

April 10, 1951

T. HELME

2,548,788

PASTEURIZING DEVICE

Filed March 22, 1946

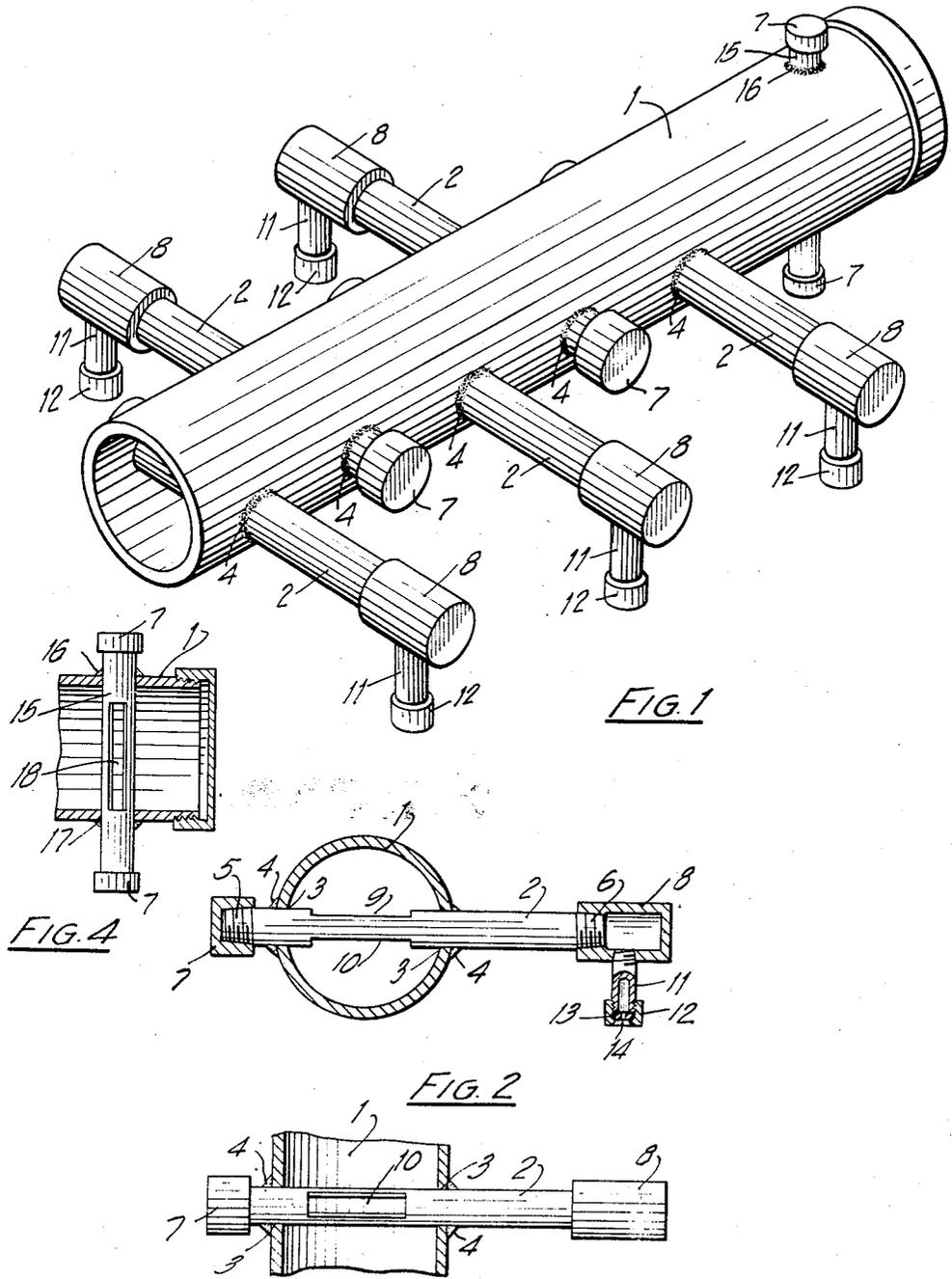


FIG. 1

FIG. 4

FIG. 2

FIG. 3

INVENTOR.
Thomas Helme
BY *[Signature]*
ATTORNEY

UNITED STATES PATENT OFFICE

2,548,788

PASTEURIZING DEVICE

Thomas Helme, Albany, N. Y.

Application March 22, 1946, Serial No. 656,294

2 Claims. (Cl. 299-106)

1

2

My invention relates to pasteurizing apparatus and particularly to apparatus for pasteurizing liquids such as beer in which the pasteurizing treatment is conducted after the beer or other liquid has been placed in a sealed container such as a bottle or can.

At the present time, the cans or bottles containing the liquid to be pasteurized are usually subjected to sprays of hot water for sufficient length of time to bring the contents thereof up to the necessary temperature. In breweries and the like, there is usually provided an elongated main pipe or manifold having lateral pipes merely welded to and extending from the opposite sides thereof which are provided at the ends with downwardly directed spray nozzles. A substantial head or pressure of water is maintained in the main pipe or manifold and conveyors carry the beer bottles or cans beneath the sprays. Since considerable volumes of water are required at comparatively high temperature, the water is used over and over again. After it is discharged from the spray nozzles, it is pumped back to the heater, reheated to the necessary temperature and again forced through the main pipe and nozzles under substantial pressure. Since the same water is thus constantly circulated, and parts of old labels which sometimes adhere to the bottles are removed by the sprays, these and other foreign matters find their way back into the main pipe or manifold and eventually into the spray nozzles which results in the clogging thereof. Thus, the spray nozzles and the lateral pipes and also the main pipe must be cleaned from time to time which is rather difficult with the present types of construction. Furthermore, one or more of the lateral pipes are often broken from the main pipe with the result that the entire apparatus must be shut down while repairs are made. In the present types of construction, the lateral pipes are merely welded, as pointed out above, over openings in the main pipe so that the welded joint between the lateral and the main pipe offers very little resistance to breaking.

