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ICE CUBE PAN STRUCTURE

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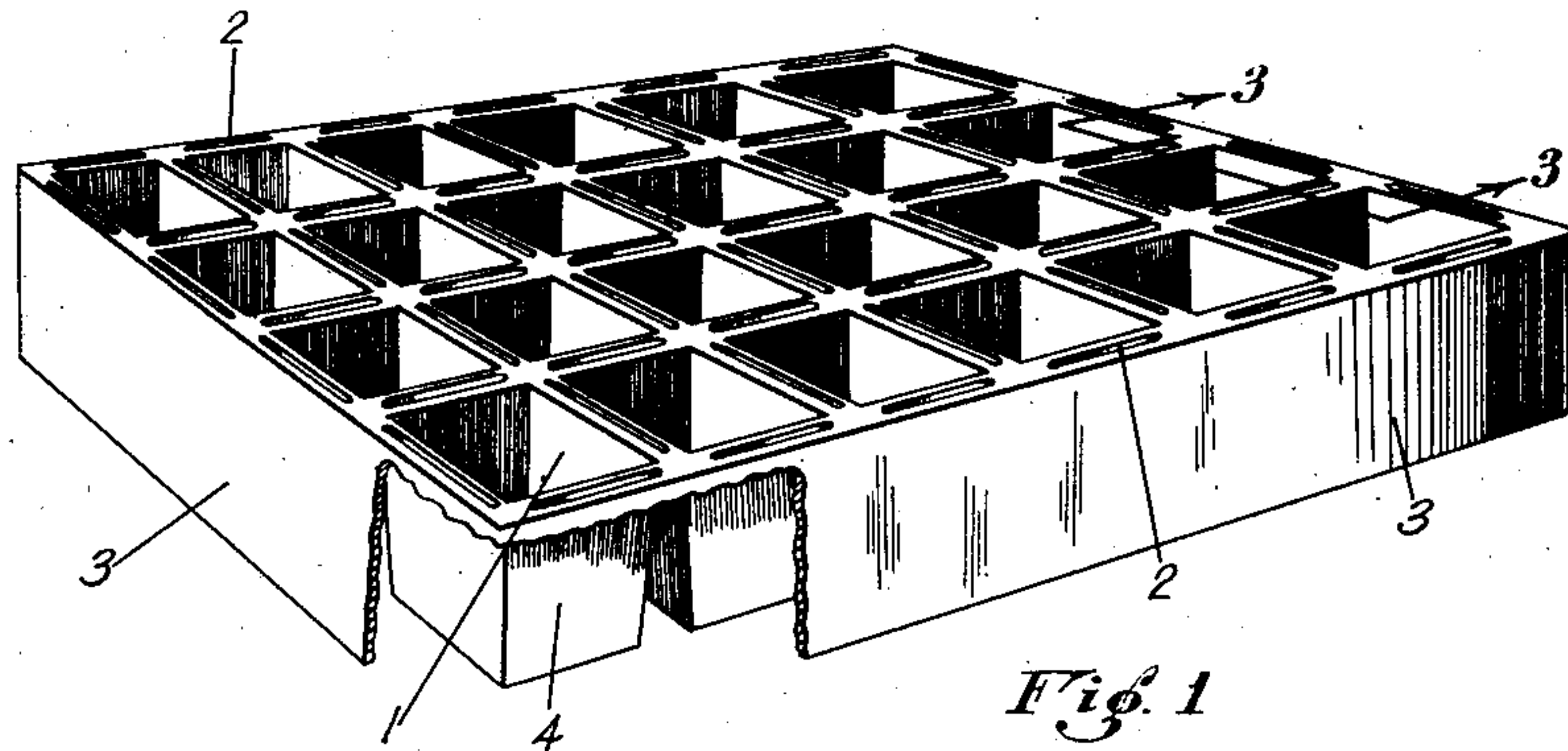


