(No Model.) 2 Sheets—Sheet 1.

H. E. WILLIAMS.

BARREL SKID.

No. 534,130. Patented Feb. 12, 1895.

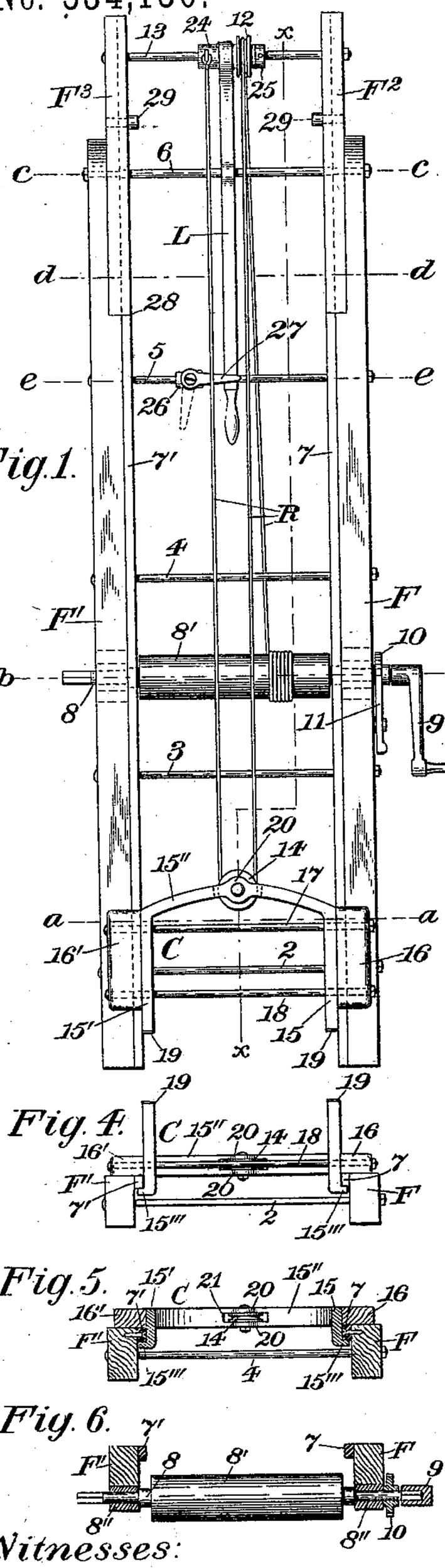


Fig. 1.

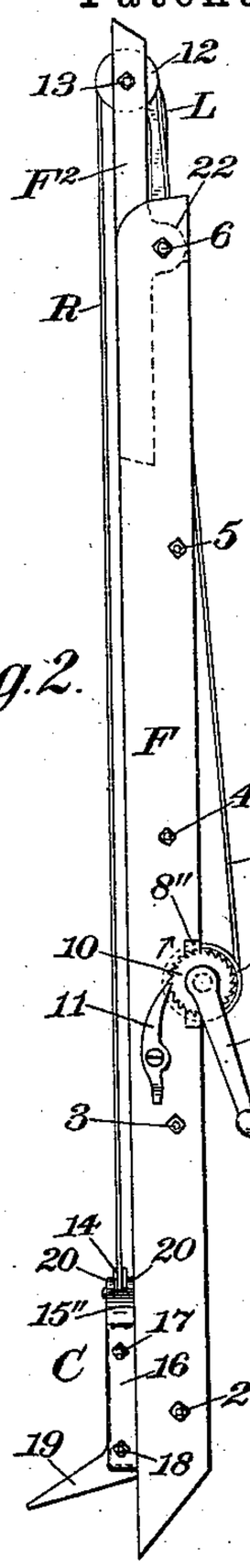


Fig. 2.

