

N. W. MILLER.

Improvement in Milk-Coolers.

No. 126,563.

Patented May 7, 1872.

Fig. 1.

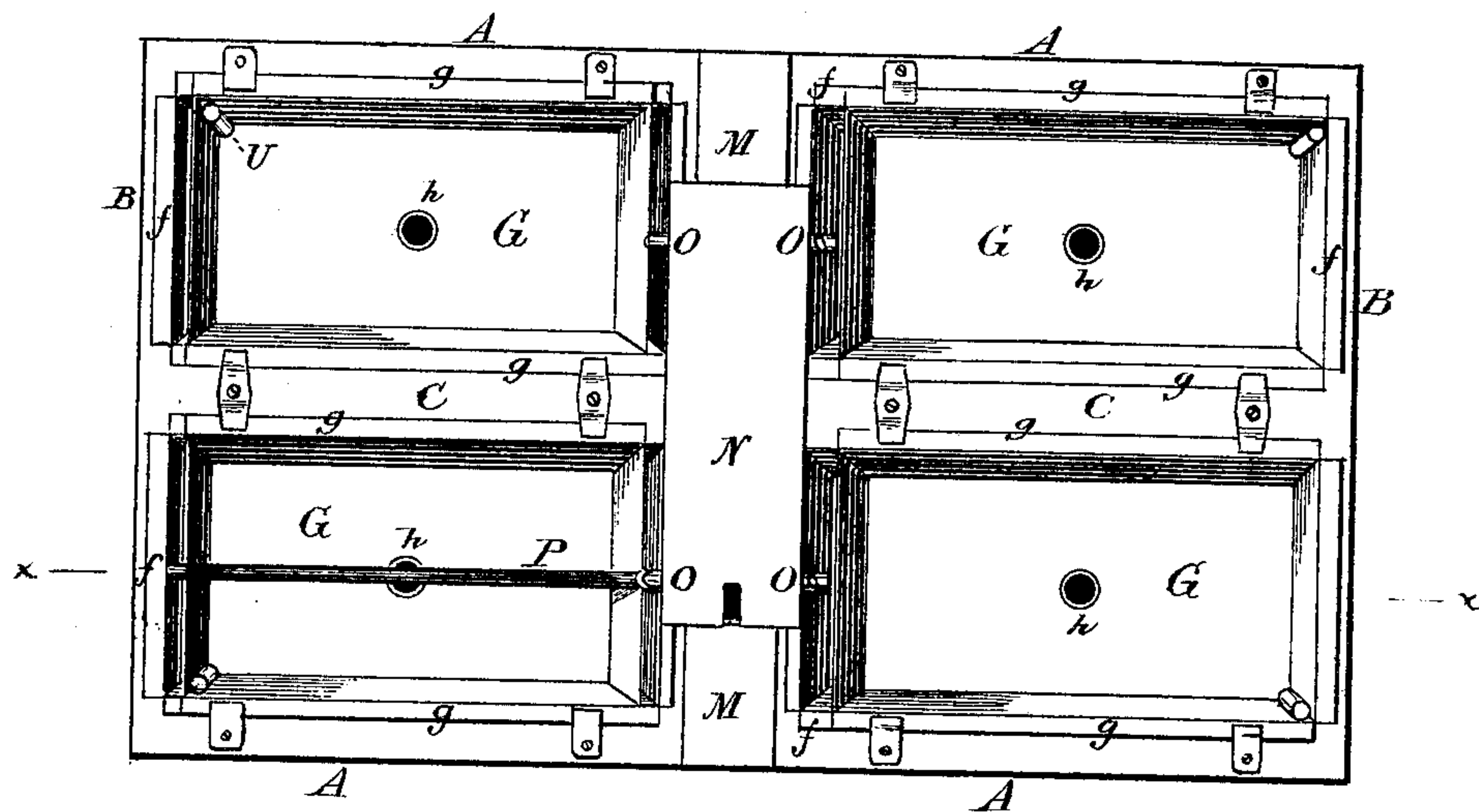
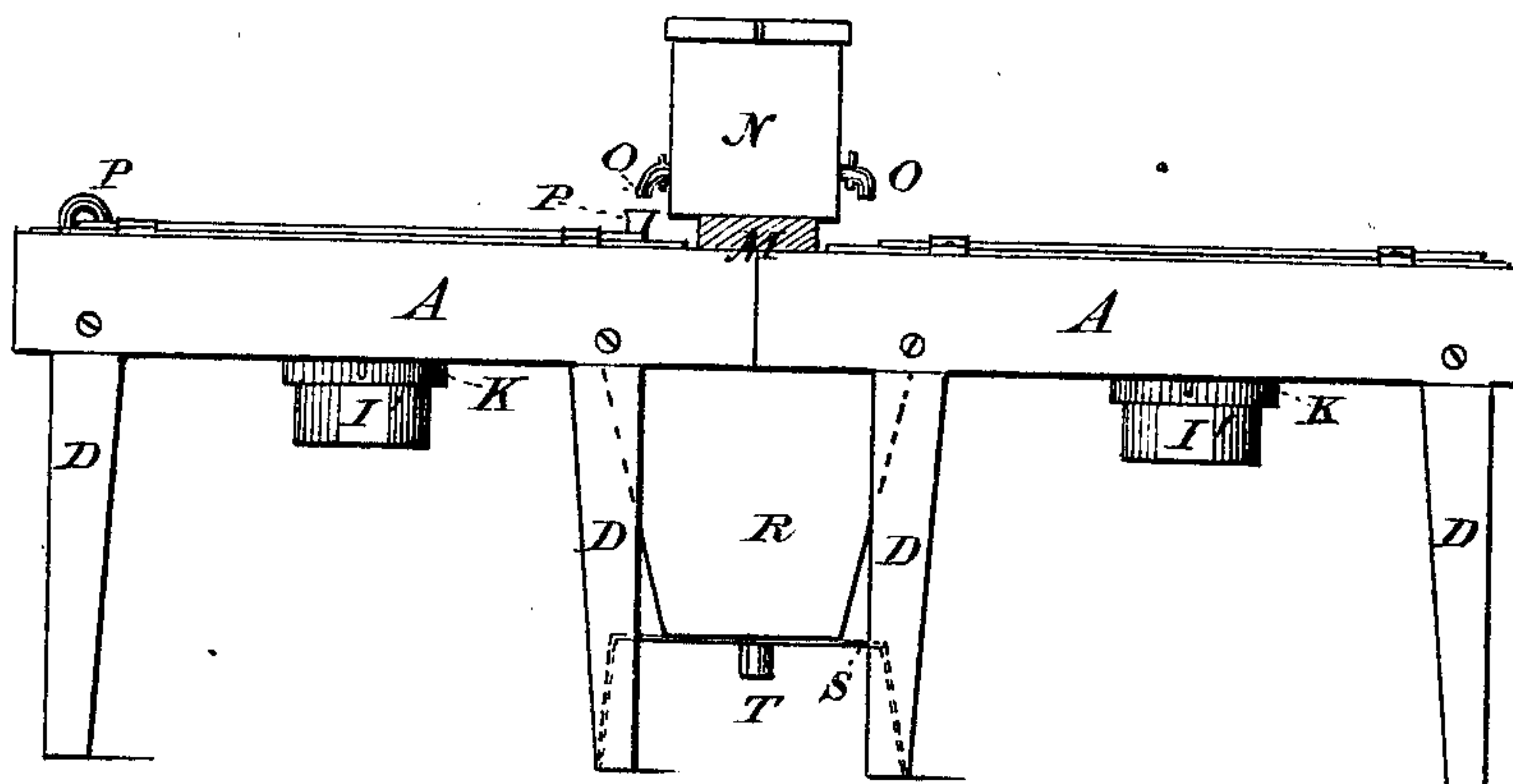


