110,550

PATENT SPECIFICATION

Convention Date (Germany), Oct. 12, 1916.
Application Date (in the United Kingdom), Oct. 15, 1917. No. 14,909/17.
Complete Accepted, July 24, 1919.

COMPLETE SPECIFICATION.

Improved Process and Apparatus for the Manufacture of Ices.

We, NÜRNBERGER METALL- & LACKIERWAAREN-FABRIK VORM. GEBRÜDER BING ACTIENGESELLSCHAFT, of No. 16, Blumenstrasse, Nürnberg, Germany, Manufacturers, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

In the known apparatus for making ices, either the vessel containing the substance to be frozen in the case of a fixed vessel containing the freezing mixture, is adapted to be rotated about a vertical axis, or the vessel containing the substance to be frozen is rotated together with the vessel containing the freezing mixture about a horizontal axis. In using these apparatus, the freezing of the substance to be frozen takes a comparatively long time. The object of the present invention is to accelarate the manufacure of ices.

According to the improved process of this invention the substance to be frozen and the freezing mixture receive unlike motions, namely for instance, the former a rotary and shaking motion, and the latter a shaking motion only. Owing to the combination of two unlike motions for the substance to be frozen and the freezing mixture, the process of making ices is considerably accelerated compared with the known processes.

A constructional form of improved apparatus for carrying into effect the improved process according to this invention is illustrated by way of example in the accompanying drawings in which:

Fig. 1 is a plan

Fig. 2 is a side elevation, and

Fig. 3 is an axial section of the improved apparatus.

The vessel 1 for containing the freezing mixture is provided at the top with a tight-closing removable lid 2, and at its lower end with two radial trunnions 14, 15. To the bottom of the vessel 1 there is fixed a socket 3 for the reception of the box 4 for containing the substance to be frozen. On the bottom of the box 4 there is provided a bearing 5 for the stirring shaft 6 that carries the stirring vane 7. The box 4 is closed by means of a tight-closing lid 8 which has a hole in its middle and carries connected to this hole a tubular neck 9, which latter extends through a hole in the lid 2. The tubular neck 9 serves as a top bearing for the stirring shaft 6, and it has also the function of preventing the freezing mixture from passing over from the vessel 1 into the box 4. On the upper end of the stirring shaft 6 there is mounted a removable crank 10 with a nose 17.

[*Price 6d.*]

The vessel 1 is carried by a spider 11 of which one arm is bent up at right angles at both ends. One bent up end 12 is formed with a hole for receiving the trunnion 14 of the vessel 1, whilst the other bent up end 13 has an open slot into which is placed the trunnion 15 of the vessel 1. A catch 16 pivoted to the bent up end 13 serves to hold the trunnion 15 in the slot.

The operation of the improved apparatus is as follows:—

After the stirring shaft 6 together with the stirring vane 7 has been inserted in the box 4 the latter is filled up to a certain height with the substance to be frozen, and is closed by means of the lid 8, and is then placed into the socket 3 in which it is held by friction so firmly as not to rotate when the stirring vane is rotated. Then the freezing mixture is charged into the vessel 1 which is then closed by the lid 2 and inserted with its trunnions 14, 15 respectively into the hole and the slot in the bent up ends 12, 13 of the spider 11. By turning up the catch 16 the connection between the spider 11 and the vessel 1 is rendered secure. Finally the crank 10 is placed on the stirring shaft 6.

The freezing of the substance to be frozen is effected by first causing the vessel 1 to rock on its trunnions 14, 15 (Fig. 2). In this movement the vessel strikes the spider so that the entire apparatus is shaken. Then the shaking is stopped and the crank 10 is rotated so as to rotate the substance to be frozen. Then there is produced at the same time a shaking of the vessel 1 and a rotation of the stirring blade 7. The freezing of the substance to be frozen takes about five minutes.

It is not absolutely necessary that the shaking shall take place first and then rotation be performed, and finally shaking and rotation be effected. The several movements may be performed in another order of succession.

