A. HUNT.

ICE CONVEYERS.

No. 190,144. Patented May 1, 1877.

Fig 1.

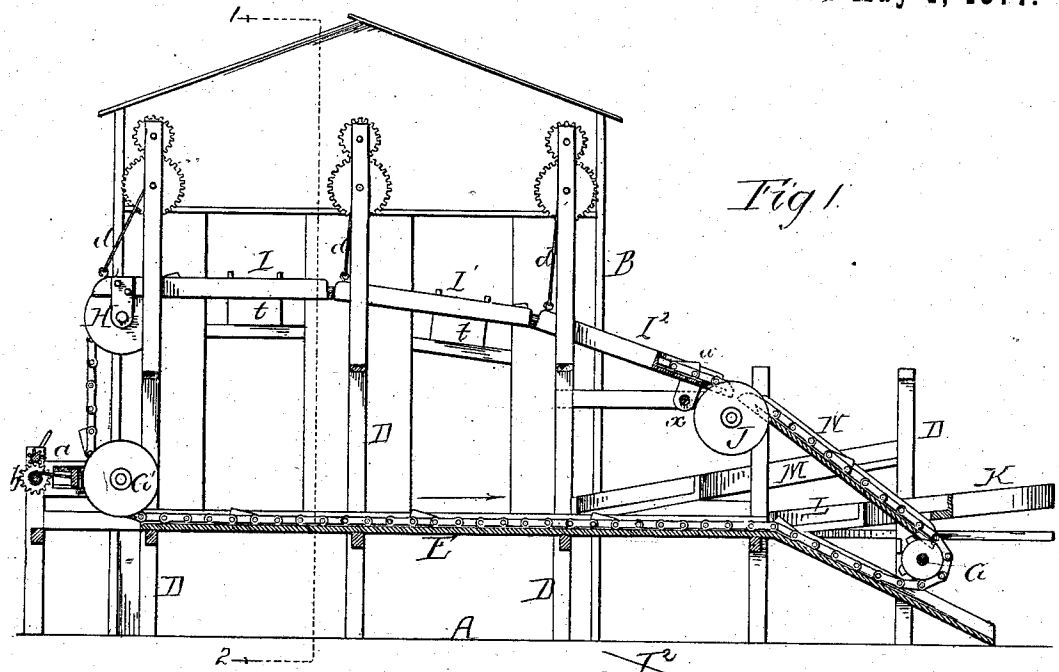


Fig 3.

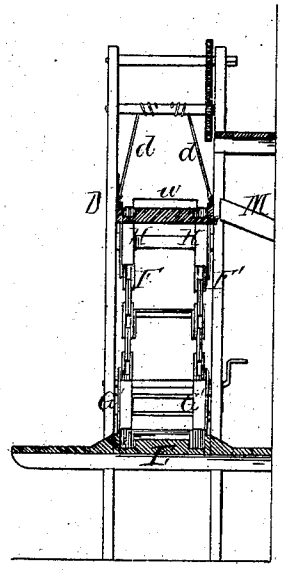


Fig 2.

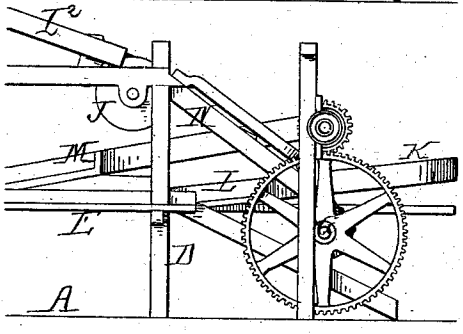
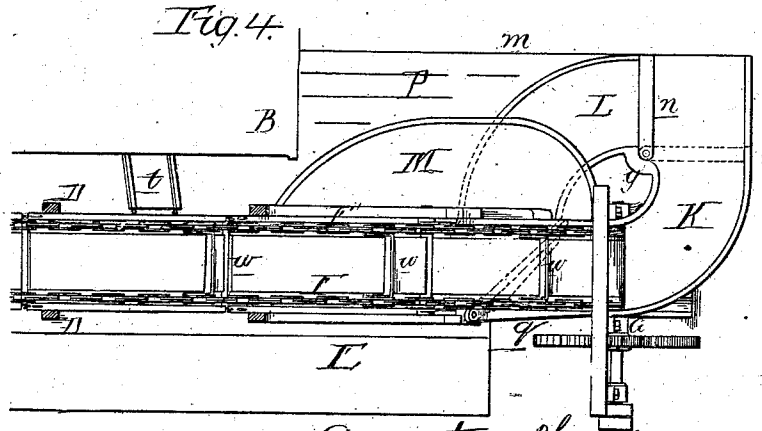


Fig 4.



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UNITED STATES PATENT OFFICE.

AUGUSTUS HUNT, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN ICE-CONVEYERS.

