

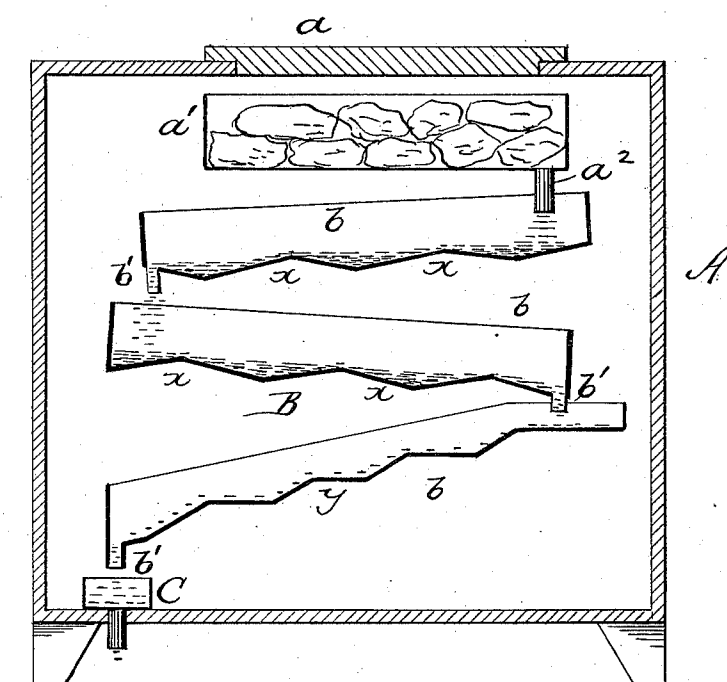
(No Model.)

E. Z. COLLINGS & C. F. PIKE.

REFRIGERATOR.

No. 311,814.

Patented Feb. 3, 1885.



WITNESSES:

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REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 311,814, dated February 3, 1885.

Application filed May 15, 1884. (No model.)

To all whom it may concern:

Be it known that we, EDWARD Z. COLLINGS, residing at Camden, in the county of Camden and State of New Jersey, and CHARLES F. PIKE, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, citizens of the United States, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification, reference being had therein to the accompanying drawing, which is a longitudinal vertical section showing a refrigerator embodying our improvements.

Our invention has relation to that form of refrigerator wherein the reduction of temperature is effected by conveying the drip from the ice-box through a series of troughs located within the refrigerator and arranged one above the other adjacent to one of its walls. Heretofore these troughs, whether alternately inclined to one another or otherwise arranged, have been formed with smooth, unbroken, or straight bottoms, to cause the drip as it flows into a trough to almost instantly pass out of the same into the succeeding trough, and so on throughout the series—or, in other words, the drip has a comparatively rapid or swift passage or flow through the troughs or the refrigerator, and the temperature in the latter is not reduced to as low a degree as it would be if the drip had its flow lessened or traveled more slowly through the refrigerator.

Our invention has for its object to obtain better refrigerant results or the lowest possible reduction of temperature in the refrigerator with the use of a less volume or flow of drip or amount of ice required to provide the drip than have heretofore been done, and this we accomplish by retarding the flow of the drip or provide for retaining it for a longer period of time within the refrigerator.

Our invention accordingly consists of the construction of the troughs, as hereinafter described and claimed.

In the drawing, A represents the refrigerator, which may be of any suitable configuration and construction, and be stationary or portable. It has a lid, *a*, and an ice-box, *a'*, provided with an outlet, *a''*, in line with a

trough or pan, *b*, of a series, B, of the same. Said ice-box may be of any desired construction and suitably arranged. The end trough of the series B leads into an outlet, C, of any suitable construction. Said troughs may be of any appropriate form in cross section; but we prefer to make them either square or oblong and provide them with end pipes or spouts, *b'*, as shown.

To retard the flow of the drip through or along the troughs, we corrugate their bottoms or make them wave like in outline. These corrugations may be regular, as shown at *x*, so that a portion of the drip will always be retained in the troughs, or irregular or step-shape, as indicated at *y*. In the latter case none of the drip is retained in the trough; but its corrugated bottom increases the extent of surface for the drip to pass over, and thereby retards its flow. These corrugations or wave-lines are placed transversely across the trough, so as to be at right angles to the line or direction of travel.

The above-described construction of troughs or pans, it will be noted, prevents a rapid flow of the drip through the troughs. It is therefore retained in the refrigerator for a longer interval of time, and the full benefit of its reduced temperature is secured to effect a lowering of the temperature in the refrigerator. The flow of the drip being retarded, less drip and less ice to provide the drip is required, so that we can obtain better refrigerant results with a reduced amount of ice, or at less cost, than has heretofore been accomplished with the above-described form of refrigerators. The troughs may be alternately inclined to one another, or arranged parallel to each other, or as otherwise desired.

What we claim is—

1. In refrigerators having an ice-box and a series of troughs for conducting the drip from the ice-box through the refrigerator, the method herein described for increasing the refrigerant results, which consists of retarding the flow of drip by causing it to pass over corrugations placed transversely to the line or direction of the flow, substantially as set forth.

2. The refrigerator A, having ice-box *a* and

a series of inclined troughs, b , provided with corrugated or wave-like bottoms, the corrugations or wave-lines of which are placed transversely to the line or direction of flow, 5 substantially as shown and described.

3. The combination, with a refrigerator, of the inclined troughs b , having uneven or corrugated bottoms b' , the corrugations or wave-lines of which are placed transversely to the 10 line or direction of the flow, substantially as shown and described.

4. A conducting or drip-flow pan or trough

having corrugated or uneven bottom b' , with transverse corrugations, and the outlet for the water between one of the corrugations and 15 the end of the trough, substantially as shown, and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWARD Z. COLLINGS.

CHAS. F. PIKE.

Witnesses:

S. J. VAN STAVOREN,

CHAS. F. VAN HORN.