

### Rendering Apparatus.

No. 57,103.

Patented Aug. 14, 1866.

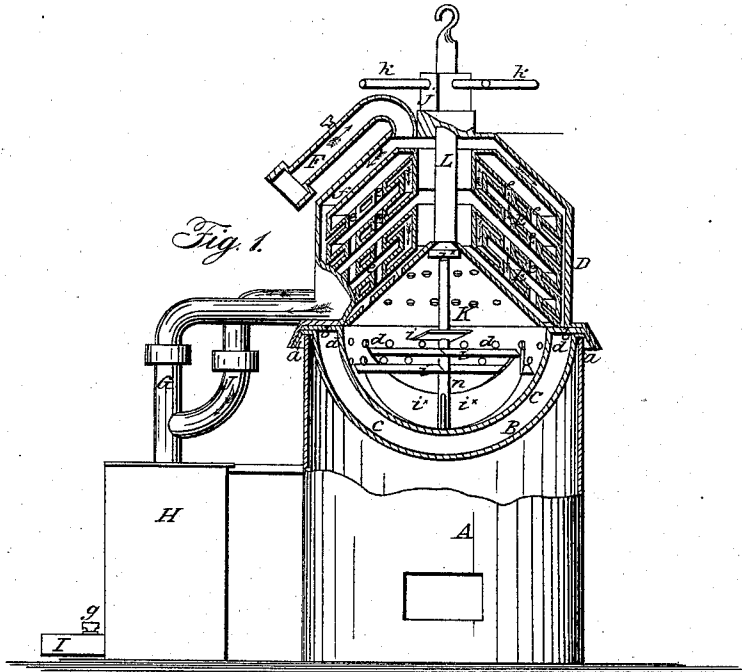
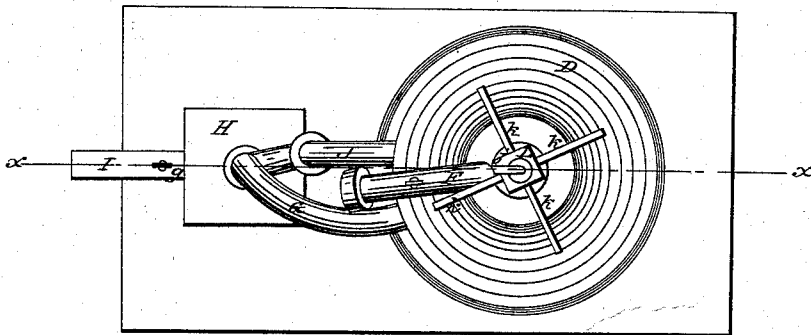


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## IMPROVED APPARATUS FOR RENDERING TALLOW, LARD, &c.

Specification forming part of Letters Patent No. 57,103, dated August 14, 1866.

*To all whom it may concern:*

Be it known that we, JOHN J. ECKEL and ISAAC S. SCHUYLER, of the city, county, and State of New York, have invented a new and Improved Device for Rendering Tallow and other Fatty Substances; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side sectional view of our invention, taken in the line *x x*, Fig. 2; Fig. 2, a plan or top view of the same.

Similar letters of reference indicate like parts.

The object of this invention is to obtain a device for rendering tallow which will preclude the possibility of the tallow becoming scorched or burned during the cooking process, and by which all offensive odors will be avoided.

The difficulties attending the cooking or rendering of tallow are twofold, to wit: first, the offensive odors escaping from the kettle, which precludes such operation being carried on in populous neighborhoods, especially during the summer months or in time of pestilence; and, second, the liability of the scorching or burning of the meat, offal, or scrap, a constant stirring being required in order to prevent such contingency, involving hitherto considerable labor and expense.

By our improvement the escape of offensive odors is entirely prevented and the stirring of the tallow during the cooking operation greatly facilitated.

A represents a furnace, which may be constructed of metal or masonry, and having a kettle, B, in its upper end. This kettle may be of cast-iron, and it is provided with a flange, *a*, at its upper edge, to rest upon the wall or side of the furnace, as shown clearly in Fig. 1.

C represents a kettle, which may be constructed of copper or other suitable metal, and is fitted within the kettle B, the kettle C being provided with a flange, *b*, at its upper edge, to rest on the flange *a* of the kettle B. The kettle C is smaller in diameter than B, so that a space, *c*, is allowed between them, and

the upper part of C is perforated with holes *d* all around, the use of which will presently be shown.

