No. 706,773. Patented Aug. 12, 1902.

F. H. NICHOLS.

ICE CRUSHER FOR REFRIGERATORS.

(Application filed Nov. 14, 1901.)

(No Model.)

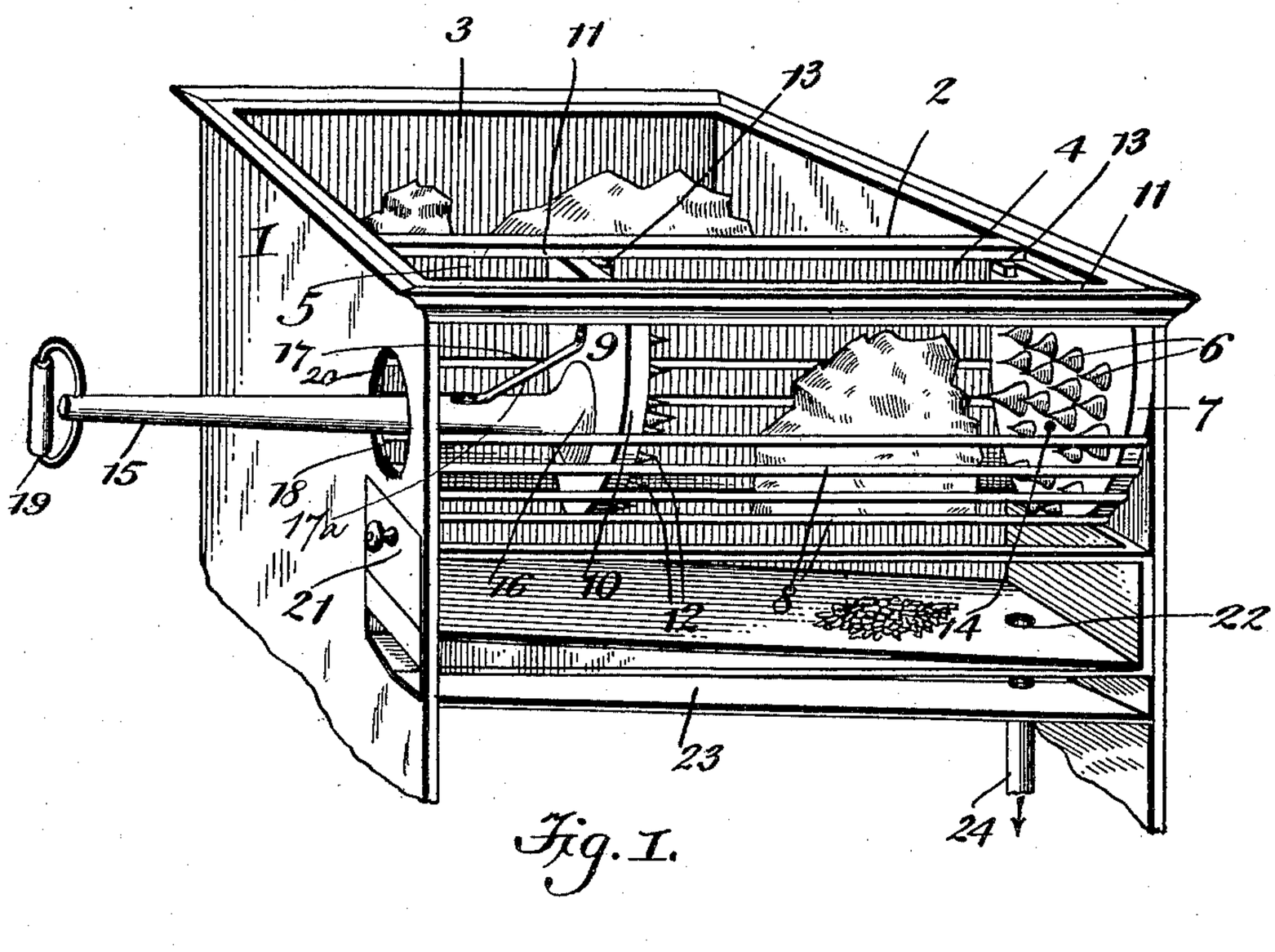

Fig. 1.

