

(No Model.)

2 Sheets—Sheet 1.

L. M. OHLY.

APPARATUS FOR RENDERING ANIMAL FATS.

No. 275,404.

Patented Apr. 10, 1883.

Fig. 1.

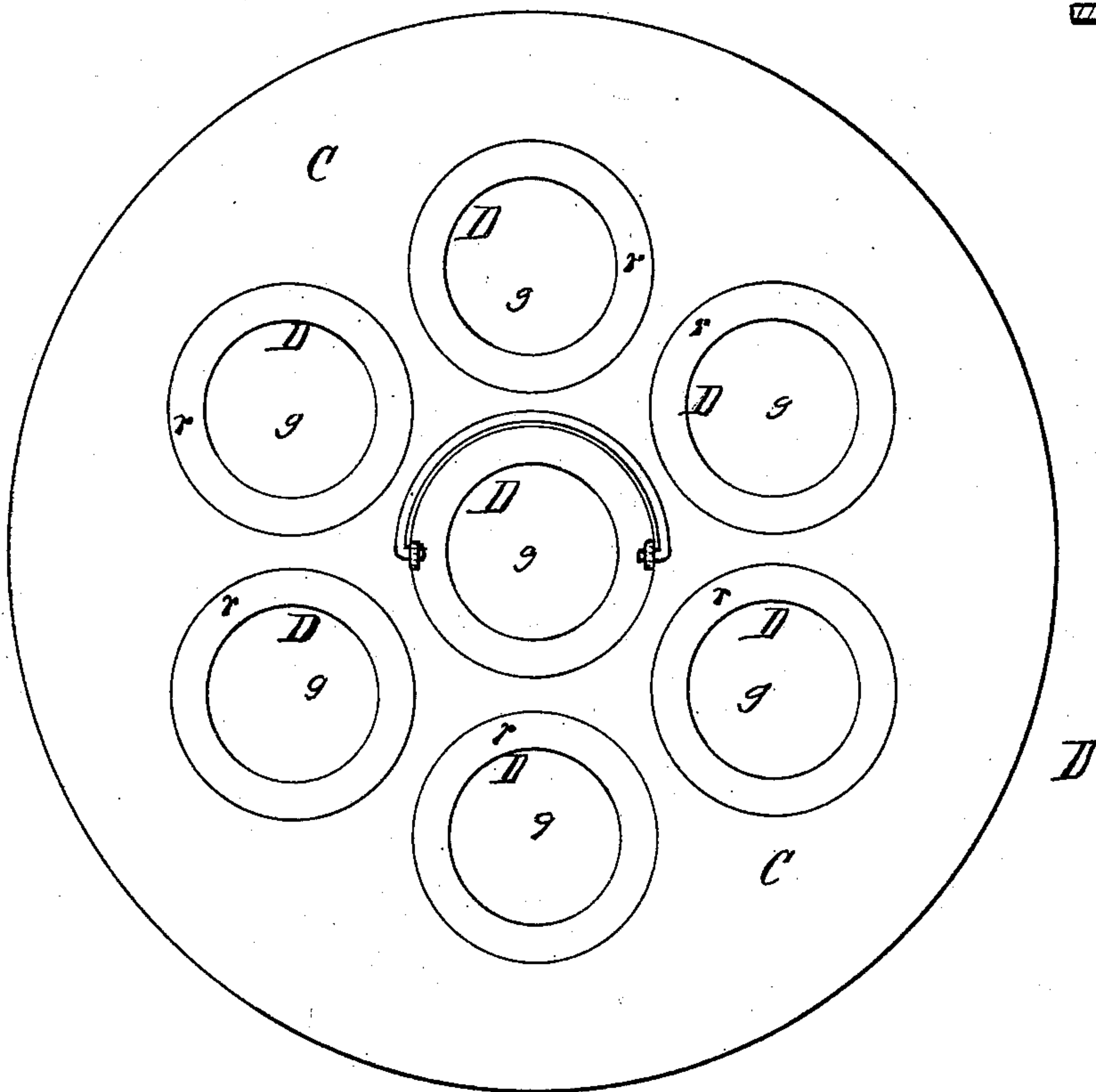


Fig. 3.

