N. J. Wyeth,

Ice Elevator.

No. 3,327. Patented Nov. 6, 1843.

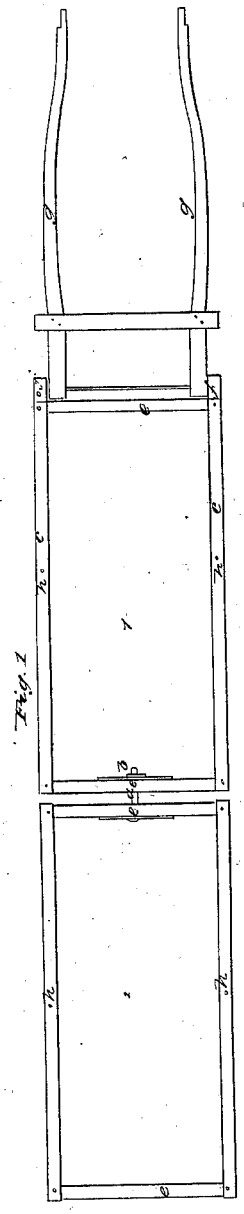

Fig. 1.

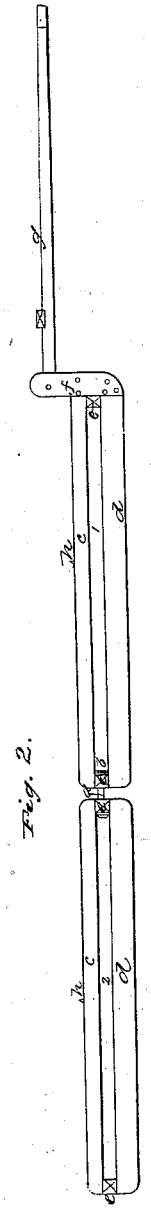

Fig. 2.

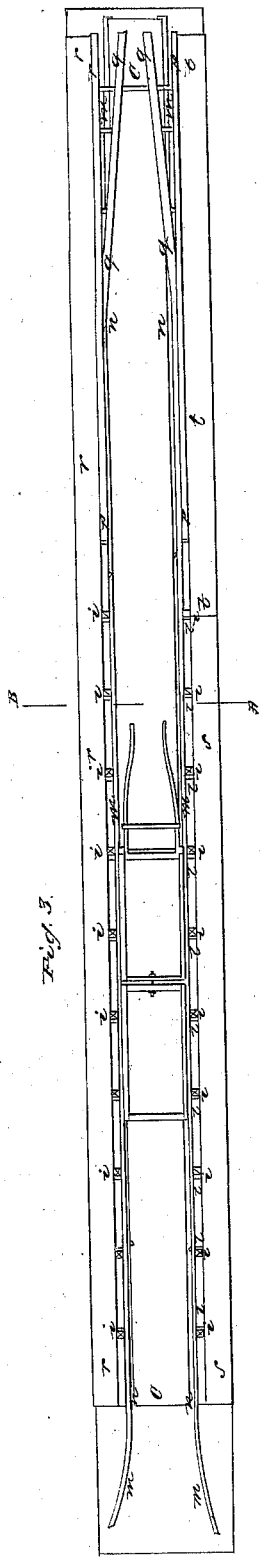

Fig. 3.

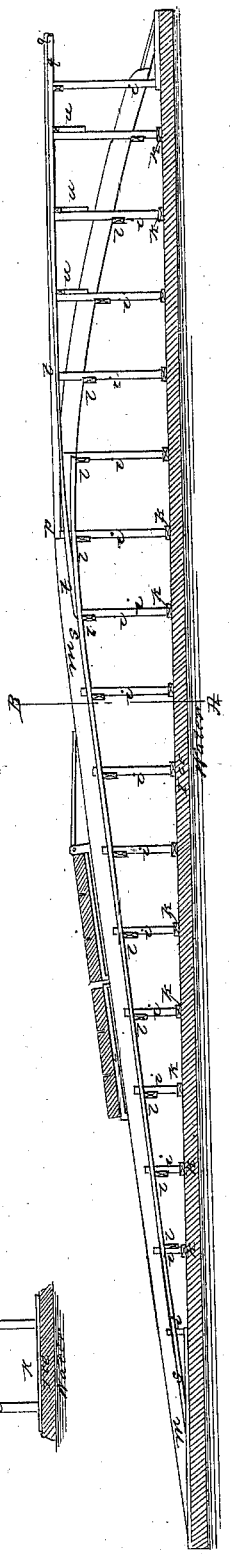

Fig. 4.

