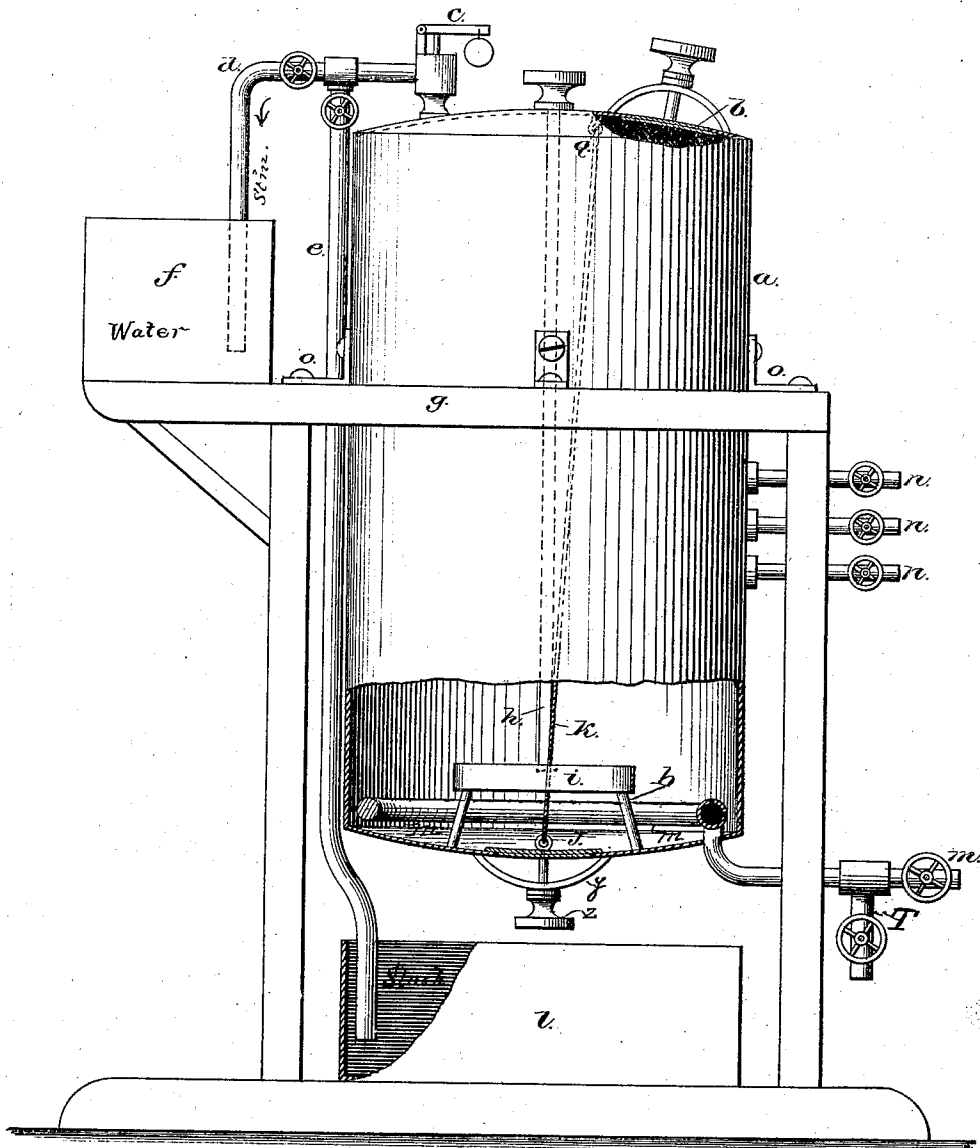


N. CALDWELL.
Lard-Rendering Tank.

No. 168,611.

Patented Oct. 11, 1875.



Attest:

Geo. P. Brown
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UNITED STATES PATENT OFFICE.

NATHANIEL CALDWELL, OF CINCINNATI, OHIO.

IMPROVEMENT IN LARD-RENDERING TANKS.

Specification forming part of Letters Patent No. 168,611, dated October 11, 1875; application filed April 21, 1875.

To all whom it may concern :

Be it known that I, NATHANIEL CALDWELL, of Cincinnati, Ohio, have invented an Improved Lard-Rendering Tank, of which the following is a specification :

The object of my invention is to construct a more perfect lard-tank than has heretofore been used, by placing all the parts that are used to empty the tank and wash it out, in such a position as to be worked from the outside, thus preventing the necessity of a man having to go in to clean it out, as is done with the tanks now in use, thus saving a large amount of time in not having to wait for the tank to cool off to allow the man to enter, and also using the waste steam when blowing off the tank, after the steaming process is done, to heat water for scalding hogs, and other uses in slaughtering-houses. Also, in supporting the tank by the use of lugs instead of resting it on its end, as is now done.

