

J. J. CRAVEN.

Improvement in Apparatus for Rendering and Drying Animal Matter.

No. 132,636.

Patented Oct. 29, 1872.

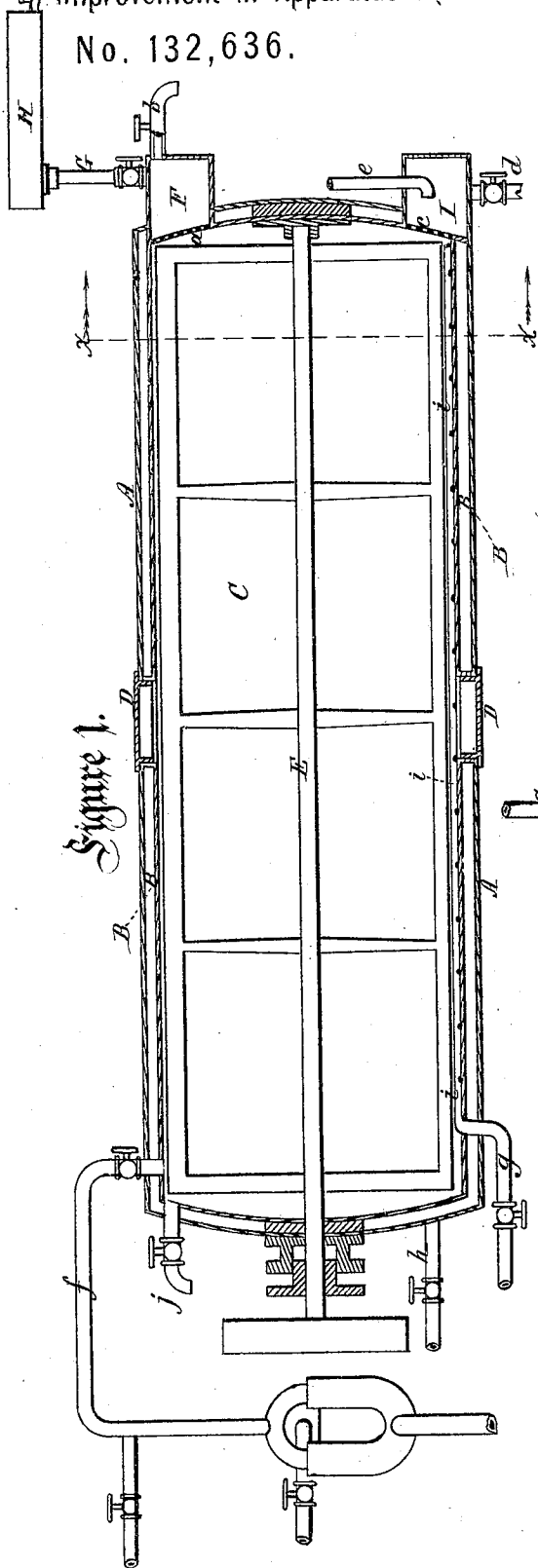


Figure 1.

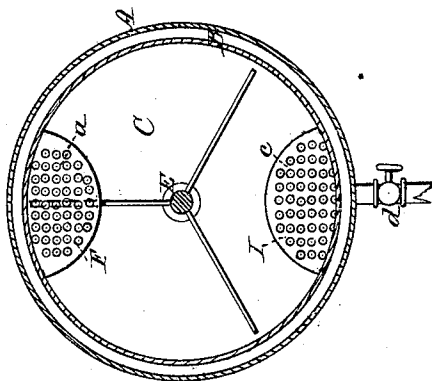


Figure 2.

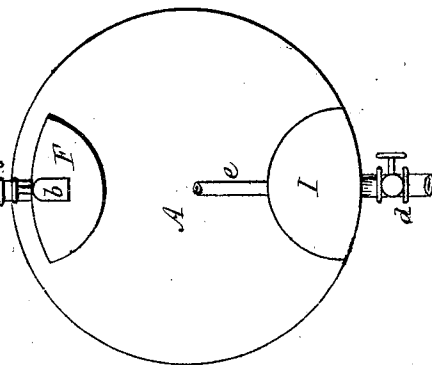


Figure 3.

Inventor:

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UNITED STATES PATENT OFFICE.

JOHN J. CRAVEN, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN APPARATUS FOR RENDERING AND DRYING ANIMAL MATTER.

Specification forming part of Letters Patent No. 132,636, dated October 29, 1872.

To all whom it may concern:

Be it known that I, JOHN J. CRAVEN, M. D., of Bergen District, Jersey City, in the State of New Jersey, have invented certain new and useful Improvements in Apparatus for Rendering and Drying Animal Matter, of which the following is a specification:

My present invention is an improvement upon those already patented to me, bearing date the 17th day of September, and October 15th, 1872, for the treatment of animal matter in the extraction of the oils therefrom, effecting the drying of the said matter or residuum and the deodorization of the noxious gases generated during the operations. The improvements herein claimed have for their object the simplification and practical utility of the apparatus in carrying out two of the principal features of the operation—viz., in the decantation of the oils or fatty matter, and the sewerage or drainage of the working-chamber. To the accomplishment of these ends, therefore, the invention which forms the subject-matter of this patent consists of a receiving-box for the oils or fatty matter located and arranged on the outside of the head of the vessel projecting outwardly and inwardly and communicating with the working-chamber at the top thereof, thereby constituting an outside oil decanting-box having perpetual communication with the working-chamber, and which possesses the advantage of being applicable to rendering vessels already in use with but little expense and being a very convenient device for the purpose. Also, in the arrangement of a drain-box or chest for sewerage purposes, located outside of, and projecting both inward and outward from the head of the vessel, and having open communication with the bottom of the working-chamber by a strainer, and provided with an outlet-gate, thereby obtaining a thorough and practical drainage for the fluids from the working-chamber after the processes of rendering and drawing off the oils have been effected—the device being simple and readily applied to rendering-tanks now in use—the special advantages of these two devices being in their location and arrangement with respect to the outside of the end of the working-chamber, easy of access, forming no obstruction to the interior or the working-chamber, and of economy for the purpose in-