When the freezing of the substance to be frozen is complete, the lid 2 is removed by means of the nose 17 of the crank 10 as shown in dotted lines (Fig. 2); the box 4 is taken out of the vessel 1; and the frozen substance is taken out in the usual manner.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. An improvement in the process for making ices, consisting in the feature that the substance to be frozen and the freezing mixture receive unlike motions, substantially as described.

2. An improvement in the process for making ices, which consists in the feature that the substance to be frozen is rotated and shaken, whilst the freezing mixture is only shaken.

3. An apparatus for making ices, wherein the vessel for containing the freezing mixture is rotatably mounted on a horizontal axis and receives non-rotatably the box for containing the substance to be frozen, said box being provided with a stirring vane rotating about a vertical axis for acting upon the substance to be frozen in the usual manner.

4. The improved process for making ices, substantially as hereinbefore described.

5. The improved apparatus for making ices, constructed and operating substantially as hereinbefore described and also as illustrated in and by the accompanying drawings.

Dated this 1st day of October, 1917.

MARKS & CLERK.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1919.

110,550. COMPLETE SPECIFICATION. OF NÜRNBERGER-METALL & LACKIERWAAREN-FABRIK VORM. GEB. BING AKT-GES. (1 SHEET)

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig.1

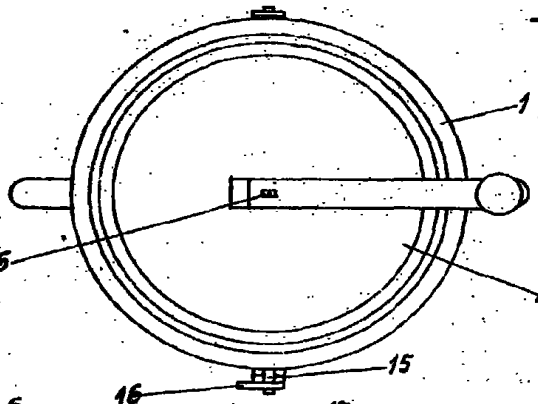

Fig.2

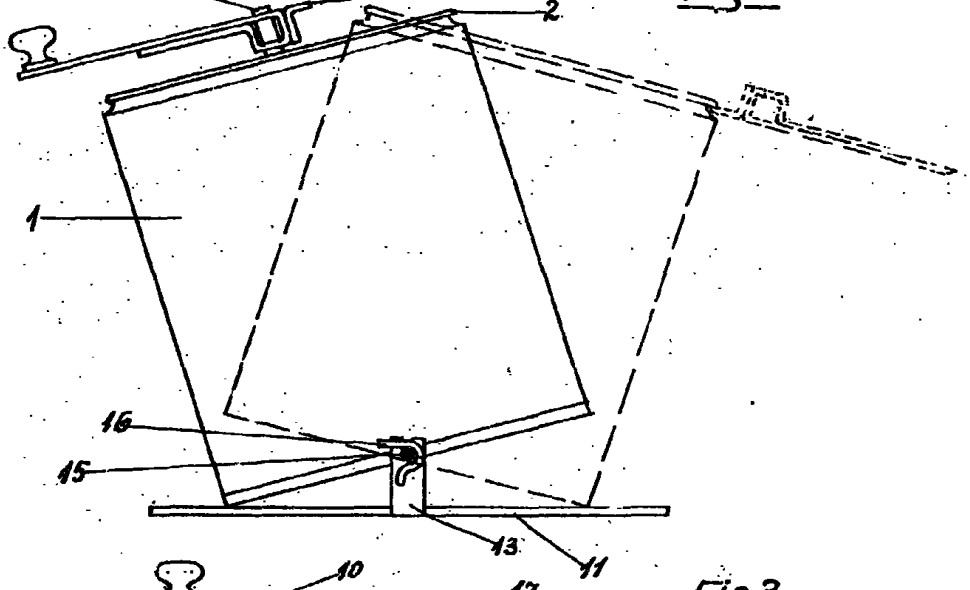

Fig.3