A. A. PINDSTOFTE.

PASTEURIZING APPARATUS.

APPLICATION FILED OCT. 1, 1907.

913,559. Patented Feb. 23, 1909.

Fig. 1

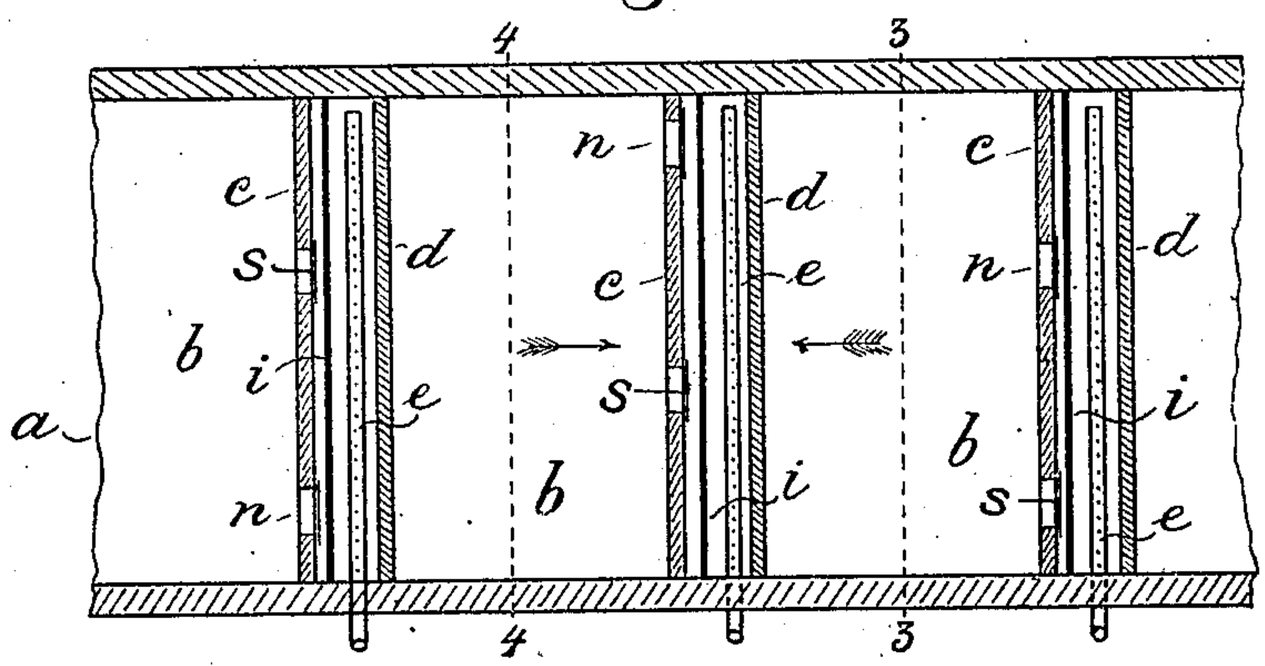


Fig. 2

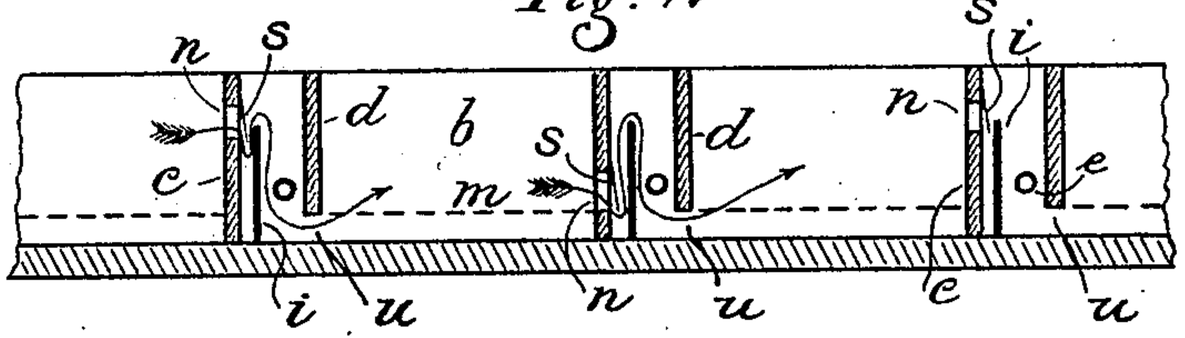


Fig. 3

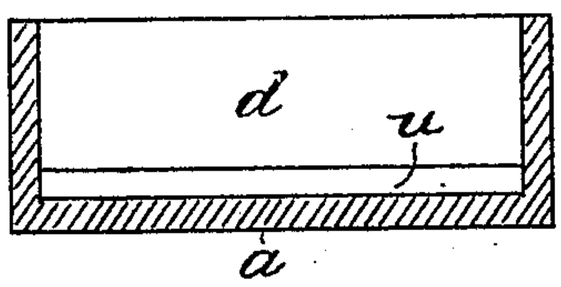
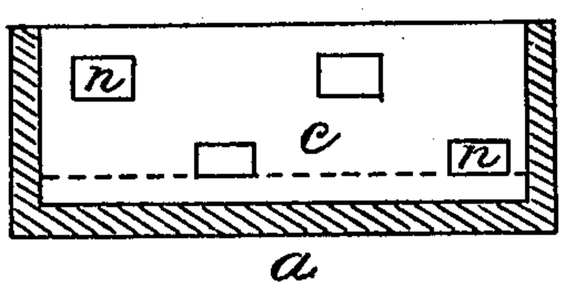


Fig. 4



Witnesses

L. Glynn

R. T. Tomek

Inventor

Anders A. Pindstofte

per

Attorneys

UNITED STATES PATENT OFFICE.

ANDERS ANDERSEN PINDSTOFTE, OF FREDERIKSBERG, NEAR COPENHAGEN, DENMARK.

PASTEURIZING APPARATUS.

No. 913,559. Specification of Letters Patent. Patented Feb. 23, 1909.

Application filed October 1, 1907. Serial No. 395,391.

To all whom it may concern:

Be it known that I, ANDERS ANDERSEN PINDSTOFTE, subject of Denmark, residing at No. 62 Frederiksberg Alle, in the city of Frederiksberg, near Copenhagen, Kingdom of Denmark, have invented new and useful Improvements in Pasteurizing Apparatus, of which the following is a specification.

The invention relates to improvements in pasteurizing-apparatus, consisting of a reservoir divided into compartments through which the pasteurizing fluid is caused to circulate during the use of the apparatus, which circulation always takes place in a certain direction through the apparatus. In order to insure that the upper and lower portions of the pasteurizing fluid are mixed together during the passage of said fluid from one of the compartments to the next, it has been customary or usual to provide the partitions between the compartments with channels alternately having inlet at the top, outlet at the bottom, an inlet at the bottom, outlet at the top, thereby causing the pasteurizing fluid when it, during the use of the apparatus, is brought to circulate to flow out from the several compartments as well at the bottom as at the neck of the bottles inserted in the compartments and to be thoroughly mixed when it leaves the said channels before it flows into the next compartment. Such channels, however, render the cleaning of the apparatus difficult, and, therefore, the present invention has for its object to dispense with such channels, which are replaced by an arrangement, by means of which the different layers of the pasteurizing fluid are mixed at least as well or still better as in apparatus provided with the above stated channels.