Specification forming part of Letters Patent No. **190,144**, dated May 1, 1877; application filed April 4, 1877.

To all whom it may concern:

Be it known that I, AUGUSTUS HUNT, of Philadelphia, Pennsylvania, have invented an Improvement in Devices for Conveying Ice, of which the following is a specification:

The object of my invention is to readily move ice from a vessel into the ice-house, or from a vessel into wagons, or into the latter from the ice-house.

In the accompanying drawing, Figure 1 is a side view, partly in section, of the ice-moving apparatus; Fig. 2, an exterior view of part of Fig. 1; Fig. 3, a vertical section on the line 1 2, and Fig. 4 a plan view.

The line A in Figs. 1, 2, and 3 represents the surface of the ground, on which is erected an ice-house, B, and adjoining the latter is a frame-work, composed of posts D, properly connected together, supporting a platform, E, and carrying the mechanism which I will now proceed to describe. Two parallel endless chains, F F′, pass round chain-wheels on a shaft, G, traverse grooves in the platform E, round pulleys G′, having bearings adapted to guides *a* in the frame-work; thence over pulleys H, carried by a guide, I, which is hinged to a similar guide, I^1, and the latter to the guide I^2, the outer end of which is hinged at *x* to the frame-work.

The bearings of the shaft carrying the pulleys G′ can slide in the guides *a*, and are under the control of a cord or chain wound round a shaft, *b*, at the end of the guide *a*, so that, by operating said shaft, the shaft of the pulleys G′ may be moved to and fro, to compensate for any tightening or slackening of the chains F F′.

The three guides, or any other desired number of the same, constitute an articulated way, along which the blocks of ice are traversed, as described hereafter, the chains being adapted to grooves in the way, and passing over pulleys J, the shaft of which is adapted to fixed bearings in the frame-work; and, finally, passing over the above-mentioned chain-wheels G, which are driven by a steam-engine, or other motive power, through the medium of the gearing shown in Fig. 2, or through any other system of gearing or driving-belts.

Each of the guides of the articulated way is connected, by a chain or rope, *d*, to a barrel, having bearings in the frame-work, the barrel being geared to a driving-shaft, furnished with a suitable handle, so that the guides may be raised or lowered, and the articulated way adjusted to the position which the quantity of ice stored in the house may suggest.

In connection with the above-described apparatus, there are three inclined chutes, K, L, and M, the first having its elevated termination at the edge *m* of a wharf, P, and its lower termination at the platform E.

The upper end of the chute L communicates with the chute K, but is separated therefrom by a switch, *n*, hinged at *y*, the lower end of the chute L being also on a level with the platform E.

The inclined guide N, along which the chains pass between the pulleys J and driving-wheels G, adjoins the upper end of the plane M, with which the said inclined guide may be made to communicate by a switch, *q*, the said chute M terminating at its lower end on the platform E.

It should be understood that the chains are connected together at intervals by cross-bars *w*, which project above the surface of the platform, above that of the inclined guide N, and above the surface of the articulated way, and, by bearing against the blocks of ice, move the same in the courses which I will now proceed to describe.

Should it be desirable to convey ice from a loaded vessel moored to the wharf B to the ice-house, the switches *n* and *q* are adjusted to the position shown by plain lines in Fig. 4, and block after block of ice is placed on the elevated end of the chute K. Each block slides down the latter, is seized at the rear by one of the cross-bars *w*, and, as the chains traverse in the direction of the arrow, is pushed by the bar up the inclined guide N and along the articulated way, whence it may be pushed along a chute, *t*, into one or other of the openings in the front of the house.

If the ice in the vessel has to be carted away at once, instead of being stored in the house, the switch *n* should be adjusted to the position shown by dotted lines in Fig. 4, so that the blocks of ice may pass down the chute L to a position on that part of the platform E

which is traversed by the chains, the blocks being moved by the latter to a position adjoining that occupied by the cart backed against the platform, when the blocks may be drawn over the latter and into the cart.

When ice has to be taken from the house and loaded into carts backed against the platform, the chains are caused to traverse in a direction contrary to that pointed out by the arrow, and the switch *q* is adjusted to the position shown by dotted lines in Fig. 4. The blocks of ice are then drawn along the chutes *t* onto the articulated ways, are permitted by the cross-bars of the chain to pass down the said ways, and onto the inclined guide N, whence they are directed by the switch *q* onto the chute M, and directed by the latter onto the platform against which the carts are backed.

I claim as my invention—

1. The combination of the endless chains and their cross-bars with the inclined guide N and inclined chute K.

2. The combination of the inclined chute L with the platform E, traversed by the endless chains.

3. The combination of the inclined chutes K and L and switch *n* with the endless conveying-chains and platform E.

4. The combination of the endless chains and cross-bars with the inclined guide N, inclined chute M, and switch *q*.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUGUSTUS HUNT.

Witnesses:
HERMANN MOESSNER,
HARRY SMITH.