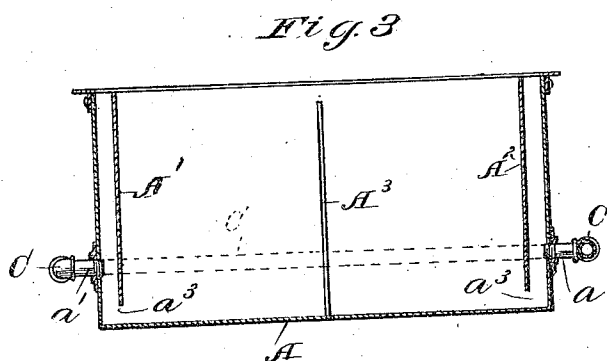
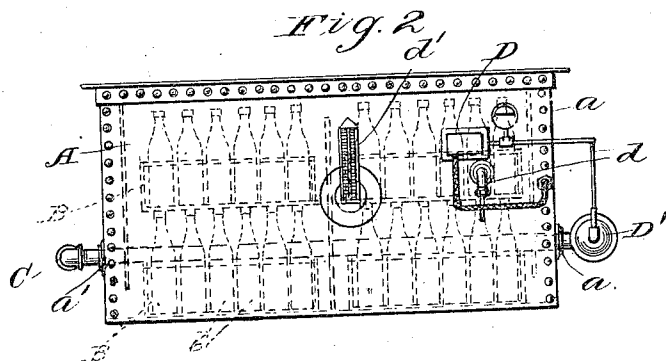
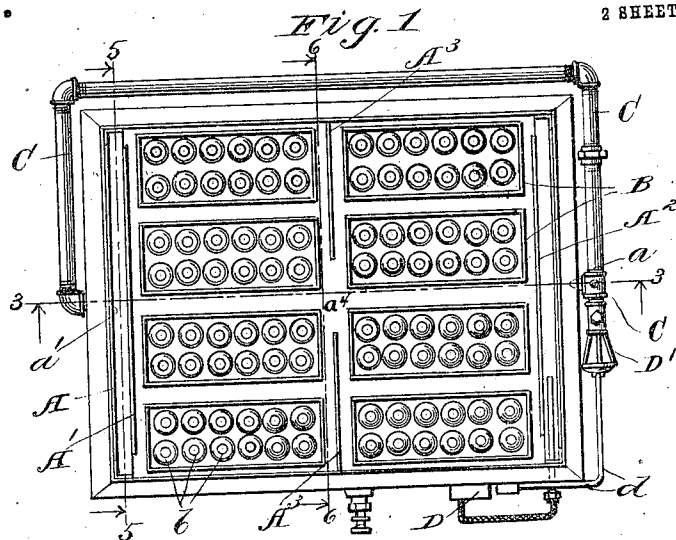


979,796.

B. D. PINKNEY.
PASTEURIZER.
APPLICATION FILED OCT. 19, 1908.

Patented Dec. 27, 1910.

2 SHEETS—SHEET 1.



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Fig. 4

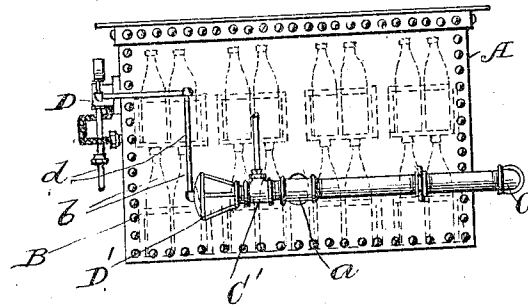


Fig. 5

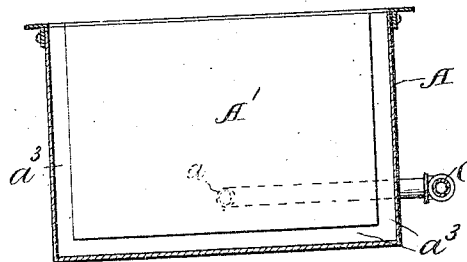
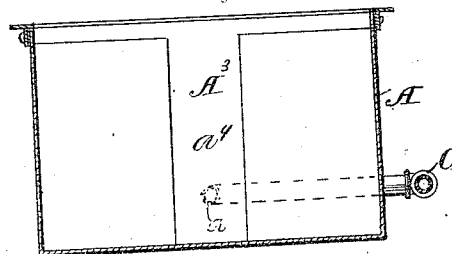


Fig. 6



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PASTEURIZER.

979,796.

Specification of Letters Patent.

Patented Dec. 27, 1910.

Application filed October 19, 1908. Serial No. 458,544.

To all whom it may concern:

Be it known that I, BRYAN D. PINKNEY, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Pasteurizers, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

It is to pasteurizers of the tank, or "chainless," type in contradistinction to the continuous pasteurizer that the present invention belongs, this classification of pasteurizers being that generally adopted in dealing with those intended for use in beer-bottling establishments and the like. As is well understood, the process of pasteurization in this connection consists in heating the beer in the bottles to a certain temperature, holding this temperature constant for a determined length of time, and finally cooling such bottles to nearly ordinary atmospheric temperature.

The object of the present invention is the provision of a pasteurizer of the tank type, wherein this change in temperature may be conveniently effected under suitable conditions of control, and wherein the uniform heating of all parts of the tank's contents is assured, such uniform heating being a prerequisite to a sound condition of the goods, and the absence of such heating in present pasteurizing operations being the cause of no small amount of trouble to the bottler and dissatisfaction on the part of the consumer.

