Jan. 22, 1924. 1,481,500

G. B. BRIGHT

BRINE CIRCULATING APPARATUS FOR ICE MACHINES

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Fig. 1.

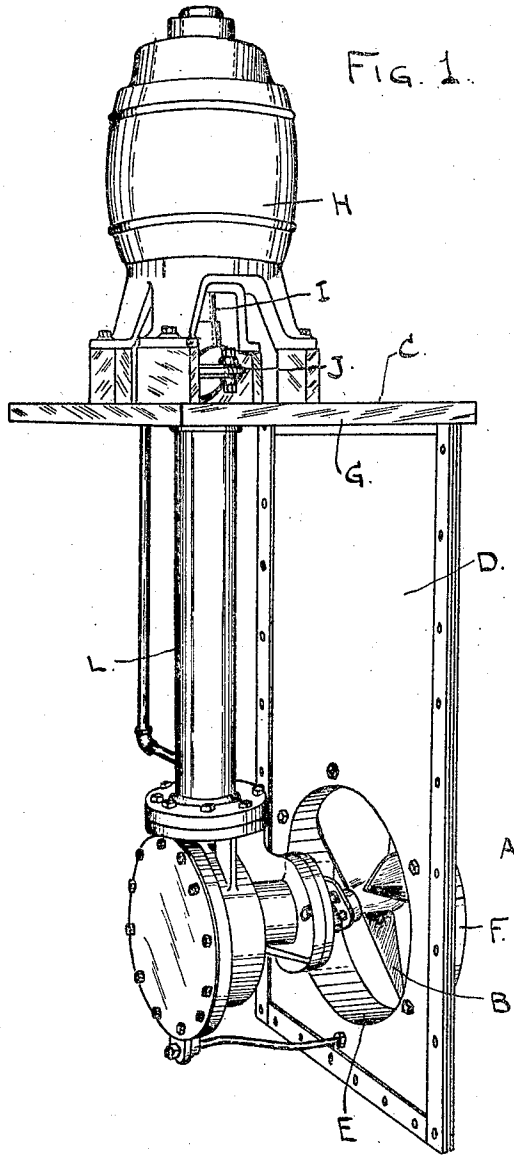
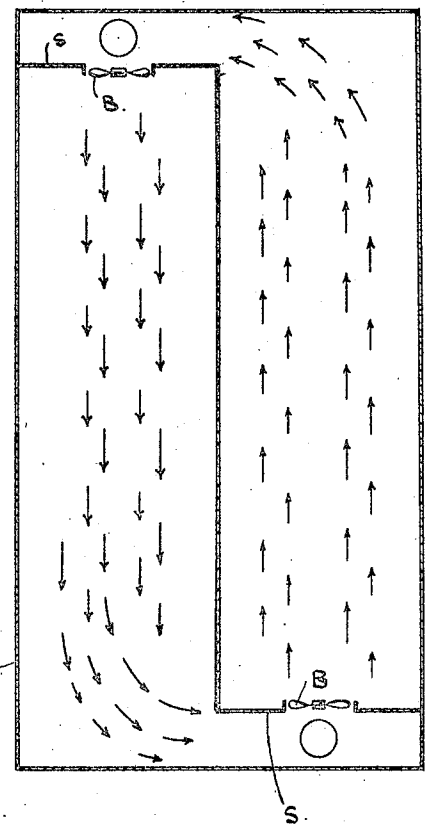


Fig. 2.



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Fig. 3.

