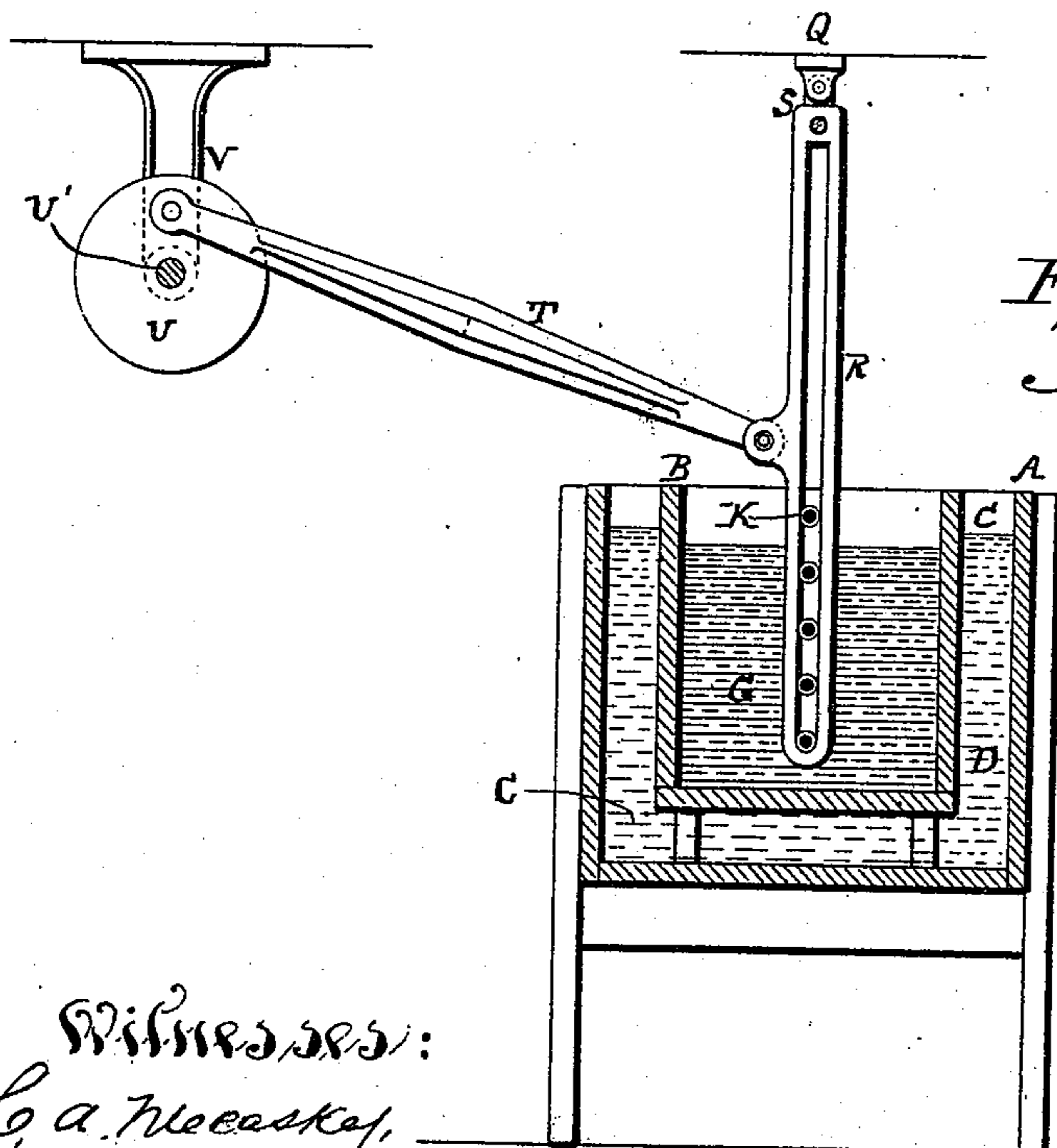
