

(No Model.)

J. H. WINSHIP.
RENDERING APPARATUS.

No. 548,793.

Patented Oct. 29, 1895.

Fig. 1.
On line y-y

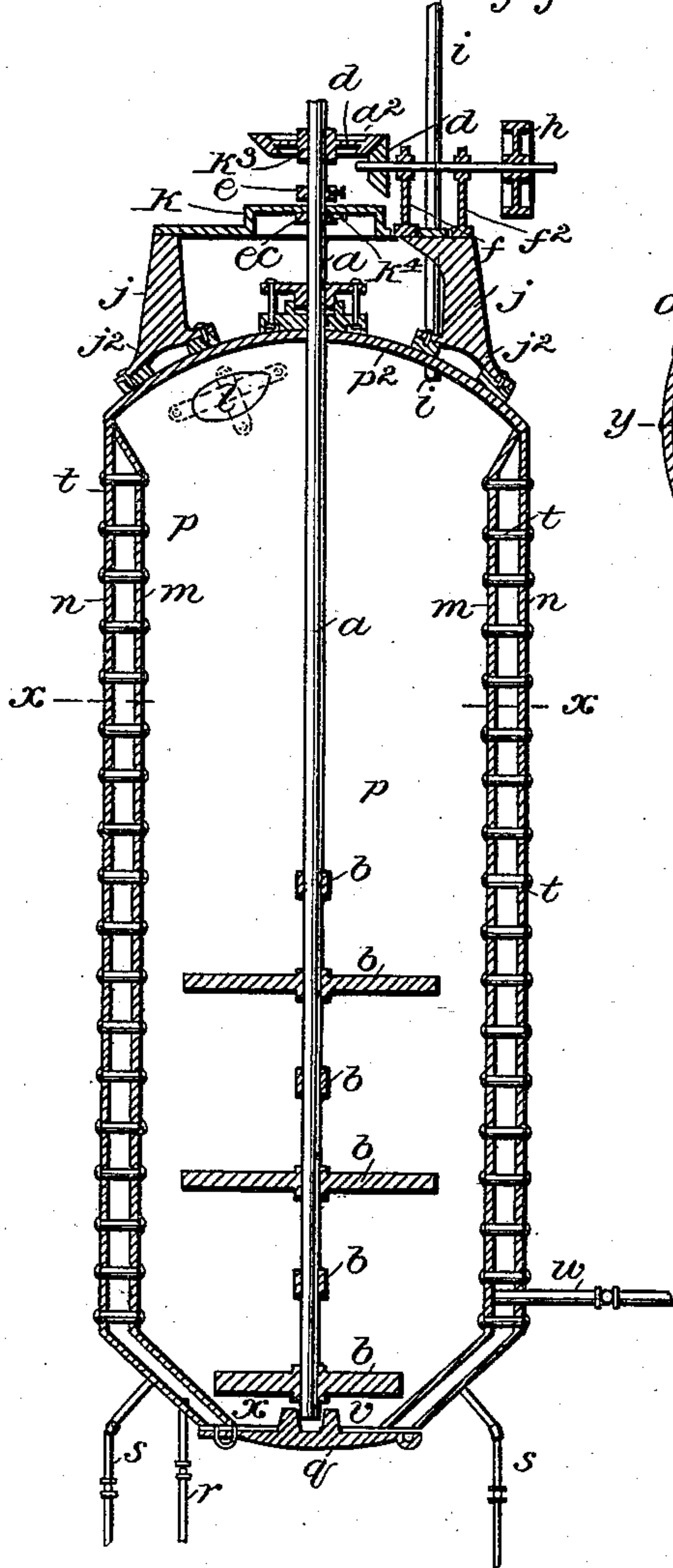


Fig. 2.
On line x-x

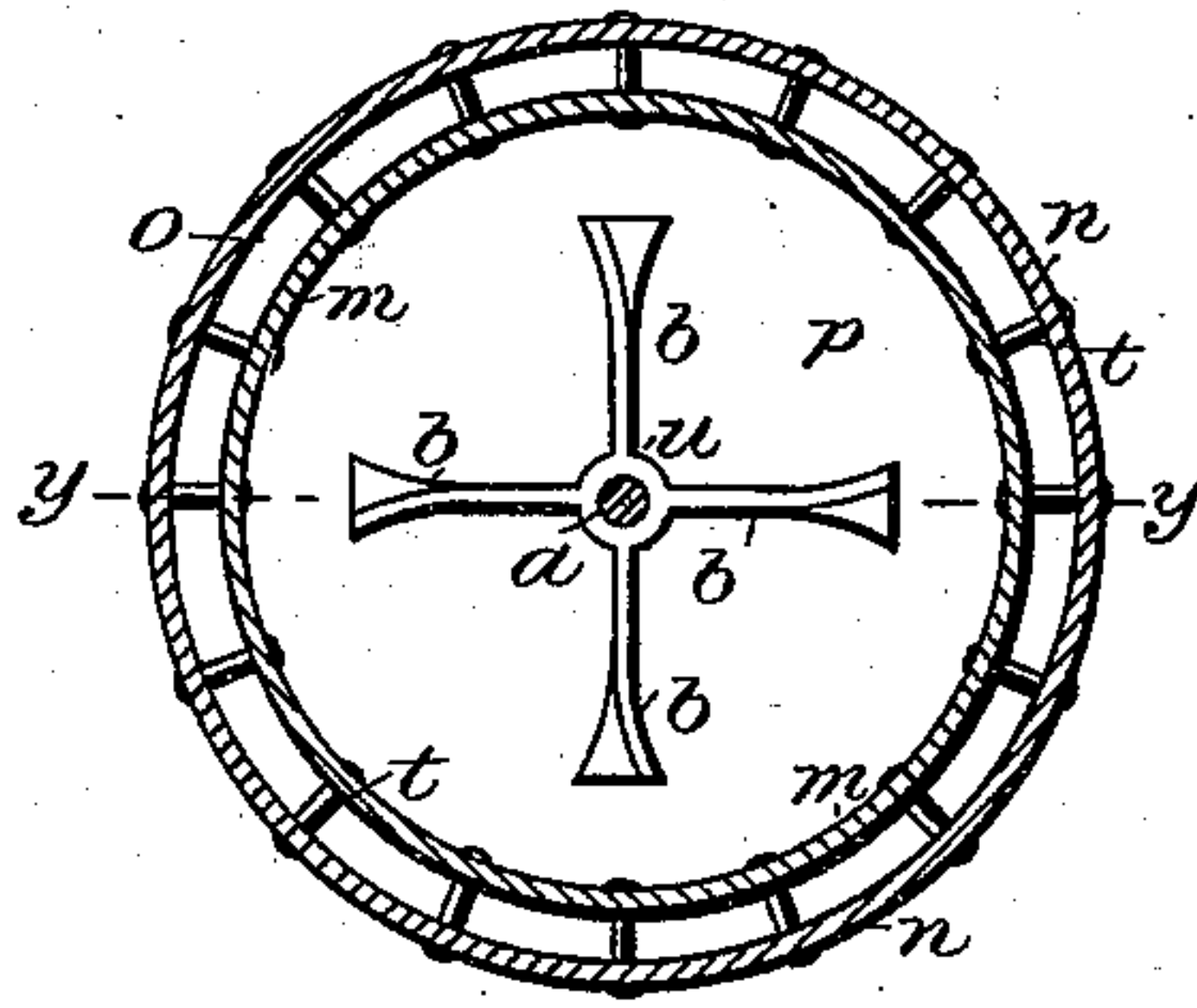


Fig. 3.

