No. 783,672. PATENTED FEB. 28, 1905.

W. A. BOCK.

ICE HOIST.

APPLICATION FILED JUNE 13, 1904.

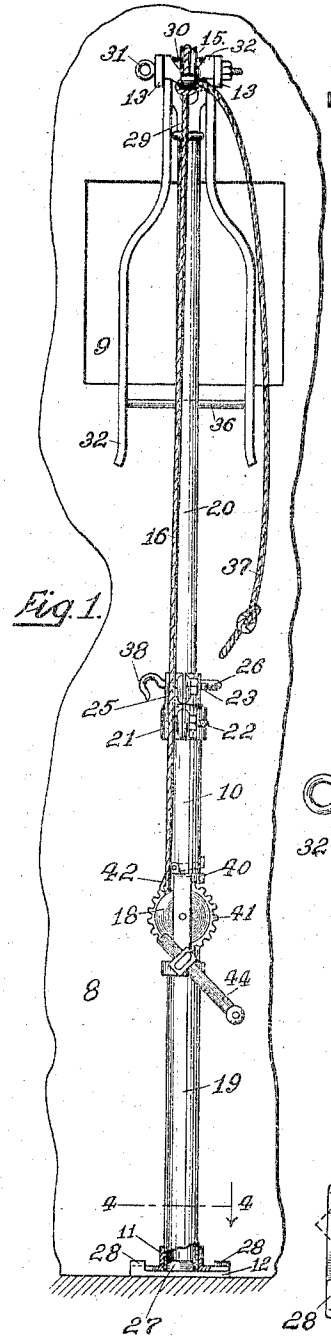


Fig. 1.

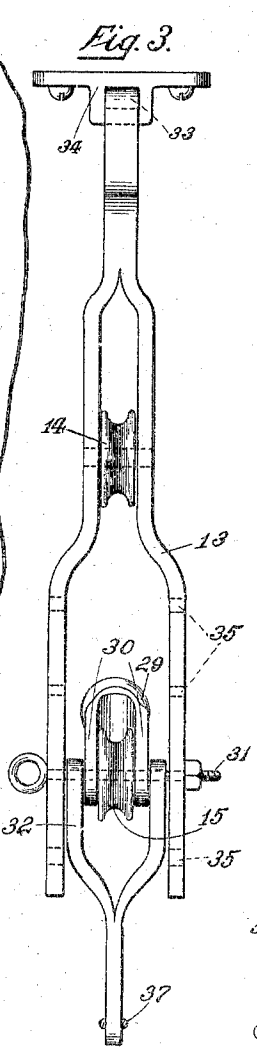


Fig. 3.

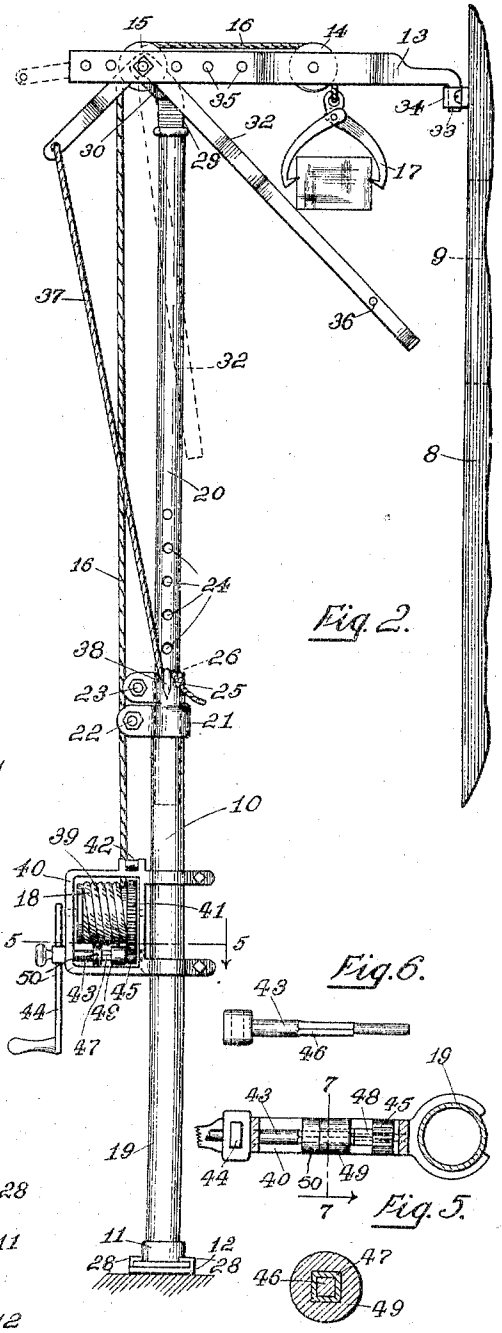


Fig. 2.