Fig. 1

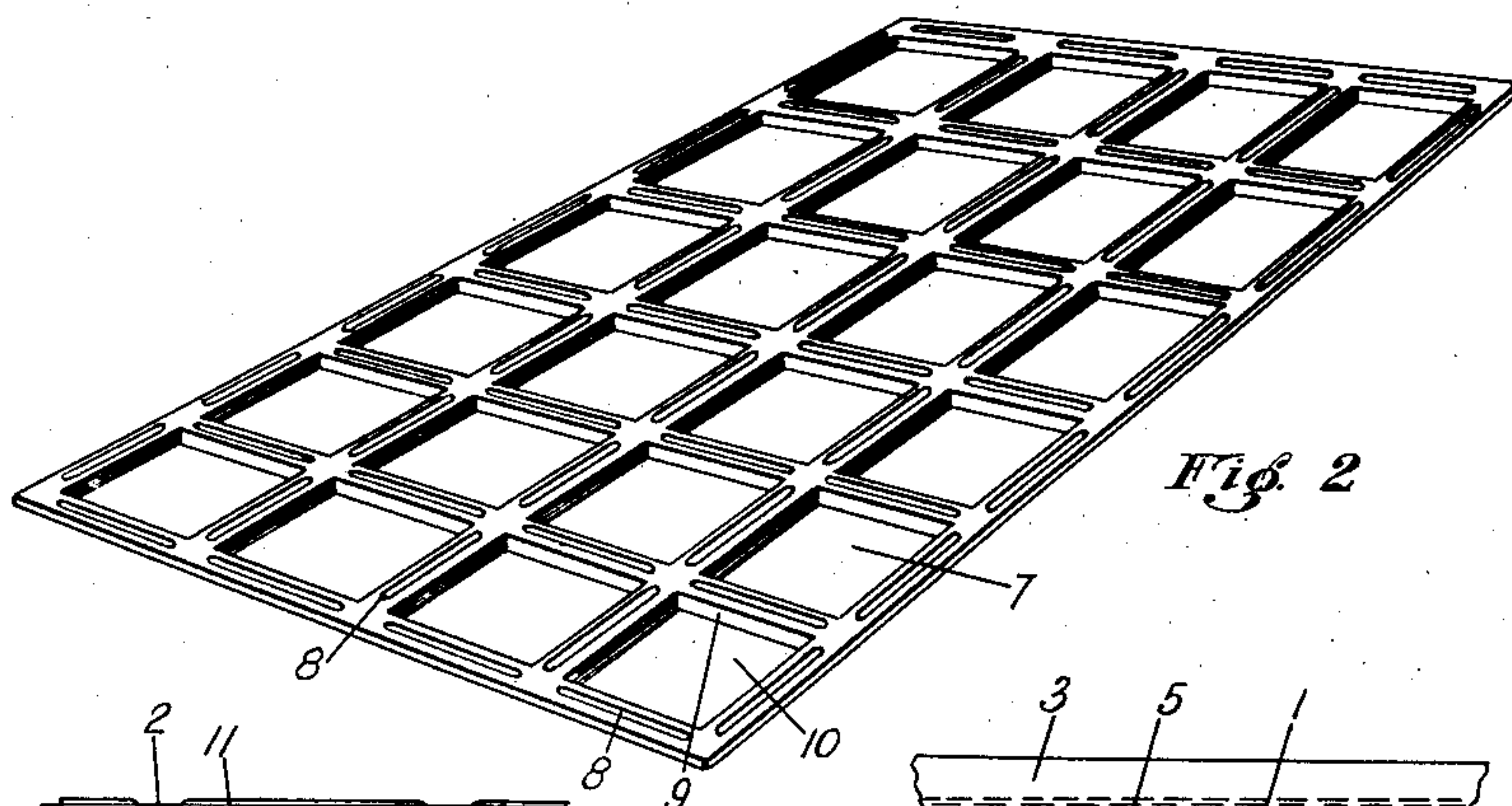


Fig. 2

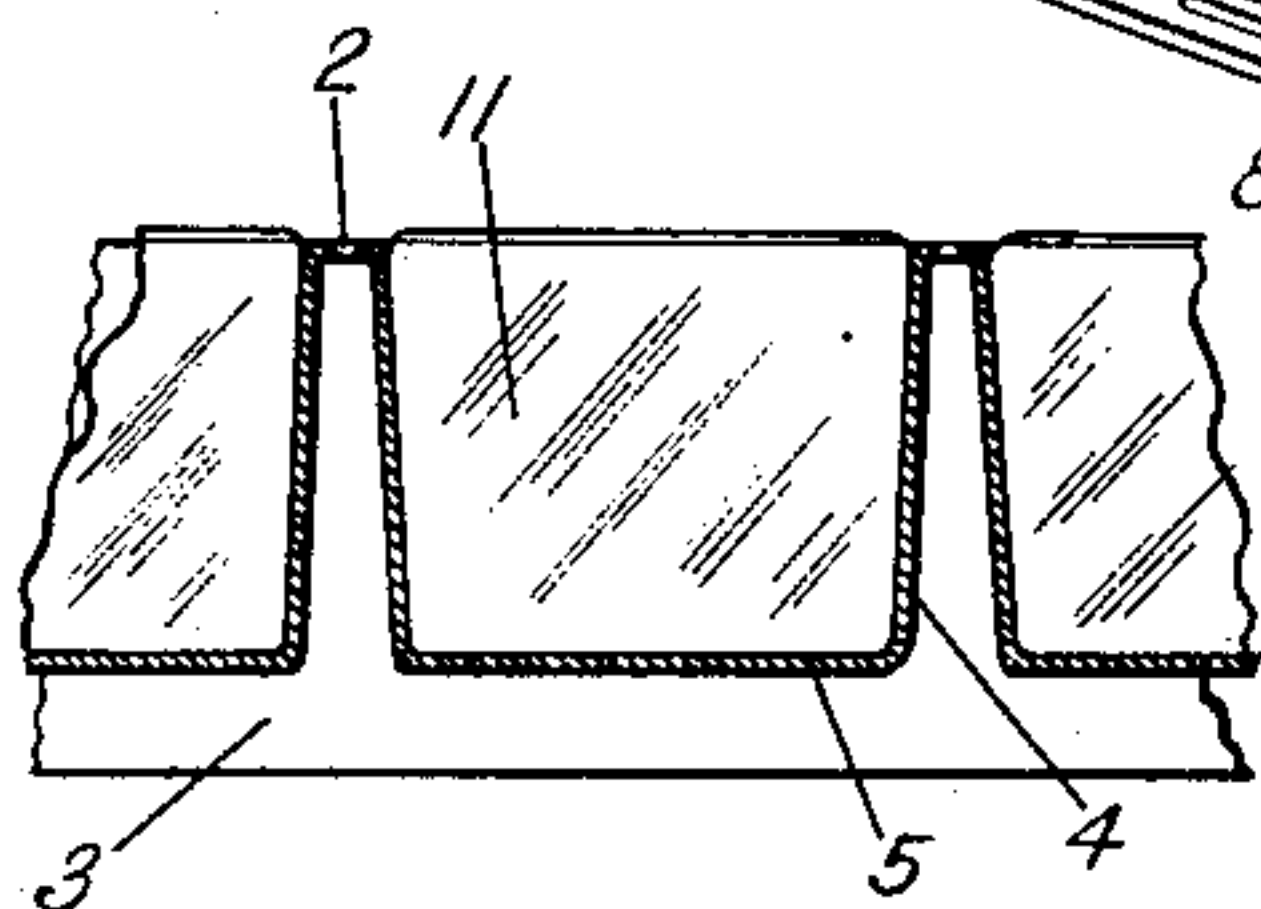


Fig. 3

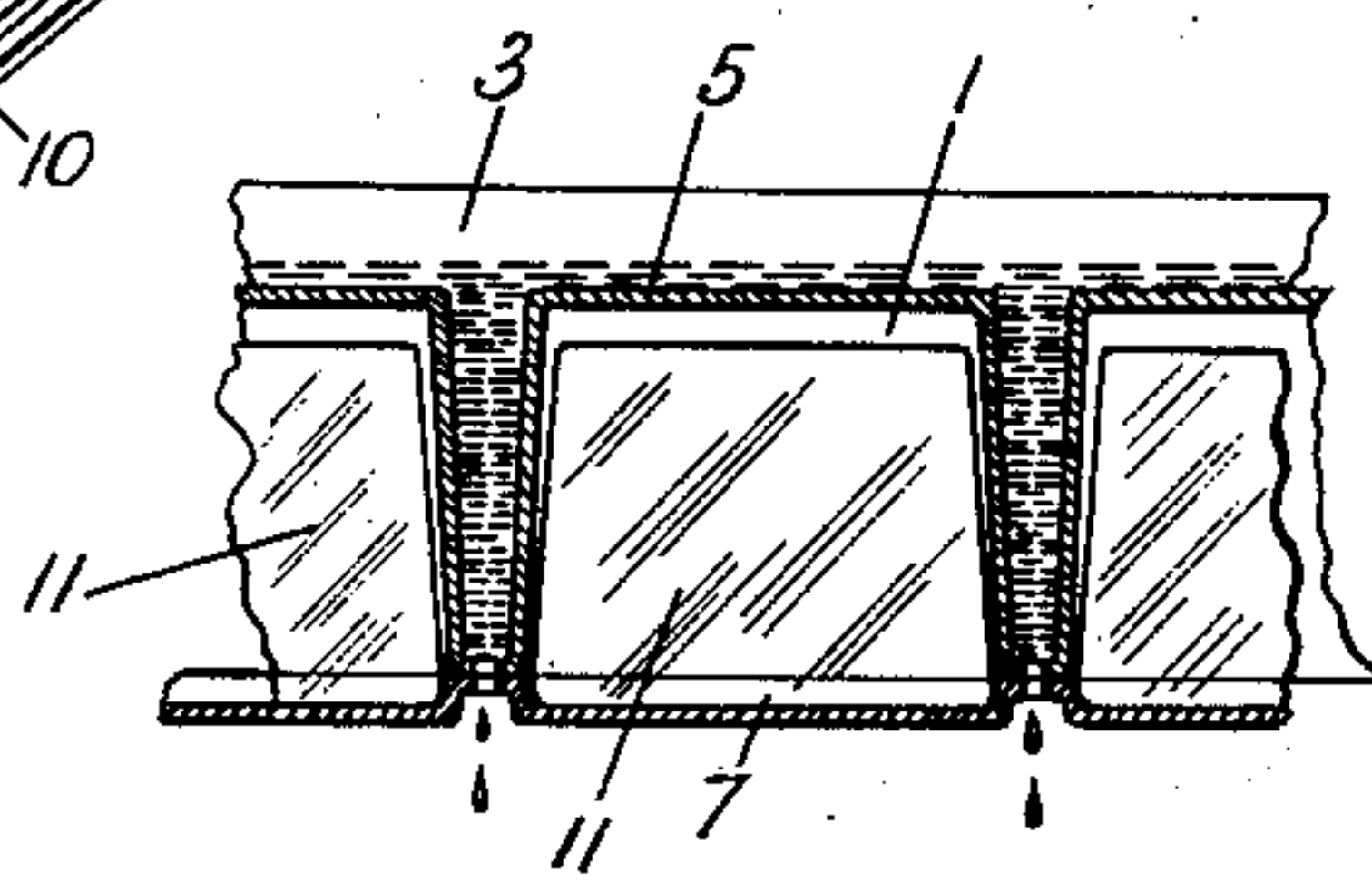


Fig. 4

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ICE CUBE PAN STRUCTURE

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My invention relates to an ice cube pan structure. It pertains, particularly, to a device in which water is adapted to be disposed preparatory to the formation of ice cubes, although it is not limited thereto. For instance, the device might be employed with equal success in operations wherein liquids are solidified by other than a freezing operation.

