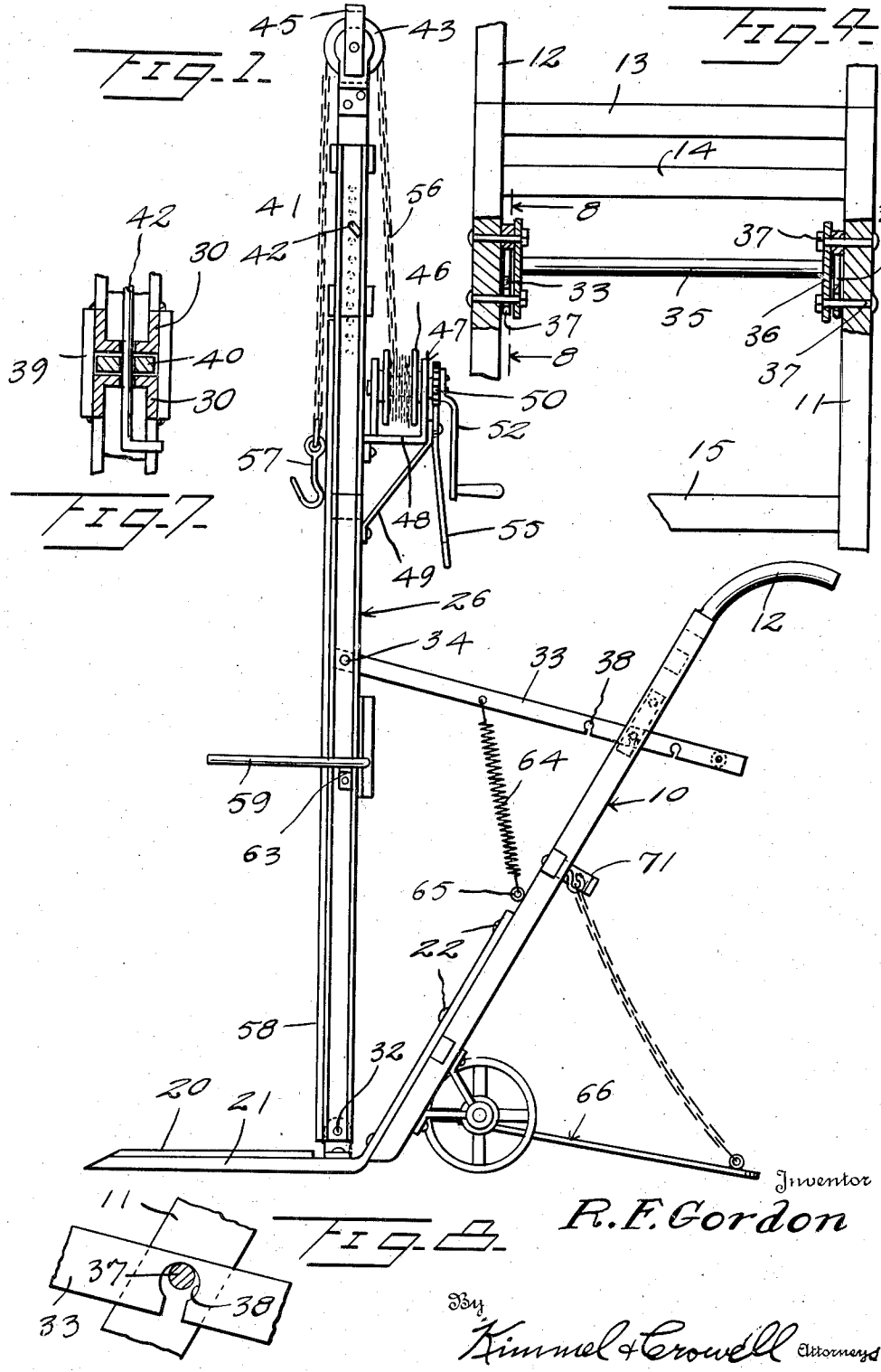
May 4, 1948. R. F. GORDON 2,440,681

COMBINED TRUCK AND ELEVATOR

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Fig. 2.