Fig. 6.

Fig. 5.

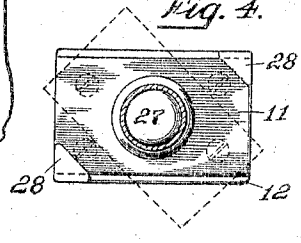


Fig. 4.

Fig. 7.

Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM A. BOCK, OF CHICAGO, ILLINOIS.

ICE-HOIST.

SPECIFICATION forming part of Letters Patent No. 783,672, dated February 28, 1905.

Application filed June 13, 1904. Serial No. 212,351.

To all whom it may concern:

Be it known that I, WILLIAM A. BOCK, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Ice-Hoists, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to improvements in a hoisting apparatus for which Letters Patent No. 715,747, dated December 16, 1902, were granted to me and which is designed particularly as a portable hoist for charging ice into large refrigerators. It is so constructed that when not in use it may be folded into a compact form convenient for carrying upon a delivery-wagon and to be erected without loss of time in front of a customer's refrigerator.

The object of the invention is to improve the construction of the hoisting apparatus above mentioned in order to increase its usefulness, and particularly so as to provide means for guiding the ice into the door of the refrigerator after it has been hoisted to a position slightly above the level thereof.

The invention consists in the construction and arrangement of parts hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my improved hoisting device set up before a refrigerator. Fig. 2 is a side elevation of the same. Fig. 3 is a detail plan of the same. Fig. 4 is a detail plan section on the line 4 4 of Fig. 1. Figs. 5, 6, and 7 are detail views of a winch mechanism used upon the device. Figs. 3, 4, 5, and 6 are drawn to a larger scale than Figs. 1 and 2, and Fig. 7 is drawn to a still larger scale.

A portion of the front of the refrigerator is shown at 8 and the opening into the ice-chamber at 9.

The construction comprises a vertically-adjustable standard 10, provided at its lower end with a base-plate 11, designed to be received by a suitable socket 12, permanently secured to the floor in front of the refrigerator, an arm 13, supported from the upper end of the standard and when in use extending at right angles therefrom, its free end being supported from the wall of the refrigerator; pulleys 14 and 15, journaled in the arm 13, and a rope 16, passing over the pulleys and carrying at one end a pair of ice-tongs 17 and having its other end wound upon a winch 18, secured to the standard adjacent its lower end.

In order that the standard shall be adjustable to convenient length when not in use and to conform with various heights of refrigerators, it is composed of a lower tubular member 19 and an upper member 20, telescoping the lower. The tubular member 19 has attached to its lower end the base-plate 11, and to the upper end a split collar 21 is secured by means of the clamping-bolt 22.

An extension 25 of the split collar is drilled so that a pin 26 may be passed through this collar and any one of a plurality of apertures 24 in the telescoping member 20 to sustain it at any desired height, and a stiff connection may be formed between it and the tubular member 19 by drawing up the bolt 23.

To make the temporary connection of the standard with the floor as rigid as possible, I make the base-plate 11 rectangular in shape and provide a rectangular anchor-plate 12 to be permanently secured to the floor wherever the hoist is to be used, as by screws. This anchor-plate has a boss 27 at its center, which engages the open end of the tubular member 9 and is provided at diametrically opposite corners with a pair of wings 28, folded over so as to inclose the corners of the base-plate 11. To seat the base-plate 11 beneath these wings, it is necessary to set the standard over the boss 27, with the base-plate turned at an angle, as shown by the dotted lines, Fig. 4, and then to rotate it to its seat.

