No. 699,319. Patented May 6, 1902.

T. W. HENNING.

ICE TRAY.

(Application filed Sept. 4, 1901.)

(No Model.)

Fig. 1.

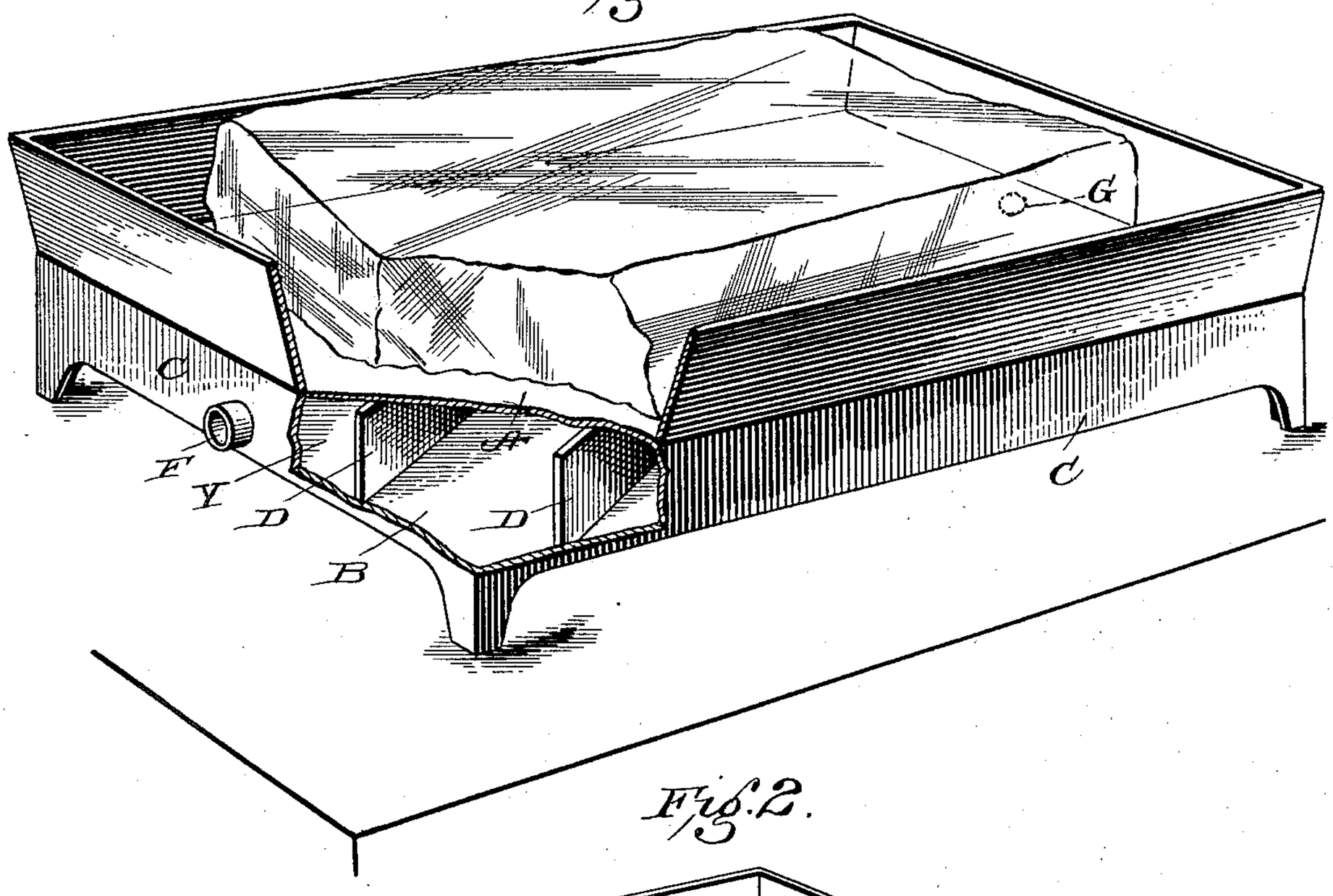


Fig. 2.

