(No Model.)

J. B. FISCHER.

ICE LOWERING APPARATUS.

No. 342,433. Patented May 25, 1886.

Fig. 2.

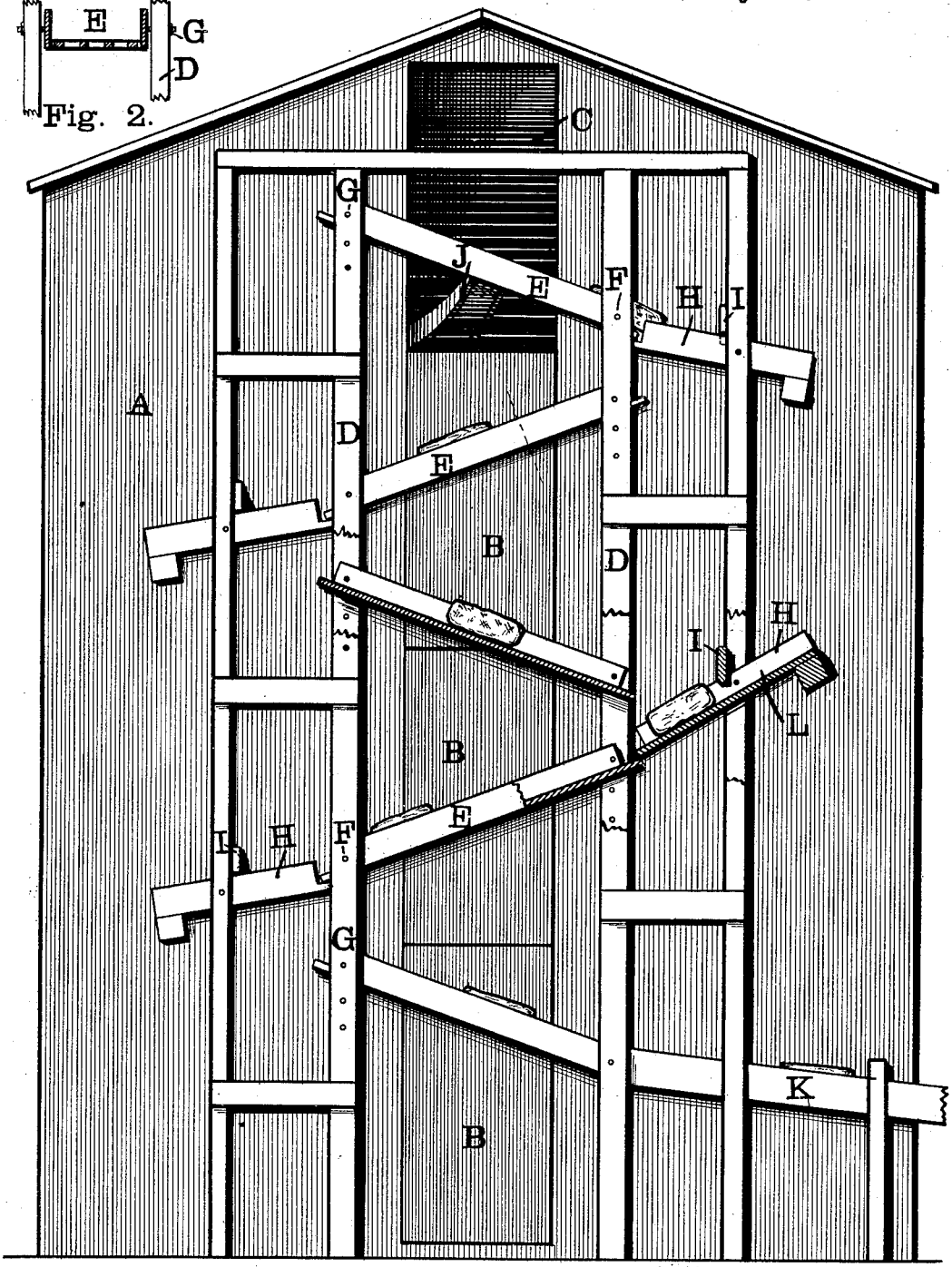

Fig. 1.

Witnesses:
W. A. Seward
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UNITED STATES PATENT OFFICE.

JOSEPH B. FISCHER, OF HAMILTON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SAID FISCHER, JAMES E. CAMPBELL, AND JESSE C. SMITH, OF SAME PLACE.

ICE-LOWERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 342,433, dated May 25, 1886.

Application filed January 20, 1886. Serial No. 189,141. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH B. FISCHER, of Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Ice-Lowering Apparatus, of which the following is a specification.

This invention relates to runways or chutes arranged in connection with ice-houses to serve in lowering the ice from its position in the house to the level of railroad-cars, wagons, or other receiving device upon the ground-level, the object of my invention being to produce a a runway of simple and cheap construction, which will receive the ice which may be placed upon it at the higher levels and automatically lower it to the lower levels with rapidity, and without the intervention of human help, and without causing loss by breakage of ice.