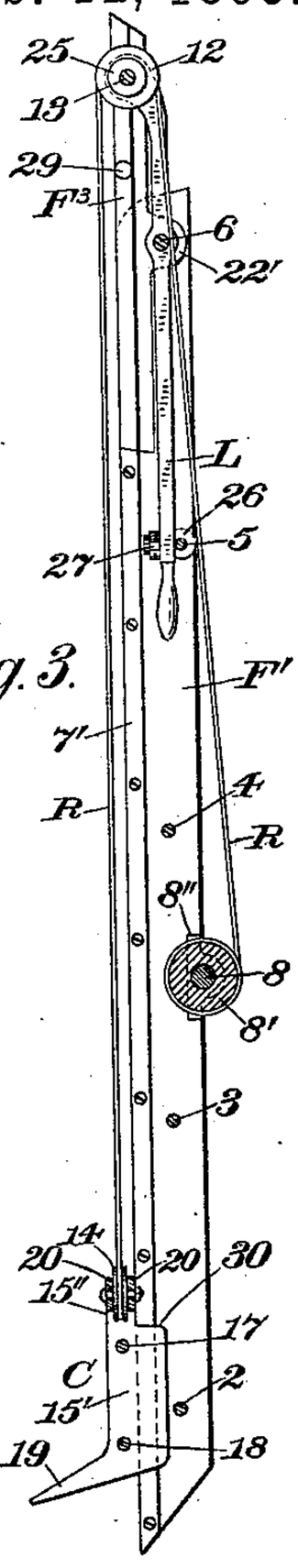


Fig. 3.

Fig. 4.

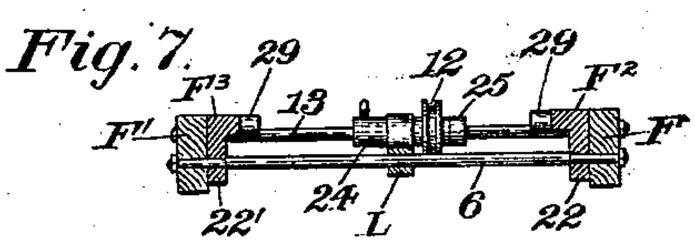


Fig. 7.

Fig. 5.

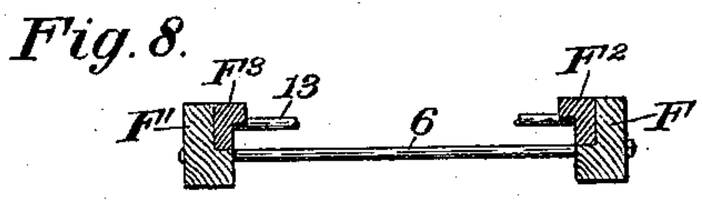


Fig. 8.

Fig. 6.

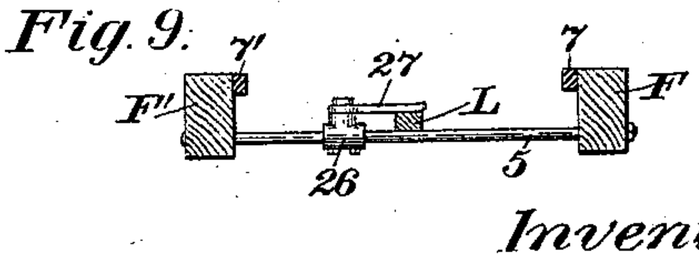


Fig. 9.

Witnesses:
J. L. Edwards Jr.
Fred. J. Dole.

Inventor:
Henry E. Williams:
By his Attorney,
F. W. Richards.

(No Model.) 2 Sheets—Sheet 2.

H. E. WILLIAMS.

BARREL SKID.

No. 534,130. Patented Feb. 12, 1895.

Fig. 11.

