J. L. KLAUS & M. J. GADIENT.

PORTABLE HOIST.

APPLICATION FILED APR. 23, 1909.

936,911.

Patented Oct. 12, 1909.

2 SHEETS—SHEET 1.

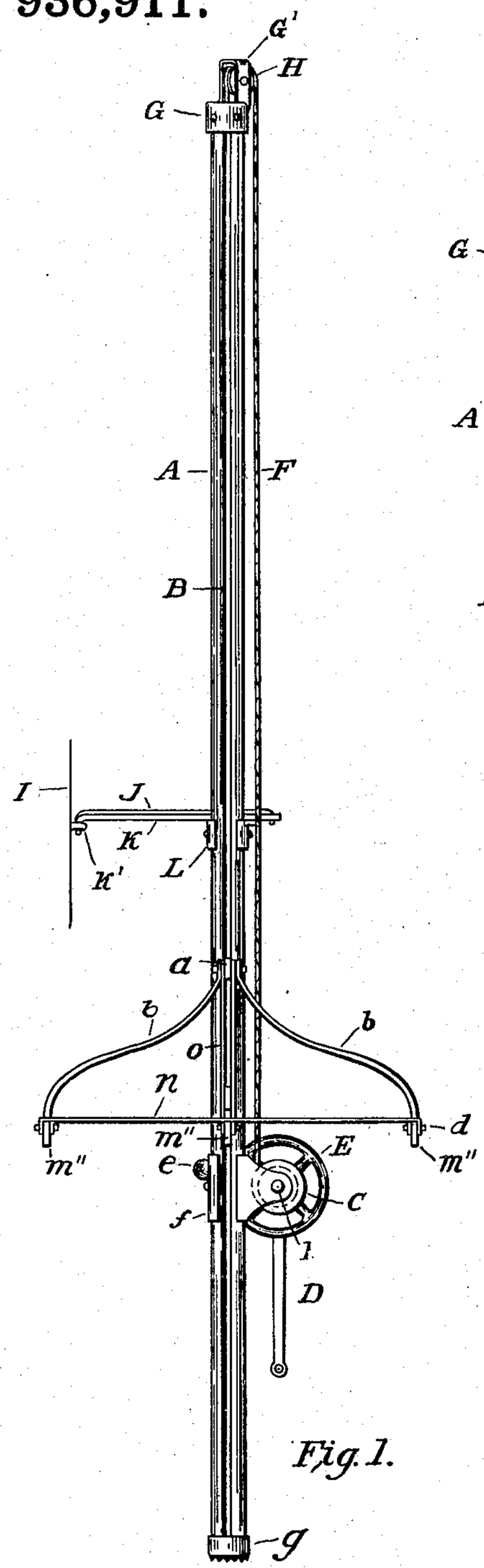

Fig. 1.

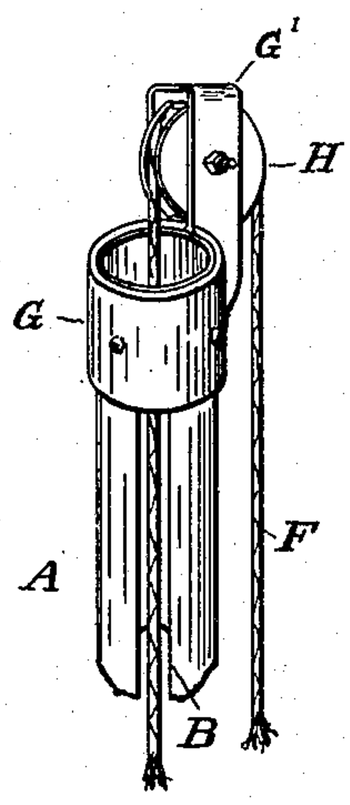

Fig. 3.

