

No. 866,870.

PATENTED SEPT. 24, 1907.

C. H. LOEW.
PASTEURIZER.

APPLICATION FILED APR. 7, 1906. RENEWED AUG. 20, 1907.

Fig. 1

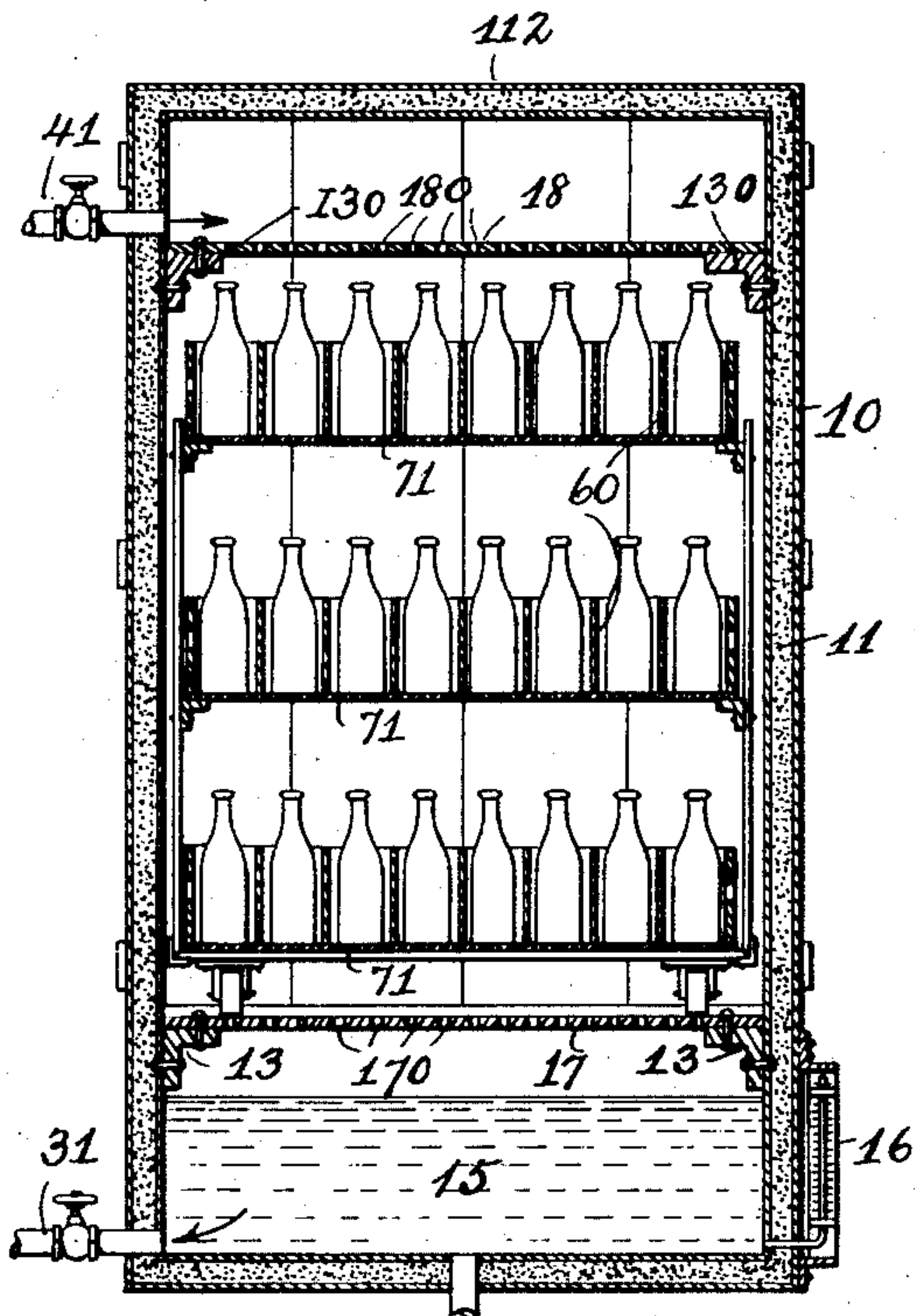


Fig. 2

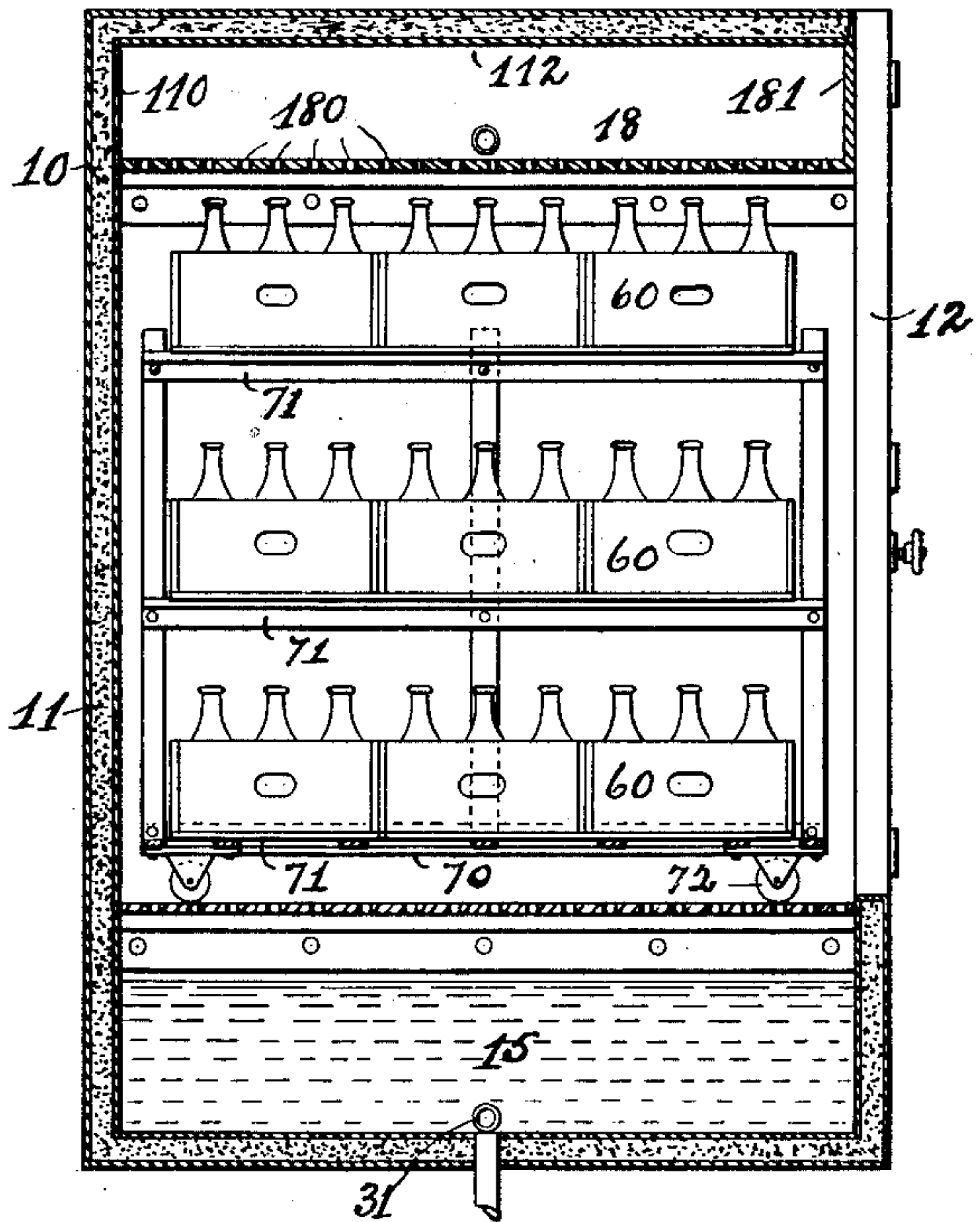