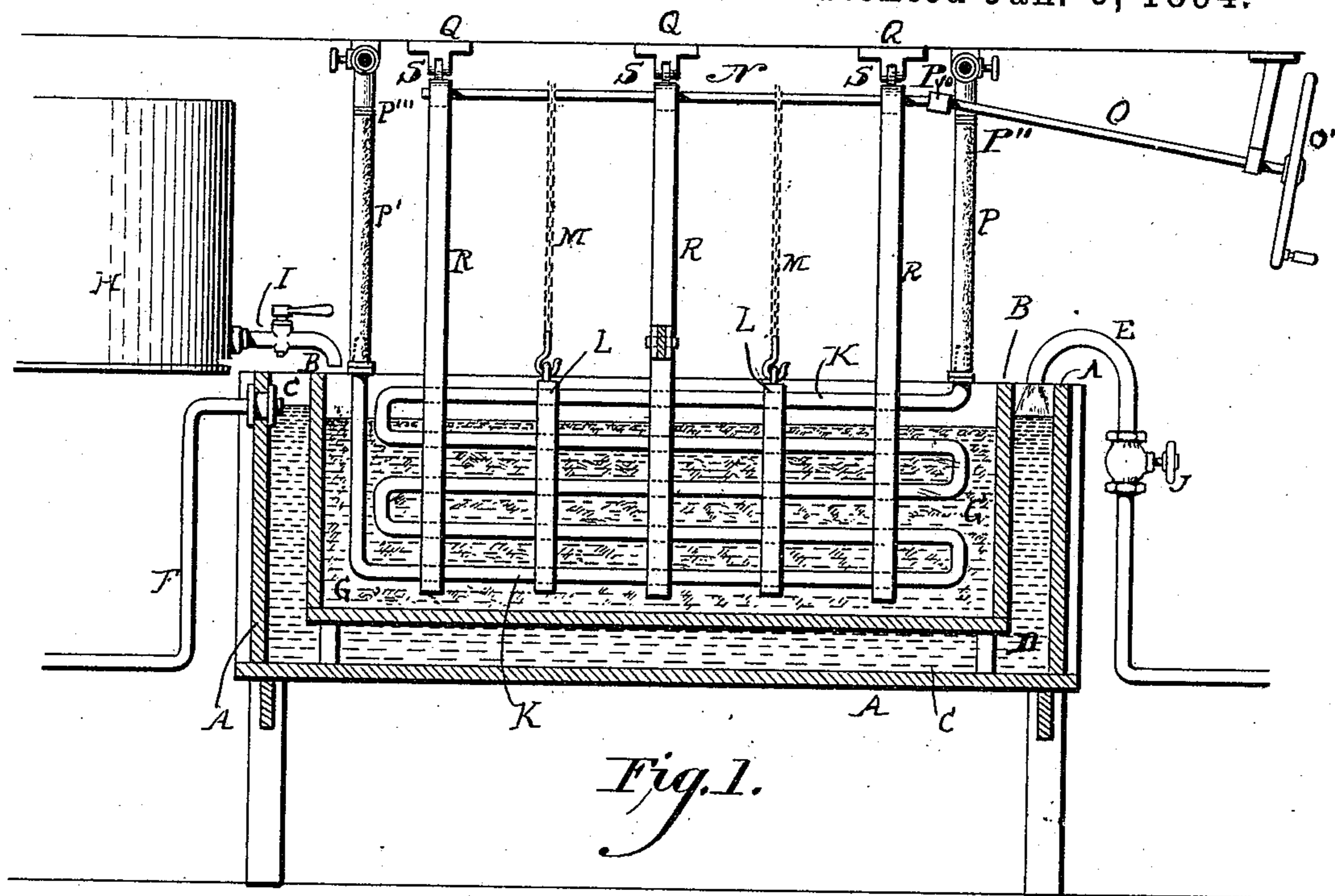


