(No Model.) 2 Sheets—Sheet 1.

J. B. SWEETLAND.

HOISTING APPARATUS.

No. 433,752. Patented Aug. 5, 1890.

Fig. 1.

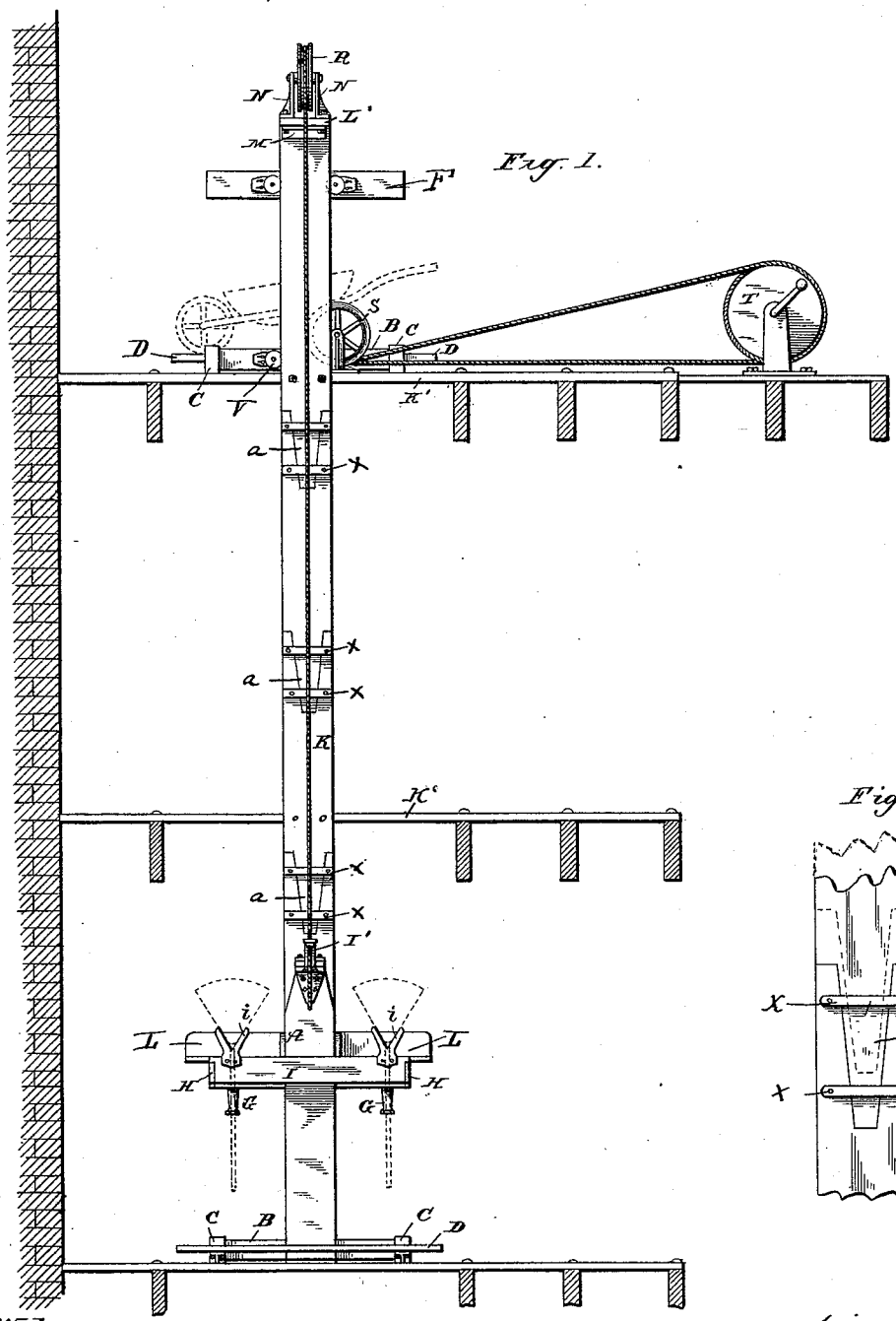

Fig. 6.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