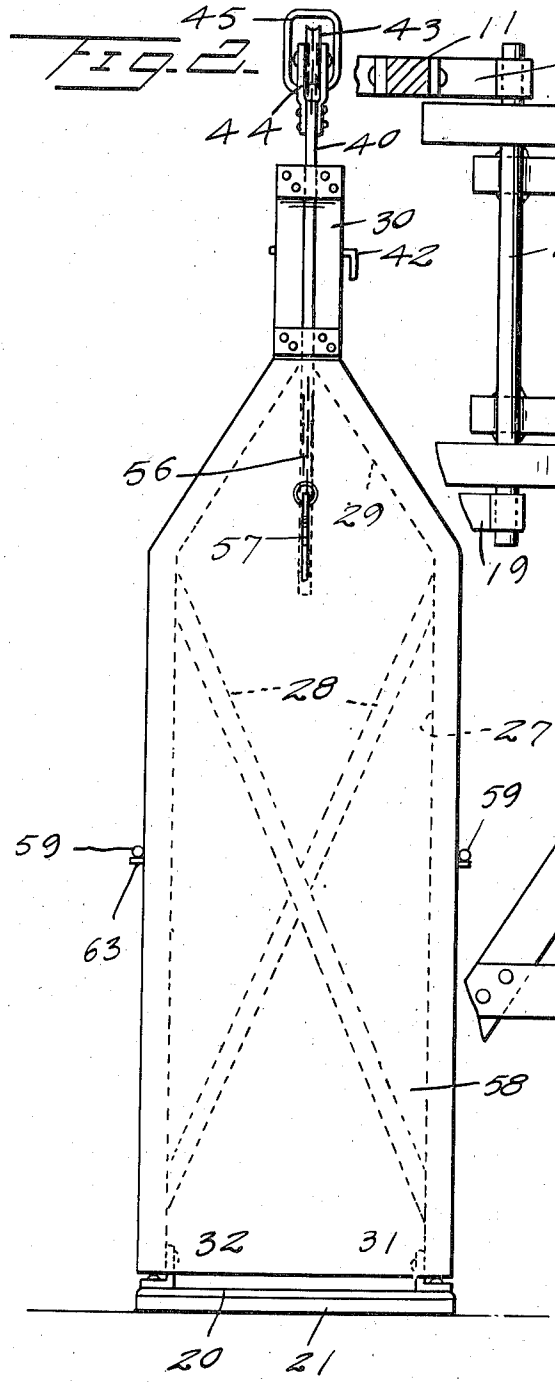
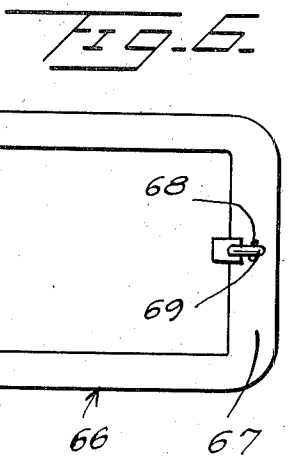


Fig. 6.



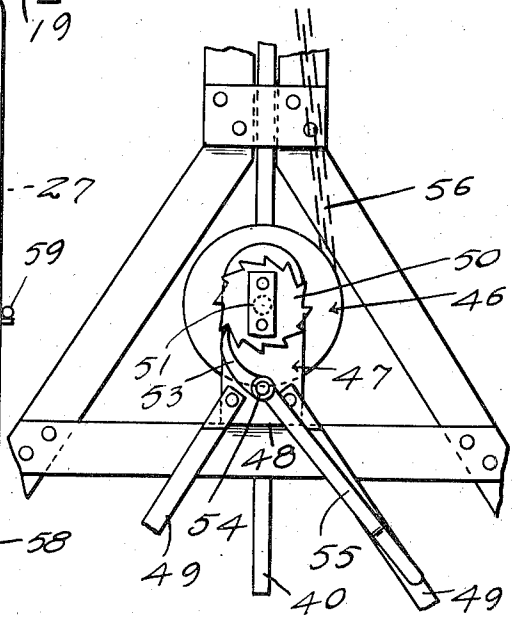


Fig. 5.