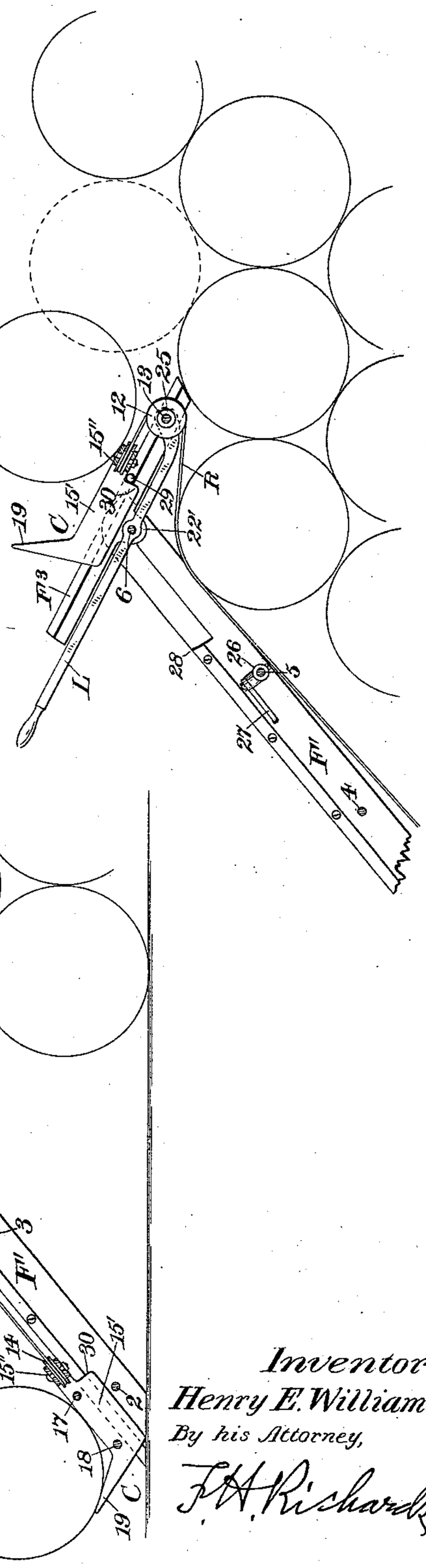
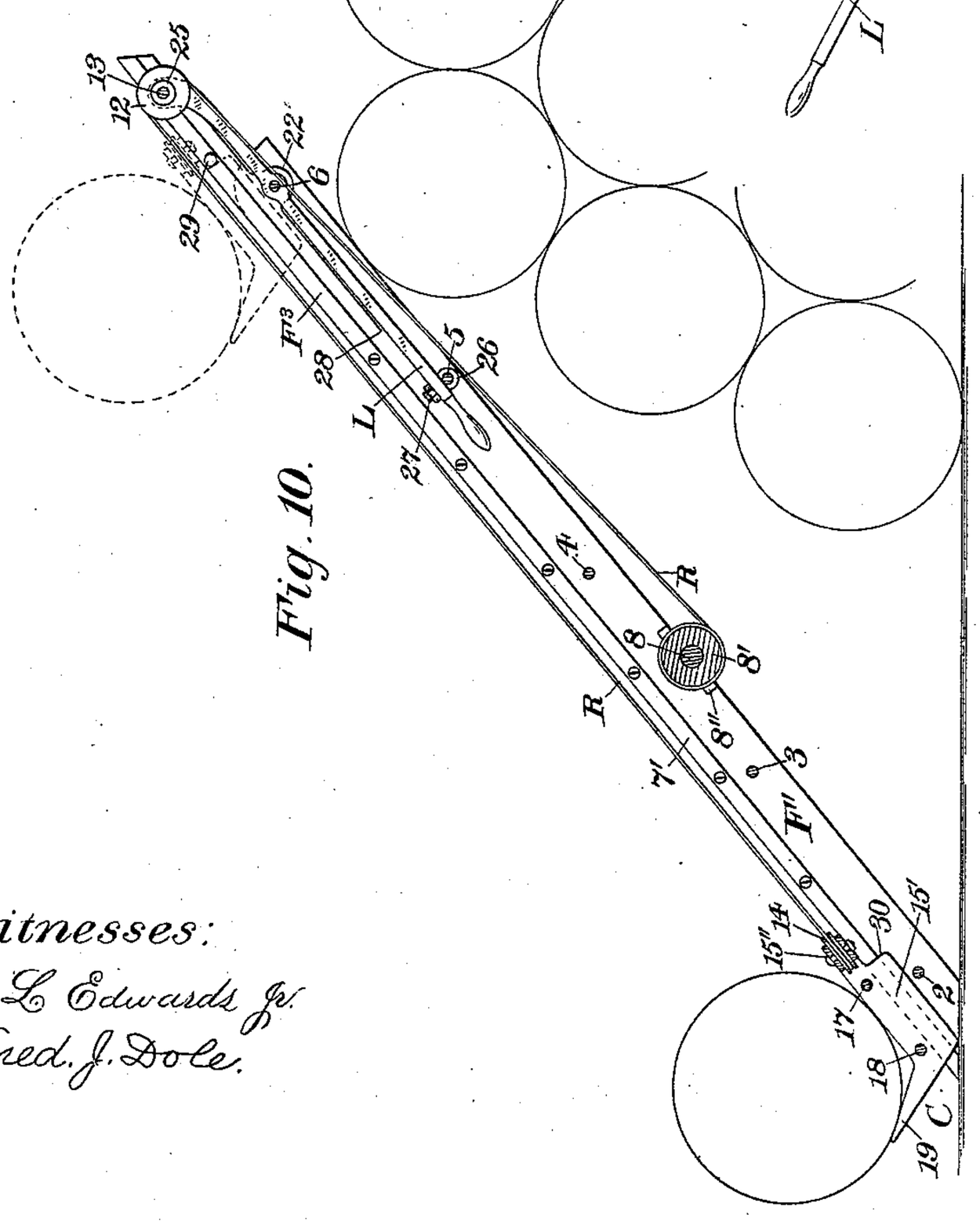