In devices of this type used at the present time, a shallow metal pan or tray is used in combination with a latticed or grid member adapted to be inserted into the pan or tray to divide the interior thereof into a series of individual compartments. The latticed member is usually constructed of a plurality of metal strips that are assembled in such relation as to form the series of individual compartments.

While my invention may be successfully used in the operation of solidifying various liquids, I have hereinafter described the invention as being particularly adapted to the formation of a plurality of ice cubes. My invention contemplates the provision of a liquid container so constructed that the ice cubes may be removed from the individual compartments by the application of a temperature increasing agent to the walls of the cups instead of by direct contact between the temperature increasing agent and the ice cubes.

My invention also contemplates the provision of a liquid containing device wherein the individual compartments are so constructed that, on the application of a temperature increasing medium to the walls of the individual compartments and the resultant loosening of the ice cubes in the compartments, the ice cubes will, in a minimum length of time, break contact with the walls of the compartments.

Further, my invention contemplates the provision of a second pan or tray which may take the form of a lid or cover for the first pan. This second tray is so constructed that, when it is placed over the container having the ice cubes therein, the entire device is inverted, and a temperature increasing medium applied to the walls of the com-

partment in the original container, the ice cubes on dropping out of their respective compartments will rest on the second lid or tray, preferably in spaced relation to each other.

Numerous advantageous features and the objects of my invention may be seen in the following description and one embodiment thereof may be seen in the accompanying drawing wherein similar characters of reference designate corresponding parts and wherein:

Figure 1 is a perspective view, partly broken away, showing the container in which a liquid is adapted to be disposed prior to solidification.

Figure 2 is a perspective view of the cover or lid for the container shown in Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1 and showing one of the individual compartments containing an ice cube.

Figure 4 is a view similar to Figure 3 showing the liquid container in inverted position with the structure shown in Figure 2 disposed beneath the container and a temperature increasing medium being applied to the walls of the individual compartments of the liquid container.

In the drawing, I have shown one embodiment of my ice cube tray as comprising a plurality of cups or containers 1, disposed therein in spaced relationship.

The cups 1 are preferably disposed at uniform distances from each other, and are of the same general size and shape. The side walls 4 of these cups 1 converge, meeting a common base portion 5 at an angle, the purpose of which will be hereinafter described.

It will be noted that each cup 1 is bounded on all sides by a portion containing slits or slots 2. These openings 2 are not restricted as to size, position, or number and may be disposed about the upper surface of the tray wherever desired.

Formed integrally with the outer edge of the upper surface of my ice cube tray, and depending downwardly therefrom, is a skirt

3 which is capable of supporting the tray in an upright position. This skirt 3 is of sufficient height to extend below the bottoms of the cups 1 and support them in a supported position with relation to any object upon which the tray may rest while in an upright position.

When my ice cube tray is inverted and a liquid applied thereto to loosen the cubes, the skirt 3 tends to partially confine the liquid within its limits and, because of its height, to cause the liquid to completely cover each cup.

I have shown in Figure 2 a member that has the same dimensions as the upper surface of my ice cube tray, which I shall term a cover or lid. This member is capable of holding the ice cube tray when said ice cube tray is inverted thereon. It may be used as a lid, if so desired, during a freezing operation.

I have shown the cover as comprising a plurality of shallow cups or containers 7 disposed therein in spaced relationship.

The cups 7 are preferably of a relatively shallow nature, having the same dimensions and are spaced uniformly within the cover.

The side wall 9 of each cup 7 meets a common base portion 10 at right angles. The width and breadth of this cup is approximately the same as the width and breadth of the cup 1 at its uppermost limits, and is adapted to coincide therewith when inverted thereon.

These cups 7 are connected by portions provided with slots or slits 8. These openings 8 are not restricted as to size, position or number and may be disposed about the upper surface of the cover wherever desired. It is preferable that each opening 8 be of the same dimensions, and placed so that when inverted on the ice cube tray, they will coincide with the openings 2 of that member. However, they may be larger.

