

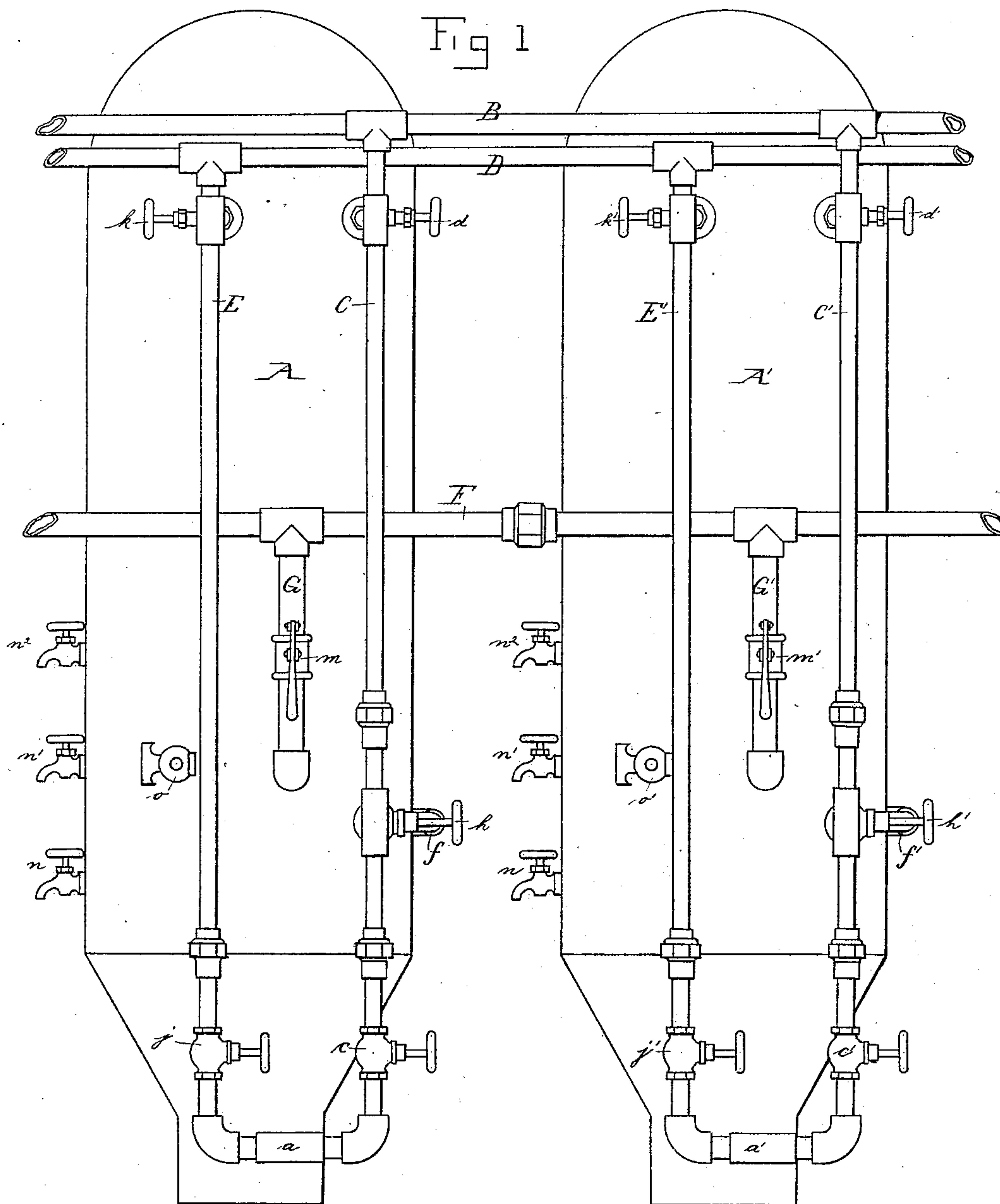
(No Model.)

2 Sheets—Sheet 1.

J. K. MARTIN.  
LARD AND TALLOW TANK.

No. 256,715.

Patented Apr. 18, 1882.



WITNESSES  
D. W. Adams.  
J. W. Kasehagen.