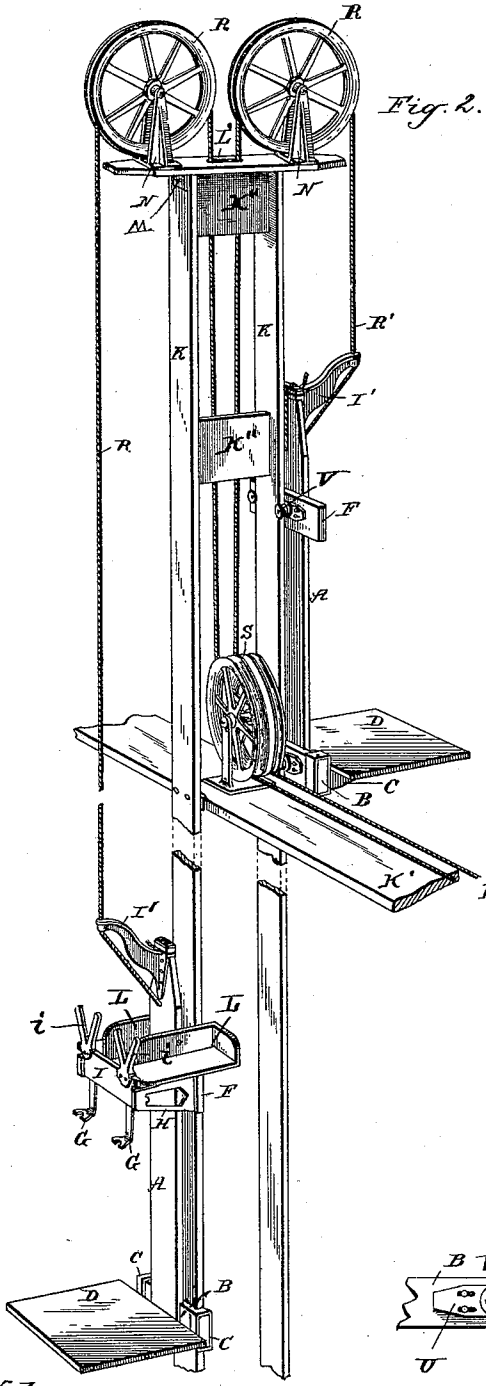


Fig. 3.

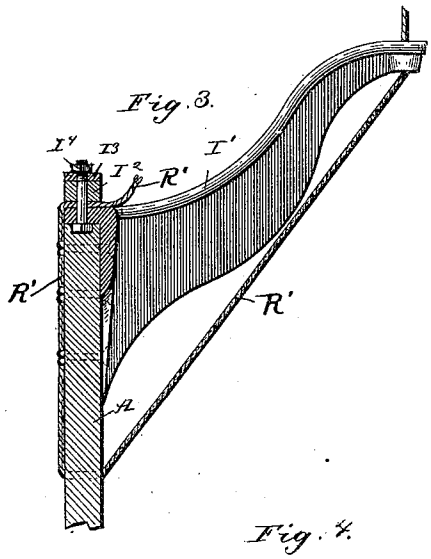


Fig. 4.

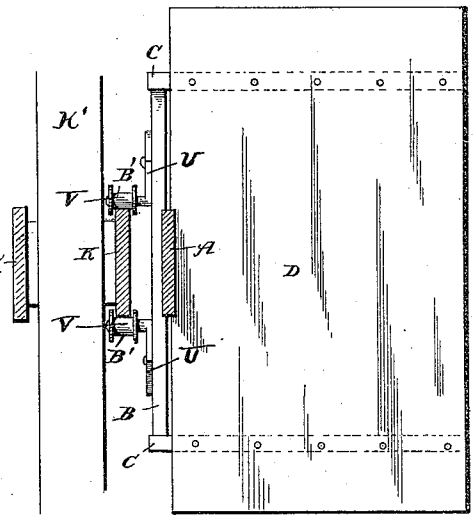
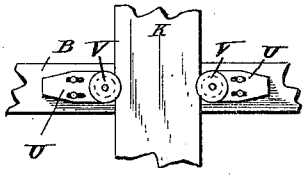


Fig. 5.



