(No Model.)

O. VEZIN.

METHOD OR PROCESS OF UNITING SHEETS OF ICE.

No. 301,539. Patented July 8, 1884.

fig. 1.

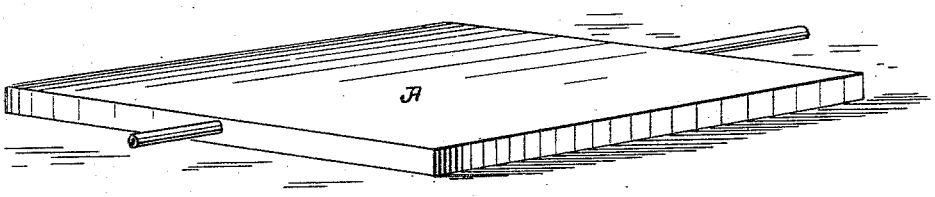


fig. 2.

fig. 3.

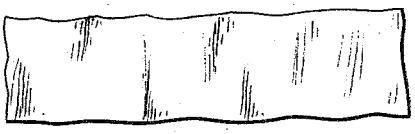


fig. 4.

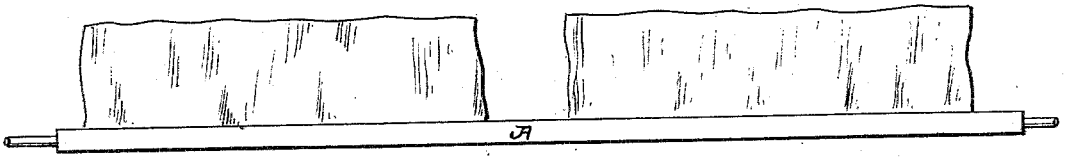
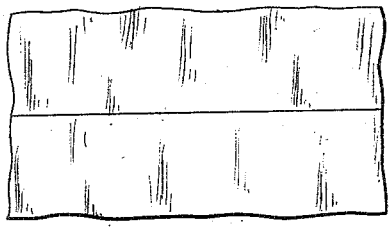


fig. 5.



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METHOD OR PROCESS OF UNITING SHEETS OF ICE.

SPECIFICATION forming part of Letters Patent No. 301,539, dated July 8, 1884.

Application filed January 12, 1883. Renewed December 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, OSCAR VEZIN, of Elizabeth, Union county, New Jersey, and a citizen of the United States, have invented an Improved Method or Process of Uniting Sheets of Ice, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The object of my invention is to unite by freezing together slabs or thin sheets of ice that have been artificially produced in an ice-machine, to form blocks of ice of the thickness necessary to their being merchantable; and my invention consists in the method of uniting sheets of ice in which the sheets to be united are first laid upon and with the faces at which they are to be united in contact with a smooth plane plate of metal or equivelent material, the temperature of which is above that of the ice-sheets, whereby any inequalities or unevenness on the said faces of the slabs is melted off, and said faces are rendered smooth and plane, and then, while the faces are covered with the water resulting from the melting of the ice, placing the sheets together, with their wet plane surfaces in contact, whereby the sheets are instantly united by the crystallization of the intervening water.

In the manufacture of ice it is customary to place cans containing water to be frozen in a bath of liquid, the temperature of which is reduced below the freezing-point, and allowing the cans to remain in the freezing-bath until their contents are congealed into solid blocks of ice. If less than six inches in thickness, the sheets of ice are not merchantable, and it is desirable, for obvious reasions, that they should be of still greater thickness; but thick sheets of ice cannot be thus produced economically, as the water congeals but slowly after the formation of the first inch or two of ice on the inner surfaces of the cans, the ice itself acting as a non-conductor of heat, and prolonging the operation.

My invention consists in the following-described process, whereby two or more comparatively thin sheets of ice, produced in cans as above indicated, may be congealed together, forming a single solid block of ice of merchantable dimensions. The sheets of ice intended to be frozen together by my process are to be produced by the ordinary method commonly practiced in artificial-ice making—that is to say, in metal cans or vessels of suitable size and form placed in a refrigerating-bath. These cans are usually about three feet in length, eighteen inches in width, and from six to eight inches in thickness. Similar cans may be used for the practice of my process, except that they should be made much thinner, so as to produce sheets of ice not more than two to three inches in thickness. The rate of congelation is much greater in such thin cans than it is in those designed to produce thicker sheets. The greater the thickness the slower is the rate of congelation. The sheets of ice, when thus produced, have a temperature considerably below the freezing-point, and if, on being removed from the cans, these slabs were placed one upon another, with their contiguous surfaces covered with uncongealed water, they would be frozen solidly together but for the fact that their surfaces having the unevenness of the cans, as roughly shown in Figures 2 and 3, are not perfect planes, and cannot therefore be brought into complete contact throughout. To accomplish this result I provide a smooth plane table (preferably of metal) of dimensions suitable to receive two or more of the sheets of ice produced in said cans. The temperature of this table is raised to and maintained at a degree a little above the freezing, point, which may be done in any suitable manner. The preferable way is to construct this table as represented in Fig. 1 of the accompanying drawings, which shows a perspective view of steam-table, in which A is a broad flat metal box, made steam-tight, and provided with a steam-inlet and steam or water outlet pipe. Into this box steam is introduced from any suitable steam-generator, whereby the upper surface constituting the required table may be suitably heated.

Figs. 2 and 3 show rough blocks of ice; Fig. 4, the same on the steam-table. Fig. 5 shows two blocks of ice united.

Two of the slabs, being removed from the cans, are laid upon this table, and allowed to remain until their surfaces in contact therewith are slightly melted and made smooth

and plane, as seen in Fig. 4. Then they are quickly placed one upon the other, as seen in Fig. 5, when the uncongealed water resulting from their previous contact with the table A will be instantly frozen, thus uniting the sheets into a single solid block of merchantable ice.

It is obvious that any desired number and thickness of sheets of ice may be thus frozen solidly together.

What I claim as my invention, and desire to secure by Letters Patent, is—

The described method of forming thick, solid blocks of ice, consisting in the freezing of water in metal cans, the placing of the sheets of ice thus formed, when removed from the cans, upon a plane heated table, whereby one surface of each sheet is, by melting, reduced to a smooth plane, and then immediately placing the sheets together, with their said plane surfaces, while still covered with uncongealed water, in contact, all as described.

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