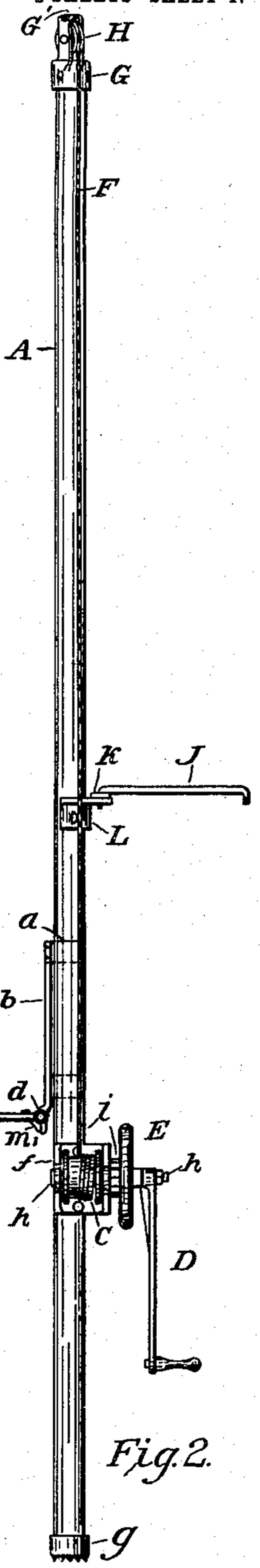

Fig. 2.

WITNESSES:

Veronica E. Brammer

Albert W. Hamaan

Joseph L. Klaus
Martin J. Gadient
INVENTORS.

BY

Ely & Bush

ATTORNEYS.

936,911.

J. L. KLAUS & M. J. GADIENT.

PORTABLE HOIST.

APPLICATION FILED APR. 23, 1909.

Patented Oct. 12, 1909.