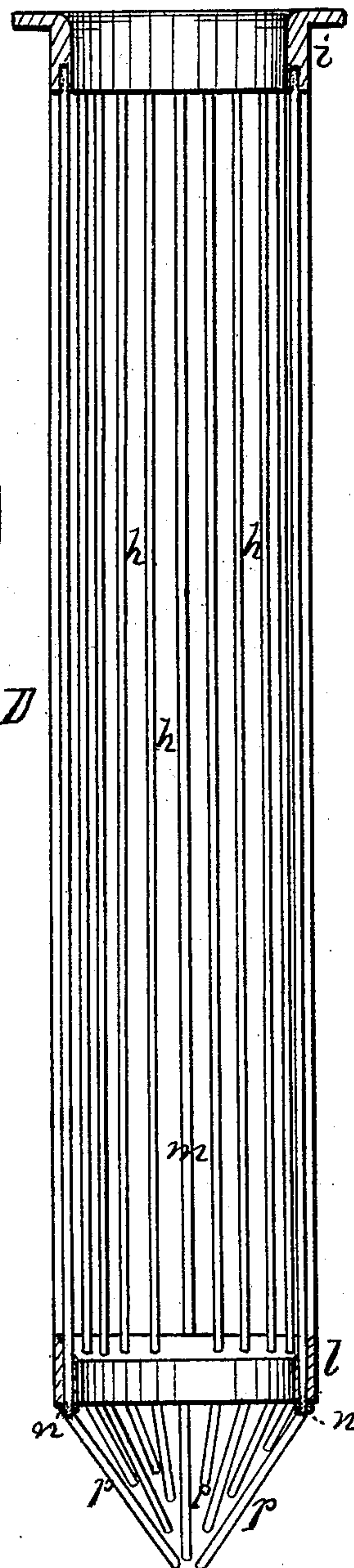


Fig. 5.