In the improved apparatus the front wall of each of the compartments (*i. e.* the end wall of the compartment which is situated in the direction of movement of the pasteurizing fluid) is provided with openings closed by self-acting valves, such openings being arranged alternately at the bottom and at the top in line with the neck of the bottles inserted in the compartment. The openings are so arranged and of such dimensions that a simultaneous flow corresponding to the size of the apparatus takes place through all the openings every time when the pasteurizing fluid during the use of the apparatus is caused to circulate through the compartments. When the bottles are placed in stories in the compartments the number of ranks of openings in the front-walls is augmented proportional to the number of stories, so that thereby the distribution of the fluid-current between the bottles is rendered as equal as possible. Between each of said front walls and the rear wall of the next compartment is arranged a transversely placed partition of such a height, that the several parts of the pasteurizing fluid which flow out through the openings in the front wall are thoroughly mixed in the rear of such partition, after which the mixed fluid passing over the upper edge of the partition can flow into the next compartment. In front of the partition between it and the rear wall of the next compartment a perforated tube or the like may be arranged, through which tube steam or cooling water can be introduced into the pasteurizing fluid during its movement, thereby heating or cooling said fluid in a homogeneous manner before it flows into the next compartment.

I will now proceed to describe my invention with reference to the accompanying drawing, in which like reference letters refer to like parts throughout, and in which—

Figure 1 is a horizontal section through a part of a pasteurizing apparatus, Fig. 2 is a vertical longitudinal section through said apparatus, Fig. 3 is a vertical section on line 3—3 of Fig. 1, and Fig. 4 is a vertical section on line 4—4 of Fig. 1. Figs. 3 and 4 are seen in the direction of the arrows placed at the section-lines.

The pasteurizing-apparatus *a* is divided into a number of compartments *b* by means of walls *c*, *d*. The walls *c* which are designated "the front-walls" because they lie in the direction of movement of the pasteurizing fluid, are provided with openings *n* closed by self-acting valves *s*, which openings are situated alternately at a level with the bottom and the neck of the bottles placed in the compartments. The walls *d* are provided at the bottom with a transverse opening *u*, through which the pasteurizing-fluid from one compartment can pass into the next compartment and upwards between the bottles, which are placed upon the perforated bottom *m* of the compartment, or in a basket having a perforated bottom and placed upon the bottom *m*. In order, however, that the

pasteurizing fluid flowing out of the openings *n* shall be thoroughly mixed before it passes into the next compartment, a transverse partition *i* is arranged in front of each of the front-walls *c*. Behind these transverse partitions the several layers of the outflowing fluid are thoroughly mixed before the fluid passing over the upper edge of said partitions *i* can pass through the opening *u* at the bottom of the partitions *d* and upwards between the bottles placed in the next compartment.

Between each of the partitions *i* and the end walls *d* may be arranged a perforated tube *e* an injeetor or the like, through which steam or cooling water can be introduced into the passing pasteurizing fluid. By such means the fluid may be heated or cooled to the desired extent and in a homogeneous manner during its passage from one compartment to the next. The perforated tubes *e* may suitably be branched to a common pipe arranged outside the apparatus.

1 claim:

1. In a pasteurizing apparatus, the combination of transverse partitions dividing the apparatus into compartments through which the pasteurizing fluid is caused to circulate during the use of the apparatus and forming the front and rear walls of said compartments, with openings arranged at different levels in said front-walls and closed by self-acting valves, opening or openings in the rear-walls, and intermediate transverse partitions of suitable height placed one in front of each of the front-walls; substantially as described and for the purpose set forth.

2. In a pasteurizing apparatus, the combination of transverse partitions dividing the apparatus into compartments through which the pasteurizing fluid is caused to circulate during the use of the apparatus and forming the front and rear walls of said compartments, with two rows of openings arranged at different levels in said front-walls and closed by self-acting non-return valves, which open in the direction of the flow, a transverse opening at the bottom of each rear-wall, and intermediate transverse partitions of suitable height placed one in front of each of the front-walls; substantially as described and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANDERS ANDERSEN PINDSTOFTE.

Witnesses:

MARCUS ULOLLER,

T. RATKJUR.