2 SHEETS—SHEET 2.

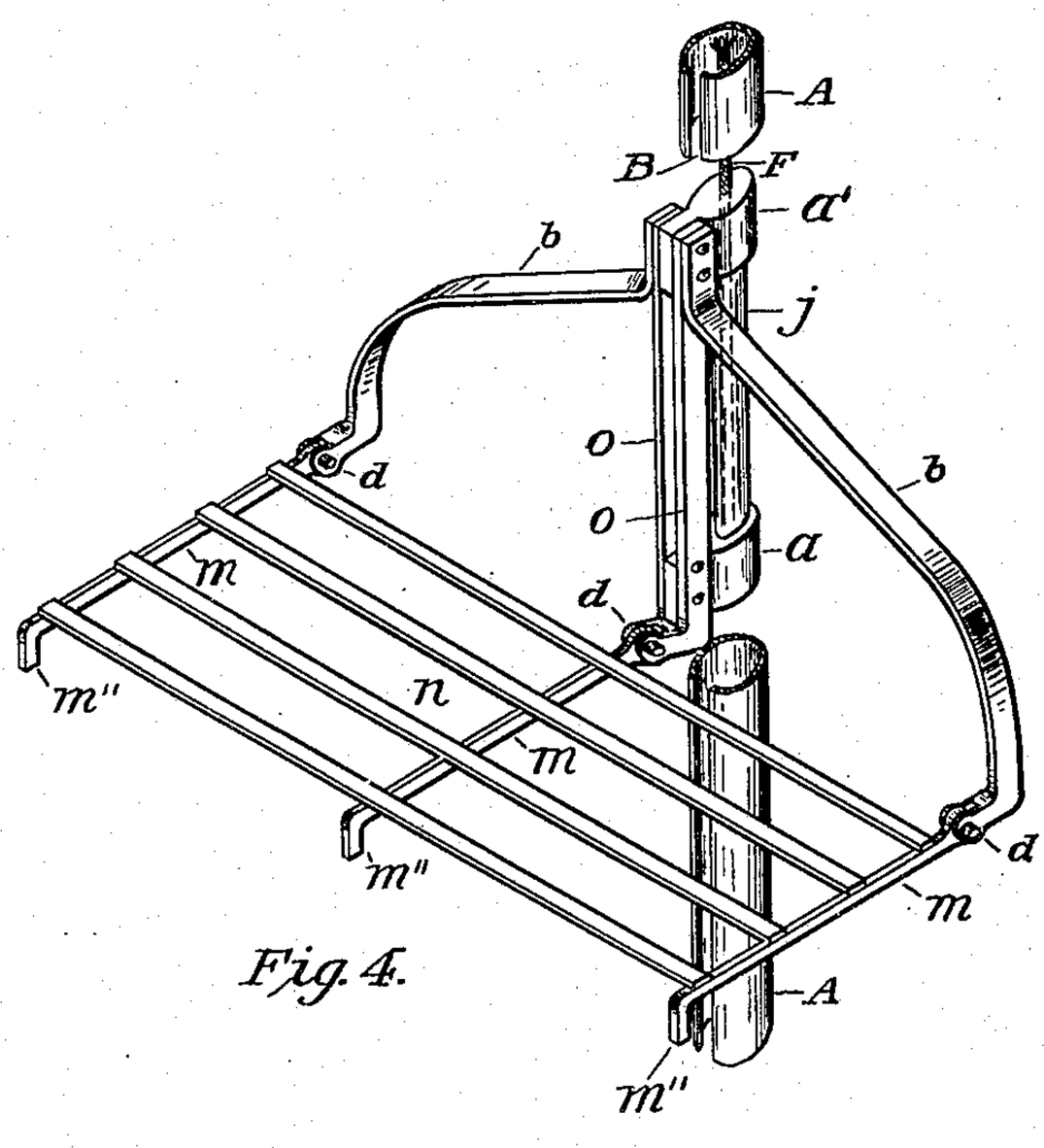

Fig. 4.

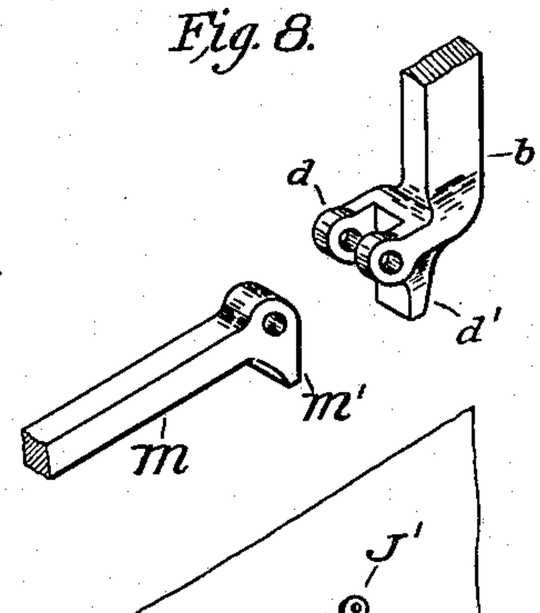

Fig. 8.