The principal object of my invention is to provide an improved type of construction whereby the laterals are connected to the main pipe in such a way that it is quite impossible for them to be accidentally broken off. A further object is to provide an improved type of construction whereby the lateral pipes may be more readily cleaned and whereby any obstructing matter therein may be forced out of the system rather than back into the main pipe. A still further object is to provide a type of construction whereby there will

be less liability of the laterals to become clogged than in the present types.

I accomplish these objects by the novel elements and the combinations and arrangements thereof described below and illustrated in the accompanying drawings in which—

Fig. 1 is a fragmentary perspective view of the main pipe or manifold showing several laterals projecting therefrom;

Fig. 2 is a vertical section through the main pipe and one of the laterals;

Fig. 3 is a top view of one of the laterals with the upper half of the main pipe removed; and

Fig. 4 is a fragmentary longitudinal section through the main pipe at the closed end thereof.

Referring to the drawings—

1 is the main pipe or manifold and 2 are the laterals which project from the opposite sides thereof; the laterals on one side being staggered with respect to the laterals on the other side.

Instead of merely drilling holes in the sides of the main pipe and welding the laterals in or around these openings, I propose to drill diametrically opposed holes 3 through the main pipe wherever a lateral is to be connected thereto. These holes should be only slightly larger in diameter than the outside diameter of the laterals 2. The laterals are then thrust entirely through the main pipe 1, as best shown in Figs. 2 and 3, and the spaces between the laterals 2 and the openings 3 in the main pipe are closed by welding 4. Thus, a very strong connection is formed between the main pipe and each of the laterals.

The laterals are threaded on each end, as shown at 5 and 6, to receive the closing cap 7 on one end and the spray nozzle 8 or the attachment thereof, on the other end. To provide openings for the flow of water from the main pipe 1 into the laterals 2, I prefer to provide the laterals, within the main pipe, with elongated slotted openings 9 and 10 of substantial size in the top and bottom thereof so that any foreign matter which might tend to lodge in or over the openings in the laterals will have an opportunity of dropping entirely through the lateral.

In order to clean the laterals, it is only necessary to remove the cap 7 and the nozzle or nozzle attachment 8 and force water under pressure therethrough. Any matter which adheres to the inside of the laterals may be pushed completely out by means of a cleaning rod which is not possible with the present types of construction. At present, any matter that adheres to the inside of the laterals and cannot be dislodged by water

3

pressure must be pushed back into the main pipe.

While my invention has nothing whatever to do with the type of spray nozzle employed, I have shown in Fig. 2 a nipple 11 threaded into the nozzle attachment 8 and provided with a cap 12 which holds a spray button 13 having any desired size or type of orifice 14 therein.

In order to flush out the main pipe 1, I provide, near the closed end thereof, a vertical pipe 15 which extends entirely through the main pipe and is welded thereto as shown at 16 in Fig. 1, and at 16 and 17 in Fig. 4, in substantially the same manner as the laterals 2 are welded to the main pipe. Each end of the pipe 15 is closed by a cap 7, and, within the main pipe, the pipe 15 is provided with elongated slots 18 extending upwardly from the bottom of the main pipe, as shown in Fig. 4. Thus, to flush the main pipe, it is necessary only to remove the lower cap 7 on pipe 15 and force water under pressure through the main pipe.

From the foregoing it will be apparent that it is practically impossible accidentally to break one of my laterals from the main pipe and, furthermore, by reason of the fact that the laterals may be opened at both ends, cleaning of the laterals is greatly facilitated.

What I claim is—

1. A pasteurizing device adapted for pasteurizing liquids in sealed containers and comprising a main pipe, a straight lateral pipe, and a downwardly projecting spray nozzle secured to the end of said lateral pipe; said lateral pipe extending transversely entirely through said main pipe, but terminating adjacent and being secured to said main pipe by welded joints, and being provided with vertically opposed openings of substantial size within said main pipe to provide for the flow of fluid from said main pipe into said lateral, and

4

to provide for the free fall therethrough by gravity of foreign solid matter in said main pipe, which otherwise might be drawn into said lateral pipe and clog said nozzle.

2. A pasteurizing device adapted for use in breweries for pasteurizing liquids in sealed containers and comprising a main pipe, and a plurality of straight lateral pipes spaced longitudinally of and extending transversely entirely through said main pipe and being secured to said main pipe by welded joints; each of said lateral pipes being provided at one end thereof with detachable closure means, at the other end thereof with a downwardly projecting spray nozzle detachably secured thereto, and within said main pipe with oppositely disposed slotted openings of substantial length and width to provide for the flow of liquid from said main pipe into each of said lateral pipes, and also to provide for the free passage transversely of said lateral pipes through said slotted openings of foreign solid matter suspended in the liquid flowing in said main pipe, which otherwise might be drawn into said lateral pipes and clog said nozzles; whereby said lateral pipes may be readily cleaned by detaching said closure means and said spray nozzles therefrom and forcing water under pressure therethrough.

THOMAS HELME.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
868,715	Skinner	Oct. 22, 1907
1,109,768	Laux	Sept. 8, 1914
2,163,591	Deverall	June 27, 1939
2,409,262	Eldred	Oct. 15, 1946