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UNITED STATES PATENT OFFICE.

JEROME B. SWEETLAND, OF PONTIAC, MICHIGAN.

HOISTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 433,752, dated August 5, 1890.

Application filed February 12, 1890. Serial No. 340,193. (No model.)

To all whom it may concern:

Be it known that I, JEROME B. SWEETLAND, a citizen of the United States, residing at Pontiac, in the State of Michigan, have invented certain new and useful Improvements in Hoisting-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention is designed to furnish an elevator or hoisting apparatus for raising building material to the upper parts of a building during the course of its construction; and it has for its object to provide an improved car having suitable rests for a hod or series of hods, and also to provide suitable guideways for the said car that can be readily built of ordinary lumber and applied to the openings or landings of the stairways of a building or structure during its erection, as will be more fully hereinafter described.

The above-mentioned objects I attain by the means illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of the complete hoisting apparatus applied to a building; Fig. 2, a perspective view of the same, the building being omitted; Fig. 3, a detail sectional view of the upper portion of one of the cars; Fig. 4, a horizontal sectional view of one of the cars; Fig. 5, a detail view showing the arrangement of adjustable guide-rollers carried by the cars, and Fig. 6 a detail view of the splice or means for connecting adjacent ends of the guideways.

Referring to the drawings, the letter A indicates the car, which is constructed of a vertical beam of lumber, having a cross-beam B secured to its lower end. To the said beam are secured projecting brackets C for the support of the platform D of the car. These brackets are formed with rectangular eyes, which may be slipped over the ends of the cross-beam, so as to hold the arms of said brackets in a horizontal position for the reception of the platform, which is secured to said arms by means of bolts or other fastening devices. To the front of said vertical beam is bolted or otherwise fastened a cross-beam F, of metal or other material, to the ends of which are secured horizontal outwardly-projecting brackets or arms H, which serve to support and retain a cross-bar I.

Depending from the cross-bar I are hangers or arms G G, provided with horizontal bifurcated extensions at their lower ends for the reception of the handles of the hods when the same are placed upon the car. These arms serve to steady the hods during the movements of the cars, and thereby prevent serious accidents, which might ensue from the displacement of the hods.

Upon the cross-beam I, directly above the arms G, are secured upright angular supports *i i*, shaped to conform with and support the body of the hod, as shown in Fig. 2.

Secured upon the beams I F of the cars, directly behind the hod-supports *i*, are open boxes or trays L, which serve to catch and retain any mortar that may be splashed or jarred out of the hods, thereby keeping the ways and carriages free from obstructions of this kind. The upper end of the vertical beam of the car has secured to it a projecting arm I′, which is provided with an eye at its free end, through which the elevating rope or cable R′ passes. The said arm extends outwardly directly over the center of the platform of the carrier, so as to lift the same without any lateral strain upon it, whereby the carrier may move with a minimum of friction and wear.

The letter K indicates two vertical guides or ways, which consist of ordinary beams of lumber of suitable dimensions. These are bolted to the edges of a horizontal cross-beam K′, bolted upon the stringers or joists near the edges of the openings at the landings of the floors of the building, these beams K′ extending across said openings. The guides or ways at their upper ends have secured to them a cross-head L′, which is braced thereon by means of angle-plates M. Upon said cross-head are mounted and secured the standards N, having bearings for the sheaves or pulleys R, over which the elevating lines or cables R′ pass. The peripheries of the said pulleys extend directly over the ends of the projecting arms of the cars, so that a direct vertical draft will be exerted upon the said carriers.

The letter S indicates a double sheave, which has its journal-bearings in pillow-blocks or standards mounted on and secured to the upper cross-beam K′. The elevator-hoisting cables pass under the said double sheave, which is suitably grooved for the purpose.