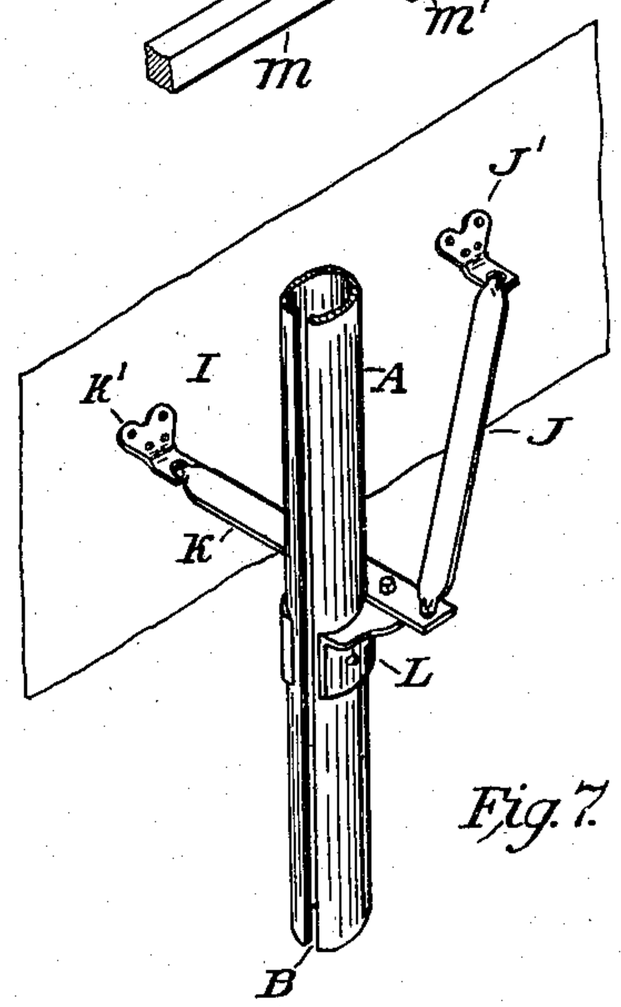

Fig. 7.

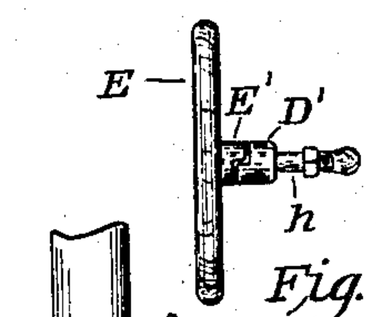

Fig. 9.

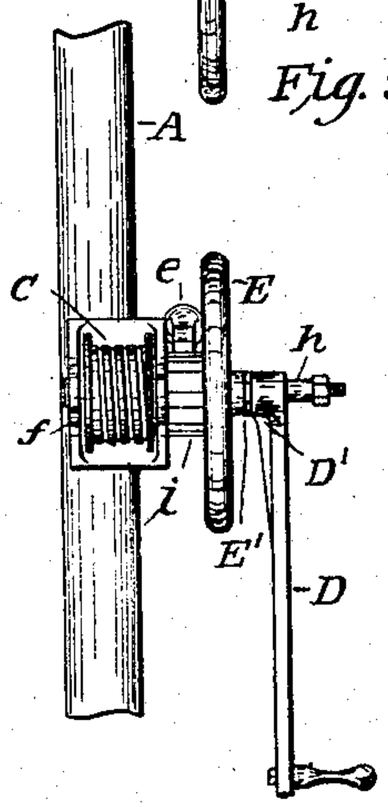

Fig. 5.

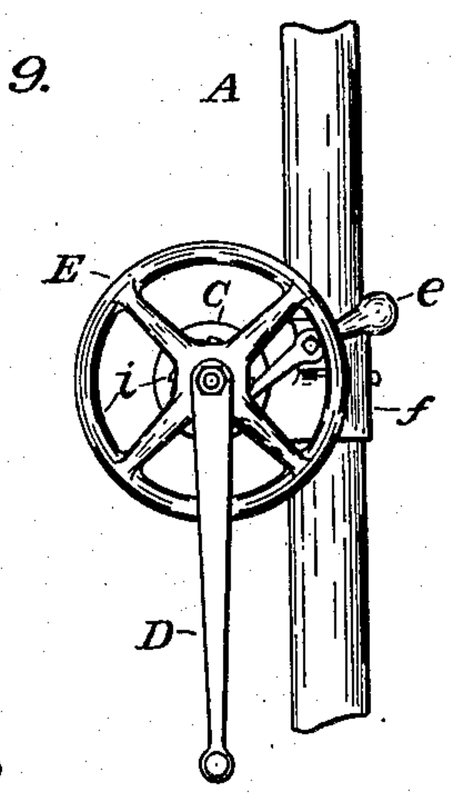

Fig. 6.

WITNESSES:

Veronica E. Brammer

Albert W. Hamann

Joseph L. Klaus

Martin J. Gadient INVENTORS.

BY

Ely & Bush.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOSEPH L. KLAUS AND MARTIN J. GADIENT, OF DAVENPORT, IOWA.

PORTABLE HOIST.

936,911. Specification of Letters Patent. Patented Oct. 12, 1909.

Application filed April 23, 1909. Serial No. 491,857.