Fig. 2.



Witnesses.

A. Poole.
John R. Young

Inventor,

Norton W. Miller, by
Orindle & Co. his
attys

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Fig. 3.

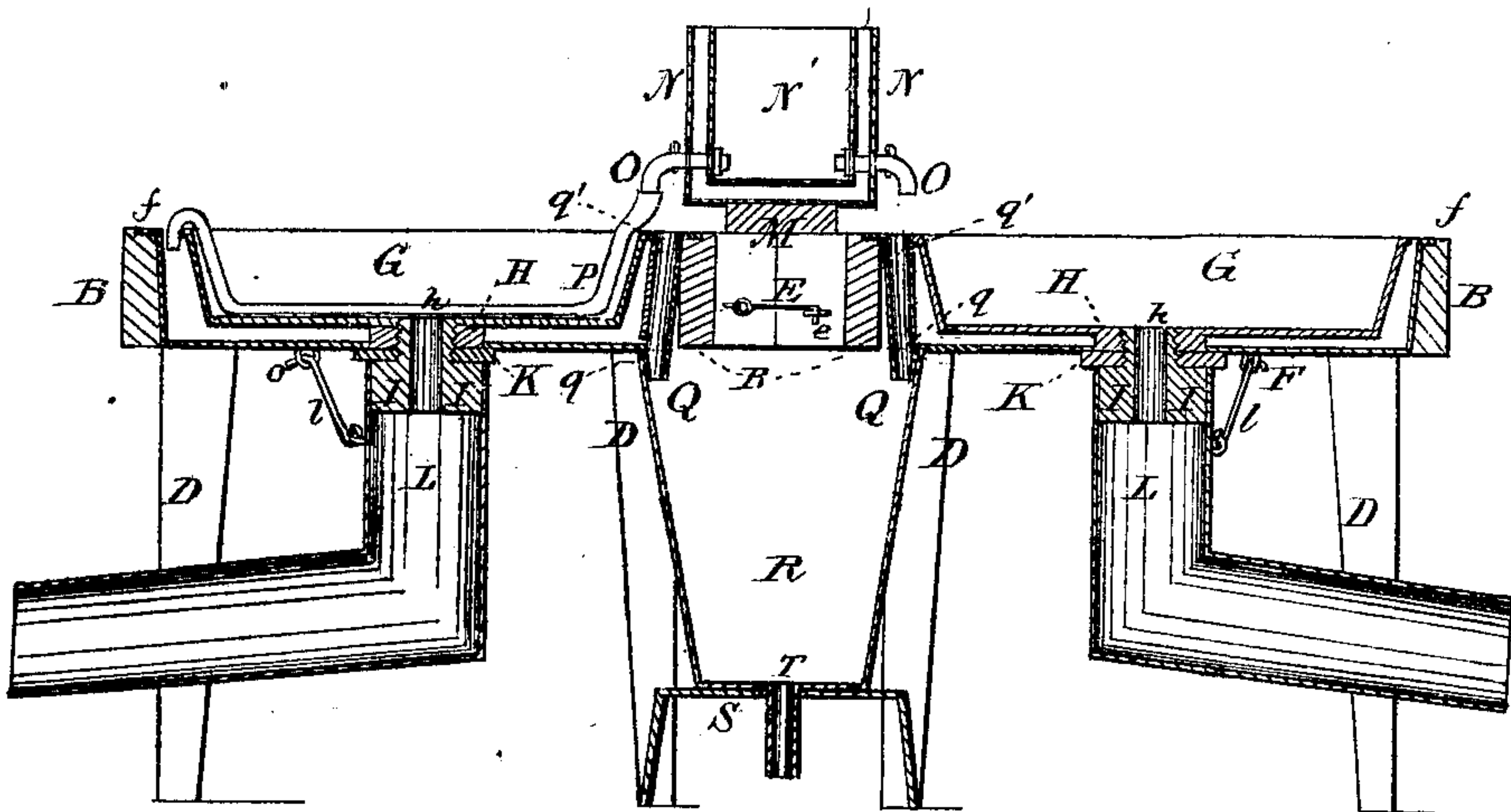
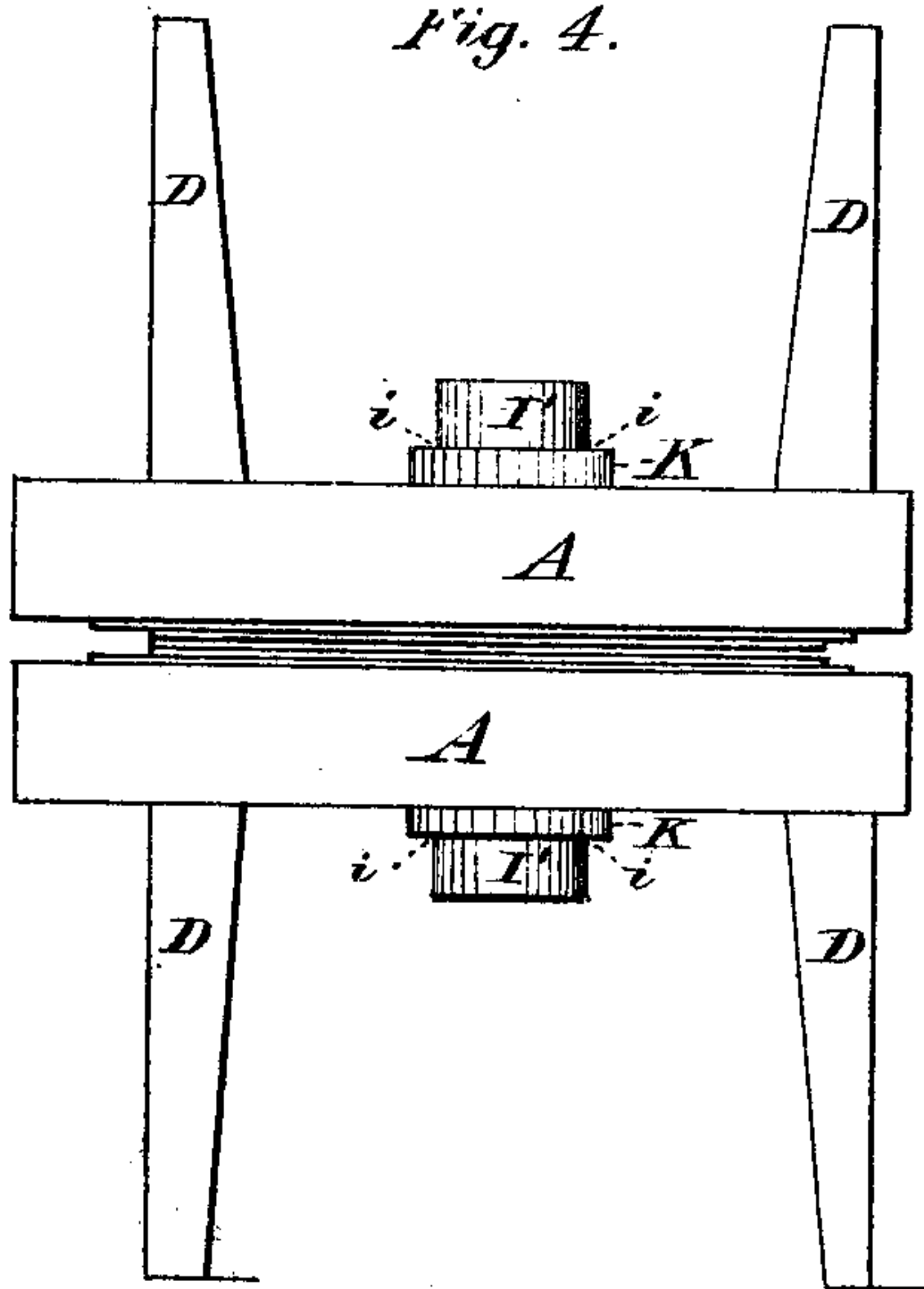