Fig. 10.



Witnesses:
F. L. Edwards Jr.
Fred. J. Dole.

Inventor:
Henry E. Williams.
By his Attorney,
F. A. Richards

UNITED STATES PATENT OFFICE.

HENRY E. WILLIAMS, OF HARTFORD, CONNECTICUT.

BARREL-SKID.

SPECIFICATION forming part of Letters Patent No. 534,130, dated February 12, 1895.

Application filed October 17, 1894. Serial No. 526,146. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. WILLIAMS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Barrel-Skids, of which the following is a specification.

This invention relates to tilting hoists, and more especially to that class which are adapted for use as skids for hoisting and delivering barrels and other packages of merchandise; and it has for its object to furnish an apparatus in which a traveling carrier may be hoisted to any determined height and then delivered upon and tilted by an auxiliary tilting frame carried by the skid.

In the drawings accompanying and forming part of this specification, Figure 1 is a plan of a tilting hoist constructed in accordance with my invention. Fig. 2 is a side elevation of the same, looking from the right in Fig. 1. Fig. 3 is a longitudinal section in line *x—x*, Fig. 1. Fig. 4 is an end elevation of a portion of the apparatus, looking from the under side in Fig. 1. Fig. 5 is a transverse section in line *a—a*, Fig. 1. Fig. 6 is a transverse section in line *b—b*, Fig. 1. Fig. 7 is a transverse section in line *c—c*, Fig 1. Fig. 8 is a transverse section in line *d—d*, Fig. 1. Fig. 9 is a transverse section in line *e—e*, Fig. 1. Fig. 10 is a sectional, side elevation of the apparatus in operative position and showing, in full and dotted lines, respectively, a barrel in its two extreme positions upon the traveling carrier, and Fig. 11 is a similar view of a portion of the apparatus, illustrating the operation of the auxiliary tilting frame.

Similar characters designate like parts in all of the figures.

