This case is provided with a perforated bottom, which is raised on supports, so as to leave a small space below the perforated bottom as a receiver for the lard, tallow, or oil, from which it is drawn by the regular lard-faucet attached, passing through the steam-cylinder into the inside cylinder for that purpose.

The use of the metallic case is to afford a ready means of removing the scrap or fibrous substances from the cylinder after the tallow, lard, and oil has been extracted and pressed out.

In combination with the cylinders, I use a screw-press, the cross-beam and screw being attached so as to move on trunnions, thereby swinging the same over to one side of the cylinder, when not in use.

I also combine with these devices a meat-mill or cutting-machine, for the purpose of grinding or chopping into fine particles the leaf-lard, tallow, and cod-livers, so as to facilitate the operation of extracting and rendering.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

Figure 1, in the drawing, represents the steam-cylinder, in sectional form, with the inside cylinder, and the braces supporting the same, with the movable heads of both together, with lard-faucet and steam-pipe attached.

Figure 2 represents a vertical sectional view of the two cylinders and the braces, with the cutting-machine in place, as in use.

Figure 3 represents the screw-press, and its parts, as it appears in use, in connection with the cylinders.

In fig. 1—

a represents the cylinder-head.

O, the eye-bolt for raising the cylinder-head.

k, the outer rim of the head that packs the cylinder.

J, angle-iron, bolted to the outside cylinder, to which the head is fastened with screw-bolts.

n, the screw-bolts for securing the head and packing to the top edge of outer cylinder.

m represents the cover to the inside cylinder.

c, the steam-chamber surrounding the inside cylinder.

d, the braces supporting it in place.

e, the bottoms of the cylinders.

f, the steam-pipe and connections.

g, the steam-valve.

i, the pipe leading from the inside cylinder to the bottom of the outside, connecting with the lard-faucet.

h, the lard-faucet.

In fig. 2—

b represents the bottom of the interior cylinder

f, the steam-pipe connection.

i, the lard-faucet connection.

d, the braces supporting the inside cylinder.

P, the meat-mill for cutting the leaf-lard.

In fig. 3—

E represents the screw for the press.

G, the swing-beam.

F, the screw-block.

J, the angle-iron, to which the cylinder-head is bolted.

H, the trunnions, on which the swing-beam and screw have their axes.

M, the screw-bearing.

K, the follow-board.

L, the bolts fastening the follow-board to the screw-bearing.

A represents the metallic case.

N, the perforated bottom of the metallic case.

Having thus described my invention, I wish to state that, of all other processes of which I have any knowledge, not one uses the closed cylinder or vessel, completely surrounded with steam, for rendering lard and tallow, and extracting the oil from cod's livers.

Those devices, of which I have a knowledge, each and all of them, either practice injecting steam into the vessel containing the material during the process of rendering, or they use the jacket-kettle, which is only partially surrounded by steam, in all instances allowing of evaporation, or allowing air and steam, one or both, to circulate with the material during the process. These and similar devices are used. But I do not know of any process or device now used in rendering and extracting from the substances I name that use a closed cylinder or vessel, that is so arranged as to be entirely surrounded by the steam, held in pressure, excluding the atmosphere and the steam from the inside cylinder or vessel during the process of extracting and rendering.

Having thus described the process and the devices used,

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The process of rendering and refining lard, tallow, cod-livers, and like substances, in a receptacle inclosed, said receptacle being completely surrounded by steam, thereby preventing loss of substance by evaporation and atmospheric action, substantially for the purposes set forth.

2. The combination of a cylinder or vessel entirely surrounded by steam, suspended within another cylinder, so as to form a steam-chamber around the entire sphere or vessel for extracting and rendering purposes.

3. The combination of the inside and outside cylinders with the space *c*, the outside cylinder-head *a*, the inside cylinder-cover *m*, the braces *d*, the metallic case *b*, the connections *i*, the faucet *h*, the steam-connections *f*, and the screw-press, as attached, the whole made substantially as described, and so as to operate in the manner set forth.

Witnesses: JAS. WILLARD PATTERSON.
M. H. DANIELS,
A. HOPKINS.