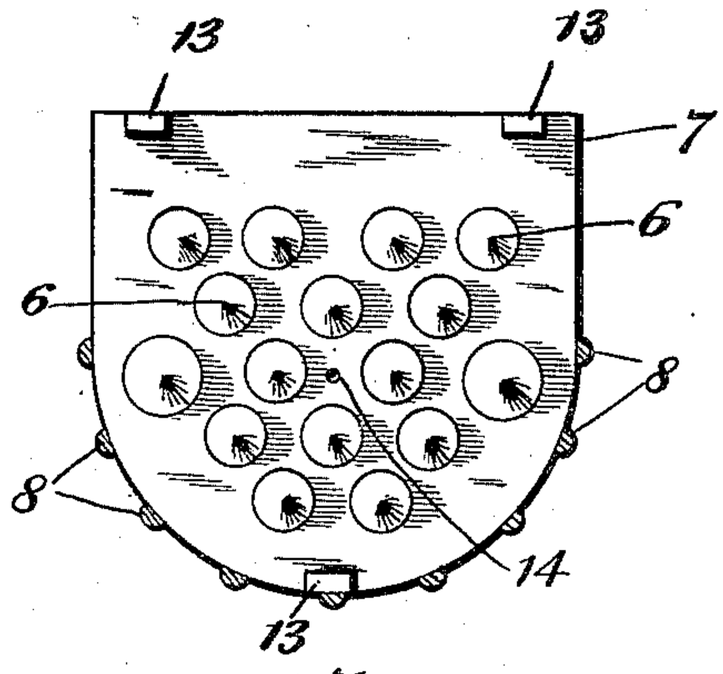

Fig. 2.

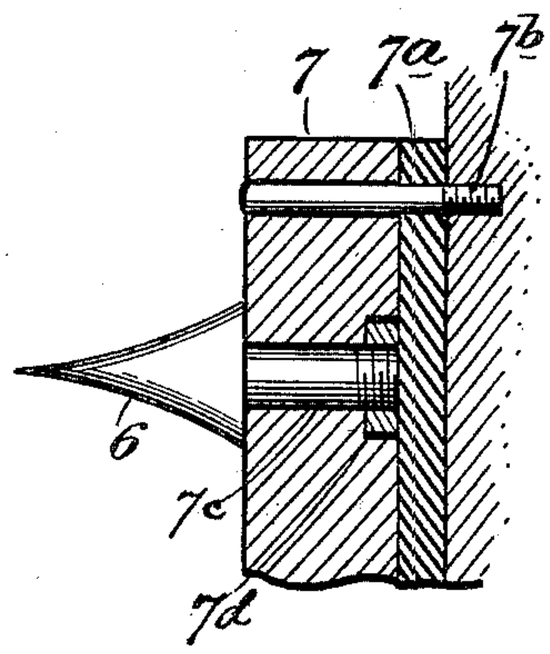

Fig. 3.

WITNESSES:

A. D. Cropsey

Hartwell P. Heath

INVENTOR

Frank Herbert Nichols,

BY J. R. Littell

his ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANK HERBERT NICHOLS, OF LYNN, MASSACHUSETTS.

ICE-CRUSHER FOR REFRIGERATORS.

SPECIFICATION forming part of Letters Patent No. 706,773, dated August 12, 1902.

Application filed November 14, 1901. Serial No. 82,190. (No model.)

To all whom it may concern:

Be it known that I, FRANK HERBERT NICHOLS, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Ice-Crushers for Refrigerators, &c., of which the following is a specification.

This invention relates to ice-crushers for refrigerators, &c., and has for its object to provide an improved device of the class described which will possess advantage in point of convenience, inexpensiveness, effectiveness, and general efficiency.

Another object of my invention is to provide an improved device of the class described which will crush the ice within the refrigerator into suitable sizes for use in water-tanks, pitchers, glasses, or to place on fruit to be served at the table, as desired.

Another object of my invention is to provide an improved device of the class described which will prevent the spattering of pieces of ice and drops of water about the place where the crushing is done.

In the drawings, Figure 1 is a perspective view of a refrigerator embodying my improvements partly broken away and having one side removed. Fig. 2 is a front view of the plate 7. Fig. 3 is a fragmentary sectional view of the plate 7 and adjoining parts.

Corresponding parts in all the figures are designated by the same reference characters.

My invention comprises in general a refrigerator having a receptacle for the ice and a smaller chamber having openings in its sides and bottom and provided with penetrative points at one end and a sliding plunger-pick provided with like points and means for receiving the drippings from such chamber.