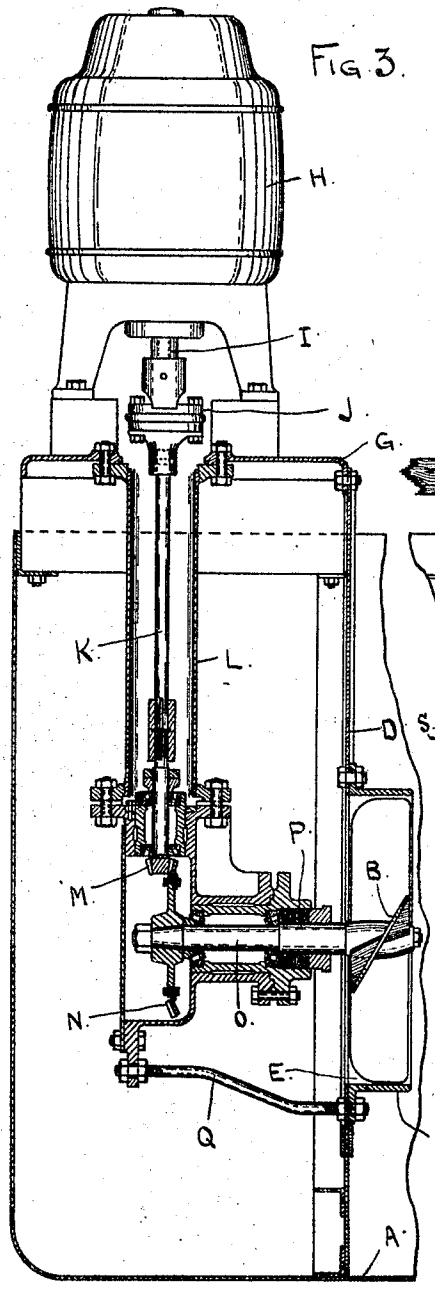
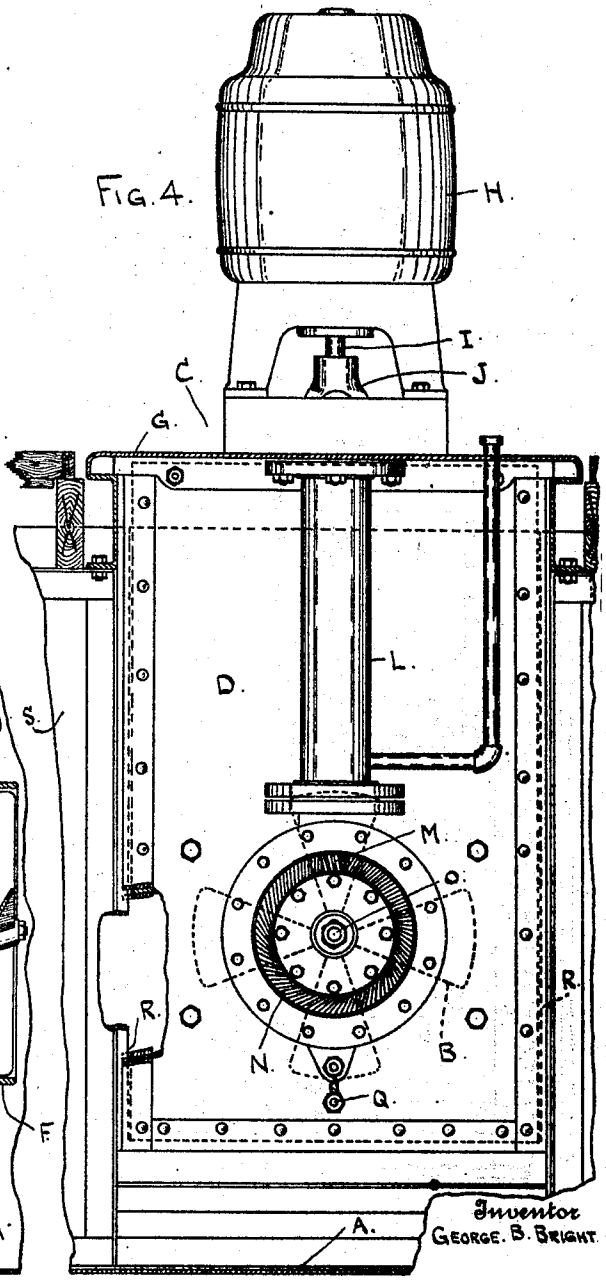


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE B. BRIGHT, OF DETROIT, MICHIGAN, ASSIGNOR TO DETROIT ICE MACHINE CO., OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

BRINE-CIRCULATING APPARATUS FOR ICE MACHINES.