Runways for ice-houses, as at present constructed, are expensive, cumbersome, difficult to move from one ice house to another, difficult to adapt to different ice-houses. They involve the labor of many attendants, and they cause much loss by the breakage of ice.

My improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a front view of an ice-house fitted with a runway illustrating my improvements, and Fig. 2 is a vertical section through one of the chutes.

In the drawings A indicates one of the usual ice-houses; B, the usual long sectional door, reaching vertically to as high a level as the ice will be packed in the ice-houses; C, the upper section of this door, opened for the removal of ice; D, a vertical frame-work erected close alongside the ice-house wall; E, a vertical series of inclined chutes, of the usual construction, supported by the frame-work, the successive chutes of the series being inclined in opposite directions; F, pivots at the lower ends of these chutes, where the chutes attach to the frame-work; G, movable supports, by which the upper ends of the chutes are attached to the frame-work, such supports being illustrated as bolts or pins attaching the ends of the chutes at any chosen one of a vertical series of holes in the frame-work; H, continuations of the lower ends of the chutes, formed of short sections of sufficient length to receive a cake of ice, and so pivoted as to be capable of having their inner ends brought into correspondence with either of the contiguous chutes, and so counterbalanced as to normally form continuations at the lower ends of the chutes; I, stop-boards disposed at the pivot-chutes H, and serving to limit the motion of the ice upon these chutes, these boards being attached either to the framing or to the chutes; J, an ordinary skid arranged within the ice-house, by means of which the workmen within the house may run the ice onto the chute at the end of the skid; K, the lower off-bearing chute, by which the ice finally reaches the wagon or railroad-car, or other position near the ground-level; and L, one of the pivot-chutes H, shown as tipped downward.

Ice placed upon the upper chute will slide down that chute onto the appropriate one of the pivot-chutes and against the appropriate stop-board. The chutes E are very short and hence, with ordinary inclination of chutes, the ice will not obtain momentum enough to strike the stop-board with sufficient force to be broken. When the cake of ice reaches the first pivoted chute, the chute will be overbalanced by the weight of the ice, and it will tip and form the upper prolongation of the succeeding chute, and will deliver the ice to the succeeding chute, whence it passes in the same manner through the succeeding chutes until it reaches the bottom. When the ice in the ice-house has, by removal, become so lowered that the skid J has an inconvenient upward inclination, the upper end of the upper chute may be lowered to the next pin-hole, and so on until the ice in the ice-house has been reduced to the level, which will permit it to be delivered upon the succeeding chute below, in which case the one above is no longer used. The chutes are short, and, consequently, very light and cheap, and the frame-work, having but light load to support, may be of comparatively light structures and may be bolted together in sections, so as to be easily removed and erected where required. There will be as many of the chutes E employed as the height of the chosen ice-house may re-

quire, and in erecting the structure, in changing from one ice-house to another, only as many of the vertical series of chutes need be erected as the house will require.

I claim as my invention—

1. In a runway for delivering ice from an ice-house, the combination of a vertical frame-work, a vertical series of chutes inclined in the same direction and supported by said frame-work, similar chutes placed intermediately in the series and inclining in the opposite direction, stop-boards disposed beyond the lower ends of the chutes, and chutes disposed below said stop-boards and adapted to deliver the ice to the upper ends of the contiguous succeeding chutes.

2. In runways for delivering ice from ice-houses, the combination of the vertical frame-work, a vertical series of chutes supported by such frame-work and inclined in the same direction, pivoted at one end and vertically adjustable at the other end, stop-boards beyond the lower ends of the chutes, and chutes disposed below the stop-boards and adapted to deliver the ice to the upper ends of the contiguous lower chutes, substantially as and for the purpose set forth.

3. In runways for delivering ice from ice-houses, the combination of a vertical frame-work, a vertical series of chutes inclined in the same direction, intermediate chutes inclined in the opposite direction, stop-boards beyond the lower ends of the chutes, and pivoted counterbalanced chutes disposed below said stop-boards and adapted to normally form continuations of the lower ends of the chutes, and to tip under the weight of ice, so as to form continuations of the upper ends of the contiguous succeeding chutes, substantially as and for the purpose set forth.

4. In runways for delivering ice from ice-houses, the combination of a vertical frame-work, a vertical series of chutes with alternate opposite inclinations pivoted at their lower ends and vertically adjustable at their upper ends, stop-boards beyond the lower ends of the chutes, and pivoted counterbalanced chutes disposed below said stop-boards and normally forming continuations of the lower ends of the chutes, and adapted to tip under the weight of ice and form continuations of the upper ends of the contiguous succeeding chutes, substantially as and for the purpose set forth.

JOSEPH B. FISCHER.

Witnesses:
J. W. SEE,
W. A. SEWARD.