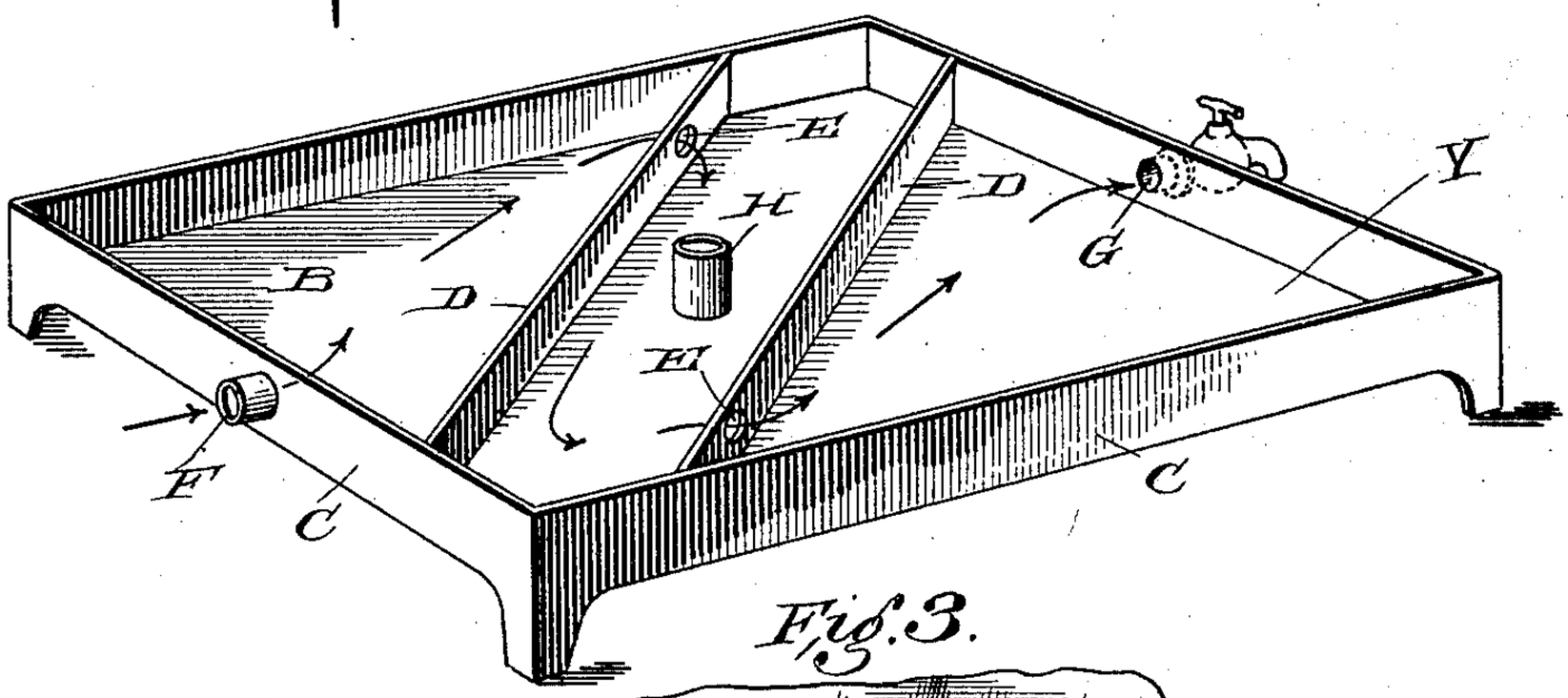
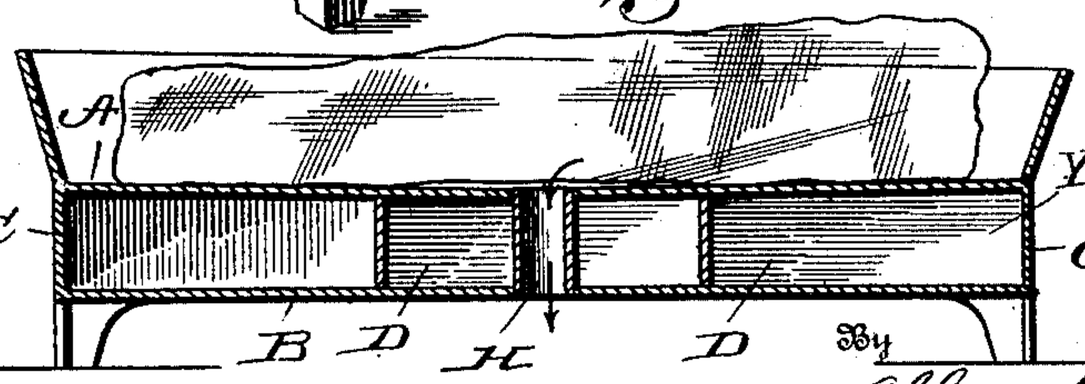


