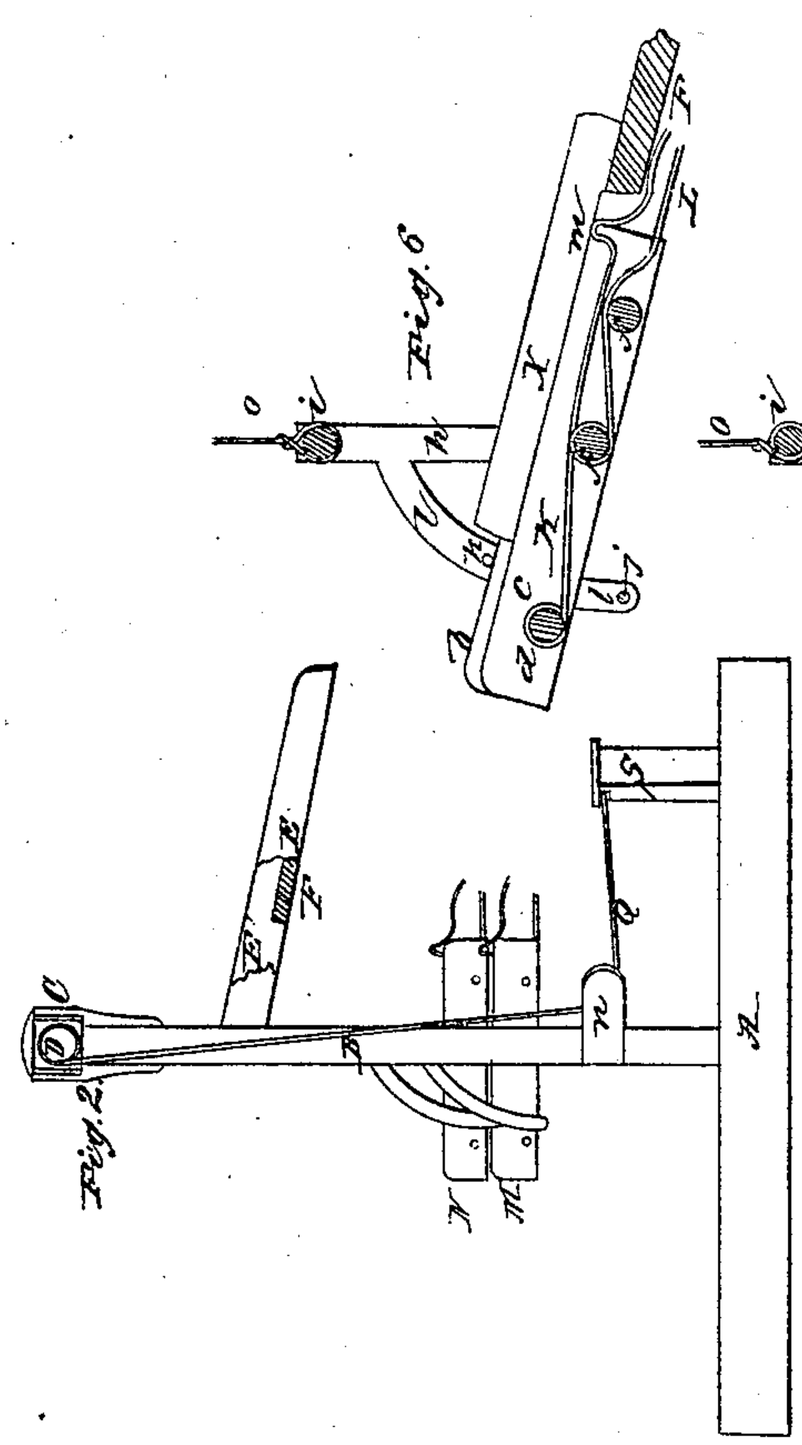
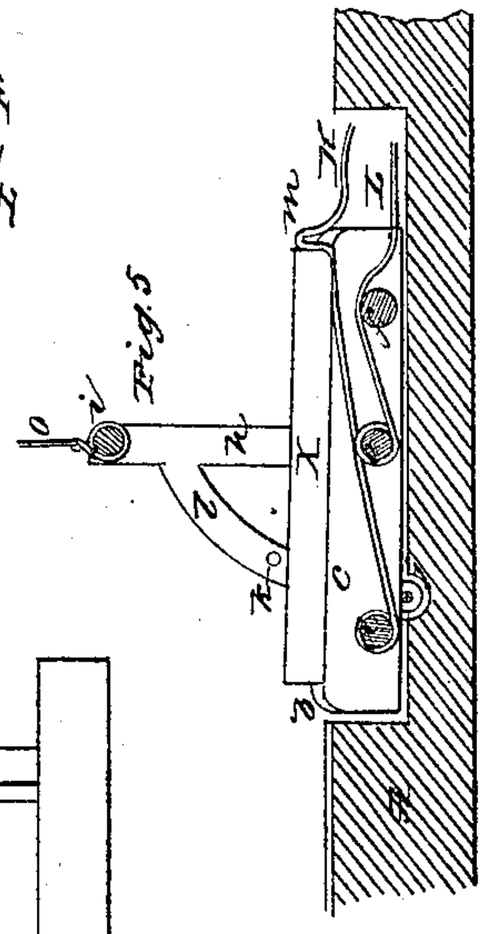
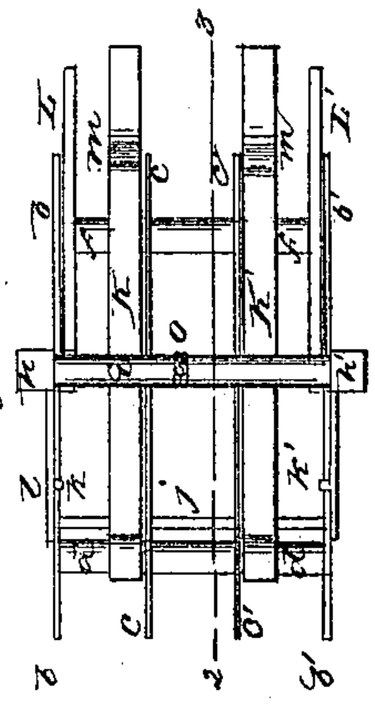
A. HUNT.