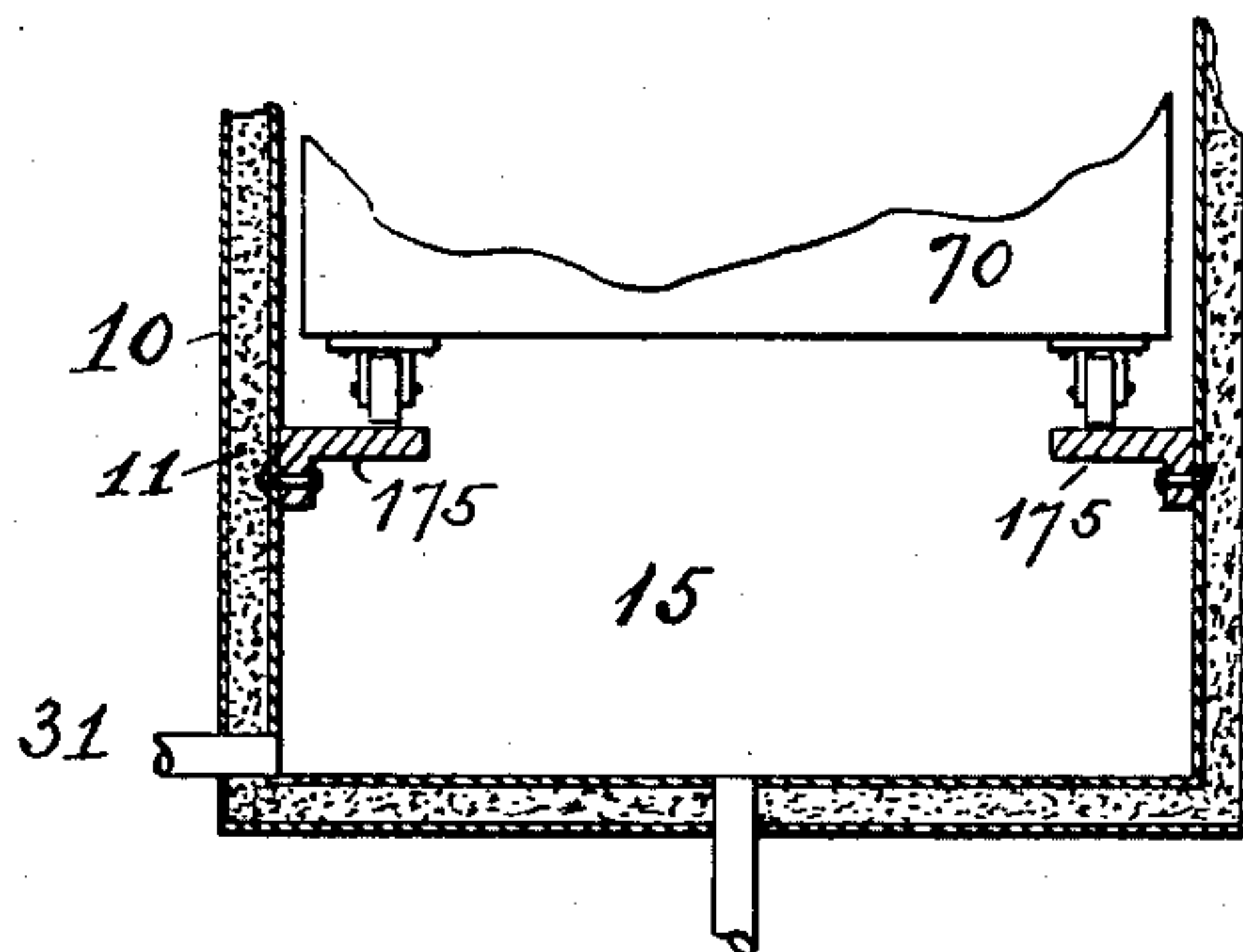


Fig. 3



Attest:
May Hughes
Alan Mc Donnell.