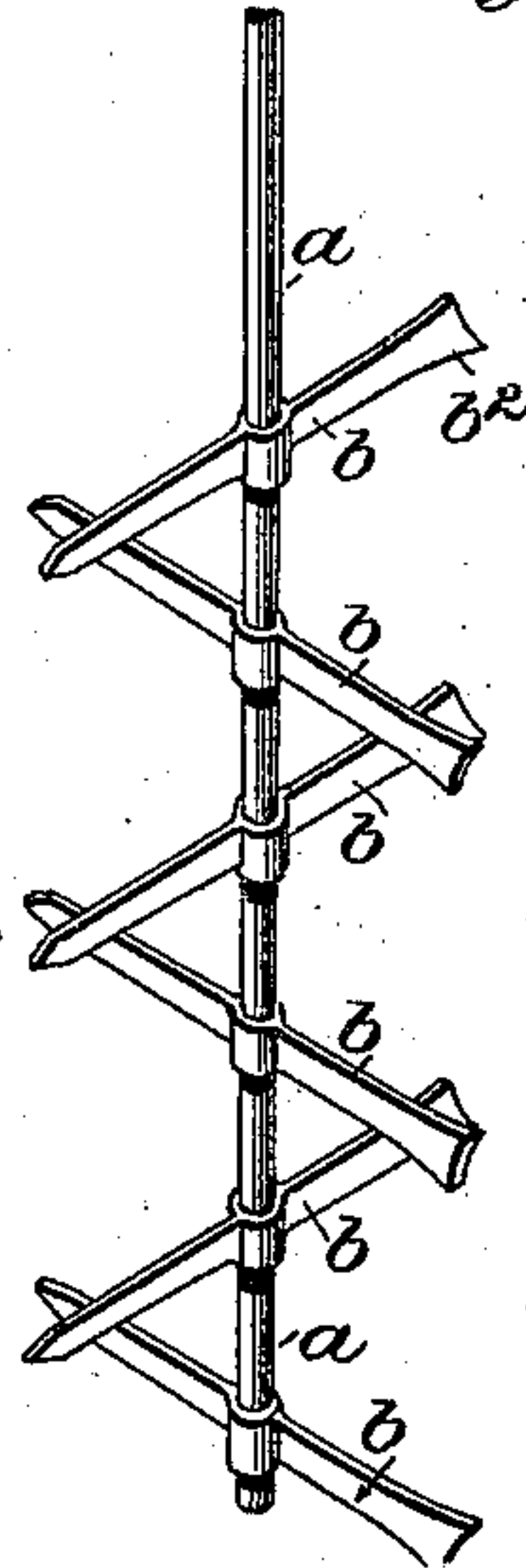
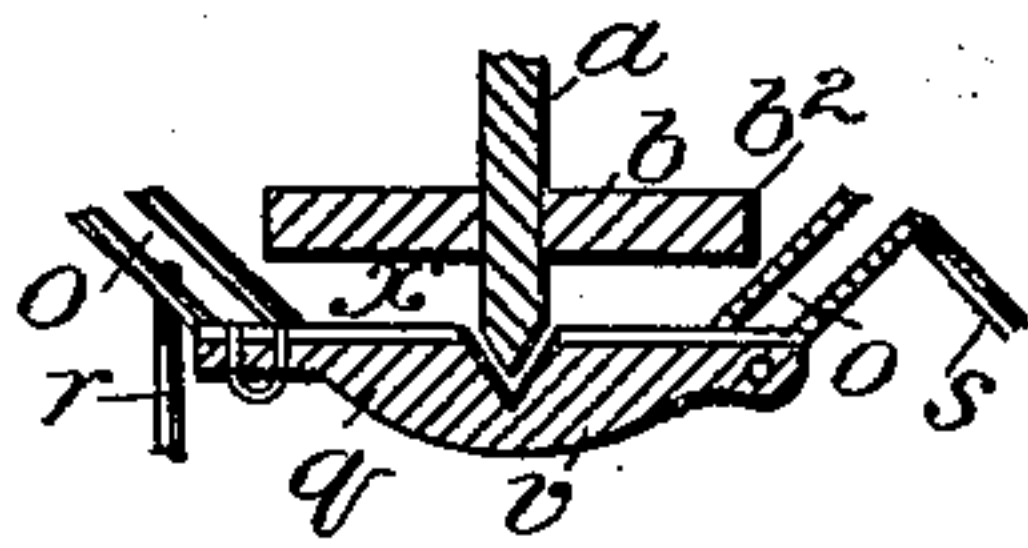


Fig. 4.



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RENDERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 548,793, dated October 29, 1895.

Application filed August 7, 1895. Serial No. 558,519. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. WINSHIP, a citizen of the United States, and a resident of the city of New York, in the county of New York, in the State of New York, have invented a new and useful Apparatus for Treating Fats, of which the following is a correct description.

The invention relates generally to improvements in apparatus for separating tallow and like fatty matters from the fibrin and other refuse substances, the whole being commonly or technically known as "scrap," in connection with which they are ordinarily found; and it relates particularly to that class of such devices or apparatus in which a vertical chamber to receive the substances which are to be treated is encircled by a warming-jacket or steam-chamber, and is provided with a means for producing agitation of the contents of such chamber or receptacle.

The invention consists in various novel parts or combinations of parts in an apparatus for the treatment of fatty matters or substances, as will first be described with particular reference to the details of its construction, and then specifically and distinctly claimed in the clauses which follow such detailed description.

In the accompanying drawings, which constitute a part of this specification, Figure 1 is a vertical central section of the apparatus as in the line *y y* of Fig. 2. Fig. 2 is a horizontal section as in the plane indicated at *x x* in Fig. 1. Fig. 3 is an isometric figure representing the relation of the agitating-arms and their blades to the horizontally-revoluble shaft. Fig. 4 is a detail representing a modification to be referred to in describing the operation.

The vertically-arranged chamber or treating-receptacle *p*, which rests upon any suitable foundation or support, (not represented in the drawings,) is of generally cylindrical form and is heated to any required degree of temperature by means of the encircling steam-chamber *o*, which is embraced between the inner shell *m* and the outer shell *n*, which are maintained securely in position by means of numerous stay-bolts *t*. Steam from any convenient source is introduced through either or both of the steam-pipes *s*, which are provided with suitable means of control. A pipe

r is provided to permit outflow of the products of condensation, and a pipe *w* for withdrawing the liquefied contents of the chamber or receptacle *a*.