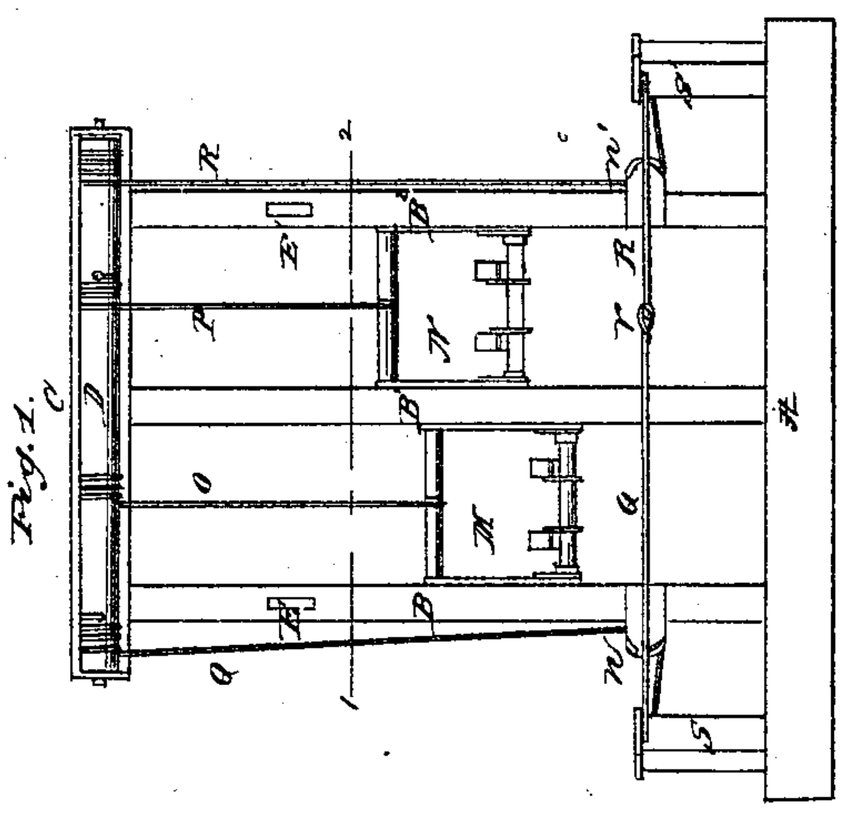
APPARATUS FOR HOISTING ICE.