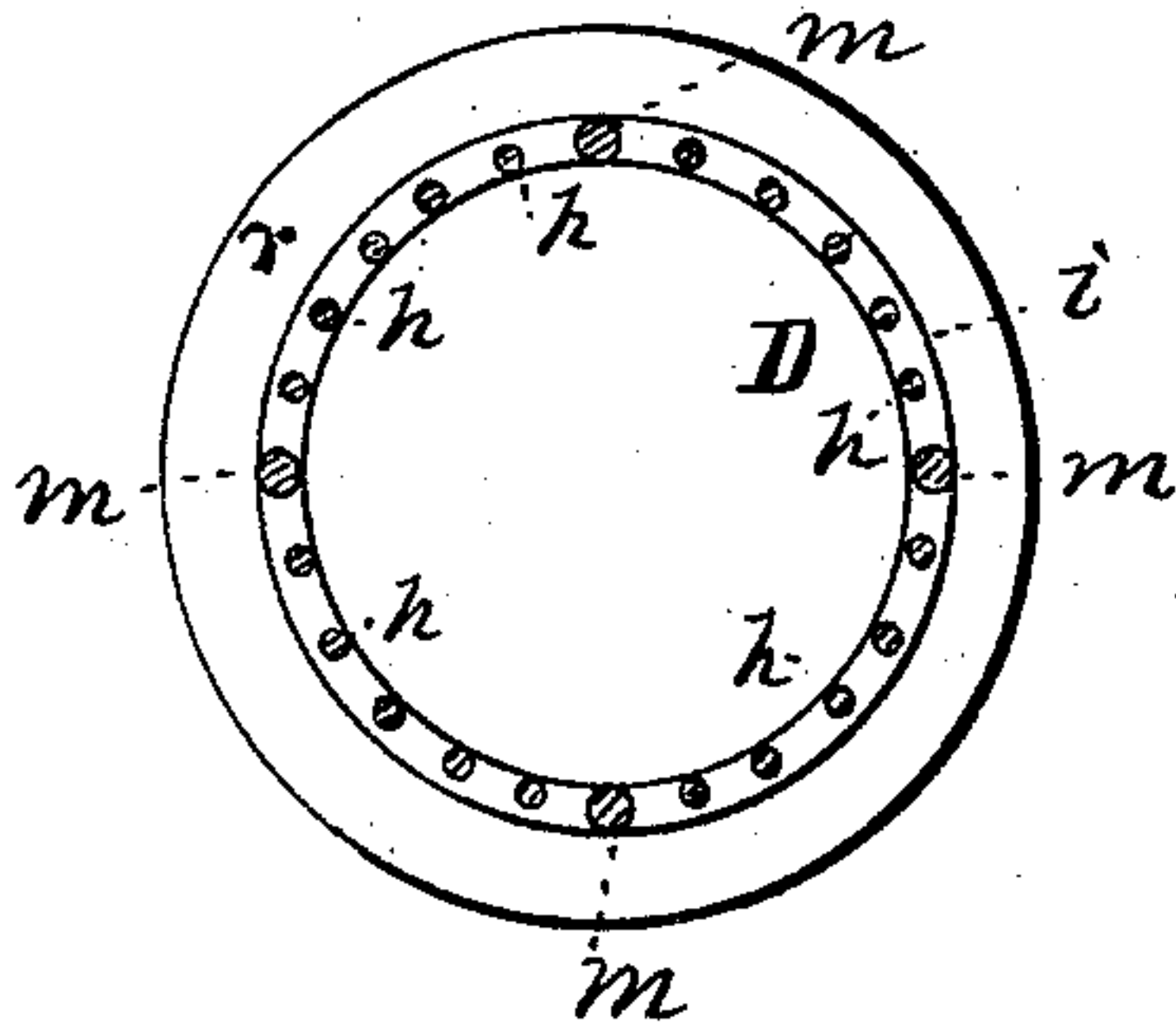
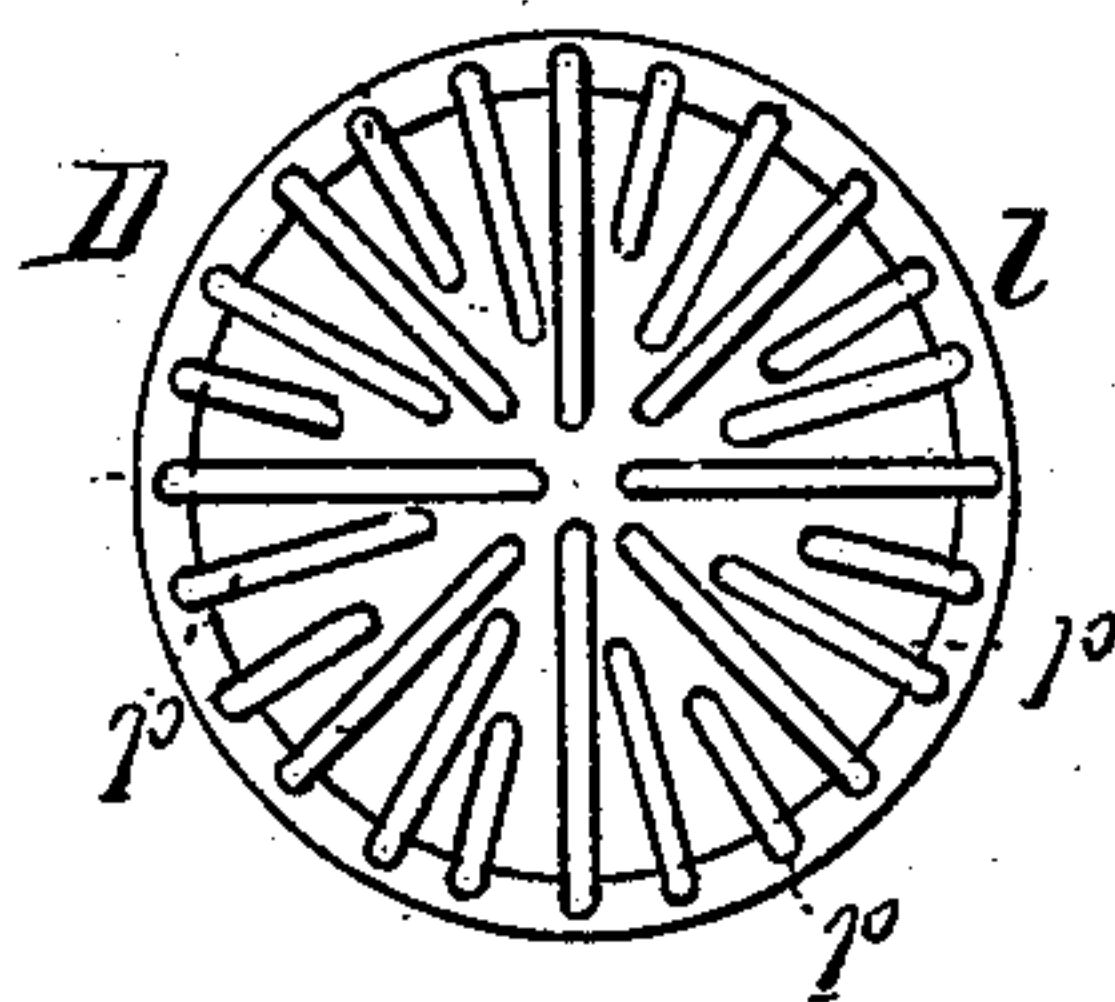


Fig. 4.