My present invention comprises, in combination, a frame having guides or ways thereon, a carrier adapted to travel along said frame and upon the ways, means for hoisting said carrier upon said ways, and a tiltable auxiliary frame, pivotally mounted at the upper end of the main frame and having auxiliary ways aligned with the ways upon the main frame, and adapted to receive thereon the traveling carrier, and also adapted to tilt said carrier, with said auxiliary ways, out of the plane of the ways upon the main frame.

The main frame, for carrying the several operative parts of the apparatus, is shown herein as comprising two preferably similar main frames, F and F′, secured together at suitable intervals, in parallelism with each other, by means of a series of stay-bolts, or connecting-rods, 2, 3, 4, 5 and 6. At the inner sides thereof each of said frames or beams is shown as provided with a suitable way or track, designated, respectively, 7 and 7′, and which ways are secured to the frames in any suitable manner, as by screws or bolts. These ways are also supported in parallelism and with their upper or working-faces in the same plane.

Journaled in bearings, such as 8″, in the frames F and F′ at any suitable point, preferably near the lower end of the apparatus, is shown a winding shaft, 8, adapted to carry rotatably therewith a windlass or winding-drum, 8′, to which is secured one end of a suitable, flexible band, such as a rope or chain, and which is designated herein by R. Each end of the winding shaft 8 is shown as squared for the reception of a crank-arm, 9, in order that the windlass may be actuated from either side of the apparatus. A ratchet-wheel, designated by 10, is fixedly secured to the winding shaft, at one side of the apparatus, shown herein as the right-hand side thereof, and when said windlass is turned in the direction of the arrow in Fig. 2 the winding shaft is preferably held against return movement by means of a pawl, 11, pivotally secured to the side of the frame F, adjacent to said ratchet-wheel, and adapted to engage the successive teeth thereof in the well-known manner, said pawl being weighted at its forward end to maintain it in engagement with said ratchet-wheel. The rope R, upon leaving the windlass, is shown herein as passed over a guide-roller or pulley, 12, rotatively mounted upon the carrier or connecting-rod, 13, of the auxiliary frame, which will be hereinafter described, and is held between fixed stops thereon against movement longitudinally of said carrier. Upon leaving the pulley 12, the rope passes to a second pulley, 14, mounted upon a traveling carrier, C, supported for longitudinal movement upon the ways and side beams of the main frame, and, from said pulley, the rope passes to and is secured upon the hub

of a strap or lever, L, carried upon and adapted for actuating the tilting auxiliary frame.

The carrier C is shown herein as comprising a substantially U-shaped member, having parallel sides, 15 and 15′, and a connecting bar, 15″, integral therewith, and slide-blocks, 16 and 16′, secured to said members 15 and 15′ by means of the connecting rods or tie-bars 17 and 18. The blocks 16 and 16′ are shown herein as adapted to slide upon the upper or working faces of the frames and ways, F, F′, 7 and 7′, while the members 15 and 15′ are shown as adapted to engage the inner faces of the tracks 7 and 7′, to hold the carrier against lateral movement. Each of said members 15 and 15′ is also shown as formed with an outwardly-extending flange, 15‴, positioned to engage the under sides of the tracks 7 and 7′ and thereby hold the carrier and prevent its rising from the frame during its hoisting or lowering movement. The carrier C, is provided, as shown herein, with stops, 19, for holding a barrel or other article therein, said stops being preferably integral with the parallel members 15 and 15′ of the carrier frame. The pulley 14 for obtaining the necessary connection of the rope R with the windlass 8′, and with the hub of the lever L, is shown as journaled between the opposite eyes, 20, formed integral with the connecting bar 15″ of the carrier frame and separated from each other by the cut-away portion or slot, 21, of said bar, the usual pivot-pin being passed through said eyes and through the journal of the pulley 14.