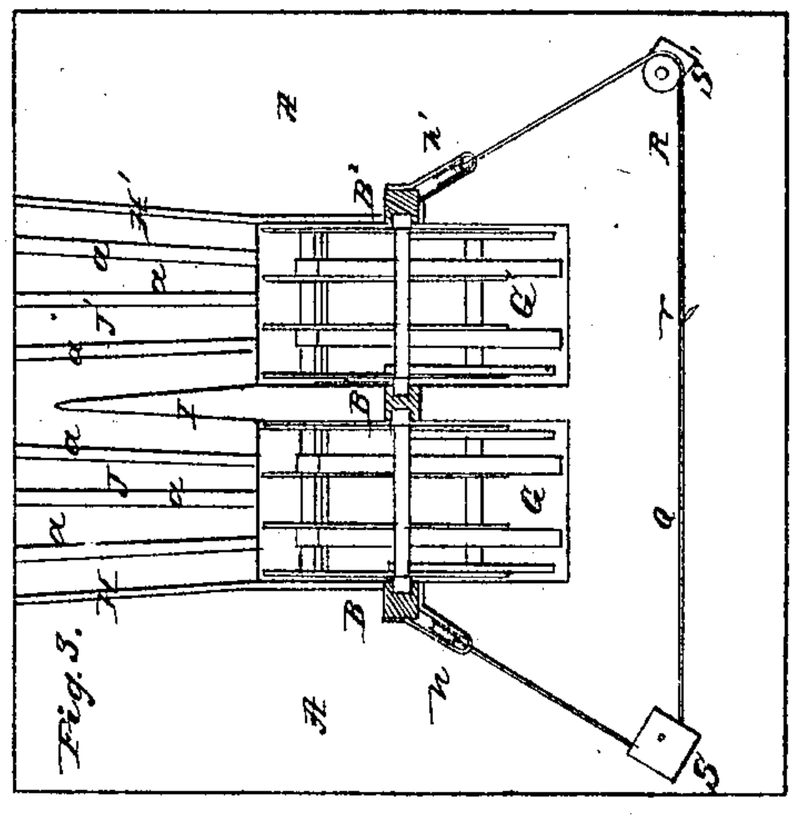
No. 19,250. Patented Feb. 2, 1858.











UNITED STATES PATENT OFFICE.

AUGUSTUS HUNT, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR HOISTING ICE.

Specification of Letters Patent No. 19,250, dated February 2, 1858.

To all whom it may concern:

Be it known that I, AUGUSTUS HUNT, of the city of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machinery for Hoisting and Delivering Ice; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention consists in the employment of two cradles for hoisting and delivering ice, so arranged in connection with any suitable driving apparatus, that one shall ascend simultaneously with the descent of the other, said cradles being so inclined on the part where the ice rests, and furnished with such an arrangement of retaining and releasing levers, (as fully set forth hereafter) that the hoisting and delivering of ice may be continued almost uninterruptedly and with great rapidity, and this without the aid of the usual assistants for grasping the ice previous to, and unhooking it after being hoisted as in other machines.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the drawing which forms a part of this specification; Figure 1 is a side view of my improved apparatus for hoisting and delivering ice. Fig. 2 a side view of the same, with the end of the box containing the roller, and a portion of the chute removed. Fig. 3 a sectional plan on the line 1, 2, (Fig. 1). Fig. 4 a plan view of the cradle, drawn to an enlarged scale. Fig. 5 a sectional view of the cradle, showing the same at its lowest position. Fig. 6 the same as Fig. 5, but showing the cradle in its most elevated position.

Similar letters refer to similar parts throughout the several views.

A represents the base of the apparatus, B, B′ and B² three upright posts firmly secured to the base, and surmounted at the top with a horizontal box C, in the ends of which turn the journals of the roller D. Each of the posts B and B² has on the inside a vertical groove, and the intermediate post B′ a similar groove on each side, these grooves serving as guides for the cradles. Near the top of each of the outer posts is secured an inclined beam E, and between the opposite beams an inclined platform F, forming the chute, the position of which as regards the posts is illustrated in Fig. 2.

In the base of the machine (see Fig. 3) are two recesses G and G′, the former between the posts B and B², and the latter between the posts B′ and B², and in these recesses rest the cradles when at their lowest position.

Reaching from the posts to the ends of the recesses, and inclining outward toward the back edge of the base, are the two ribs H and H′; and between the recesses G and G′ an angular rib I. These ribs form two ways J and J′, one for each cradle. These ways, together with their ribs *a a*, are inclined or rounded off toward the back edge of the base, at which point they are about on a level with the water, so that the pieces of floating ice may be easily forced or drawn up the ways.