Referring to the drawings, my invention comprises a refrigerator 1, the upper part of which is divided by a vertical partition 2 into two compartments, one of which, 3, may be larger than the other and serve as a storage-chamber for the ice. The smaller, 4, of said compartments has a chamber 5 formed in its upper part, which chamber 5 is preferably U-shaped in cross-section and has the inner face of its rear wall provided with a plurality of penetrating points 6. The rear wall of the chamber 5 may conveniently be formed of a heavy U-shaped metal plate 7, provided with a backing of a suitable yielding material, herein shown as rubber strips 7^a and slidably mounted on bolts 7^b, so as to yield somewhat. The points 6 are secured to the plate 7 in any suitable manner, herein shown as by inserting their ends through holes 7^c in the plate 7 and securing them therein by nuts 7^d, seated in mortises in the rear face of the plate 7. The points 6 are preferably arranged in parallel rows across the greater part of the inner face of the plate 7, those in each row alternating with those in each of the adjoining rows, and taper from the base to a point. Some of the points 6, herein shown as two in the lower portion of the plate 7, project beyond the others for a purpose hereinafter explained. The sides and bottom of the chamber 5 are provided with openings through which the crushed ice and water may freely pass. A convenient manner of forming such sides and bottom, and that herein shown, consists of spaced bars 8, extending from end to end of the refrigerator 1 and part way up each side of the chamber 5. A plunger-pick (designated generally 9) is adapted to slide in the chamber 5. Such plunger-pick 9 in the form herein shown comprises a U-shaped head 10, preferably formed of metal, which rests on the bars 8 and fits snugly in the chamber 5 and is prevented from turning or twisting in the U-shaped run by guide-pieces 11, which project inwardly from the top of the sides of the chamber 5 and beneath which the head 10 fits. The head 10 is provided on one side with penetrating points 12, so placed that when the head 10 approaches the plate 7 the points 12 will pass between the points 6. The points 12 may be made integral with the head 10, as herein shown, or secured thereto in any suitable manner—for instance, like the points 6 are fixed in the plate 7. The head 10 and the plate 7 are both provided with suitable guards 13 to prevent the points 6 or the points 12 coming into contact with the face of the head 10 or the plate 7. Such guards 13 are herein shown as rubber projections, suitably secured at the corners of the top and at the center of the bottom of the head 10 and of the plate 7. One of the points 12 may project beyond the others in the same manner as the two of the points

6 do and for the same reason, and to accommodate these longer points and prevent their striking against the face of either the head 10 or the plate 7 recesses 14 are provided in the head 10 and plate 7. Suitable means of operating the head 10 are provided. Such means are herein shown as a rod 15, secured at one end to the head 10 on the side opposite the points 12 in any suitable manner, as by providing the rod 15 near its end with an angular flange 16 to form a shoulder which bears against the head 10, and screw-threading the end complementarily to a screw-threaded hole in the head 10, into which it is screwed. If desired, the head 10 may be provided with braces 17, secured at one end to the head 10 and at the other end to the rod 15 in any suitable manner, herein shown as screws 17ª. The rod 15 extends through an opening 18 in the front of the refrigerator 1 and is provided on its outer end with a handle 19, adapted when the plunger-pick 9 is not in use to be turned and rest in a recess 20 in the front of the refrigerator 1. It is evident that when the top of the refrigerator 1 is closed, as is the case when the plunger-pick 9 is in use, the ice cannot fly back of the plunger-pick 9.

A suitable receptacle may be provided beneath the chamber 5 for the crushed ice. Such receptacle in the form herein shown comprises a drawer 21, preferably zinc-lined and the bottom of which slants from the front to the back to conduct the water from the melting or rinsing of the ice to the outlet 22 at the rear of such drawer 21, which outlet 22 communicates with a drain-compartment 23 beneath the drawer 21. The drain-compartment 23 extends beneath the drawer 21 and inclines slightly toward the back and from the sides toward the center and is provided near its rear end with a drain-pipe 24, communicating with a suitable receptacle for the waste water. The ice-storage chamber 3 also drains into the drain-compartment 23.

While I have illustrated and described my invention in connection with a refrigerator, in which connection it will be most commonly used, it can be used as a separate and independent structure for crushing ice where it is desired to provide means of doing so without spattering ice and water about.