The accompanying drawing, illustrating my invention, is a side elevation, showing the tank in section with my improvements attached.

a is the shell of tank. *b* is the man-hole in the upper end of the tank through which the material to be rendered is put. *c* is the safety-valve from which the pipes *d* and *e* run to the hot water-tank *f* and slush-tub *l*, having two valves so as to throw the steam into either of them at will from lard-tank *a*. *f* is what I call the hot-water tank, in which I heat the water for scalding hogs, and other purposes, by using the waste steam from the tank *a*. After the steaming process is done, all tanks now in use blow this steam out in the open air, thus wasting a large amount of heat which I am enabled to save. *g* is the framework upon which the tank *a* is supported by the lugs *o o*, which are fastened to the tank *a*, having their faces rest upon frame-timbers. The tank *f* may be placed at any convenient part of the house, as well as by the side of the tank *a*, and be connected by steam-pipes. *h* is the center stay-bolt having its upper end passing up through the upper head of tank *a* to stiffen the tank-heads. At its lower end is fastened a cross-piece, *i*, to receive the bolts *t*, which rise from the bottom head in such a way as to form an arch, so as to allow the man-

hole plate *J* to be lifted out of its place by the chain *k*, after its arch *y* and bolt *z* on the outside of the tank-head have been taken off. *J* is the man-hole plate in the center of bottom head through which the tank *a* is emptied of its contents, by lifting the plate out of its seat by means of the chain *k*, after its bolt and arch have been removed. The chain *k* runs to the upper head, and is fastened or held up by a hook in reach of a man's hand, after the plate *b* is taken off. The lower man-hole plate *J* may be placed out of the center of head, if wanted. So may more than one hole be used; but I prefer to use only one, and that in the center of the lower head. *l* is what is called the slush-tub, into which are emptied the waste material and water after the steaming process is done, and the steam-pipe *e* runs into it. The pipe *m* serves the double purpose of a steam and water pipe, by reason of the two stop-valves and branches *T*, as follows: When steam is let into one pipe, the other valve will be closed, and so when water is let into the pipe the steam-valve will be shut. The pipe *m* runs into the inside of tank *a*, when it branches off to the right and left from a *T*, and runs around the tank close to the shell, but does not make a complete circle, but has its ends closed up while the back side of pipe next to the tank-shell is perforated so as to throw the steam or water out to the side or inner surface of the tank. The object of this is to wash the tank's side and bottom by the use of steam or water, instead of a man having to go into the tank and clean it out by hand. *n n* are what are called the lard-cocks for drawing off the melted lard. *o o* are the lugs which support the tank *a*, so as to give room to operate the man-hole plate *J*. There may be an upper steam-pipe for filling the tank *a*, when the lower pipe *m* does not fill it as fast as is wanted. *Q* is the hook to which the chain *k* is fastened when not in use, so as to keep it from dropping down into the lard and waste material.

When the above tank is thus combined, its operation will be as follows: When the tank is to be filled the upper man-hole plate *b* is taken off, and the material put in; the plate is again replaced and fastened by the arch and bolt. Steam is then let on, when the steam-

ing process goes on, and when completed the tank is emptied of its steam by opening the stop-valve in pipes *d* or *e*, as is wanted. After the steam is blown off the man-hole plate *b* is taken out of its seat when the lifting chain *k* can be operated to lift the lower man-hole plate *J* out of its place after its arch and bolt have been removed from the outside of tank-head. When the plate *J* is lifted up, the waste material and the large amount of water used in the tank while the steaming process is going on, to float the melted lard up to the lard-cocks to be drawn off, all rush out at the man-hole *J* into the slush-tub *l*. The head of the tank being concave, the waste material not run off at the first discharge can be run or washed out by opening the water or steam valves in pipe *m*. This operation will take only a few minutes to empty and clean out the tank, while the old way takes several hours to perform the operation, thus doing the same amount of work with a less number of tanks.

I am aware that lard-rendering tanks have been made with openings in their lower ends to discharge their contents by the use of a screw or throttle valve, which opens with a gradual movement or a slow motion, but not by giving a large opening quickly and instantaneously, as I do to clean out such tanks.

I do not claim, broadly, the making an open-

ing in the bottom of a lard-rendering tank to operate with a slow movement like a screw; but

What I do claim is—

1. The combination of the lower tank-head, having a man-hole, with the plate *J*, chain *k*, arch *y*, and bolt *z*, as and for the purpose specified.

2. Combination of the pipes *T m* (the pipe *m* extending inside the tank, and perforated inside the tank) with the tank *a*, whereby either water or steam may be admitted to the lard-tank as required, substantially as set forth.

3. Combination with the head of a lard-tank of the rod *h*, the brace or arch *i*, and the man-hole plate *J*, whereby the heads of the lard-tank are braced or supported when the man-hole is in the center, substantially as described.

4. The lard-rendering apparatus, consisting of a suitable frame, the tank *a* supported by the lugs *o o*, and braced by the rod *h*, and cross-bar or arch *i*, and having man-holes *b J*, as described, and inlet water or steam pipe *T m*, perforated on the outer side, and outlet-pipes *d e*, and tanks *f* and *l*, substantially as described.

NATHANIEL CALDWELL.

Witnesses:

GEO. P. BROWN,
SAM. B. COOKE.