A supporting-base *j* of a generally annular form in horizontal section, and by preference composed of cast metal, is mounted by its suitably-secured legs *j*² upon the rounded or dome-like upper extremity *p*² of the chamber or tank, and a cover or head *k*, of suitable thickness and provided with an elevated central seat *k*², has a central opening *k*³, around which rises a supporting-rim *k*⁴. Upon the supporting-base *j*, at one side of the same, are standards or bearings *f* and *f*², which receive a horizontal shaft *g*, which at its outer extremity carries a belt-wheel *h*, while at its inner extremity it is provided with bevel gear-wheel *d*, which engages the horizontal bevel gear-wheel *a*², which is fixed upon the projecting upper portion of the central agitating-shaft *a*. At a point immediately above the raised seat *k*² the shaft *a* is fitted with a collar *e*, which rests upon the rim *k*⁴ of the opening *k*³, while a second collar *ec*, directly underneath the seat *k*², is also securely fixed to the shaft. Within the chamber which is encircled by the body of the base *j* the shaft *a* is provided with a stuffing-box *c*, of ordinary construction.

At its foot the receiving chamber or tank *p* has a discharge-opening *x*, which is closed against the escape of the liquid or gaseous contents of the chamber by a pivoted closely-fitting cover or drop-door *q*, which is provided with a central cavity or recess *v*, which constitutes, as it were, a "step-like" center for the lower extremity of the shaft *a*. This recess or step may be formed as a circular rim projecting upwardly a short distance above the flat inner face of the drop-door *q*, as in Fig. 1, or it may be formed as a central cavity in such flat face, as in Fig. 4. It should be understood that the recess *v* serves merely to insure the centrality of this extremity of the shaft and to render certain its steadiness of movement, and that the shaft does not rest in—that is, is not supported in any degree by—the drop-door.

It will be observed that the horizontal agitating-arms *b* upon the shaft *a*, which may be provided in any suitable number, terminate

outwardly in cutting-blades b^2 , each of which is formed by a partial twist, as it were, of the extremity of the plate from which each arm is formed, the upper portion being bent slightly backward, while the lower portion is bent slightly forward and is provided with a sharp edge, which in the operation of the apparatus serves to cut up the fatty matters and other substances supplied through the feed-opening or manhole l , to sever the adhering material from the bones, and generally to comminute and reduce to a soft and pulpy mass all the matters which are to be subjected to the rendering process effected through the conjoint action of the steam-jacket and the agitating and dividing arms. It will be understood that steam and vapor evolved within the receptacle will escape through the exhaust-pipe i either into the open air or into any suitable receptacle or condensing-chamber.

It will be noted that by reason of the provision of a means for maintaining the lower extremity of the revoluble shaft in its proper position without employing a device which will become a fixed obstruction in the discharging end of the tank renders complete discharge of all the contents of the same easy and certain.

The invention having been thus fully described, what is claimed is—

1. In an apparatus for treating fats, and analogous substances, the combination with a vertical cylindrical chamber or tank, of a pivoted discharging-door, at the foot of the receptacle, provided with a central loosely-engaging step or cavity; and a central vertical shaft which has agitating-arms, and which at its top is revolubly supported, at a point above the receptacle, while its lower extremity is loosely received within the engaging-step or

cavity; substantially as and for the purposes specified.

2. In an apparatus for treating fats and other substances,—the combination with the vertical tank or receptacle p having bottom discharging-opening, as specified; of the annular base or standard j , surmounting the receptacle; the platform k , having the seat k^2 , central opening k^3 , and supporting-rim k^4 ; and the revoluble shaft a , having encircling collar, as set forth, resting upon the rim k^4 , and wholly supported thereby and extending at its foot into a withdrawable recess at the bottom of the receptacle, whereby its centrality at that point is maintained; substantially as shown and described.

3. In an apparatus for treating fats and other substances,—the combination with the vertical cylindrical chamber, having the horizontally-revoluble shaft, supported wholly at its upper extremity, and provided with arms b , which have knife-edges b^2 ; of the pivoted drop-door, having central cavity, to receive the lower extremity of the revoluble shaft, and prevent its misadjustment; substantially as set forth.

4. An apparatus for treating fats and other substances, which has a vertical cylindrical body; an encircling steam-jacket; a vertical shaft which is supported wholly at its upper extremity, which has horizontal agitating and cutting arms, and which at its foot is received in a cavity or step which when the refuse is to be discharged from the apparatus, drops away from the body of the same; substantially as described and shown.

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