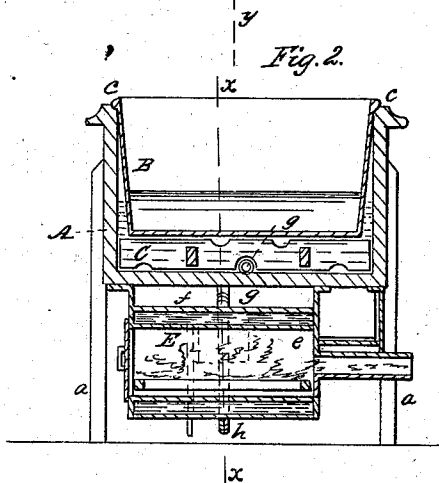
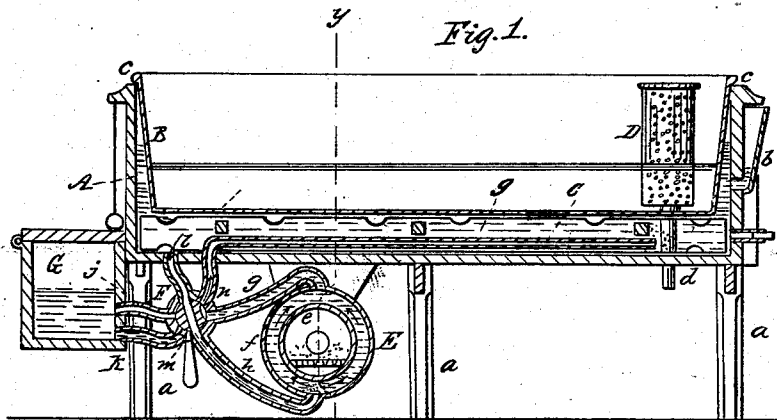


REDINGTON & McCLUER.

Device for Heating Milk for Making Cheese.

No. 22,891.

Patented Feb. 8, 1859.



Witnesses:

W. B. Redington
W. B. Wiley

Inventors:

F. W. Redington
George M. Cluer

UNITED STATES PATENT OFFICE.

F. A. REDINGTON AND GEO. McCLUER, OF FREDONIA, NEW YORK.

MANUFACTURE OF CHEESE.

Specification forming part of Letters Patent No. 22,891, dated February 8, 1859; Reissued May 21, 1861, No. 1,189.

To all whom it may concern:

Be it known that we, F. A. REDINGTON and GEORGE McCLUER, both of Fredonia, in the county of Chautauqua and State of New York, have invented a new and Improved Device for Heating Milk for the Manufacture of Cheese; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a longitudinal vertical section of our invention, taken in the line *x, x*, Fig. 2. Fig. 2, is a transverse vertical section of our invention, taken in the line *y, y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in the employment or use of a boiler, hot water box, hot water reserve box, and suitable water pipes connected therewith and with the boiler and used in connection with a six-way cock and milk-pan or vat, the whole being arranged as hereinafter fully shown and described, whereby the milk in the vat may be heated to the proper temperature with great facility and the temperature of the milk checked, when at the proper height, with equal facility, the device operating with the smallest expenditure of fuel and affording greater facilities for the prosecuting of the desired work than any other heating device for a similar purpose that has passed under our observation.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A, represents a rectangular box which is supported at a suitable height by uprights *a*. This box may be constructed of wood and provided at one end with a funnel *b*, through which the box is supplied with a requisite quantity of water.

Within the box A, the milk vat B, is placed. This vat may be constructed of sheet metal and it is provided with a flanch or rim *c*, at its upper end which rests on the upper edge of the box A, the bottom of the vat B, resting on a rack C, which is on the bottom of the box A.

D, is a cylindrical perforated strainer which is fitted in the milk vat B. This strainer has a water tube *d*, at its lower end, said tube passing through the bottom of the vat and also through the bottom of the box

A, said tube being closed by a cork or plug, when not intended to be open.

Beneath the box A, a boiler E, is suspended. This boiler is of cylindrical form, and is composed of a cylindrical fire-chamber *e*, encompassed by a water-chamber *f*. A pipe *g*, communicates with the upper part of the boiler E, and a pipe *h*, communicates with its lower part. These pipes pass through a six-way cock F, when said cock is properly turned or adjusted; the pipe *h*, communicates with the box A, as shown at *i*, Fig. 1, and the pipe *g*, extends horizontally along the bottom of box A, nearly to the tube *d*, of the strainer, as clearly shown in Fig. 1.

To one end of the box A, a box G, is attached. This box does not communicate with the box A, but has two pipes *j, k*, communicating with it which also communicate with the cock F, see Fig. 1. The box G, may be constructed of wood.

The cock F, is of usual construction, its spigot *l*, being provided with two water passages *m, n*, one of which, *m*, is made to register with the pipes *g, j*, and *h*, and the other, *n*, made to register with the pipes *g*, and *h, k*.

The device is used as follows. The spigot *l*, of the cock is turned so that its passage *m*, will register with the pipe *h*, and the passage *n*, registers with the pipe *g*. The box A, is then supplied with a requisite quantity of water, and the boiler E, is also filled in consequence of the water passing through the pipes *g, h*. The box G, is also supplied with a requisite quantity of water. The fire is then kindled in the fire-chamber *e*, and as the water in *f*, becomes heated, it of course rises and passes through the pipe *g*, into the box A, the cold water descending therefrom through the pipe *h*, into the chamber *f*. A current is therefore formed which passes through the chamber *f*, and box A. The water in the box A, soon becomes heated and warms the milk in the vat B. When the milk in the vat is heated to the proper temperature to receive the rennet for the subsequent operation in the making of cheese, the spigot *l*, is turned so as to cause the passage *m*, to register with the pipes *j, g*, and the passage *n*, to register with the pipes *h, k*.

By this latter adjustment of the spigot *l*, the communication between the box A, and boiler E, is cut off, and a communication es-

established between the boiler E, and box G, The milk, after the curd is separated from the whey, is poured into the vat B, and the whey passes through the strainer D, and is discharged through the tube *d*. When the communication between the box A, and boiler E, is cut off, and the communication between the boiler and box G, is established, the water in said box G, becomes heated, and this water is used for scalding the pans, pails, etc. used in the process of cheese-making. It will be seen, therefore, that the heat of the fire in the fire chamber E, need not, as has hitherto been the case, be extinguished in order to reduce the temperature of the milk in the vat. The temperature of the milk may be checked at once, as the current may be changed at pleasure.

We do not claim a boiler communicating with a hot-water box A, and heating the water in said box, by allowing a current to pass

through the boiler and box, for such device has been previously used,—and we are not aware, however, that a reserve hot-water box has been previously used in connection with the parts aforesaid, and with proper pipes and a six-way cock in order to admit of the changing of the current through either box and the boiler, as desired.

We claim, therefore, as new and desire to secure by Letters Patent—

The combination of the water box A, milk vat B, the reserve water box G, boiler E, pipes *g*, *h*, *j*, *k*, and the six-way cock F, arranged to operate substantially as and for the purpose set forth.

F. A. REDINGTON.
GEORGE McCLUER.

Witnesses:

W. B. REDINGTON,
W. C. WILEY.

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