To all whom it may concern:

Be it known that we, JOSEPH L. KLAUS and MARTIN J. GADIENT, citizens of the United States of America, residing at Davenport, in the county of Scott and State of Iowa, have invented a new and useful Portable Hoist, of which the following is a specification.

Our invention relates to improvements in portable hoists in which a vertical shaft or mast is used in conjunction with a sheave at its upper end, and a winding drum actuated by a crank secured near its lower end, with a cable or chain passing over the sheave and having one end secured to a platform carrying the object to be hoisted and the other end wound upon the receiving drum or spool; and the object of our improvement is to provide a hoist for putting ice into ice boxes and similar purposes which shall be simple, strong, compact, easily portable, and quickly set up or taken down. We attain this object by the mechanism illustrated in the accompanying drawings in which—

Figure I is a front elevation; Fig. II is a side elevation; Fig. III is a detail showing the arrangement of the sheave and cable; Fig. IV is a detail showing the guides with the platform attached; Fig. V is a detail elevation of the drum and crank; Fig. VI is a detail showing the crank and ratchet secured to the crank shaft; Fig. VII is a detail showing the manner of bracing the hoist when in position for use; Fig. VIII is a detail of one of the platform hinges; Fig. IX is a detail showing the construction of the crank and the adjacent face of the hub of the hand wheel.

Similar letters refer to similar parts throughout the several views.

The shaft or mast is composed of a tube of iron or other suitable material A, having a longitudinal slot B, extending from end to end. To the lower end is secured a collar *g*, which may be in the form of a cap and may have its lower surface studded or toothed to afford a firm grip on the floor. It may be secured to the shaft by screw threads or by rivets or any other suitable manner. The upper end of the shaft is provided with a collar G, secured thereto by rivets or in any other suitable manner. The collar G, has formed integral therewith or suitably secured thereto, a pair of arms G′, between which is journaled a sheave H. A brace K, is secured to the shaft near its middle by a bracket L, formed integral therewith or suitably secured thereto. The outer end of the brace K, is bent downward at right angles and shaped to fit an opening in a lug or ear K′, which is bolted or otherwise secured to the wall of the ice box, in which the ice is to be placed. A similar lug or ear J′, is similarly bolted or secured to the wall of the ice box at the same height as K′, and a suitable distance from K′, to afford a firm brace for the hoist from another direction.

A brace or arm J, having both ends turned downward at right angles, is provided, one end of which enters a corresponding hole in the brace K, near its attachment to the shaft A, and its other end enters a corresponding hole in the lug or ear J′.

A frame composed of the center strips O O, and side bars *b b*, having a platform *n*, hinged thereto, is secured to guide blocks *a* and *a′*, formed integral with or suitably secured to the guide bar *j*.

The platform may be formed in one piece or of several crossed strips of metal as shown in Fig. IV, and is hinged by the hinges *d*, *d*, *d*, to the lower end of the middle strips O, O, and side bars *b*, *b*, of the frame. The lower ends of the middle strips O, O, and the side bars, *b*, *b*, are preferably turned at right angles to the mast of the hoist and the arms, *m*, *m*, *m*, of the platform are formed with a shoulder *m′*, at the inner end of each, which impinges against the lower edge of the corresponding portion of the frame thus preventing the platform from forming any angle greater than a right angle to the frame, but allowing it to be folded up close to the frame. The outer side of the platform is formed with legs *m″*, *m″*, *m″*, of sufficient length to aid in supporting it when at its lowest point of travel.

The guide bar *j*, and the guide blocks *a* and *a′* are made of a size to fit inside of the shaft or tube A, and to slide readily therein and of length sufficient to give good sized bearing faces. The guide bar *j*, and the guide blocks *a*, and *a′*, have a hole extending through them longitudinally in which one end of the cable F, is securely fastened by a knot or other suitable means. The cable F, passes from the guide block *a′*, upward inside of the shaft or pipe A, and over the sheave H, thence passing downward to the winding drum or spool C, to which it is suitably secured and upon which it may be wound in the usual well known manner.

