A. J. INSTONE.

FREEZING TANK.

APPLICATION FILED NOV. 8, 1919.

1,367,394. **Patented Feb. 1, 1921.**

Fig. 1.

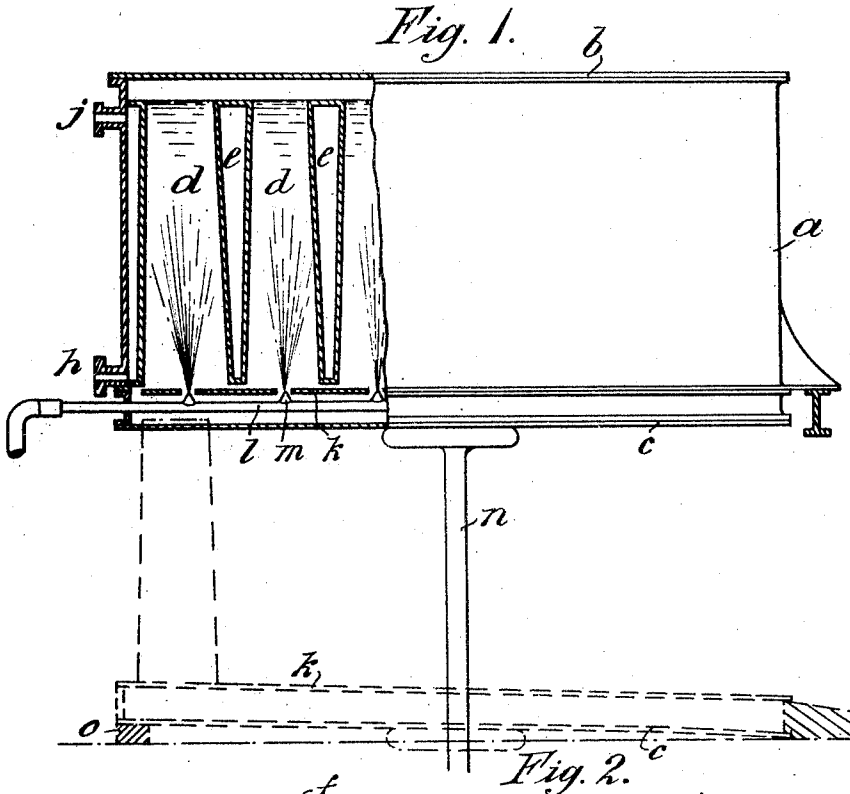
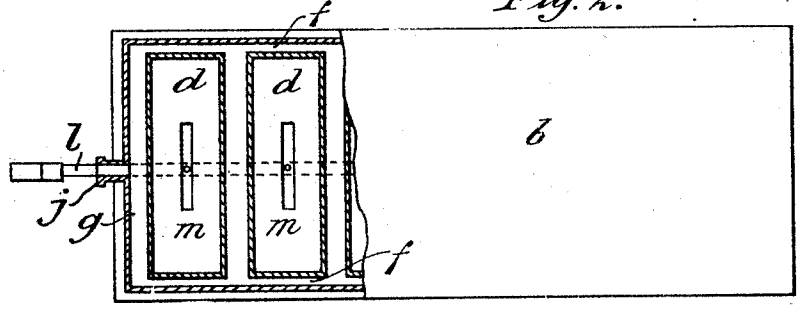


Fig. 2.



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UNITED STATES PATENT OFFICE.

ALFRED JOSEPH INSTONE, OF LONDON, ENGLAND.

FREEZING-TANK.

1,367,394. Specification of Letters Patent. Patented Feb. 1, 1921.

Application filed November 8, 1919. Serial No. 336,538.

To all whom it may concern:

Be it known that I, ALFRED JOSEPH INSTONE, a subject of the King of Great Britain, residing at 17 Ashley road, Crouch Hill, London, England, have invented a new and useful Improvement in Freezing-Tanks, of which the following is a specification.

This invention relates to improvements in freezing tanks, and has for its object to facilitate the withdrawal of the blocks of ice from the tank.

According to this invention the tank comprises a casing divided into chambers tapering upward by hollow partitions and having a removable bottom cover to allow the removal of the blocks of ice. The bottom cover is preferably lowered and then tilted in order that the blocks may be delivered at one end. A false bottom may be secured to the bottom cover and an air delivery pipe passes between the false bottom and the bottom cover and air is blown into the chambers through nozzles on the pipe. When the bottom cover is lowered these nozzles are easily thawed and cleaned.

The freezing medium is fed to the hollow partitions through a pipe near the bottom of the casing and passes away through a pipe near the top. Ammonia may be used as the freezing medium, in which case it is fed in a liquid form through the pipe near the bottom and passes away as a vapor through the pipe near the top.

In order to loosen the ice from the molds, the vaporized ammonia mentioned above is pumped into the hollow partitions, causing the vapor to become liquid, but by lowering the pressure the liquid ammonia can be again vaporized and used for cooling the molds in another machine.

When brine is used as the freezing medium, it is necessary to heat it before using it for thawing out the ice.

The accompanying drawings show a freezing tank made in accordance with this invention. Figure 1 is a side elevation partly in section and Fig. 2 is a plan partly in section. *a* is a casing having a top cover *b* and a bottom cover *c*. The casing is divided into chambers *d* tapering upward by hollow partitions *e* which communicate with chambers *f* extending along the sides of the casing and chambers *g* at the ends of the casing. The freezing medium is supplied to the chamber *g* through an inlet *h* and passed away to an outlet *j*. To the bottom cover *c* is secured a false bottom *k* and between the cover *c* and the false bottom *k* is an air pipe *l* having nozzles *m* through which air is delivered into the chambers *d*. The bottom cover *c* is supported upon a ram *n* by which it is lowered into the position shown in dotted lines in Fig. 1, the cover *c* being tilted by the block *o* in order that the blocks may be delivered at one end to an incline *p*.

What I claim is:—

1. A freezing tank comprising a casing, hollow partitions dividing the casing into chambers in which ice is made and a single detachable bottom cover for closing the lower ends of all the chambers.

2. A freezing tank comprising a casing, hollow partitions tapering downward and dividing the casing into chambers tapering upward and in which ice is made, and a single detachable bottom cover for closing the lower ends of all the chambers.

3. A freezing tank comprising a casing, hollow partitions tapering downward and dividing the casing into chambers tapering upward and in which ice is made, a detachable bottom cover, a false bottom secured to the bottom cover, and an air pipe extending between the false bottom and the bottom cover and delivering to the chambers.

4. A freezing tank comprising a casing, hollow partitions tapering downward and dividing the casing into chambers tapering upward and in which ice is made, a single detachable bottom cover for closing the lower ends of all the chambers, a false bottom arranged above the bottom cover and secured thereto, and an air pipe extending between the false bottom and the bottom cover and delivering to said chambers.

5. A freezing tank comprising a casing, hollow partitions tapering downward and dividing the casing into chambers tapering upward and in which ice is made, a detachable bottom cover for closing the lower ends of all the chambers, and means for supporting and for lowering the bottom cover with the ice from said chambers.

6. A freezing tank comprising a casing, hollow partitions dividing the casing into chambers in which ice is made, a single detachable bottom cover for closing the lower ends of all the chambers, means for supporting the bottom cover and for lowering it with the ice from the chambers, and means for tilting the cover while supporting the ice after it is lowered.

In testimony that I claim the foregoing as my invention I have signed my name this 24th day of October, 1919.

ALFRED JOSEPH INSTONE.