Fig. 3.



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UNITED STATES PATENT OFFICE.

THOMAS W. HENNING, OF SAN ANGELO, TEXAS.

ICE-TRAY.

SPECIFICATION forming part of Letters Patent No. 699,319, dated May 6, 1902.

Application filed September 4, 1901. Serial No. 74,321. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. HENNING, a citizen of the United States, residing at San Angelo, in the county of Tom Green and State of Texas, have invented certain new and useful Improvements in Ice-Trays, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a combined water-cooler and ice-tray, and has for its object the cooling of water by ice without the ice coming in contact with the water, and the flow of water through the device is retarded to admit of the water being retained in proximity with the ice a longer time than is usual in devices for such purposes; and it consists of various features, details, and combinations hereinafter set forth and claimed.

Referring to the drawings, in which similar letters indicate similar parts, Figure 1 is a perspective view of my invention, the corner being broken away for better illustration. Fig. 2 is a perspective of my invention, the lower portion only being shown to clearly illustrate the perforated partition. Fig. 3 is a cross-sectional view taken through the draining-pipe for the ice-chamber.

A is the upper or false bottom of the double bottom of my device, composed of metal or other suitable material. B is the under or true bottom, composed of the same material. Said bottoms A and B join at right angles the walls or sides C, also composed of the same material, the union of said bottoms A and B with the said walls C forming a water-tight chamber Y. The said walls C extend upwardly from the union with the under bottom B to above the false bottom A equally on all sides, said extension of the walls C forming a receptacle over the said bottom A to retain the ice, which rests on said bottom A.

The water-tight chamber Y is divided into water-tight compartments of equal or varied size, as desired, by partitions D, running parallel to each other, composed of the same material as the bottom A and B and the walls C. Said partitions D extend from the walls C, to which they are joined along their perpendicular edges either at right angles or diagonally, as desired, and are joined at right angles along their horizontal edges to the under surface of the bottoms A on their upper horizontal edges and to the upper surface of the bottom B on their under horizontal edges. Said partitions, in addition to dividing the water-tight chamber Y into water-tight compartments, serve also to support and strengthen the bottom A to sustain the weight of the ice upon it. The number of said partitions is not limited, and as many compartments may be formed as is desired; but said compartments must be so arranged that water introduced into the compartment next the point of entrance of water of natural temperature will flow through each compartment one after the other to the point of exit, as hereinafter shown. Each of said partitions D is provided at alternate ends, adjacent to its union with the walls C, and at its top, near its union with the under surface of the bottom A, with a small opening E, serving to admit the flow of water from one compartment to the one next adjoining when the water reaches the level of said opening E.