The winding drum or spool C, is secured upon a shaft *h*, journaled in the arms of a bracket *f*, riveted to the mast or pipe A. A ratchet wheel *i*, preferably formed integral with the handwheel E, is securely mounted upon the shaft with a corresponding pawl *e*, engaging therewith, pivoted or suitably secured to the bracket *f* or the mast A. A hand wheel E, is secured upon the shaft *h*. The outer side of the hub of the hand wheel E, is provided with a shoulder E′. A crank D, is slidingly mounted upon the shaft *h*, and has a shoulder D′, corresponding to the shoulder E′, upon the hub of the hand wheel. The shaft *h*, is made of sufficient length to allow the crank D, to slide into and out of engagement with the hub of the hand wheel E.

It is the intention to construct this hoist of a size and weight that can be carried conveniently upon ordinary ice wagons and it may be suspended by hooks upon the side of an ice wagon.

The ears or lugs J′ and K′ are expected to be permanently attached to the ice boxes to be served. The hoist can then be set up by placing the lower end upon the floor and using the braces J and K, as illustrated. If any firmer floor connection is necessary, it is obvious that a spike or rod may be secured in the lower end of the mast to enter a corresponding hole in the floor. Additional braces similar to J and K and lugs or ears J′ and K′, may be used if desired. However, for ordinary work it is anticipated that the single pair of braces will be sufficient.

While this hoist is designed primarily for use in hoisting ice to large sized ice boxes, etc., it is obvious that it is also adaptable to use for hoisting a variety of other objects.

Among the advantages claimed for this form of hoist are its comparatively light weight, the small space necessary to contain it, its portability and simplicity, the ease with which it can be erected and taken down and its freedom from liability to get tangled or out of order.

The crank may be used when hoisting heavy objects and the hand wheel forms a rapid and convenient means of bringing the platform back to the ground when empty. The ratchet may be cast integral with the hand wheel. The pawl is so constructed as to be readily thrown out of engagement with the ratchet.

What we claim as new and desire to secure by Letters Patent is:

1. In a lift or hoist, the combination with a hollow mast having a longitudinal slot in one side, of guide blocks sliding therein, a frame secured to the guide blocks, a platform hinged to the lower end of the frame, a shaft journaled in a pair of brackets secured to the mast near its lower end having one end extending past its corresponding bracket, a hand wheel having a ratchet wheel formed upon the inner side of its hub and a shoulder formed upon the outer side of its hub secured upon the extended end of the shaft adjacent the bracket, a crank slidingly mounted upon the outer end of the shaft adjacent the hand wheel having a shoulder formed upon its inner face corresponding to the shoulder formed upon the hub of the hand wheel, a pawl pivoted to the mast and engaging the ratchet wheel, a cable having one end secured to the guide blocks inside of the mast passing over a sheave journaled in bearings secured to the upper end of the mast and its opposite end secured to a winding drum or spool mounted upon the shaft between the brackets, a toothed collar secured upon the lower end of the mast, a bracket secured upon the mast near the middle, and braces each having one end suitably connected with the bracket and its opposite end engaging a lug or ear secured to an adjacent wall or support.

2. In a lift or hoist, the combination with a hollow mast having a longitudinal slot in one side, of guide blocks sliding therein, a frame secured to the guide blocks, a platform hinged to the lower end of the frame, a detent formed upon each platform member of the hinge and a corresponding bearing formed upon each frame member of the hinge, a shaft journaled in a pair of brackets secured to the mast near its lower end having one end extending past its corresponding bracket, a ratchet wheel secured upon the extended end of the shaft adjacent the corresponding bracket, a crank secured upon the outer end of the shaft, a pawl pivoted to the mast and engaging the ratchet wheel, a cable having one end secured to the guide blocks inside of the mast passing over a sheave journaled in bearings secured to the upper end of the mast and its opposite end secured to a winding drum or spool mounted upon the shaft between the brackets, a toothed collar secured upon the lower end of the mast, a bracket secured upon the mast near the middle, and braces each having one end suitably connected with the bracket and its opposite end engaging a lug or ear secured to an adjacent wall or support.