The operation and advantages of my invention will be readily understood and appreciated. When it is desired to crush some ice, the handle 19 is withdrawn from the recess 20 and straightened out parallel with the rod 15, which is then drawn out of the refrigerator 1, carrying the head 10 with it. The ice which it is desired to crush is now placed in the chamber 5 between the head 10 and the plate 7 and the top of the refrigerator 1 closed. The head 10 is moved back and forth in the chamber 5, the longer penetrating points 6 and 12 first coming into contact with the ice and serving with a few blows to break it up into sizes suitable for water-tanks and pitchers and for convenient crushing by the shorter points. By continuing to move the head 10 back and forth in the chamber 5 the ice can be crushed sufficiently small to serve upon fruit, in glasses, or on the table. If the ice is crushed small enough, it will pass between the bars 8 and fall into the drawer 21. The ice may be conveniently rinsed while in the chamber 5 before being crushed, the water used by such rinsing passing off through the outlet 22 into the drain-compartment 23, whence it passes by the drain-pipe 24 into the waste-water receptacle. It is evident that by the use of my invention the ice can be crushed in a room without water or pieces of ice being spattered about the same, and, as explained, the crushed ice can be rinsed off before being removed from the refrigerator, thereby saving time, trouble, and the use of a separate utensil.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claims.

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

1. A refrigerator having its upper part divided into an ice-storage compartment and an ice-crushing compartment, the latter comprising a chamber having inclined sides and bottom with spaced openings therein, and a plunger-pick slidable on the sides and bottom of said chamber to crush the ice between said pick and the end of said chamber.

2. A refrigerator having its upper part divided into an ice-storage compartment and an ice-crushing compartment, the latter comprising a chamber having inclined sides and bottom with spaced longitudinal openings therein and provided at one end with a plurality of penetrating points projecting inwardly, and a plunger-pick embodying a head slidable on the sides and bottom of said chamber and provided with like opposed points.

3. A refrigerator having its upper part divided into an ice-storage compartment and an ice-crushing compartment, the latter comprising a chamber having inclined sides and bottom with spaced longitudinal openings and one end of which is provided with inwardly-projecting penetrating points, a plunger-pick embodying a head slidable on the sides and bottom of said chamber and provided with similar opposed points, and removable means positioned beneath said chamber to receive the crushed ice and provided with an outlet to drain the same.

4. A refrigerator having its upper part divided into an ice-storage compartment and an ice-crushing compartment, the latter comprising a chamber having inclined sides and bottom with spaced openings therein and provided at one end with a plurality of penetrating points of different lengths projecting inwardly, and a plunger-pick embodying a head slidable on the sides and bottom of said chamber and provided with like opposed points.

5. An improved device of the class described, comprising a chamber within the refrigerator U-shaped in cross-section and provided at one end with inwardly-projecting penetrating points and with sides and a bottom composed of spaced bars, a plunger-pick embodying a U-shaped head slidable on said bars and provided with penetrating points adapted to coact with the points in the end of such chamber, and a sliding rod extending through an opening in the wall of said refrigerator and secured at one end to said head.

6. An improved device of the class described, comprising a closed compartment within the refrigerator, a chamber U-shaped in vertical cross-section in the upper part of said compartment one end of said chamber consisting of a plate provided with inwardly-projecting points of different lengths and the bottom and sides of said chamber consisting of spaced bars, guide-rails along the top of the sides of said chamber and extending inwardly, a plunger-pick embodying a head fitting in said chamber beneath said guide-rails and sliding on said bars which head is provided with projecting points of different lengths, a sliding rod secured at one end to said head and projecting through an opening in the wall of said refrigerator, and means beneath said chamber to receive the crushed ice and provided with a drain-outlet.

7. The combination with a refrigerator comprising a casing, a chamber therein provided with openings in its sides and bottom, and a plunger-pick slidable in said chamber, of a drawer beneath said chamber to receive the crushed ice and provided with a bottom inclined from front to rear and with a drain-outlet at the rear.

8. The combination with a refrigerator comprising a casing, a chamber therein provided with openings in its sides and bottom, a plunger-pick slidable in said chamber, and a drawer beneath said chamber to receive the crushed ice and provided with a drain-outlet, of a drain-compartment extending across said casing beneath said drawer, when the latter is in normal position.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

FRANK HERBERT NICHOLS.

Witnesses:
EMILY C. NICHOLS,
LOUIS M. NICHOLS.