By virtue of the provision of the small openings E in the partitions D and the arrangement of said openings immediately adjacent to the ice-receptacle bottom A, of metal or other cold-conducting material, in the manner just described, it will be observed that the water, incident to its passage from one compartment to the next succeeding compartment of the chamber Y, is carried in a thin stream in close proximity to the said bottom A, with the result that by the time it reaches the exit-opening of the chamber Y it will be rendered very cold. It will also be observed that because of the tortuous course which the water is compelled to take in its passage through the chamber Y and the fact that it is carried several times *en route* in the form of a thin stream against the metallic or other conductive bottom A it will be materially cooled by the time it reaches the exit-opening of the chamber Y, even if it is permitted to flow from a source of supply through the said chamber without stoppage. This will be appreciated as an important advantage when it is remembered that frequently the amount of water drawn from the chamber Y at one time exceeds the capacity of said chamber, and if no provision were made for retarding the flow of water through the chamber and

carrying it several times *en route* in the form of a thin stream against the bottom A of the ice-receptacle the temperature of the water when it issued from the chamber Y would be substantially the same as when it entered.

On the two sides of the walls C which run parallel to the partitions D when said partitions are arranged to join the walls C at right angles, or on the two sides of said walls C directly opposite each other when the partitions D are arranged diagonally, as shown in Fig. 2, are openings, F on one side being the point of entrance and G on the other side being the point of exit, said openings being placed in the center of said walls C, midway between the bottoms A and B, the opening F being provided with a piping capable of being attached to a hydrant, tank, or reservoir of water of natural temperature and the opening G being provided with a faucet to draw off the iced water.

Descending from the center of the bottom A from its upper surface to and through the center of the bottom B, to both of which it is attached to render itself and the central compartment through which it enters water-tight, is a drain-pipe H, adapted to carry off the melted ice from the ice-receptacle before described.

To operate my improved ice-tray and cooler, ice is placed in the receptacle formed by the walls C and the bottom A, the ice resting on the said bottom A. Water of natural temperature is introduced from a tank, reservoir, or hydrant, as desired, through the opening F, filling the compartment into which said opening enters. When the water in said compartment rises to the level of the opening E in the partition D, separating it from the next compartment, it flows through said opening E into the next compartment, and so on to the last compartment, following the direction as indicated by the arrows in Fig. 2, when it can be drawn off by the faucet attached to opening G.

By the use of the partitions D the water is retained in the several compartments and its flow from the point of entrance to the point of exit retarded to admit of its being retained in proximity with the ice to obtain the effect of its cooling influence.

It is obvious that my improved ice-tray and water-cooler can be placed in an ice-chest or refrigerator, the ice then serving the double purpose of cooling the water and the atmosphere of the chest or refrigerator at the same time, or it can serve the single purpose of cooling water, as desired, and, furthermore, that my device is not limited to the cooling of water. Milk and other liquids requiring refrigeration may also be used.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

The herein-described combined ice-holder and water-cooler consisting essentially of the bottom wall, the wall of cold-conducting material disposed in a plane above the bottom wall, the continuous side walls C extending upwardly from the bottom wall to a point above the cold-conducting wall, and permanently joined in a water-tight manner at their lower ends to the bottom wall, and at an intermediate point of their height to the cold-conducting wall; said side walls C serving in conjunction with the bottom and cold-conducting walls to form a water-chamber, and in conjunction with the cold-conducting wall to form an ice-receptacle above the water-chamber, and having inlet and outlet ports communicating with the water-chamber at opposite points, and the plurality of partitions arranged in the water-chamber at intervals between the inlet and outlet ports, and extending from side to side and top to bottom of the chamber; the said partitions each having a small opening near its upper edge whereby the water must of necessity pass several times in a slight stream adjacent to the cold-conducting wall incident to its passage through the water-chamber, and the opening in one partition being arranged adjacent to the opposite side of the chamber with reference to the opening in the next adjacent partition to compel the water to take a tortuous course and retard its passage through the chamber.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS W. HENNING.

Witnesses:
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