R. G. BROWN.
Ice-Elevator.

No. 207,848. Patented Sept. 10, 1878.

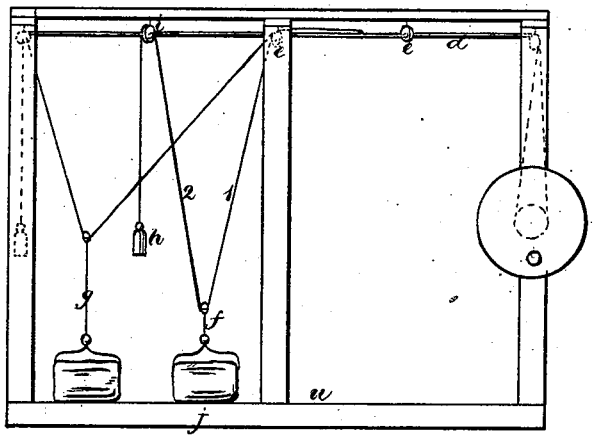

FIG. 1.

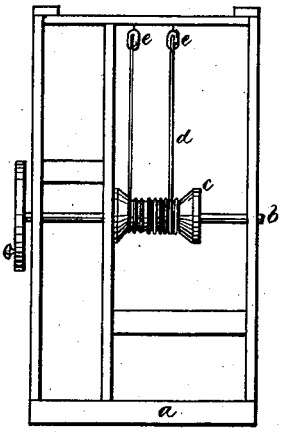

FIG. 2.

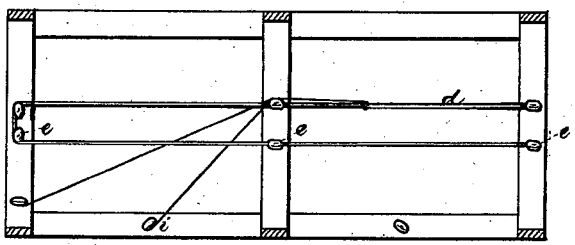

FIG. 3.

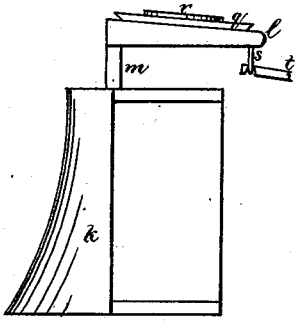

FIG. 4.

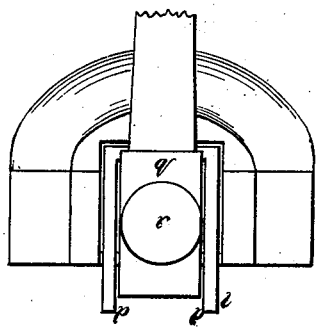

FIG. 5.

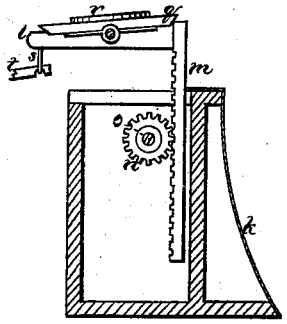

FIG. 6.

WITNESSES:
Chas. H. Kimball
Chas. L. Mooney.

INVENTOR:
Rufus G. Brown,
Per atty
William Henry Clifford

UNITED STATES PATENT OFFICE.

RUFUS G. BROWN, OF PITTSTON, MAINE.

IMPROVEMENT IN ICE-ELEVATORS.

Specification forming part of Letters Patent No. **207,848**, dated September 10, 1878; application filed January 7, 1878.

To all whom it may concern:

Be it known that I, RUFUS G. BROWN, of Pittston, in the county of Kennebec and State of Maine, have invented certain new and useful Improvements in Ice-Houses; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of the framework of an ice-house or building with my invention therein. Fig. 2 is an end elevation of the same, showing the drum. Fig. 3 is a plan of the ceiling, showing the endless band, the pulleys, &c. Fig. 4 is a side view of the delivering-table. Fig. 5 is a top view of the same. Fig. 6 is a side sectional elevation of the same.

Same letters show like parts.

The purpose of my invention is to provide certain machinery for the handling and removing from an ice-house of blocks of ice for shipment and other purposes, after the ice has been packed and stored as usual.

In the first three figures of the drawings, *a* shows a frame of a building, in order to clearly illustrate the position and operation of the devices. The devices consist, first, of the shaft *b*, with its drum *c*, having an endless band, *d*, wound around it, and then passing up to the top of the house through and around the pulleys *e*.

By the revolution of the shaft *b* the band can be moved in either direction. By the motions of this band and certain supplementary ropes the ice packed in the house can be both moved about within it or taken to a table to be hereinafter described, by which it is quickly and easily removed from the house for shipment or otherwise.

My invention thus both cheapens and facilitates the necessary handling of ice-blocks. It is also equally useful in the packing and storing of the ice when being put into the building. *f* and *g* show some of the supplemental cords or ropes, and these will serve to illustrate the nature and operation of my invention. These ropes have one end attached to the band *d*, and the other supplied with a weight, *h*, first, however, passing through a pulley, *i*.

Ice-hooks are provided to clasp the blocks, as seen in the drawings.