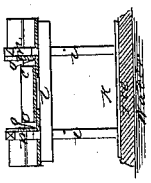

Fig. 5.

UNITED STATES PATENT OFFICE.

NATHL. J. WYETH, OF CAMBRIDGE, MASSACHUSETTS.

MACHINERY FOR ELEVATING BLOCKS OF ICE FROM THE SURFACE OF THE WATER TO A HIGHER LEVEL.

Specification of Letters Patent No. 3,327, dated November 6, 1843.

To all whom it may concern:

Be it known that I, NATHANIEL J. WYETH, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented new and useful improvements in machinery for raising blocks of ice from the surface of a lake or pond to a higher level for the purpose of loading them into cars or depositing them in storehouses, and that the following description, taken in connection with the accompanying drawings hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements by which they may be distinguished from other contrivances for a similar purpose, together with such parts or combinations as I claim and wish to have secured to me by Letters Patent.

In the operation of the machinery which has heretofore been used by me for the above specified purpose, and which is described in the schedule annexed to Letters Patent numbered twenty three hundred and eighty one, (2381), granted to me on the tenth day of (December eighteen hundred and forty one,—there is one defect which it is the design of my present improvements to remedy. This defect is as follows: In that machinery the blocks of ice are made to slide upon the rails of the inclined plane, upon which they rest or bear near their edges, leaving the center part of the block entirely unsupported, the catch or projections from the rear of the moving sled serving to press or convey the blocks along or up the said plane. In such an arrangement there is great liability, that the blocks grooved as they are for the purpose of being separated or divided into smaller pieces, will break or divide during their passage up the inclined plane, and such is frequently the effect in practice.

The defect specified is obviated, by permitting the blocks to rest entirely upon the sled during its passage up the inclined plane, and the arrangement for this purpose is represented in the figures of the accompanying plate of drawings.

Figure 1, is a plan of a sled to be used in connection with the inclined planes &c. and Fig. 2, is a side elevation of the same. Fig. 3, is a plan of the inclined planes and parts connected with the same. Fig. 4, is a side elevation of the same and Fig. 5, is a transverse vertical section taken in the plane of the lines A B Figs. 3, and 4.

The sled, Figs. 1, and 2, is formed in one two or more sections or parts—numbered 1, 2,—connected together by an iron bolt *a* and nut *b* Fig. 1, each sled being of sufficient capacity to accommodate one block of ice as shown in Fig. 4. The runners of each section of the sled are composed, each, of an upper and lower longitudinal strip or plank *c*, *d* arranged vertically, and between these strips are placed the cross ties or braces *e*, *e*, *e*, *e* &c. to which the said strips or planks are nailed or otherwise fastened. The 1st or front section of the sled is formed with two vertical projections *f*, *f*, being fixed, one at the head of each runner, which projections have connected to them the shafts *g g* as shown in Fig. 1, and are of sufficient height to prevent the blocks of ice from sliding off forward or at the front of the sled if the points hereinafter mentioned should fail at any time to hold them. On the tops of the upper strips *c* of the runners suitable steel or metallic points *h h* are fixed which are for the purpose of preventing the ice from sliding laterally or in any direction and in fact to hold the block in its position on the sled.