Witnesses.

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Inventor,

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By his attorney,
J. S. Brown.

(No Model.)

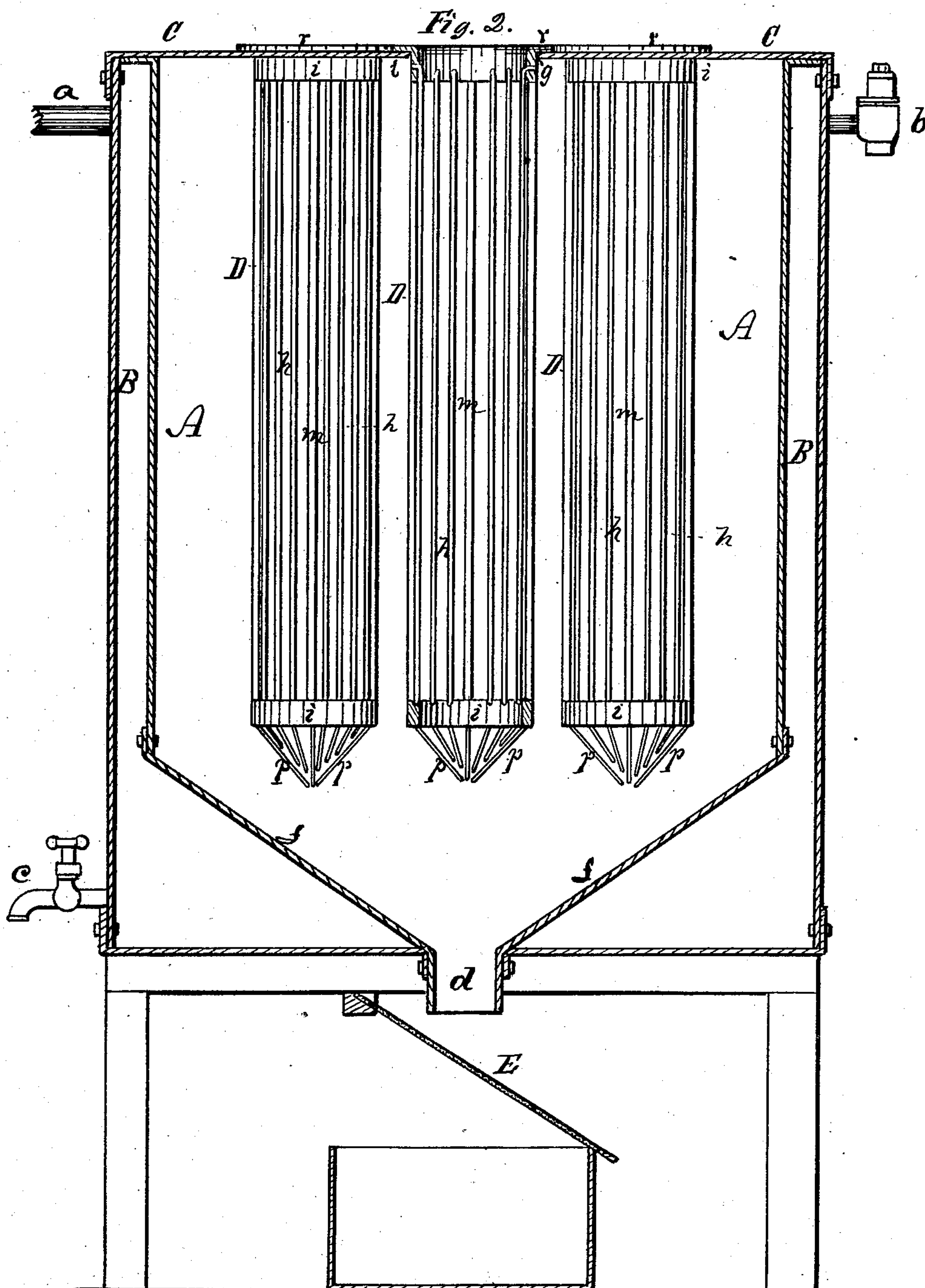
2 Sheets—Sheet 2.