INVENTOR  
James K. Martin  
By Wm H. Lotz  
Attorney

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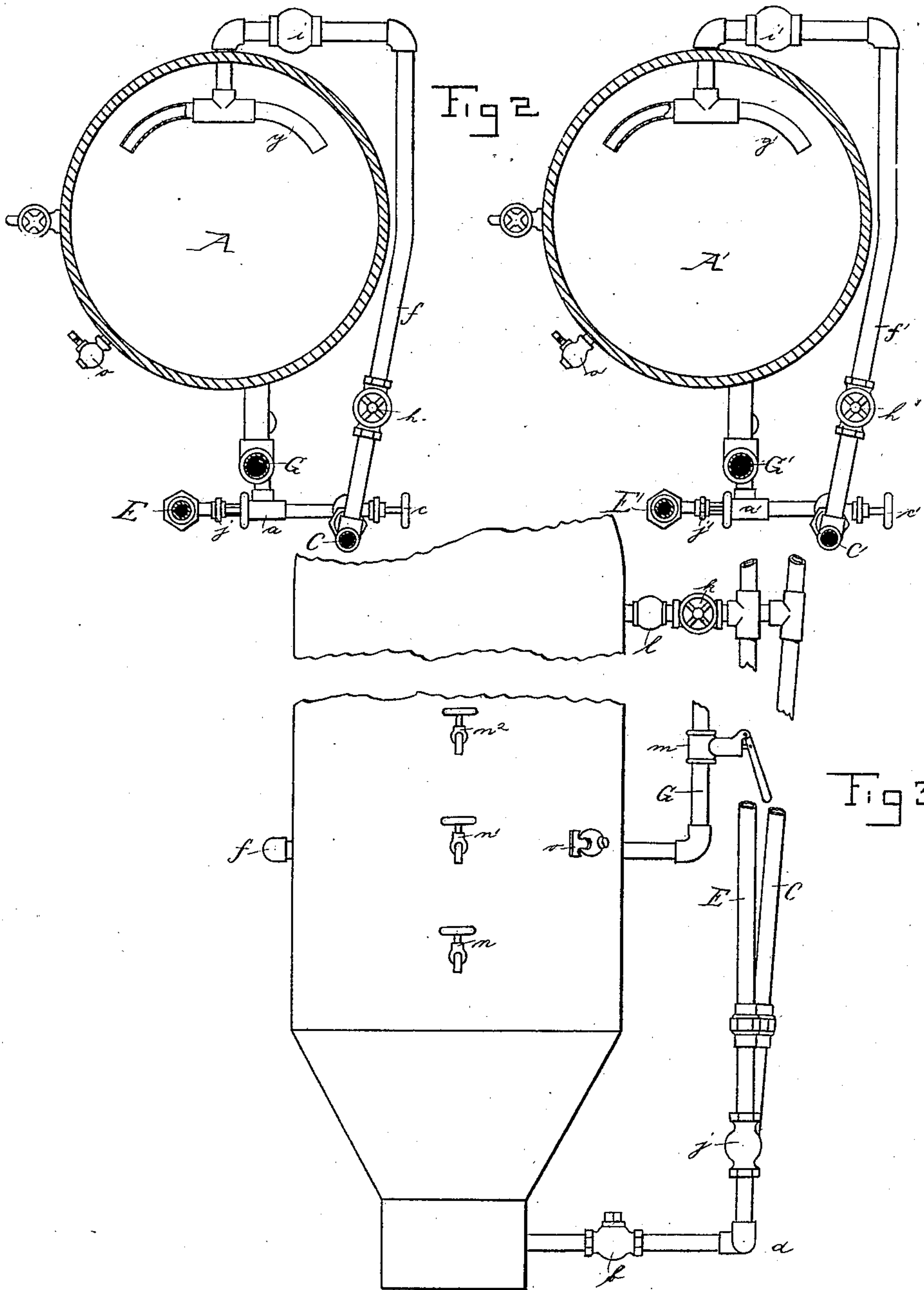
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# UNITED STATES PATENT OFFICE.

JAMES K. MARTIN, OF CHICAGO, ILLINOIS.

## LARD AND TALLOW TANK.

SPECIFICATION forming part of Letters Patent No. 256,715, dated April 18, 1882.

Application filed February 18, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES K. MARTIN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Lard and Tallow Tanks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon,  
10 which form a part of this specification.

This invention relates to the separation of lard or tallow from all the water, blood, salt, fragments of membranes, and other impurities by boiling and condensation; and it is my ob-  
15 ject to accomplish this in a series of tanks which may be used alternately for rendering or purifying.

Therefore my invention consists of the devices and combinations of devices hereinafter  
20 described and specifically claimed.

In the accompanying drawings, Figure 1 represents a front elevation of two of a series of tanks; Fig. 2, a sectional plan of the same, and Fig. 3 an edge view of one of the tanks.

25 Like letters designate corresponding parts in all the figures.

A and A' denote two of a number of tanks, which are made of the usual construction, one exactly like the other, and each is to be pro-  
30 vided with a gate or man-hole on top for filling with the raw material and with a valve or gate in the bottom for drawing off the water and for removing bones and other refuse; also, with a safety-valve on top, all of which attach-  
35 ments are made in any usual manner, and therefore are not shown in the drawings.

B is a pipe connecting with a steam-generator and having drop-branches C C', one to each tank, which connect at their lower ends  
40 with T-couplings a a', that communicate with the bottom of the tanks through check-valves b b', and the admission of steam to which is regulated by stop-valves c c'. Each branch C C' communicates also with the top of the tanks  
45 through a stop-valve, d, and a check-valve, and at an intermediate point a pipe, f f', leads off each branch C C' around and to the rear of the tanks, where such pipe enters the tank and connects with a curved pipe, g, that is  
50 closed at both ends and is perforated at the

side toward the front of the tank with a row of small holes. Each pipe f f' is provided also with a stop-valve, h h', and a check-valve, i i'.