(No Model.)

W. L. WHITMAN.  
LARD COOLER.

No. 512,642.

Patented Jan. 9, 1894.



Witnesses:  
C. A. Neeske,  
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Inventor:  
Walter L. Whitman  
by George E. Buckley  
and William Pennington  
his Attorneys.

# UNITED STATES PATENT OFFICE.

WALTER L. WHITMAN, OF BRIDGEPORT, PENNSYLVANIA.

## LARD-COOLER.

SPECIFICATION forming part of Letters Patent No. 512,642, dated January 9, 1894.

Application filed January 14, 1893. Serial No. 458,429. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER L. WHITMAN, of the borough of Bridgeport, in the county of Montgomery, State of Pennsylvania, have  
5 invented certain new and useful Improvements in Lard and Liquor Coolers; and I do hereby declare the following to be a description of the same, reference being had to the annexed drawings, making part hereof.

10 My invention relates to apparatus for changing the temperature of liquids, and has particular reference to that class of such devices adapted for cooling lard.

My invention consists in the construction  
15 and combination of parts as hereinafter described and claimed.

In the drawings:—Figure 1, is a longitudinal vertical sectional view of the tanks, the other parts being in elevation; Fig. 2, a vertical cross sectional view of the tanks, showing in elevation the coil of pipe and vibrating  
20 apparatus.

A is the outer tank made of wood, sheet iron, or other desired material; B the inner  
25 tank, into which is placed the material to be treated; C the interspace, into which is injected the liquid designed to perform part of the function of changing the temperature of the contents of inner tank B. The latter is  
30 preferably made of iron plate, or thick sheet iron so as to be susceptible as a conveyer of the temperature of the liquid in space C to its own contents.

D is the liquid in space C, fed from pipe E, the flow being regulated by valve J; F a pipe  
35 to convey the excess of inflowing liquid from space C and the entrance to pipe F is located at a point at which it is desired to maintain the liquid level.

40 G is the material to be treated, the temperature of which it is desired to change.

H is a tank from which through nozzle and cock I the material G is supplied to tank B.

45 K is a coil, or series of vibrating pipes, sustained by lifts L and chains or bands M from horizontal rod N, which latter, at the will of the operator is revolved by rod O and hand wheel O'. Rod O is connected with rod N by the universal joint P<sup>10</sup>.

50 Q Q Q are lugs and joints; S sustaining guides R R R, which latter are long slotted

rods adapted to receive so much, or such parts of the coil K as will suffice to direct the latter in its upper movement; T a connecting rod from the actuating disk U, which is  
55 mounted on a driving shaft U' and is sustained by the suspended stanchion V.

P P' are rubber tubes, running or curved back from the line of the operative mechanism, so as to permit of bending and freedom  
60 of action of the coil in its rising and lowering in guides R R R.

The operation is as follows: The tank B is charged with the matter to be treated from tank or reservoir H through nozzle and cock  
65 I. While this matter, if it is desired, can be heated, we will suppose it is desirable to cool it; because the employment of the active agents to change the temperature may go to cool or to heat such matter. Heated lard in  
70 its liquid state is supplied to tank B, if it is desired to cool it. Cold water is supplied from pipe E to space C, the overflow passing off through pipe F, continuously. Cold water is sent through pipe P, continuously, and finds  
75 its exit through pipe P'. Wheel U is set in motion and, actuating one guide R, through the coil, actuates the other guides and by means of connecting rod T, vibrates the coil  
80 K laterally through the mass under treatment in tank B. Thus stirring it and cooling it within said tank by a continuous current of cooling vapor or water while the tank is conveying to the mass the cooling influence of the liquid C in a continuous current. When  
85 the lard is cooled sufficiently to be "set" the flow of the cooling liquids is stopped by shutting off the cocks and valves controlling their flow. The hand wheel O' is then turned to wind up the chains or bands M M, thus raising  
90 the coil K in guides R R R. When the coil is raised out of the mass treated the latter is removed from tank B by buckets, siphons, or any of the means known to ordinarily skilled mechanics, which require no  
95 special description here.

What I claim as new is—

1. A temperature regulator for liquids, comprising in its construction a tank, a coil or connected series of pipe, a vertically movable  
100 support for said pipe, flexible connections from said coil or series to supply and dis-

charge pipes, means for raising and lowering said support, and independent means for vibrating said coil or series of pipe and support relatively to the tank, for the purpose  
5 set forth.

2. A temperature regulator for liquids, composed of a tank, adapted to receive the liquid under treatment, a vibrating coil, or connected series of pipes, with flexible connecting tubes  
10 P P', adapted to inject and carry off the agent regulating the temperature of the contents of tank B; vibrating mechanism R R, T U, to throw said coil from side to side of said tank, guides R R to direct the upward  
15 and downward movement of said coil; bands M M and rod or winding agent N to take up said bands M and raise said coil from the material under treatment, substantially as described.

3. A temperature regulator for liquids, composed of a tank B, adapted to receive the liquid under treatment; a vibrating coil or connected series of pipes, with flexible connecting tubes P P', adapted to inject and carry off the agent regulating the temperature in  
20 said coil of pipe; vibrating mechanism R R, T U, to throw said coil from side to side of tank B; outer tank A, with an interspace between it and tank B, whereby a temperature  
25 regulating agent may be floated in said interspace, substantially as and for the purposes described.  
30

In witness that the above is my invention I have hereunto set my hand.

WALTER L. WHITMAN.

Witnesses:

MUSCOE M. GIBSON,  
WILLIAM RENNYSON.