The inclined planes and parts connected therewith, with which the above described sled is to be used are constructed as follows: *i*, *i*, *i*, *i* &c. Figs. 3, 4, 5, are vertical upright posts or joists arranged in two rows directly opposite each other. The lower ends of these posts are to be inserted in the ice, which is to be allowed to congeal or freeze around them so as to hold them firmly, or they may be mortised into or rest upon the cross sills *k k k* &c. which lay upon the surface of the ice. Cross supports or planks *l*, *l*, *l*, &c. are fastened to the posts *i*, *i*, *i* in such positions as to sustain the various parts of the ascending and descending inclined planes. Long guide planks *m m m m m m* are fastened vertically to each row of posts *i*, *i*, *i*, *i* on the inside thereof as shown in the figures. These guide planks are made to flare or diverge at the commencement of the ascending plane so as to guide the sled in its entrance upon the same. Between the lower edges of the guide planks *m m m m m m* and the upper sides of the cross supports *l*, *l*, *l*, the bearing planks *n n n n* are arranged on which the runners of the sled are to slide, as will be

hereinafter explained. These bearing planks *n n n n* extend in length from the commencement of the ascending plane to the end of the descending plane and in width only as far as shown in the sectional drawing Fig. 5, occupying only a portion of the resting space on the supports *l*, *l*, between the guide planks *m m m m m m*. The planks or planking which make the horse track are fastened to the tops of the bearing planks *n n n n* as shown at C C Figs. 3, 5, this planking being of such a width as to leave a groove or box *o*, *o*, between each side of the horse track and the inside faces of the guide planks *m m m m m m m m* of sufficient width to permit the runners of the sleds to slide freely therein. The box or groove thus formed is to be filled with snow or ice, which will greatly enhance the ease with which the sled may be moved or diminish the friction on the underside of the runners of the sled, and it is the formation of this snow track or box as described which constitutes the principal novelty of my improvements as by it the blocks of ice are conveyed as easily up the inclined plane upon the sleds, or with as little expenditure of power as would be necessary to slide them up on the rails of the apparatus above mentioned as patented by me, while the liability to breakage or of separating the blocks, during their progress up the plane, is altogether obviated.

The horizontal rails *p p*, *p p* which form the level to which the blocks of ice are to be raised are arranged as shown in Figs. 3 and 4, commencing at the top of the ascending inclined plane and extending horizontally over the whole length of the descending plane. The blocks of ice when upon the sled project over the guide rails *m m m m m m* on each side but do not rest upon them. When the front of the sled arrives at the commencement of the descending inclined plane, the blocks of ice will begin to rest upon the rails *p p*, *p p*, and when the sled has left them they will be entirely supported on the said rails and the converging auxiliary supporting rails *q q*, *q q*, Fig. 3, and from these rails they may be discharged or passed into cars by ice hooks in the ordinary way, or deposited in store houses.

Plank foot paths *r r r*—*s s s* are arranged on each side of the two inclined planes and on one side of the horizontal plane or rails *p p*, *p p* at *t t t*. Those designated by *r r r* and *s s s*, are fastened to the cross supports *l*, *l*, as shown in Figs. 3, 4, 5, and that denoted by *t t t* in the drawings is supported on and secured to the vertical cleats *u*, *u*, fastened to the upright posts *i*, *i*, *i* as shown in Fig. 4. These foot paths are for the accommodation or use of the workman who is to guide the blocks of ice and for the driver or teamster who has the direction of the sled and horses, and the said plank-paths may be arranged as above described or in any convenient manner.

Having thus described my apparatus for raising blocks of ice from one level to a higher one I shall now proceed to specify such parts as I consider new and claim to be my invention.

1. I claim the use, formation or arrangement of a snow track, groove, or box between the horse path or track, and the guide rails of the ascending and descending inclined planes for the purpose of facilitating the movements of the sled up and down said planes.

2. I also claim the combination of an ice sled formed in sections with the groove or box aforesaid and the horizontal rails herein before described, for the purpose of raising blocks of ice from one level to a higher one, the whole being arranged and operating substantially as herein above specified.

In testimony that the foregoing is a true description of my said invention and improvements I have hereto set my signature this ninth day of October in the year eighteen hundred and forty three.

NATHL. J. WYETH.

Witnesses:
CHARLES F. SMITH,
EZRA LINCOLN, JR.