3. In a lift or hoist, the combination with a hollow mast having a longitudinal slot in one side, of guide blocks sliding therein, a frame secured to the guide blocks, a platform hinged to the lower end of the frame, a detent formed upon each platform member of the hinge and a corresponding bearing formed upon each frame member of the hinge, a shaft journaled in a pair of brackets secured to the mast near its lower end having one end extending past its corresponding bracket, a hand wheel having a ratchet wheel formed upon the inner side of its hub and a shoulder formed upon the

outer side of its hub secured upon the extended end of the shaft adjacent the bracket, a crank slidingly mounted upon the outer end of the shaft adjacent the hand wheel having a shoulder formed upon its inner face corresponding to the shoulder formed upon the hub of the hand wheel, a pawl pivoted to the mast and engaging the ratchet wheel, a cable having one end secured to the guide blocks inside of the mast passing over a sheave journaled in bearings secured to the upper end of the mast and its opposite end secured to a winding drum or spool mounted upon the shaft between the brackets, a bracket secured upon the mast near the middle, and braces each having one end suitably connected with the bracket and its opposite end engaging a lug or ear secured to an adjacent wall or support.

4. In a lift or hoist, the combination with a hollow mast having a longitudinal slot in one side, of guide blocks sliding therein, a frame secured to the guide blocks, a platform hinged to the lower end of the frame, a detent formed upon each platform member of the hinge and a corresponding bearing formed upon each frame member of the hinge, a shaft journaled in a pair of brackets secured to the mast near its lower end having one end extending past its corresponding bracket, a hand wheel having a ratchet wheel formed upon the inner side of its hub and a shoulder formed upon the outer side of its hub secured upon the extended end of the shaft adjacent the bracket, a crank slidingly mounted upon the outer end of the shaft adjacent the hand wheel having a shoulder formed upon its inner face corresponding to the shoulder formed upon the hub of the hand wheel, a pawl pivoted to the mast and engaging the ratchet wheel, a cable having one end secured to the guide blocks inside of the mast passing over a sheave journaled in bearings secured to the upper end of the mast and its opposite end secured to a winding drum or spool mounted upon the shaft between the brackets, and a toothed collar secured upon the lower end of the mast.

5. In a lift or hoist, the combination with a hollow mast having a longitudinal slot in one side, of guide blocks sliding therein, a frame secured to the guide blocks, a platform hinged to the lower end of the frame, a detent formed upon each platform member of the hinge and a corresponding bearing formed upon each frame member of the hinge, a shaft journaled in a pair of brackets secured to the mast near its lower end having one end extending past its corresponding bracket, a hand wheel having a ratchet wheel formed upon the inner side of its hub and a shoulder formed upon the outer side of its hub secured upon the extended end of the shaft adjacent the bracket, a crank slidingly mounted upon the outer end of the shaft adjacent the hand wheel having a shoulder formed upon its inner face corresponding to the shoulder formed upon the hub of the hand wheel, a pawl pivoted to the mast and engaging the ratchet wheel, a cable having one end secured to the guide blocks inside of the mast passing over a sheave journaled in bearings secured to the upper end of the mast and its opposite end secured to a winding drum or spool mounted upon the shaft between the brackets, a toothed collar secured upon the lower end of the mast, and means for securing the hoist in position when in use.

6. In a lift or hoist, the combination with a hollow mast having a longitudinal slot in one side, of guide blocks sliding therein, a frame secured to the guide blocks, a platform hinged to the lower end of the frame, a shaft journaled in a pair of brackets secured to the mast near its lower end having one end extending past its corresponding bracket, a ratchet wheel secured upon the extended end of the shaft adjacent the corresponding bracket, a crank secured upon the outer end of the shaft, a pawl pivoted to the mast and engaging the ratchet wheel, a cable having one end secured to the guide blocks inside of the mast passing over a sheave journaled in bearings secured to the upper end of the mast and its opposite end secured to a winding drum or spool mounted upon the shaft between the brackets, a toothed collar secured upon the lower end of the mast, a bracket secured upon the mast near the middle, and braces each having one end suitably connected with the bracket and its opposite end engaging a lug or ear secured to an adjacent wall or support.

