A. G. BAGG.

Cheese Vat.

No. 59,941. Patented Nov. 27, 1866.

Fig: 1.

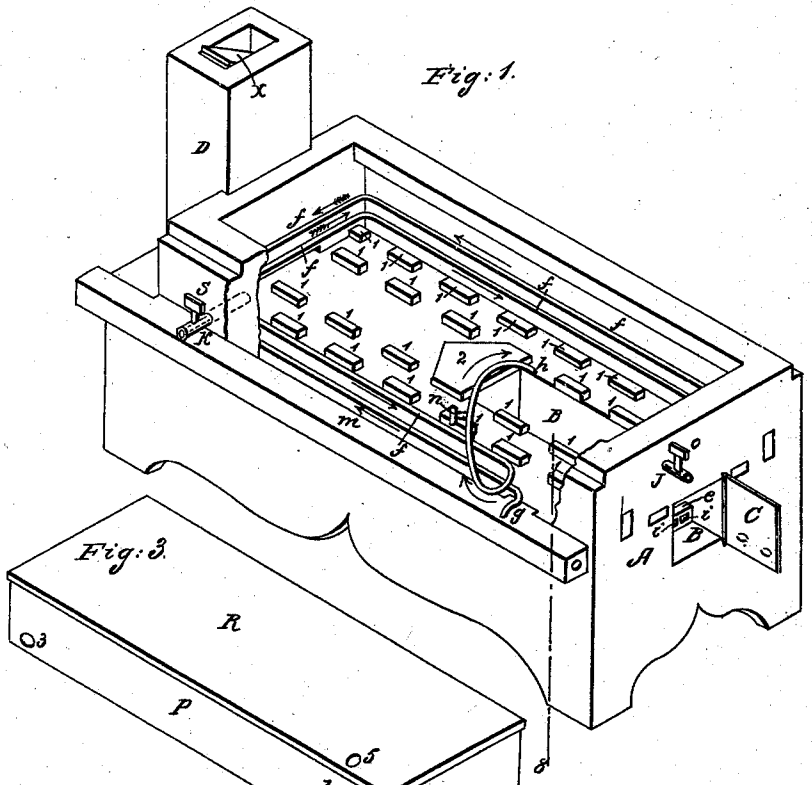


Fig: 3.

Fig: 4.

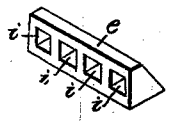
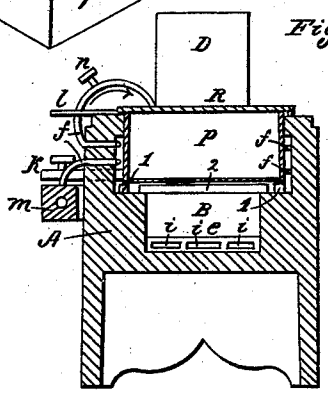


Fig: 2.



Witnesses:

James McBride.

A. G. Johnston.

Inventor:

Albert G. Bagg.

By his attorney James L. Johnston.

United States Patent Office.

IMPROVEMENT IN CHEESE VATS.

ALBERT G. BAGG, OF HOLLAND PATENT, NEW YORK.

Letters Patent No. 59,941, *dated November* 27, 1866.

SPECIFICATION.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ALBERT G. BAGG, of Holland Patent, Oneida county, and State of New York, have invented a new and useful Improvement in Cheese Vats; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon:

My invention consists in combining with a cheese vat and its furnace, pipes for supplying the vat with water which, prior to entering the vat, has traversed a pipe which is arranged around on the inside wall of the heating chamber of the furnace, said vat being provided with waste pipes and gauge, and the supply pipes with suitable valves for regulating the supply and flow of water to the vat; said cheese vat, its furnaces, and the pipes, gauge, and valves connected therewith, being constructed, arranged, combined, and operating in the manner hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation. In the accompanying drawings, which form part of this specification—

Figure 1 represents a perspective view of the furnace, with a portion of the wall broken out to show the arrangement of the pipes connected with it and the cheese vat.

Figure 2 represents a transverse section of the furnace pipes and vat when cut through at the line marked 8, in fig. 1.

Figure 3 represents a perspective view of the cheese vat.

Figure 4 represents a perspective view of a "fire dog" or grate bar, which is used in connection with the furnace when wood is used for fuel.