Application filed August 21, 1922. Serial No. 583,334.

To all whom it may concern:

Be it known that I, GEORGE B. BRIGHT, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Brine-Circulating Apparatus for Ice Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to the manufacture of artificial ice and has more particular reference to the means for circulating the brine in which the ice cans are immersed, so as to maintain the same at substantially uniform temperature. It is usual in the construction of such apparatus to mount an impeller within the tank, which is driven from outside the tank by a shaft passing through the tank wall. Where repairs are necessary, as, for instance, in case of a broken blade, the brine must be drained from or lowered within the tank to afford access to this impeller. As a consequence, the freezing operation must be suspended until the repairs are completed.

It is the object of the present invention to provide an impeller unit which may be attached to or detached from the brine tank without interference with the use of said tank and to this end the invention consists in the construction as hereinafter set forth.

In the drawings:

Figure 1 is a perspective view of the impeller unit detached;

Figure 2 is a horizontal section through the brine tank showing the arrangement of the impeller units in relation thereto and the manner of circulating the brine;

Figure 3 is a vertical longitudinal section partly in elevation; and

Figure 4 is a front elevation.

A is a brine tank of any suitable construction. B is an impeller of such capacity that, when arranged at one end of the tank, it will propel the brine to the opposite end thereof at the desired velocity.

Instead of mounting the impeller B permanently within the tank A, it is mounted upon an independent frame C, which preferably includes a panel D having an aperture E in which the impeller is located. F is an annular flange projecting from the panel and surrounding the impeller and which assists in giving direction to the current. Attached to the upper end of the panel D is a platform G on which is mounted a motor H, preferably electric. The shaft I of this motor extends vertically and is connected by a universal coupling J with a transmission shaft K extending downward through a tubular housing L. In the lower end of this housing are the bevel gears M and N, which transmit the motion to the horizontally arranged impeller shaft O. These gears and the shaft O are also housed and a packing gland P at the point where the shaft O passes out from the housing forms a liquid tight seal. Q is a brace arm connecting the lower end of the housing L with the panel D.

The unit constructed as described is engageable with the tank by sliding the panel D downward in vertical guides R within the tank A. These guides are preferably formed at opposite sides of an opening in the partition wall S, which opening is closed by the panel D. Thus, when the panel is in position within the tank, the motion communicated from the motor H to the impeller will cause the proper circulation of the brine. If, however, it is necessary to remove the impeller, this may be accomplished by merely raising the panel and without interfering with the continued use of the tank.

What I claim as my invention is:

1. The combination with a brine tank, of an impeller unit detachably engaging said tank and comprising an apertured panel, an impeller operating in the aperture of said panel, a motor arranged at the upper end of said panel, a transmission between said motor and impeller, and guides within said tank for receiving and holding said panel.

2. The combination with a brine tank, of an impeller unit comprising a platform, a motor mounted thereon, a panel depending from said platform and apertured near its lower end, an impeller located within the aperture of said panel, a transmission from said motor to said impeller, and a housing for said transmission protecting the same from the brine.

3. The combination with a brine tank, of an impeller unit comprising a platform, a motor mounted thereon, a panel depending from said platform and apertured near its lower end, an annular flange surrounding said aperture and projecting laterally from said panel, an impeller located within said

annular flange, a transmission between said motor and impeller including transversely arranged shafts and a connecting gearing, and a housing for enclosing said transmission and protecting the same from the brine.

4. The combination with a brine tank, of a partition in the tank having an opening, an impeller unit including a support, an impeller carried by said support, a motor carried by said support, and a transmission between said motor and impeller, one portion of said support being adapted to close the opening in said partition.

5. The combination with a brine tank, of an impeller unit detachably engaging said tank and comprising an apertured panel, an impeller for causing a flow of brine through the aperture in the panel, a motor arranged in the upper end of said panel, and a transmission between said motor and impeller.

In testimony whereof I affix my signature.

GEORGE B. BRIGHT.