To the accomplishment of the above and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings Figure 1, is a plan view of a pasteurizer embodying my several improvements; Fig. 2, is a front elevation of such pasteurizer; Fig. 3 is a section thereof taken on the line 3—3, Fig. 1; Fig. 4 is an end elevation of the same; Fig. 5, is a transverse cross-section on the line

5—5, Fig. 1; and Fig. 6 is a similar section on the line 6—6 of said Fig. 1.

The pasteurizing chamber comprises as usual in apparatus of this kind, simply a tank like receptacle A that is preferably rectangular in form, so as to conveniently accommodate the crates or trays B, in which the bottles *b* are placed for steaming, as the pasteurizing process is frequently called. The dimensions of such receptacle A are chosen so as to permit of the placing therein, and the entire submergence when so placed, of the desired number of crates, whether of pint or quart bottles, constituting the capacity of the pasteurizer. Connected with opposite ends of the tank or receptacle, and on a level below the middle, is a pipe or conduit C lying wholly without said receptacle. Connected with such exterior conduit or pipe near one of the points where it is joined to the tank, is a steam injector C' of well known construction, and hence not requiring detailed description here. By means of such injector, a circulation of water through the receptacle and pipe can be maintained, the water being drawn from the receptacle at the end *a* adjacent to such injector, and returned thereto at the opposite end *a'*. As will be readily understood, such injector serves at the same time to heat the water, thus put into circulation, so as to raise the same from the initial temperature, which is generally relatively low, in order to avoid making the transition in temperature too great when the bottles are first placed therein, to the proper pasteurizing temperature. That such temperature may be automatically maintained when it has been finally reached, a thermostat D, likewise of familiar construction, is employed, such thermostat being mounted laterally of the tank, and near the same end from which the water has been seen to be withdrawn by the injector. The thermostat is adapted by means of suitable air pressure connections *d* and a diaphragm valve D' to appropriately operate the injector whenever the temperature at the point of attachment of the thermostat falls below, or rises above the predetermined temperature. For observation purposes a thermometer *d'* is likewise mounted in the same side wall of the tank or the receptacle as such thermostat.

From the foregoing description, it will

be seen that the heating of the liquid contents of the receptacle is effected by means located wholly exterior of the receptacle. While the circulation of the receptacle's contents, effected at the same time, will serve to render more or less uniform the temperature throughout the tank, the presence of the crates or trays of bottles will more or less hinder such circulation, and render its effects at least uncertain. With a view accordingly of assuring the penetration of the inflowing stream of warmer liquid to all parts of the receptacle, as it passes therethrough, I employ a series of baffle plates A' , A^2 , A^3 , of the form clearly appearing from Figs. 5 and 6. In other words, at each end adjacent to the inlet and discharge openings a a' of the tank, is provided an imperforate plate A' or A^2 suspended from above, so as to leave in effect, an open space a^3 between its bottom and lateral edges, and the tank walls. Any tendency, accordingly, at the inlet opening for the warmer water to rise to the surface and there remain, is effectually overcome, while similarly it is the cooler liquid near the bottom of the other end of the tank that is withdrawn. The third plate A^3 is located midway between the two ends of the tank, being disposed so as to contact with the side and bottom of the tank, but is so formed as to leave a vertically disposed opening a^4 centrally of the tank, so that the divergent streams passing around the baffle plate A' at the inlet end of the tank, are obliged to again unite before they can pass on into the other portion of the tank. Here they are again obliged to diffuse themselves throughout such tank portion, before they can escape around the lateral and bottom edges of the remaining baffle plate A^2 .

From the foregoing description of my improved pasteurizer, it will be obvious that the heating of the contents of such pasteurizer cannot only be conveniently and quickly effected, but automatically as well, since the effect of the thermostatic control will be to admit steam to the injector until the pasteurizing temperature has been reached. At the same time, by reason of the presence and particular disposition of

the baffle plates, the heating effect is uniform throughout the tank, and all portions will be brought up to such pasteurizing temperature at the same time, and likewise maintained at such temperature together, so that the reversal of the heating process may be begun with assurance that no part of the receptacle's contents has been either over or under-heated.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. A pasteurizer of the tank type comprising a receptacle, means exterior of the same for effecting a circulation of liquid therethrough and simultaneously heating the liquid, and transverse baffle plates within said receptacle comprising one at each end spaced from the bottom and side walls of the receptacle and a centrally located plate in contact with such walls but formed with an opening midway between the side walls, whereby the entering warmer liquid is spread throughout the tank.

2. A pasteurizer of the tank type comprising a receptacle, a conduit exterior of said receptacle and connecting opposite ends of the same, an injector connected with said conduit adapted to effect a circulation of said receptacle's contents and simultaneously heat the same, and transverse baffle plates within said receptacle comprising one at each end spaced from the bottom and side walls of the receptacle and a centrally located plate in contact with such walls but formed with an opening midway between the side walls, whereby the entering warmer liquid is spread throughout the tank.

Signed by me this 15th day of October, 1908.

BRYAN D. PINKNEY.

Attested by—

CHRISTINE E. ARNS,
JNO. F. OBERLIN.