In the drawings, A represents the furnace, which is provided with a fire chamber, B, and stack, D, and may be constructed of stone, brick, or other suitable material. In the stack, D, is placed and pivoted a damper or valve, *x*, so arranged that it can be set at any suitable angle for regulating the draught of the furnace. The fire chamber, B, is provided with a fire door, C, and a "fire dog" or grate bar, *e*, which is provided with a number of openings marked *i*. This "fire dog" or grate bar is placed across the fire chamber B, (as is shown in figs. 1 and 2,) and is used for the purpose of holding the wood used for fuel up off the bottom of the fire chamber, to admit the free access of air to the fire. The advantages of this "fire dog" or grate bar are twofold: first, it holds the wood up off the bottom of the fire chamber; second, by means of the openings *i* it distributes the air evenly to all parts of the fire, which are advantages that will be apparent to all who use wood as a fuel. *m* represents a conducting pipe or "water log," which conveys the water from a spring or reservoir, which spring or reservoir of water may be located near the furnace or at a great distance from it, but in all cases, (when a pump is not used,) the spring or reservoir should be at an elevation which is higher than the furnace or vat, so that the water will flow through the pipes into the vat by its own gravity. To the pipe or "water log" *m* is attached, at the point marked *g*, a pipe, *f*, which passes through the wall of the furnace and then around on the inside of the wall of the heating chamber, and then passes out through the wall at a point directly above where it entered; it then turns up and terminates in opening 5, in lid R of the vat P, and is provided with a valve, *n*, all of which is clearly shown in figs. 1 and 2. The vat P is made of iron, and is provided with a lid, R, (as shown in figs. 2 and 3,) and is arranged in the furnace so that its bottom will rest on the tile or brick marked 1 and 2, which will prevent the bottom of the vat from sagging down, and will form a series of flues by means of which the heat will be evenly distributed over the entire bottom of the vat. Through the front end of the furnace wall passes a pipe, J, provided with a valve, *o*. This pipe is secured in the opening 4, in the front end of the vat, (see figs. 1 and 3.) This pipe and valve is used as a gauge to ascertain when the vat is sufficiently full of water. The vat is also provided with a pipe, *l*, which is secured to it near the upper edge, and is used for carrying off the over supply of waste water, and is also used for conducting any steam or noxious vapor or gas which may gather in the vat when the lid is closed down. Near the back end of the vat, near the bottom, is placed a pipe, K, provided with a valve, S. This pipe is used for drawing off the water from the vat when so desired. This pipe K passes through the wall of the furnace and is secured to the vat P.

As the skillful mechanic will, from the above description, and by reference to the accompanying drawings, readily understand the construction and arrangement of the various parts of my improvement, I will therefore proceed at once to describe its operation, which is as follows:

Having the pipe or "water log" *m* properly connected to a spring or other supply of water, I then open

the valve *n*, in the pipe *f*, so as to allow a small stream of water to flow into the vat P. I then start a fire in the fire chamber B, and the heat will circulate under the bottom of the vat through the openings left between the tiles or bricks 1 and 2, and will rise up in the heating chamber of the furnace, around the sides of the vat, and also come in contact with the pipe *f*, and partially heat the water as it flows through the pipe into the vat. The arrows indicate the course of the water through the pipe *f* into the vat P. When the water rises up in the vat and flows out through the gauge pipe J, I close the valve *o*, also the valve *n*, which will cut off the flow of water into the vat. When I desire to draw off all of the water from the vat, for the purpose of cleaning it, or for other cause, I open valve S, and let it flow out through pipe K. When the temperature of the water in the vat rises above the degree desired, I adjust the damper *x* in the stack, so as to shut off the draught of the furnace. I then allow the water to flow into the vat through the pipe *f*, opening the valve S, so that an equal amount of the water will flow out from the vat through the pipe K. This will reduce the temperature of the water in the vat to the degree desired. It will readily be observed that by the above arrangement of parts I can control and hold the temperature of the water in the vat to the degree desired, which is a very important thing in the process of making cheese. The manner of operating and manipulating the milk in connection with the vat is performed in the ordinary manner.

Having thus described the nature, construction, and operation of my improvement, what I claim as of my invention, is—

1. The combination of the pipes *m*, *f*, J and K, with the vat P, said pipes and vat being constructed, arranged, combined, and operating substantially as herein described.

2. The combination of the above with the furnace A, the heat chamber of said furnace being provided with tiles or bricks, 1 and 2, for the purpose of supporting the bottom of the vat, and for distributing the heat evenly through all parts of said heat chamber, as herein described and set forth.

3. The "fire dog" or grate bar *e*, provided with openings *i*, when used in connection with a furnace combined with a cheese vat, as herein described and for the purpose set forth.

ALBERT G. BAGG.

Witnesses:

GEO. H. THOMAS,

S. F. POWELL.

59,941