Fig. 4.



Witnesses.
Ch. Poole.
John R. Young.

Inventor.
Norton W. Miller by
Orindle & Co. his
attys.

UNITED STATES PATENT OFFICE.

NORTON W. MILLER, OF EAST RANDOLPH, NEW YORK.

IMPROVEMENT IN MILK-COOLERS.

Specification forming part of Letters Patent No. 126,563, dated May 7, 1872.

To all whom it may concern:

Be it known that I, NORTON W. MILLER, of East Randolph, in the county of Cattaraugus and in the State of New York, have invented certain new and useful Improvements in Milk-Coolers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a plan view of the upper side of my improved device. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical longitudinal section on line *xx* of Fig. 1, and Fig. 4 is a side elevation of said device when not in use.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is the production of a means whereby the temperature of milk, when in store, may be easily controlled; and it consists, principally, in the means employed for connecting together the milk and water vats, substantially as and for the purpose hereinafter specified. It consists, further, in the construction and combination of the sectional supporting-frame, substantially as and for the purpose hereinafter shown. It consists, finally, in the relative arrangement of the cooling-vats and waste-water reservoir, substantially as and for the purpose hereinafter shown and described.

In the annexed drawing, A and A represent two side rails, connected together at their ends by means of two end rails, B and B, and at their longitudinal centers by means of a cross-rail, C, and supported in a horizontal position by means of four legs, D, secured within and extending downward from the corners of the frame. Upon one side the end rails B extend outward beyond the side rail A, and, when the frame thus constructed is placed against a like frame, correspond to and coincide with the projecting end rails of said second frame. A hook, E, pivoted to or upon the inner face of the projecting end of each end rail of one section, engages with a staple, *e*, attached to the corresponding portion of the contiguous rail of the opposite section, and secures said parts firmly together. Resting within each section of the frame are two vats, F, which correspond in size and shape to the open spaces upon each side of the center cross-bar, and are provided with horizontally-projecting flanges *f*, that rest up-

on the upper side of said frame and furnish a support for said vats. A second vat, G, constructed like the first, but having somewhat smaller dimensions, is placed within each vat F, and, by means of horizontally-projecting side flanges *g*, which extend over and rest upon the sides of said lower vat, is held in such position as to form a space between their sides, ends, and bottoms. The vats thus constructed and combined are secured together by means of a nut, H, secured upon the lower side of the upper vat G and extending downward to the bottom of the lower vat F, through which passes a hollow sleeve, I, threaded exteriorly so as to fit into said nut and provided with an enlarged portion, I', which terminates in a right-angled shoulder, *i*. A rubber gasket or washer, K, placed over the threaded portion of the sleeve and upon the shoulder *i* bears against the lower side of the vat F, and, when said sleeve is screwed upward to place, presses said vat-bottom so firmly against the lower end of the nut as to form a water-tight joint between said parts. An opening, *h*, corresponding in position and size to the interior of the nut H, is provided in and through the bottom of the vat G, and permits the contents of the same to be discharged, through the hollow sleeve I, into a pipe, L, the upper end of which fits over said sleeve and is attached to or upon the lower side of the lower vat by means of a hook, *l*, pivoted upon said pipe and engaging with an eye or staple secured upon the vat. It is intended that the inner vats shall contain milk, while the outer or inclosing-vats are for the purpose of containing water with which to regulate the temperature of said milk; and, as it is necessary that said water should first be tempered and then caused to change continually within its vat, the following-described means are employed for effecting such results: Resting upon and supported by a cross-bar, M, which, in turn, rests upon the central portion of the frame, is a water-reservoir composed of an outer and an inner shell, N and N', respectively, between the sides and bottom of which is left a space that is filled with a suitable non-conductor of heat. Extending outward through the sides of the reservoir, at a point over the transverse center of each vat, is a spigot, O, the open end of which turns downward so as to cause a stream of water from said reservoir

to pass into the open end of a pipe, P, which pipe extends downward to the bottom of the milk-vat, along the same to its opposite end, from thence over said end and downward into the space between said vat and the water-vat, into which space said water is discharged. Attached to the inner end of each water-vat is a pipe, Q, which, extending vertically downward along the outer faces of the same, has communication with the interior of said vat through a small opening, q, at the lower corner of the same, which opening has a capacity equal to about one-third the quantity of water that is to pass through said vat. A second or overflow opening, q', is provided in the pipe Q at or near the upper edge of the vat, so as to permit the escape therefrom of all water which is unable to pass from or through the lower opening. Immediately beneath the vats and frame is placed a waste-water reservoir, R, which has a sufficient size to enable it to receive the water from all of the vats, and is supported in position by means of a rectangular frame, S, which rests upon the floor. A discharge-pipe, T, extending downward from the lower side of the reservoir R, completes the same, which, in connection with the hereinbefore-described water apparatus, is used as follows: Water is supplied to the reservoir N and its temperature regulated by the application of heat or by placing ice within said water. Upon opening the spigots the water passes into and through the

pipes P, and is discharged into the space between the milk and water vats, having during such passage subtracted from or added to the milk a certain amount of heat, after which said water escapes into the waste-water reservoir, from whence it can either be pumped back into the tempering-reservoir to be again used or can be permitted to escape. It is designed that a thermometer, U, shall be placed within a corner of each vat, so as to more readily show the temperature of its contents.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the water and milk vats F and G, respectively, the threaded nut H, threaded sleeve I and I', and the rubber gasket K, substantially as and for the purpose specified.

2. The supporting-frame, constructed in sections and combined, in the manner and for the purpose substantially as shown.

3. The relative arrangement of the cooling-vats and waste-water reservoir, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 4th day of April, 1872.

NORTON W. MILLER.

Witnesses:

AUGUSTINE D. HOLT,
WALTER S. JENKINS.