Charles H. Loew, Inventor:
by William R. Baird
his Att'y.

UNITED STATES PATENT OFFICE.

CHARLES H. LOEW, OF LAKEWOOD, OHIO.

PASTEURIZER.

No. 866,870.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed April 7, 1906, Serial No. 310,397. Renewed August 20, 1907. Serial No. 389,401.

To all whom it may concern:

Be it known that I, CHARLES H. LOEW, a citizen of the United States, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Pasteurizers, of which the following is a specification.

My invention relates to an apparatus for pasteurizing beer in bottles and its novelty consists in the construction and adaptation of the parts as will be more fully hereinafter pointed out.

In Letters Patent of the United States No. 808,668, issued to me Jan. 2, 1906, there is described and claimed a process of pasteurizing beer and in connection therewith there is described an apparatus for use in carrying out the said process which is itself the subject matter of Letters Patent of the United States No. 817,495 issued to me April 10, 1906.

My present invention has for its object the simplification and improvement of the apparatus above referred to.

In that apparatus I show a box or chamber with suitably insulated walls provided internally with shelving to receive the boxes containing the beer in bottles, and provided also with a spraying mechanism comprising a supply pipe and sundry branch pipes adapted to penetrate into the space between the tiers of bottles in boxes and provided with suitable atomizing nozzles whereby each row of bottles is separately sprayed. The shelves or supports for the bottle boxes are stationary.

In my present invention, I make the shelves or supports for the bottles removable, in other words, I employ a truck or carriage provided with suitable shelves on which the boxes containing the beer in bottles can be placed outside of the pasteurizing chamber and which can as an entirety, when loaded with bottles, be moved into said chamber. This is much more convenient than placing the bottles in boxes on a truck at the filling apparatus, conveying them to the pasteurizer, loading them into the pasteurizer and unloading them therefrom after the pasteurizing process has been completed. The present arrangement saves one operation and much time and labor. I also provide the pasteurizing chamber with a perforated false bottom on which the carriage described can rest and which will at the same time freely permit of the passage of the water to the collecting tank at the bottom of the chamber. I also simplify the spraying mechanism. I place a perforated false ceiling under the solid continuous ceiling of the chamber and into the intermediate space between the real and the false ceiling I conduct the supply pipe from the source of water supplied. The perforations in the false ceiling permit the water to drop upon the bottles in a shower, much in the same

manner as it did when the spraying nozzles were employed and the branch pipes were used.

By properly proportioning the number and size of the perforations of this false ceiling to the cross sectional area of the supply pipe, a pressure can always be created within the space between the two ceilings so that the water will be projected from the perforated ceiling with more or less force in the form of jets. I have found by experience that the water will pass down through the bottles in the uppermost tier and as the boxes in which they are placed are not closed at the bottom, will continue to pass down and be brought into contact with the bottles on the second tier, and so on until it reaches the perforated bottom of the apparatus, whence it falls into the collecting chamber.

By this construction I simplify the apparatus, enable it to be made of standard materials, without any special shape, and improve the ease of its operation and save time and labor in its use.

In the drawings, Figure 1 is a central vertical section of the apparatus; Fig. 2 is a central vertical section of the same on a plane at right angles to the section in Fig. 1, the truck being shown in elevation, and Fig. 3 illustrates a modified form of the means for supporting the box truck.

In the drawings there is shown a box or chamber made of any suitable size and material, but preferably of steel, and the walls 10 of which are lined with any suitable heat insulating material 11, as, for instance, mineral wool. It is provided with doors 12, 12, at one side and it may have similar doors at the opposite side.

The bottom portion 15 of the chamber comprises a water collecting tank and is provided with an external water gate 16. A short distance above the bottom 15 are arranged brackets 13, 13, or other suitable supports for a false bottom 17 made of steel or other suitable material and which is provided with openings or perforations 170, 170, to admit of the free downward passage of the water.