At the upper end of the apparatus an auxiliary tilting frame is shown herein as journaled for oscillation within and upon the side-frames F and F′. In the form thereof herein shown this auxiliary tilting frame is formed with two side-bars or ways, F^2 and F^3, having substantially-central journal-bearings, 22 and 22′, disposed in alignment with each other transversely of the apparatus. As a means for pivotally securing the auxiliary, tilting frame to the main frame, the carrier or shaft 6, is shown herein as passed through said bearings 22 and 22′, and fixed in the side frames F and F′, adjacent to the upper ends thereof. This shaft is shown herein as a tie-bar having reduced end-portions, carrying the ways F^2 and F^3, the enlarged or main portion of the rod being adapted to form shoulders to prevent lateral movement of the auxiliary ways relatively to each other and to the main frame. The tie-bar 13, hereinbefore referred to, is adapted to form the main brace, however, for positioning the auxiliary ways in lateral direction, and is shown as carried at the forward end of the auxiliary frame.

As a means for tilting the auxiliary frame a lever L is shown herein as pivotally carried upon the connecting-rod 6, at the extreme forward end of the main frame of the apparatus, and as having at its forward end a sleeve or collar, 24, preferably fixedly secured to the carrier or rod 13, so as to form one of the fixed stops in lateral direction for the pulley 12, a fixed collar, 25, being mounted upon the other side of said pulley, upon said carrier, to form the other stop. The handle of the lever L is shown as extending back to a point adjacent to the tie-bar 5, and a collar, 26, is shown as mounted upon said rod and preferably adjustable thereon. This collar is adapted to carry a latch, such as 27, for engaging the long arm of said lever, adjacent to the handle thereof, said latch being shown herein as pivotally secured to the collar, for swinging movement in a plane parallel with the plane of the ways and substantially transverse to the plane of oscillation of the lever itself. It will be evident that, when said latch is in the position shown in Fig. 1, the lever will be engaged thereby and the tilting-frame will lie with its ways in longitudinal alignment with the ways of the main frame, the latch and lever constituting a means for separably locking the two frames with their ways in longitudinal alignment with one another.

The side-bars of the main frame, it will be noticed are illustrated as channeled at their forward, inner sides to form seats and shoulders for supporting and holding in position the side-bars of the auxiliary frame the ways 7 and 7′ being shown as extending to the points of beginning of said channels, so that, when in the position shown in Figs. 1, 2, 3 and 10, the forward ends of the ways F^2 and F^3 will be contiguous to the rearward ends of the ways 7 and 7′. It will, of course, be understood that the upper bearing-faces of said ways, when in this position, will be in the same horizontal plane; that the inner, vertical bearing-faces at each side will also lie in the same vertical plane; and that the under sides of the ways F^2 and F^3 will be in a horizontal plane coinciding with the plane of the under sides of the ways 7 and 7′; so that the carrier C, when it arrives at the point 28, will run onto the auxiliary frame, and be positioned and held by bearing-faces coinciding in alignment with the similar bearing-faces upon the main frame.

For the purpose of arresting the longitudinal movement of the carrier the auxiliary frame is provided with stops, which are shown herein as pins, 29, projecting from the inner sides of the frame-pieces F^2 and F^3, immediately in advance of the axis of the tilting-frame, viz: the carrier 6. The carrier C is also shown as provided, adjacent to the inner sides of the ways 7 and 7′ and integral with the side-bars 15 and 15′, of its U-shaped frame, with shoulders, 30, in line with said stops 29 and adapted to be engaged thereby when the carrier has reached the position shown in Fig. 10, the carrier being at that time entirely upon the tilting or auxiliary frame.

The operation of the invention will be readily understood from the foregoing description.