Each cradle, as illustrated in Figs. 4, 5 and 6, consists of the two outer plates *b* and *b′* and the intermediate plates *c* and *c′*, all four plates being permanently secured together by means of the three stays *d*, *e* and *f*. The middle stay *e* projects on each side so as to form a journal fitting into an orifice in each of the opposite sides *h* and *h′*, which are connected together at the top by the cross bar *i*, and which are arranged to slide in the grooves of the posts above referred to.

It will be thus seen, that the cradle is arranged to vibrate in the opposite guides, the amount of vibration being limited below by a rod *j*, and above by the pins *k* and *k′*, both being attached to the curved bars *l*, one of which projects from and is secured to each of the opposite slides. On the cross stay *d* are hinged the two levers K and K′, which bear on the top of the intermediate bar *e*, and which are furnished with a projection *m* near the end of the cradle and terminate at a suitable distance from the same. On the intermediate cross stay *e* are hinged the two stop bars L and L′ which bear on the cross stay *f*, and which also terminate at a suitable distance from the cradle. One of these cradles, M, slides between the posts B and B′; the other between the posts B′ and B². To the first is attached one end of the rope O; to the other one end of the rope P, the opposite ends of both of the ropes being secured to the roller D, and wound around the same, the rope of one cradle being wound in a contrary direction

to that of the other. Near the opposite ends of the rollers, and winding around the same in contrary directions, are the two ropes Q and R, which, passing downward, are guided respectively by the snatchblocks *n* and *n'*, attached to the posts B and B², toward pulleys in the posts S and S', between which they meet at the loop or other suitable attachment *r*, to which the horse for operating the cradle is hitched.

Operation: It should be understood, that the respective ropes and cradles are so arranged, that, when one is at its most elevated position, the other is at its lowest. It will therefore be apparent, that, by the disposition of the ropes shown, when the horse attached to the point named be driven and turned first in one direction and then in the other, one cradle must be ascending while the other is descending. Supposing one of the cradles, M, to be at its lowest position, in its recess G, (as seen in Fig. 5) the ends of the intermediate ribs *c* and *c'* of the cradle which are nearest to the ways J, will be on a level with the ribs *a* of the latter, the ribs *c* and *c'* being inclined, so that they are somewhat lower at the opposite ends, for an object which will be apparent hereafter. The cradle is cnofined in this position by resting on the cross-bar *j*. An attendant now by a suitable implement draws or pushes a cake of ice, cut to a size suitable for the cradle and floating near the way J, up the latter, along which it is guided by the ribs H and I toward the intermediate ribs *c* and *c'* of the cradle, on which it is finally deposited. It is confined laterally on the same by the exterior ribs *b* and *b'*, resting with its end against the projections on the spring levers K and K', so that the ice is effectually confined to the cradle. As the latter ascends, all tendency to slide off backward is prevented by the inclination of the intermediate bars *c* and *c'*. The cradle continues to ascend, the ends of the spring levers L and L' come in contact with the underside of the chute F and the continued ascent of the cradle causes the latter to tilt to a degree limited by the pins *k* and *k'*, and, at the same time, depresses the spring levers until their projections *m* are free from contact with the ice, when the latter slides from the cradle onto and down the chute to the required position. Should the continued hauling of the rope have a tendency to raise the cradle beyond the desired limit, the rods L and L' come in contact with the chute and thus afford a check to its further rise. A signal might be operated by these rods or other parts of the cradle so as to warn the attendant when to turn his horse or when to reverse any gearing, by means of which the cradles may be operated.

It will now be seen without further description, that by the employment of the above mentioned machinery, the raising and delivery of the ice are conducted almost uninterruptedly and with a rapidity exceedingly desirable when the storing of ice can only be conducted during a limited period of the year. It will also be observed that the attendants required in grappling the ice previous to hoisting and also in unhooking the same after hoisting, (requirements necessary in other apparatus) may be dispensed with.

What I claim and desire to secure by Letters Patent is:

1. The employment for raising and delivering ice of two cradles, so arranged in connection with any suitable driving apparatus, that one shall ascend simultaneously with the descent of the other, said cradles being so constructed and arranged as to retain and deliver the ice without the aid of assistants.

2. Forming that portion of the cradle on which the ice rests with an incline and combining that incline with the retaining and releasing-levers K and K' or their equivalents for the purpose specified.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

AUGUSTUS HUNT.

Witnesses:
HENRY HOWSON,
WILLIAM DUTTON.