A short distance below the ceiling are arranged other brackets 130, 130, or other suitable supports for a false ceiling 18 made of steel or other suitable material and which is provided with openings or perforations 180, 180, to admit of the passage of the water. At the front of the chamber the false ceiling 18 is provided with an end wall or partition 181 and this, with the upper portion 110 of the chamber wall on that side, the false ceiling 18 and the real ceiling 112 of the apparatus, constitute a water supply chamber supplied by means of a valve controlled pipe 41.

A valve controlled pipe 31 leads from the collecting chamber 15 at the bottom of the tank.

70 is a carriage or truck comprising a series of shelves 71, 71, 71, upon which the boxes 60 containing the

beer bottles are placed, and suitable wheels 72, 72 by means of which it may readily be moved.

It will be understood that the other instrumentalities described are the same as those shown and described in the patent above referred to and which are not shown herein. Such comprise, first, a reservoir in which the water is heated and which is controlled by a thermostat, and from which the pipe 41 is supplied; second, a pump to which the pipe 31 leads, and third, a pipe from the pump to the reservoir; so that the water collecting in the chamber 15 is pumped to the heating chamber or reservoir, and thence passes through the pipe 41 to the water supply chamber between the real and false ceiling.

The method of using the apparatus is as follows: The truck 70 is rolled to the filler where, as the bottles are filled, they are stacked in boxes on the shelves 71, 71. The truck is then rolled to the pasteurizer and placed within the same, its wheels resting upon the false bottom 17. The doors 12, 12, are then closed and the water turned on through the pipe 41. This water accumulates in the compartment or chamber above the false ceiling 18 and begins to fall through the openings 180, 180, in the form of a spray or shower upon the uppermost tier of bottles, and thence falls to the tier beneath and so on until it reaches the false bottom 17 through the openings in which 170 it passes to the collecting chamber 15. It is thence drawn by the pipe 31 and pumped around through the heating chamber to the pipe 41 again. As explained in the patents above referred to, the water is gradually heated, then maintained for a suitable length of time at a proper pasteurizing temperature and then gradually cooled. The water is then shut off, the doors opened and the truck and its load removed.

A modified form of the means for supporting the truck is shown in Fig. 3 in which the entire center por-

tion of the false bottom 17 is cut away and two long shelves or rails 175, 175, are left for the wheels of the truck 70 to rest upon.

Other modifications can obviously be made in the details of the device without departing from its essential principles.

What I claim as new is:—

1. In a pasteurizer, the combination with imperforate side walls and ceiling, of a false ceiling having openings to admit of the downward flow of the water and means for supplying water between the two ceilings.

2. In a pasteurizer, a water collecting chamber, means for draining the same, a water supply chamber, a perforated ceiling forming the bottom thereof for delivering water therefrom in a shower, and removable means intermediate the supply and collecting chambers adapted to support bottles to be pasteurized by the heat extracted from the water passing from the supply to the collecting chamber.

3. A pasteurizer comprising a box or chamber divided into an upper water supply chamber, an intermediate pasteurizing chamber, and a lower water collecting chamber, a fixed perforated false ceiling separating the water supply chamber and the pasteurizing chamber, a fixed perforated plate separating the pasteurizing chamber and the water collecting chamber and serving as a support for a truck carrying the bottles of liquid to be pasteurized, and means for supplying water above the false ceiling.

4. A pasteurizer comprising a box or chamber divided into an upper water supply chamber, an intermediate pasteurizing chamber, a fixed perforated false ceiling separating the water supply chamber and the pasteurizing chamber, a fixed perforated plate separating the pasteurizing chamber and the water collecting chamber, a truck supported upon the last named perforated plate, removable perforated supports for the bottles on the truck, and a pipe for supplying water above the false ceiling.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. LOEW.

Witnesses:

MAY HUGHES,

ALAN McDONNELL.