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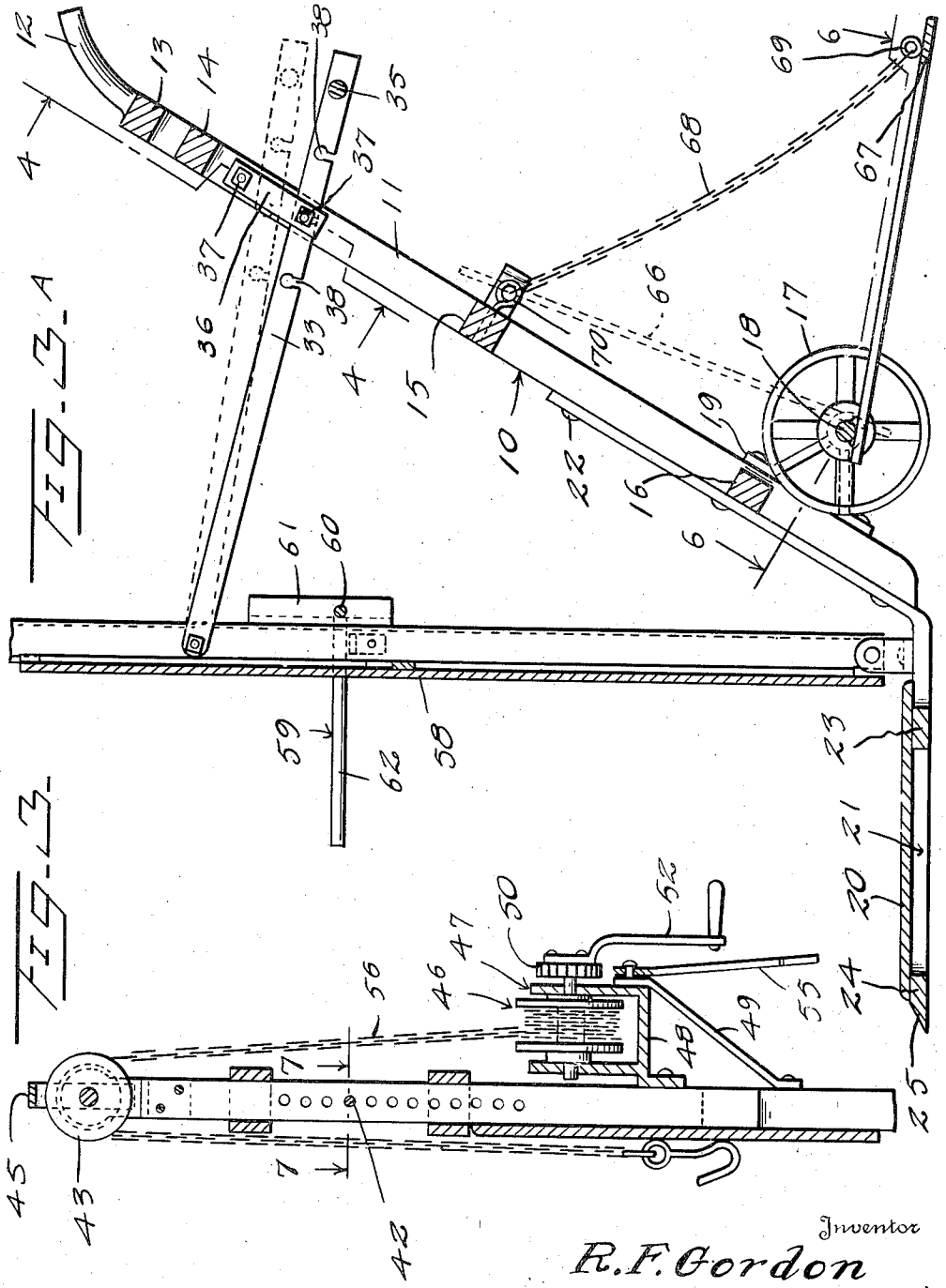
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COMBINED TRUCK AND ELEVATOR

Filed Oct. 15, 1945 3 Sheets-Sheet 3



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Patented May 4, 1948

2,440,681

UNITED STATES PATENT OFFICE

2,440,681

COMBINED TRUCK AND ELEVATOR

Roy F. Gordon, Bennington, Nebr.

Application October 15, 1945, Serial No. 622,410

6 Claims. (Cl. 214—65)

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This invention relates to portable cranes or hoists for handling articles or materials. It is particularly useful lifting and handling or transporting elongated heavy articles such as sides of meat and other relatively heavy articles which are ordinarily handled with difficulty by one man but for which the services of two men are ordinarily too expensive or unnecessary.

The principal object of the invention, therefore, is to provide what may be termed a one-man portable crane or hoist which may be used or moved around conveniently by one man.

A further object of the invention is to provide in combination a crane mounted on a warehouse truck.