The skid being placed in operative position, at the proper inclination to a pile of barrels or

other goods, or to a platform upon which said articles are to be hoisted, one of said articles is first placed upon the carrier, as shown in full lines in Fig. 10, and the crank 9 is turned to hoist the article up the incline of the skid. When the carrier reaches the point 28—it being understood that the lever L is engaged by the latch 27 and the tilting frame thereby held with its ways coinciding in longitudinal direction with the ways 7 and 7′ and the forward ends of the frames F and F′,—it is carried onto the ways of the auxiliary frame and along the same, until the shoulders 30 are engaged against the stops 29, when further longitudinal movement is prevented. When the carrier reaches this point the windlass will of course be held against return movement by means of the pawl 11, and thereby the barrel or other article will be held at the proper point for discharging it from the skid. The latch 27 is now released, to disengage the lever L from said latch, and from the stop or tie-bar 5, and, by an upward throw of said lever, the tilting-frame is rocked upon its axis or shaft 6 and thrown to the position shown in Fig. 11, thus carrying the ways of the sidebars F^2 and F^3 out of alignment with the ways of the main frame, and discharging the barrel or article upon the pile or platform upon which it is to be delivered. It will be seen that the tilting of this auxiliary frame is readily accomplished, as, when the carrier is stopped against the pins 29, the weight of the article carried thereby is usually sufficient to cause the auxiliary frame and the carrier to tend to balance or over-balance, and that but a slight force is necessary to be exerted in the upward throw of the lever.

By the above-described organization of hoisting and tilting devices it will be evident that a traveler for hoisting merchandise may be easily and quickly carried up an inclined plane by the actuation of a winding-shaft controlled by a single attendant, and that, when carried to the end of its range of upward movement, said carrier, with its load, will be held in position for tilting until said attendant can release the locking lever for the auxiliary frame, and thereby rock said frame to deliver the load carried by the carrier, all of said operations being positively controlled by a single attendant; also that the functions of the tilting-hoist may be embodied in the apparatus simple and compact in its construction and organization, and which is easily controlled, occupies practically the same space as a skid of the ordinary construction and is capable of manufacture at a a low cost.

Having thus described my invention, I claim—

1. In a tilting hoist, the combination with a main frame having ways thereon, of an auxiliary tilting frame journaled at the forward end of the main frame and having ways normally in alignment with the ways of said main frame, means for separably locking said main and auxiliary frames with their ways in longitudinal alignment with one another, a traveling carrier adapted for longitudinal movement along the ways of said frames and for tilting movement with the auxiliary frame, means mounted upon the main frame for hoisting said carrier longitudinally upon said ways, stops upon said carrier, stops upon the auxiliary frame adapted to engage said stops upon the carrier and thereby limit the longitudinal movement thereof, and means carried by the main frame for tilting the auxiliary frame and the carrier relatively to the main frame, substantially as described.

2. In a tilting hoist, the combination with a main frame having ways thereon, of an auxiliary tilting frame journaled at the forward end of the main frame and having ways normally in alignment with the ways of the main frame, a lever pivotally mounted upon the main frame and adapted for oscillating said tilting frame, a latch carried by said main frame and adapted to engage said lever and thereby maintain the ways of said frames in alignment with one another, a traveling carrier adapted for longitudinal movement along the ways of said frames and for tilting movement with the auxiliary frame, means for hoisting said carrier longitudinally upon said ways, and stops carried by the auxiliary frame and adapted to limit the longitudinal movement of said carrier, substantially as described.

3. In a tilting-hoist, the combination with a main frame having ways thereon in position and adapted to engage the guides of the carrier; of an auxiliary tilting-frame journaled at the forward end of the main frame, and having ways normally in alignment with the ways of the said main frame, said auxiliary frame also having its ways in position and adapted to engage the guides of the carrier; a traveling carrier adapted for longitudinal movement along the ways of said frames, and for tilting movement with the auxiliary frame; guides mounted upon said carrier, and in position and adapted to be engaged by the respective ways of either frame, whereby the carrier is positively held against vertical or lateral movement relatively to the frame upon which it may be carried; stops upon said carrier; stops upon the auxiliary frame adapted to engage said stops upon the carrier to thereby limit the longitudinal movement thereof; means for hoisting said carrier longitudinally upon said ways; and means carried by the main frame for tilting the auxiliary frame and the carrier relatively to the main frame, substantially as described.

HENRY E. WILLIAMS.

Witnesses:
FRED. J. DOLE,
H. J. BINGHAM.