It is apparent that each of these two members may be formed from one piece of material, or if desired, may be assembled from individual parts.

In the use of my device, I fill each individual cup 1 with the liquid to be solidified and place the tray in the sleeve provided in the ordinary type of mechanical refrigerator. The cover may be placed thereon, if so desired.

After the liquid is frozen I remove the tray and invert it on the lid as shown in Figure 4, or if the cover has been previously put in place, I simply invert the device as a whole while holding the cover in place.

It will be noted that the ice 11 (Figure 3) when frozen does not assume the shape of a true cube, but tapers slightly toward one end.

My ice cube tray is now inverted on the cover and I pour a warm liquid into the area

surrounding the cups. The liquid drains off through the openings 8 and 2 which now coincide forming a passageway through which a liquid may readily pass (Figure 4).

The warm liquid raises the temperature of the side walls 4 of the cups 1 and thereby release the ice cubes in contact with the side walls causing them to drop into the cups 7 of the cover. It is apparent that no liquid other than that generated by the melting action of the ice in contact with the side walls has come into direct contact with the ice, this being a preferred condition.

The ice 11, when it has broken contact with the walls of the cup 1 and has started to move downwardly, will not ordinarily contact with the walls of the compartment thereafter, because of the angle of said walls.

The ice cube tray is now lifted from the support and each individual cube is left in an upright position in a cup 7 of the cover. These cubes have not been materially reduced in size and the loss of solid is negligible.

I believe that I am the first to appreciate that these ice cubes may be released from cells with so little resultant loss. It is within the broad aspect of my invention to accomplish this by merely providing an individual cell for each cube that may be completely covered by any warm liquid without contacting the liquid with the ice cube. A liquid may or may not be used to release the ice. Warm air may be directed upon the exterior of the cups or they may be allowed to stand in a normal room temperature. It is understood that this may require a slightly longer period of time for releasing the cube.

Having thus described my invention, what I claim is:

1. An ice cube tray comprising a plurality of cells, connecting portions between said cells, said connecting portions having openings therein and the walls of said cells being exteriorly spaced apart and a skirt for said tray.

2. In an ice cube tray structure, the combination of a tray having a plurality of cells therein, and a cover for said tray, said cover comprising indentations registering with said cells adapted to receive and retain the cubes when they are emptied from the said tray, said indentations being of substantially the same area as one end of said cubes.

3. In an ice cube tray structure, the combination of a tray having a plurality of spaced cells therein, and a cover for said tray, said tray having a plurality of perforated connecting portions between the cells and said cover being constructed to permit the passage of water through such perforations.

4. In an ice cube tray structure, the combination of a tray having a plurality of

spaced cells therein, and a cover for said tray having a plurality of indentations therein, said cells being connected by perforated portions and the indented portions of said cover being separated by perforated portions, the said indentations being adapted to coincide with said cells and the perforated portions in the cover being adapted to coincide with the perforated connecting portions of the tray.

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10 5. A cover for a receptacle adapted to receive a liquid or a semi-solid material for the purpose of solidifying said material therein comprising a surface indented to receive and retain articles emptied thereon when such articles are emptied thereon from a receptacle, the indentations in said cover being separated by perforated portions.

15 6. A cover for ice cube trays comprising a surface indented to receive and retain ice cubes in spaced relation when such cubes are emptied thereon from a tray, the indented portions of said surface being of substantially the same area as one end of said cubes.

20 7. A cover for ice cube trays comprising a surface indented to receive and retain ice cubes in spaced relation when such cubes are emptied thereon from a tray, the indentations in said cover being separated by perforated portions.

25 8. An ice cube tray comprising a plurality of cells, connecting portions between said cells, said connecting portions having openings therein, and a skirt for said tray depending below the bases of said cells and elevating said cells when said tray is resting on said skirt.

30 In testimony whereof I hereby affix my signature.

40 EDWIN P. CORBETT.

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