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Patented Apr. 10, 1883.



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UNITED STATES PATENT OFFICE.

LUDWIG M. OHLY, OF NEW YORK, N. Y.

APPARATUS FOR RENDERING ANIMAL-FATS.

SPECIFICATION forming part of Letters Patent No. 275,404, dated April 10, 1883.

Application filed August 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG M. OHLY, of the city, county, and State of New York, have invented an Improved Apparatus for Rendering Animal-Fats; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

10 Figure 1 being a top view of a rendering apparatus provided with my improvements; Fig. 2, a central vertical section of the same; Fig. 3, a central vertical section of one of the "cages" used in the apparatus; Fig. 4, a view of the lower end of one of the cages; Fig. 5, a cross-section of one of the cages, looking upward.

Like letters designate corresponding parts in all the figures.

20 I make use of any suitable vessel in which to apply the heat for rendering the fats. The vessel A, shown in the accompanying drawings, is constructed to apply steam or hot air, which is introduced within a jacketed space, B, surrounding the vessel, a representing a pipe by which to introduce the steam under proper pressure to produce the heat desired; 25 b, a safety-valve to regulate the pressure and heat, and c a spigot for drawing off the water of condensed steam when necessary. This vessel is designed to be several feet in height and of a diameter suited to the capacity for rendering required. Through this vessel, from top to bottom, I pass the fats, after they are suitably divided into small pieces or particles 30 in a hashing machine or machines, as rapidly as possible, melting them as they pass through, and they are drawn off through or at the bottom as fast as rendered without hinderance. The outlet d is large enough to allow a free 40 passage of the melted fat and the scraps or refuse. The bottom f of the vessel A should be conical, as shown, or equivalently constructed, to facilitate the discharge without lodgment of any of the scraps or fibers thereon.

45 In the top or cover C of the vessel A a convenient number of holes, g g, are made, as represented, or otherwise. These holes are for the reception of a set of cages, D D, which form the leading feature of my invention, and 50 which are constructed and designed to operate

substantially in the following manner: These cages are intended to conduct the fats into and down through the heating-vessel A, and to retain the same long enough to melt the clear fat from the fibers or membranous tissues which contain 55 the fats in the animal-body. These fibers, when the fat is entirely separated from them, have but little bulk, but are apt to cling to anything which may offer any obstruction to their descent, and thus to clog up the apparatus which 60 holds the fat in rendering, and when once they become attached to any part of the apparatus which is subjected to high heat they adhere more strongly thereto, and, becoming scorched, impart a bad flavor to the fats; 65 but by the method of rendering with my improved apparatus the fats become melted and separated from the fibers in an exceedingly short time, giving no time to scorch either the fibers or the fats, and both are drawn from the 70 apparatus as soon as possible after the rendering. The principle on which these cages are to be made to operate, therefore, is to simply retain the fats in position for subjecting them freely to the heated air around them 75 long enough to effect the melting and to pass the melted fats and separated fibers freely down without clogging the cages with the fibers, and to allow this process to be continuous, or substantially so, the hashed fats being 80 constantly fed into the upper ends of the cages, while the melted fats flow continually therefrom and the fibers descend within them and escape from the lower ends thereof as fast as separated. To effect these results, therefore, 85 in an efficient manner, I construct the several cages of a diameter only great enough to permit the surrounding heated air to quickly penetrate among the particles of fat therein, say four inches, more or less, although it is to 90 be understood that I do not confine myself to any special size, except to indicate what is a proper one. The length of each cage will depend on the height of the containing-vessel A, being sufficient to nearly reach the bottom 95 beneath, but not to touch the same. It is most convenient to make them of cylindrical form, as represented, although other forms may be used. In order to present no obstructions to the descent of the particles, and es- 100

pecially of the fibers, as they become separated from the fat, and at the same time to make the cages open for allowing a free circulation of air in contact with the fat particles in the same, as well as for the flowing out of the melted fat through the sides thereof, I make the bodies of the cages of longitudinal wires or ribs *h h*, extending from the upper to near the lower end of each, in parallel or nearly parallel positions, and separated from one another by intervening spaces—say a quarter inch in breadth, more or less. No cross-wires are used, since they would more or less obstruct the passage of the fats and fibers.