7. In a lift or hoist, the combination with a hollow mast having a longitudinal slot in one side, of guide blocks sliding therein, a frame secured to the guide blocks, a platform hinged to the lower end of the frame, a detent formed upon each platform member of the hinge and a corresponding bearing formed upon each frame member of the hinge, a shaft journaled in a pair of brackets secured to the mast near its lower end having one end extending past its corresponding bracket, a ratchet wheel secured upon the extended end of the shaft adjacent the corresponding bracket, a crank secured upon the outer end of the shaft, a pawl pivoted to the mast and engaging the ratchet wheel, a cable having one end secured to the guide blocks inside of the mast passing over a sheave journaled in bearings secured to the upper end of the mast and its opposite end secured to a winding drum or spool mounted upon the shaft between the brackets, a bracket secured upon the mast near the middle, and braces each having one end suitably connected with the bracket and its opposite end

engaging a lug or ear secured to an adjacent wall or support.

8. In a lift or hoist, the combination with a hollow mast having a longitudinal slot in one side, of guide blocks sliding therein, a frame secured to the guide blocks, a platform hinged to the lower end of the frame, a detent formed upon each platform member of the hinge and a corresponding bearing formed upon each frame member of the hinge, a shaft journaled in a pair of brackets secured to the mast near its lower end having one end extending past its corresponding bracket, a ratchet wheel secured upon the extended end of the shaft adjacent the corresponding bracket, a crank secured upon the outer end of the shaft, a pawl pivoted to the mast and engaging the ratchet wheel, and a cable having one end secured to the guide blocks inside of the mast passing over a sheave journaled in bearings secured to the upper end of the mast and its opposite end secured to a winding drum or spool mounted upon the shaft between the brackets.

9. In a lift or hoist, the combination with a hollow mast having a longitudinal slot in one side, of guide blocks sliding therein, a frame secured to the guide blocks, a platform hinged to the lower end of the frame, a detent formed upon each platform member of the hinge and a corresponding bearing formed upon each frame member of the hinge, a shaft journaled in a pair of brackets secured to the mast near its lower end having one end extending past its corresponding bracket, a ratchet wheel secured upon the extended end of the shaft adjacent the corresponding bracket, a crank secured upon the outer end of the shaft, a pawl pivoted to the mast and engaging the ratchet wheel, a cable having one end secured to the guide blocks inside of the mast passing over a sheave journaled in bearings secured to the upper end of the mast and its opposite end secured to a winding drum or spool mounted upon the shaft between the brackets, and means for securing the hoist in position.

10. In a lift or hoist, the combination with a hollow mast having a longitudinal slot in one side, of guide blocks sliding therein, a frame secured to the guide blocks, a platform hinged to the lower end of the frame, a detent formed upon each platform member of the hinge and a corresponding bearing formed upon each frame member of the hinge, a shaft journaled in a pair of brackets secured to the mast near its lower end having one end extending past its corresponding bracket, a hand wheel having a ratchet wheel formed upon the inner side of its hub and a shoulder formed upon the outer side of its hub, secured upon the extended end of the shaft adjacent the bracket, a crank slidingly mounted upon the outer end of the shaft adjacent the hand wheel having a shoulder formed upon its inner face corresponding to the shoulder formed upon the hub of the hand wheel, a pawl pivoted to the mast and engaging the ratchet wheel, a cable having one end secured to the guide blocks inside of the mast passing over a sheave journaled in bearings secured to the upper end of the mast and its opposite end secured to a winding drum or spool mounted upon the shaft between the brackets, a toothed collar secured upon the lower end of the mast, a bracket secured upon the mast near the middle, and braces each having one end suitably connected with the bracket and its opposite end engaging a lug or ear secured to an adjacent wall or support.

JOSEPH L. KLAUS.
MARTIN J. GADIENT.

Witnesses:
VERONICA E. BRAMMER,
ALBERT W. HAMANN.