tended. The apparatus is designed to be the same, or substantially the same, in construction and operation in the several processes, as that embraced in my patents aforesaid, except in the distinguishing features indicated in the declaration of invention. The apparatus, therefore, in the several processes therein effected need not be particularly described in this patent further than is necessary in the description of the features claimed herein, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 represents a vertical longitudinal section of an apparatus embracing my invention; Fig. 2 represents a cross-section of the same at the line X X of Fig. 1; and Fig. 3 an end view of the same.

The apparatus consists of a jacketed vessel or cylinder A, the intermediate surrounding space constituting a steam-heating-chamber, B, and the interior chamber C, for the reception and treatment of the matter. It is provided with man-holes D at the top and bottom for the introduction and discharge of the matter after treatment, having an armed shaft E, for the agitation of the matter under the operation of drying. The matter is treated within the working-chamber C, under the separate processes of rendering, elevating, and decanting the oils, and drying the residuum; and the noxious odors or vapors arising while these operations are progressing are deodorized outside of the vessel by means of a condensing-pump, having direct and open communication with said working-chamber, and worked by the pressure of the steam within the chamber. It is in the processes of decanting the oils and draining the tank that my present improvements especially relate. The first of these is effected by means of a chamber or receptacle, F, secured to the end of the vessel so as to project therefrom, and extend through the intervening heating-space to the head of the working-chamber C, with which it communicates by perforations *a* in its inner end, so that between the working-chamber and the receiving-box there is a perpetual opening. This box forms a projecting pocket and is secured within an opening either in a single or double head in any suitable manner, so that as the oils or fatty matter are elevated by the inflowing

water to the crown of the vessel they will pass into the pocket F and be drawn off by a suitable gate or valve, *b*, the top of this pocket for this purpose being on a line with the crown of the working-chamber. The oils, of course, are crowded into this pocket F by the pressure of the water in the chamber, and the strainer *a* serves to keep the pocket free from clogging. This projecting pocket forms also a very great convenience and comparatively inexpensive means for attaching a glass tube, G, to conduct the oils to a receiving-tank, H, above, the said tube G serving to indicate when the oil is expelled from the working-chamber, as the glass tube G will show the line which separates the oil from the water, as will be found more fully described in my patent aforesaid. The drain or sewer consists also of a box or chest, I, arranged to project from the outer end of the vessel on a line with the bottom thereof, extends through the intervening chamber B, and communicates with the working-chamber C by a strainer, *c*, arranged flush with the head of the working-chamber so as to be always open to drain off the fluids when desired. It is provided with an outlet-gate, *d*, placed in a pipe leading therefrom to effect this purpose; and in order to keep its strainer *c* or communicating end from clogging by matter it has also a pipe, *e*, leading to the steam-boiler, through which to let in a blast of steam which rushes through the strainer *c*, and frees it completely whenever found necessary. It is located, when desired, vertically beneath the oil-receiving box F, and, like it, may be secured in any suitable way either to the inner or outer heads of the vessel. The jacketed vessel is provided with suitable pipes for the supply of water and steam. The pipe *f* leads to the automatic condensing-pump for relieving the working-vessel of the pressure therein, and the pipe *g* leads to the boiler for introducing steam to the working-chamber, while the water is introduced by the pipe *e* connecting with the sewer-box I, and the pipe *h* leads from the boiler to let in steam to the surrounding chamber B for drying. The pipe *g* from the boiler connects with two small jet-pipes, *i*, arranged upon the bot-

tom of the working-vessel on either side of the man-hole D with their steam-jets down, so as to prevent them from being filled with matter. A valve or cock, *j*, may, if desired, be arranged in the opposite end of the vessel from the oil-receiving box to serve as a supplementary means for decanting the oils. In all other respects the apparatus is constructed and operated as described in my aforesaid patents. The oil and drain boxes may be arranged on opposite ends and secured by suitable packing to a single or double head.

Having described my invention, I claim under this patent as follows:

1. In apparatus for rendering and drying animal matter, I claim a box or chamber arranged upon the outer end of the vessel and projecting therefrom on a level with the crown of the chamber to receive the oils or fatty matter from the working-chamber, essentially as described.
2. In apparatus for rendering and drying animal matter, I claim a drain or sewer box arranged upon the outer end of the vessel and projecting therefrom on a level with the bottom of the working-chamber to drain the said chamber, essentially as described.
3. In such an apparatus, I claim the oil-box F and the drain or sewer box I, arranged one above the other upon the outside end of the vessel, essentially as described.
4. In such an apparatus, I claim the outside oil-box F and the outside drain or sewer-box I, arranged to pass through the intervening heating-chamber B of the jacketed vessel and open alike into the working-chamber, as described.
5. In such an apparatus, I claim the outside oil-box and the outside drain or sewer box, having perpetual communication with the working-chamber, as described.

In testimony whereof I have hereunto set my hand this 18th day of October, A. D. 1872.

JOHN J. CRAVEN, M. D.

Witnesses:

C. H. WINFIELD,
E. M. PENNINGTON.