The following explanations will show the operation: A block of ice is hooked in the middle part of the building, and it is desired to bring the same to one side and near the end, as illustrated in Fig. 1. The drum is first revolved sufficiently to lift the block from its position and hold it suspended. During this operation the workman keeps hold of *h*, or a weight is supplied instead. Then such revolution is imparted to the drum as will permit the workman to draw the ice-block to such point as he desires. We will suppose that in lifting the ice-block from its bed in the mass packed the part 1 of *f*, where it is united to *d*, is drawn forward through the pulley *e* to the point d^2. Then a reverse motion is given to the drum, and sufficient power applied to *h* to control the motion of the ice-block, and it can be lowered at the point indicated in the drawings at *j*, or at any other desired place between the middle of the house and the place where the pulley *i* is located.

As indicated in Fig. 3, the endless band *d* is placed in the middle of the top of the building and runs the whole length of the same. Pulleys similar to *i* are attached to the beams in the top of the house, wherever they are found necessary, in order either to pack ice away or to remove it from the building at either end or at desired openings along the sides. The illustrations in the drawings serve to illustrate the principle and operation of my invention; but it is manifest that the application of the same can be varied in relation to the position of the ice-blocks in the house and the points at which they are to be delivered from the house.

The places at which the supplemental cords *f* and *g* are attached to the endless band will vary according to the same conditions as above, and it is plain that a great variety of changes to various parts of the building can be effected by the positions of pulleys like *i* and the point of attachment to the band *d* of the supplemental cords like *g* and *f*. These cords are intended to be so arranged and ap-

plied as to be easily detached from and connected to the band *d*.

Another operation of the cords *g f* and the weights *h* requires specification. When a piece of ice is taken from a certain part of the building and delivered to another part, and the hook released from the block, the weight *h* will draw the hook immediately back near to the place where the workman stands. Thus much time is economized, because the workman is not obliged to travel backward and forward many times a day to get the hooks. This arrangement and combination enables a less number of workmen to perform the same kind of work, and greatly enhances the rapidity with which it can be done.

With particular reference to the taking of ice out of the house for loading on vessels and cars, my invention embraces another device, which I will now describe. It is referred to in the description of the drawings as the delivering-table. The different views are seen in Figs. 4, 5, 6. It is an elevated stand or table with a concave smooth side or surface, *k*, against which and on which the ice slides as it is drawn up onto it. It is portable, so as to be moved and carried to any part of the house where its use is required. It has the top *l* supported on the vertical slide *m*. The slide moves upwardly and downwardly on gears *n* on the shaft *o*, which may be operated by any convenient means and fastened by any known contrivances for such purpose. The slide has the horizontal side pieces *p*, which support on a pivot the tipping table *q*, and on this is a rotating stand, *r*. *s* is a support for a slip, *t*, on which to slide the ice out of the house. When a piece of ice is landed by the band *d* and cords like *g* and *f* on the tipping table *q*, the operator, removing the hook from the block, inclines *q* forward, and the ice is discharged onto the slip *t*, and then slides out to the place desired. By the combination of this stand or elevated discharger with the band *d* and the supplemental cords *g f* ice can be taken from any part of the house and discharged from it at any side or end, or at any opening or point therein.

Suppose a piece of ice to be at *j* and the delivery-table at *u*. The drum is revolved and the block raised and dropped on the top of the table and then shot out of the building, as above described. The hook being released from the ice and the drum revolved in an opposite direction, the hook is carried by the weight *h* back to where the operator stands, ready for attachment to another block. When all the ice is taken from any quarter of the building that is desired, the cords like *g* or *f* are run through another pulley or pulleys at the proper point. Such attachment of them is made to *d* as is necessary, and the position of the delivering-table changed, if required, and then the work of removing the ice resumed.

It will be perceived that my invention enables the ice to be taken from any part of the building, handled by power, raised to a delivering-table, and with ease and speed discharged from the house.

I desire to specify that a single cord like *f* or *g* can be used in small houses. The number of the supplemental cords or ropes can be increased or diminished to suit the extent of the business to be done.

My invention embraces the combination of the endless band and supplemental ropes, arranged and operating, substantially as described, to take out ice from any part of the house and deposit it in any other part.

In place of the slide *m* standards may sometimes be employed.

In place of the endless band a band or cord running through the pulleys, and having at its end a counter-weight, might be employed. The weight would serve to draw back the cord when the block of ice was unhooked, instead of reversing the revolution of the drum to turn the endless band.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the drum *c*, endless band *d*, pulleys *e*, with supplemental cords *g* and *f*, and weights *h*, to operate as herein set forth.

2. The stand *l p*, capable of elevation and depression by means of the slide *m* and the gears *n*, and with the tipping top *q*, as herein set forth.

3. The stand *l p*, with its tipping top *q* and rotary part *r*, as herein described.

4. The stand or table shown in Figs. 4, 5, and 6, having the surface *k*, top *l*, slide *m*, gears *n*, shaft *o*, side pieces *p*, tipping table *q*, and with or without the rotating stand *r*, as herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

RUFUS G. BROWN.

Witnesses:
CHARLES E. CLIFFORD,
WM. HENRY CLIFFORD.