D represents a case, which is fitted in the furnace A directly over the inner kettle, C. This case D has a series of chambers, E, secured permanently within it, said chambers being of conical form, placed one above the other at suitable and equal distances apart. These chambers have tubes *e* passing vertically through them, so as to admit of a free passage of the steam and vapor from kettle C up through the case D, as indicated by the black arrows. The case D is double-walled, and the space *f* between the walls communicates with chambers E, as shown clearly in Fig. 1.

F represents a pipe, which leads from any suitable reservoir of water into the upper part of the space *f*, and G is a pipe which leads from the lower part of said space *f* into a receiver, H, provided with a discharge-pipe, I, at its lower end.

J is a pipe which leads from the lower part of the case D into the pipe G, just above the receiver H, as shown in Fig. 1. A stream of water, when the device is in operation, is continually passing through the space *f* and chambers E into the receiver H, as indicated by the red arrows, the discharge-pipe I being provided with a cock, *g*, to regulate the discharge from H, it being designed that the receiver H shall always contain a certain amount of water.

K represents a rotary stirrer, which consists of a vertical shaft, *h*, provided with arms *i*, which have an oblique position in their transverse section, and also provided at its lower end with curved arms or sweeps *i'*, to work over the bottom of the kettle C, as shown in Fig. 1. The upper end of this shaft *h* is fitted in the lower end of a shaft, L, placed centrally in the case D, and having a head, *i\**, at its lower end, and a shoulder or collar, *j*, upon it above the case D. The collar *j* has a radial socket, *k*, projecting from it, to receive levers or arms by which the shaft L may be turned when desired, and also the stirrer K; and by applying a tackle to the upper end of shaft L the case D may be removed from the furnace when desired, and readily adjusted upon it. This is necessary in order to supply the kettle

C with fat or offal and to remove the scraps and tallow therefrom after the cooking or rendering operation is completed.

The operation is as follows: A fire is built in the furnace A and a quantity of tallow or oil is placed in the kettle B, the kettle C then fitted within B, and the fat or offal placed in C. The case D is then fitted on the furnace A and water let into pipe F. The steam and vapor from the boiling fat or offal rises into case D and comes in contact with the exterior of the chambers E, passing through the tubes *e* in its passage upward. The chambers E, being in a cool state, on account of the current of cold water passing through them, condenses the steam or vapor, which flows down on the upper surfaces of the chambers and trickles through tubes *e*, reaching the bottom of the case, where it flows into a pipe, J, and thence into pipe G and down into receiver H. The flow of the water through pipe G induces a suction in pipe J and insures the drawing off of the condensed vapor and steam from the interior of case D. This condensing of the steam and vapor in case D prevents any steam-pressure on the boiling fat and offal, and it will be seen, of course, that no offensive odors can escape from the kettles. Should any steam or vapor escape into pipe J, it will be condensed in receiver H, which, as before stated, is always to have a supply of water within it.

The space *c* between the two kettles B C is always kept supplied with liquid tallow or oil, as the latter will flow from C through the perforations *d* into B, and, in consequence of this oil being interposed between the two kettles,

the fat or offal in C is prevented from being scorched or burned. The stirring of the fat or offal in C by means of the stirrer K also serves as an auxiliary means to prevent that result.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The two kettles B C, the latter, C, being fitted within the former, B, and sufficiently less in diameter to admit of a space, *c*, between them, in combination with the holes *d* in the kettle C, substantially as and for the purpose set forth.

2. The rotary stirrer K, placed within the kettle C, when used in connection with the case D or other cover for the kettles, for the purpose specified.

3. The condensing apparatus composed of the chambers E or other suitable or equivalent water-passages in the tube D, for the purpose of admitting of the kettles being closely covered during the cooking or rendering process.

4. The receiver H, arranged with the pipes G J, substantially as shown and described, to serve as an auxiliary to the condensing apparatus, and also to insure the drawing off of the condensed steam or vapor from D.

The above specification of our invention signed by us this 16th day of May, 1866.

JOHN J. ECKEL.

ISAAC S. SCHUYLER.

Witnesses:

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