A convenient mode of constructing the cages is to employ two rings, *i l*, Fig. 3, one at the upper end and the other at the lower end of the cylindrical part, and to stretch the wires from one to the other. Three or four brace-rods, *m m*, extend between the two rings to keep them rigidly separated, and to fully stretch the wires one end, preferably the lower end, of each may pass through the ring and be provided with a nut, *n*, Fig. 3, to tighten it between the rings. The lower ring, *l*, should be inclined or sloping on the inner side, so that the fibers shall not lodge thereon. The lower part of each cage terminates in a conical or equivalent—say polygonal or wedge-shaped—form, so as to bring the wires quite close together, but not in contact with one another, and thus prevent the escape of the fats before they are melted. The construction shown in Figs. 3, 4, and 5 is a suitable one for this purpose. The wires *p p*, being either continuations of the main wires of the cage or separate wires, extend downward and inward toward the central line of the cage, so that those extending lowest nearly touch one another, others extend not so far, and others are still shorter, and thus they cover the whole conical space with wires, having intermediate spaces of about the same breadth as those in the cylindrical part. These wires, being elastic and free at the lower ends, offer no obstruction to the discharge of the fibers, even if presented in considerable bunches or masses at once, the superincumbent weight of the fat above assisting the discharge of the fibers and the fat itself keeping the surface of the wires lubricated. The upper end of each cage should be enlarged, so that it may be suspended in its hole in the cover of the vessel A by such enlargement. A suitable construction to effect this purpose is to form the upper ring, *i*, with an outwardly-turned flange, *r*, at the upper edge, as shown in Fig. 3. This flange will rest upon the cover of the vessel around the cage-hole. Each cage may have a bail or handle to lift it by. The several cages are supplied with the hashed fats directly from the hashing-machines placed over the apparatus, or in any other convenient way, the fats dropping or being fed continually into the upper end of each. Whenever it is required to withdraw a cage for any purpose it is readily done without in-

terfering with the operation of the others, and it may be replaced by another cage in a few seconds, so that no time need be lost in the use of the apparatus. The melted fat and the fibers, as they pass out through the outlet *d*, which is kept open constantly, fall upon a suitable screen or strainer, E, below the vessel A, whereby the liquid fat is separated from the fibers and any impurities associated therewith. This strainer is preferably inclined, as shown in Fig. 2, so that the fibers and impurities may be readily removed from the strainer. Two strainers may be used, one under the other, or even more, if desired.

I am aware that animal-fats have been rendered by causing them to fall in a finely-divided state through a highly-heated vessel or chamber, the rendering being effected by simple contact with the heated air which surrounds the separated particles of fats, and that the melted fats have been drawn from the vessel or chamber as fast as separated from the membrane, leaving the membranous fibers behind. Such a method of rendering fats I disclaim. My method differs therefrom, first, in not allowing the hashed fats to simply fall in a separated state through the heated air, but, instead thereof, in holding them in narrow cages, as described, till rendered therein; and, second, in discharging the melted fat and fibers together from the heated chamber.

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

1. An apparatus for rendering animal-fats, having a heated chamber or vessel, A, through which the fats are made to pass, and provided with cages or inclosing-ways D D, through which the fats are caused to pass, and which retain them therein subject to the action of the heated atmosphere of the vessel long enough to be completely melted, and then allow the same, together with the fibers, to pass immediately therefrom and from the vessel, substantially as and for the purpose herein specified.

2. In an apparatus for rendering animal-fats, cages D D, constructed to receive the hashed fats at one end and to conduct the same through the heated air of a vessel or chamber, and to retain the fats long enough therein to completely melt the same, and then to discharge the melted fat and fibers without further retention, substantially as and for the purpose herein specified.

3. In an apparatus for rendering animal-fats, a cage or conducting-way constructed to continually receive the hashed fats at one end, to hold them subject to the action of a heated atmosphere till rendered, and to continually discharge the melted fats and fibrous remains of the fats.

4. In an apparatus for rendering animal-fats, a cage or conducting-way, D, formed of longitudinal wires or ribs, held in position by rings or their equivalent at the ends, and free from obstruction on its internal surfaces, substantially as and for the purpose herein specified.

5 5. A cage or conducting-way, D, for the purpose herein set forth, having its lower or discharging end covered with converging wires, substantially as and for the purpose herein specified.

6. In an apparatus for rendering animal-fats, a vessel, A, for containing a heated atmosphere, having holes *g g* in its top or cover, in

combination with cages D D, suspended in the said holes, and readily removable therefrom, 10 substantially as and for the purpose herein specified.

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Witnesses:

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