A bracket 29 is secured to the upper end of the member 20 and is slotted to form the two upstanding ears 30, through apertures in which a bolt 31 is passed, which forms at once an axle for the pulley 15 and a pivotal support for the arm 13 and a swinging frame 32.

The arm 13 is preferably composed of two parallel bars joined near the outer end and bent down at right angles to form a hook 33 to be engaged by a socket 34 permanently secured in the front of the refrigerator. The

arm is made with a plurality of apertures 35, through any one of which the bolt 31 may be passed, thus making its length adjustable.

The swinging frame 32 is formed, preferably, of bars similar to those used in forming the arm 13. Its shape is that of a yoke which is bent at right angles adjacent the apex of the yoke and is pivoted on the bolt 31 at the point of the bend. The yoke is crossed by one or more tie-rods 36, whereby an inclined table is formed for guiding the block of ice into the refrigerator-door, while the shorter end of the frame forms a lever by which the inclined table is swung into position and for this purpose has attached thereto a rope 37, the lower end of which may be secured under a hook 38, formed upon the end of the pin 26.

The winch 18, attached to the lower member 19 of the standard, may be of any usual form; but I find it convenient to employ one having a clutch mechanism permitting the rope to unwind without rotating the handle. The construction I have illustrated comprises a drum 39, pivoted in a retangular frame 40, which is clamped on the tubular member 19. The drum 39, has formed upon its end a gear 41, which may be held against rotation by the pawl 42, but which is ordinarily rotated from a shaft 43, having the usual crank 44 and pinion 45. The shaft 43 is shown separated from other parts. In Fig. 6 it is made square for a portion of its length 46, this square portion being increased in size by having fixed thereon a bushing 47. The pinion 45 is rotatably mounted on the shaft 43 and has projecting from one side a hub 48, the outside of which is square similar to the bushing 47.

A sleeve 49, having a square aperture slidably mounted on the bushing 47, may be moved so as to inclose the hub 48 of the pinion 45 as well as the bushing, thereby giving rotatable connection between the pinion and the shaft. A ring 50, formed upon the end of the bushing 47, limits the movement of the sleeve 49.

The operation of my device is as follows: The anchor-plate 12 and socket 34 are permanently secured to the floor in front of and to the wall of the refrigerator, respectively, wherever the hoist is to be employed. When the refrigerator is to be charged, the base 11 is set into the anchor-plate 12, as previously described, the standard adjusted to the proper length by use of the pin 26 and clamping-bolt 23, and the hook end 33 of the arm 13 is inserted in the socket 34. The frame 32 is allowed to hang in the position shown by dotted lines, Fig. 2, until a block of ice has been raised to the top of the hoist, when the attendant will lock the winch against rotation by setting the pawl 42 into the gear 41 until he has swung the frame 32 into the inclined position by pulling on the rope 37 and has secured it by passing a suitable knot or loop in the rope over the hook 38. He will now release the pawl and allow the block of ice to descend slowly, it being guided by the inclined frame into a position where it may be easily reached by a second attendant within the ice-chamber, who after having the block within the door will release the tongs, which will descend by their own weight without rotating the crank-handle of the winch when the attendant below has withdrawn the sliding sleeve 49 from engagement with the hub of the pinion.

To fold up the apparatus, the arm 13 is swung over on its pivot, so as to fall back of and parallel to the standard. The clamping-bolt 23 is then loosened and the pin 26 is withdrawn, so that the upper member 20 of the standard may be telescoped into the lower tubular member, reducing the apparatus to a compact and conveniently portable form.

I claim as my invention—

1. In an ice-hoist, in combination, a standard, an arm pivotally attached to the standard to swing in a vertical plane and having a socket-engaging hook at its end, a sheave journaled on the arm, and a slideway pivoted coaxially with the arm.

2. In an ice-hoist, in combination, a standard, an arm pivotally attached to the standard to swing in a vertical plane and having a socket-engaging hook at its end, a sheave journaled on the arm, and a slideway pivoted coaxially with the arm and having a backwardly-extending actuating-arm.

3. In an ice-hoist, in combination, a standard having an oblong foot-plate, an anchor-plate adapted to be fixed to a floor and having recesses for receiving the ends of the foot-plate, and an arm pivoted to the upper end of the standard to swing in vertical plane and having a socket-engaging hook at its end.

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Witnesses:
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