D is a cold-water pipe, which is connected with a force-pump and has drop-branches E  
55 E', one for each tank. These branches E E' connect with the T-couplings a a' at the bottom of the tanks, and have each a stop-valve, j. These branches E E' communicate also with the top of the tanks, each through a stop-valve, 60  
k, and a check-valve, l.

F is the main lard or tallow pipe, which by branches G G' communicates with the several tanks at an intermediate point, each branch  
65 having a valve or stop-gate, m m', that is operated by a lever. Three faucets, n, n', and n'', are arranged at different elevations for drawing off the lard or tallow; and o o' are  
gauge-cocks.

Now, by describing my process and opera-  
70 tion of rendering and purifying lard or tallow the arrangement of the several pipe-connections will be fully understood.

The tank A having been filled through the top with raw lard or tallow or with salt trimmings  
75 as they come from the packing-houses, I turn on steam through valve c and let the material cook from eight to twelve hours. After the mass has been thus cooked sufficiently I shut off the steam and let it settle for about thirty  
80 minutes, and then by opening valves m and m' the pressure of steam which is still in the tank A will force the larger portion of lard or tallow that has been separated through pipe  
85 F and through the branches G and G' into tank A'. Next I admit cold water into the bottom of the tank A through valve j until said tank is filled sufficiently to show water  
90 at gage-cock o, when I shut off the water and open valve h for admitting steam into pipe f to issue through the perforations of curved  
95 pipe g, when all the lard and tallow that is still remaining on the water will be skimmed and concentrated at the opening to pipe G, and will be forced through pipes G and G' and  
F into the tank A' by admitting steam into the top of tank A through valve d. Now, after gage-cock o shows nothing but pure wa-  
ter, so as to indicate that all the lard and tal-  
low has been withdrawn, the water is let out 100



from tank A, and the bones and other refuse is removed through the gate or man-hole below, when said tank is ready for a new charge of raw material. After a sufficient quantity of lard or tallow has thus been collected in tank A' from one or several rendering-tanks, I turn on steam from the bottom by opening valve *c'*, and allow the material to cook again from one to two hours. Next I let in cold water from top through valve *k'*, while the steam is still admitted from the bottom until the lard or tallow is raised as high as desired, and during this operation I open the safety-valve to allow the escape of all repugnant gases, and after closing the valve *k'* and the safety-valve I boil the material again from one to two hours, then shut off the steam, allow the material to settle, and then draw off the now pure lard or tallow through any one of the faucets *n*, *n'*, or *n*<sup>2</sup> into a cooling-tank.

Heretofore the boiling and separating of lard or tallow was done in a single tank, when the material in it being kept mixed during the entire process with the bones and other impurities until allowed to cool down and settle, such lard or tallow retained a peculiar "twang," that made it unfit for many purposes without further manipulations and treatment with chemicals for neutralizing and purifying, besides that the skimmings could not be utilized and were wasted.

With my improved process every particle of lard or tallow is extracted and separated from the refuse, and by the boiling in a second tank and the admission of cold water from the top simultaneously with steam from the bottom said water in passing through the boiling material will clean and concentrate the particles, and thus will purify the product, so as to have a sweet and healthy taste and fine color without the application of any chemicals.

What I claim is—

1. The herein-described arrangement of a series of tanks, A A', each connected with a

steam-pipe, B, water-pipe D, and lard or tallow conveying pipe F by suitable branches and valves for adapting either tank alternately to be used for rendering or purifying purposes, substantially as set forth.

2. The combination of a series of tanks, A A', connected with pipe F by branches G and G', each having a valve, *m* and *m'*, for the purpose of conveying lard or tallow from any one tank to another, substantially as and for the purpose set forth.

3. The combination of a series of tanks, A A', each connected with the lard or tallow pipe F by branches G G', having valves *m* and *m'*, and each tank containing a curved and perforated pipe, *g*, that is connected by a branch, *f*, with the steam-pipe B, all substantially as and for the purpose set forth.

4. The combination, with a series of tanks connected by pipe F and branches G and G', having valves *m* *m'*, of the steam pipe B and water-pipe D, both connected by branches with the top and bottom of all the tanks and provided with suitable valves, substantially as and for the purpose set forth.

5. The combination of a series of tanks, A A', each connected with pipe F by branches G G', having valves *m* *m'*, such tanks being also connected at top and bottom with steam-pipe B by branches C C', having valves *d* *d'* and *e* *e'*, and having perforated pipes *g* *g'*, that connect the pipes *f* *f'* with the branches C C', and have valves *h* *h'*, and with water-pipe D by branches E E', having valves *j* *j'* and *k* *k'*, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

JAMES K. MARTIN.

Witnesses:

F. W. KASEHAGEN,  
F. U. ADAMS.