The hoisting-cables are passed around a drum T at opposite sides thereof, so that when said drum is rotated cables will elevate one of the cars and lower the other, two of such cars being employed, one riding on each of the vertical guideways before mentioned.

To the rear of the cross-beams B and cross-bar F are adjustably bolted or otherwise fastened the plates U, which carry flanged rollers V, which embrace the edges of the vertical guideways and travel upon the same. The said bars or plates U are preferably made adjustable, in order that the pulleys may be set to properly embrace the edges of the ways, as is evident.

In the course of the construction of a building, after the walls have been built above the first floor and the joists thereof secured in place, the guideways K are secured in the landing or opening of the stairway by means of the boards K′ bolted to the joists. As the building rises, additional guideways are inserted, the adjoining ends of the ways being spliced or connected by means of the bars or plates X, which are bolted to the upper ends of the timbers forming the guideways. The upper ends of the guide-sections are notched for the reception of tongues *a*, formed upon the lower ends of the superimposed sections, as shown. Instead of these additional guideways, wire guideways may be employed, which may be connected to the upper floor. The lower ends of the wire guides may be suitably connected to fastenings at the lower floor of the building or structure.

Instead of the double sheave S and drum T, above described, a pulley over which the cable passes may be employed, the shaft of said pulley being provided with cranks at each end, which may be operated by hand to elevate and lower the cars; or the double sheave may be dispensed with entirely and the cable operated directly by means of a steam or other motor, as is evident, without departing from the invention in the least.

As constructed it will be perceived that while the car is in itself complete and can be applied to any building the guideways may be readily constructed of material always at hand, furnishing a cheap and effective means whereby building material may be hoisted to elevated parts of a building as fast as required.

The ends of the hoisting-cables are preferably secured to the cars after passing through the eyes in the ends of the arms I′, as shown in Fig. 3—that is to say, the ends of the cable are passed through openings in the uprights of the cars, carried up along the backs of the uprights, and clamped down adjustably upon the upper ends of the same by means of a bolt and nut I^4 and a metal clamping-plate I^3, wooden blocks I^2 being interposed between the said plates I^3 and the cables, whereby the cables will not be injured. The heads of the said bolts are recessed in the upper ends of the uprights and passed up through the flanges of the bracket I′.

As shown at the upper part of Fig. 1 and the right side of Fig. 2, the hod-supporting devices may be removed and the carriers employed for hoisting wheelbarrows, building-stones, and other materials and appliances employed in building operations. Boards or blocks K″ may be interposed between the guides, in order to stiffen and brace them, as shown in Fig. 2.

An essential feature of this apparatus is the manner in which the sections of the guideways are spliced, which enables the sections to be readily erected and taken down, and when erected holds the sections rigidly and firmly.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with a guideway, of a car adapted to travel thereon, consisting of a vertical beam A, provided with a cross-beam carrying a platform to support the load, a forwardly-projecting arm I′, secured to the upper end of the said beam A, and a hoisting-rope attached to the said arm in the vertical line of draft of the said car, whereby the car is prevented from binding in its movements upon the guideways, substantially as set forth.

2. The combination of a car, an arm secured to the upper end thereof and projecting outwardly therefrom, a cable passed down through an eye in the end of the said arm and then passed through an aperture in the upright of the car, from whence it is carried to the upper end of the upright, and a bolt and clamping-plates for securing it to the top of the upright, substantially as described.

3. The combination of a vertical beam A of a car, a cross-beam B, secured to said beam near its lower ends, a platform supported by arms secured to the said beam B, an upper cross-beam F, secured to the beam B and carrying forwardly-projecting arms H, a cross-bar I, carried by the arms H, hod-supports carried by this cross-bar, trays or boxes supported in the rear of said hod-supports, a forwardly-projecting arm I′, secured to the beam A above the beam F, and a hoisting-rope secured to the end of said arm I′, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JEROME B. SWEETLAND.

Witnesses:
JOHN MATHEWS,
CHARLES T. TAFT.