To the foregoing objects, and others which may hereinafter more fully appear, the invention consists of the novel construction, combination and arrangement of parts, as will be more specifically referred to and illustrated in the accompanying drawings, but it is to be understood that changes, variations, and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a side view of the device,

Figure 2 is a front view,

Figure 3 is an enlarged view of the crane part,

Figure 3*a* is an enlarged view of the truck showing the uprights on which the crane is mounted,

Figure 4 is a detail enlarged view of the upper part of the truck taken on the line 4—4 of Figure 3*a*,

Figure 5 is a detail enlarged rear view of the crane's hoist drum,

Figure 6 is a sectional view taken on the line 6—6 of Figure 3*a*,

Figure 7 is a sectional view of the hoist bars taken on the line 7—7 of Figure 3, and

Figure 8 is a fragmentary sectional view taken on the line 8—8 of Figure 4.

Referring to the drawings, the numeral 10 designates generally a hand truck which is formed of a pair of elongated bars 11 having curved handles 12 at their rear ends. The elongated bars 11 are connected together by means of transversely extending connecting members 13, 14, 15 and 16. A pair of wheels 17 are disposed below the forward ends of the side bars 11 being rotatably mounted on an axle or shaft 18 carried by bearings 19 secured to the lower sides of the side bars 11.

The truck 10 has extending obtusely from the forward end thereof a base plate 20 which is secured to the upper sides of a pair of angled straps

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or bars 21, which have one side thereof projecting obtusely from the forward ends of the side members 11 and which has the other side thereof engaging on the upper side of a side member 11 and secured thereto by fastening members 22. The angled bars 21 are connected together by means of a pair of connecting bars 23 and 24, the latter being the forward bar which is bevelled as indicated at 25, so that the base may, if desired, be pushed beneath an object for positioning the object on the base plate 20. An elevating frame, generally designated as 26, rises from the base supporting bars 21 and is formed of a pair of upright parallel channel members 27 which are braced by means of a pair of crossed bracing members 28. The channel members 27 have their upper ends bent inwardly in upwardly convergent relation, as indicated at 29, and the upper ends of the extensions 29 are then bent upwardly in parallel relation as indicated at 30.

The frame 26 is adjustably supported with respect to the truck 10 by means of a pair of bearing members 31 secured one to each of the base supporting bars 21 and a pivot 32 extends through the lower ends of the upright frame bars 27, so that the frame 26 may be angularly adjusted with respect to the truck 10. The frame 26 is secured in adjusted position with respect to the truck 10 by means of a pair of elongated bars 33 which are each pivotally secured at their forward ends on a pivot 34 carried by a side or upright frame member 27. The bars 33 engage on the inner sides of the side members 11 and are connected together at their rear ends by a connecting bar 35. A pair of plates 36 are secured by fastening members 37 to the side members 11 of the truck and engage on the inner sides of the bars 33. These plates 36 form guides for the adjusting bars 33 and each bar 33 is formed in its lower edge with a plurality of notches 38, within which the lower one of the pair of fastening members 37 is adapted to engage so as to adjustably hold the bars 33 with respect to the truck 10.

The parallel extensions 30 at the upper end of the frame 26 are connected together by means of a pair of plates 39 secured to the opposite sides of the extensions 30 thereby forming a guide space within which an elongated vertically adjustable bar 40 is adapted to loosely engage. The bar 40 is formed with a plurality of vertically spaced apart openings 41 through which a securing pin 42 is adapted to selectively engage, the pin 42 engaging through the webs of the channel members 30 and thereby holding the

bar 40 in vertically adjusted position. A pulley or sheave 43 is rotatably carried by the upper end of the bar 40 being mounted between a pair of supporting plates 44 which are secured to the upper end of the bar 40. A U-shaped guard 45 is secured to the sheave mounting or supporting members 44 and serves to retain the flexible elevating member in the form of a chain in the groove of the pulley or sheave 43. The winding drum 46 is rotatably carried by a base structure 47, which is secured to the rear side of the frame 26. The base structure 47 is mounted on a horizontally disposed plate 48 which is braced with respect to the frame 26 by one or more bracing members 49. The drum 46 includes a ratchet wheel 50 mounted on the drum shaft 51 and a crank 52 is secured to the drum shaft 51. A pawl 53 rockably mounted on a pivot 54 is constantly held in engagement with the ratchet 50 by means of an elongated handle 55 extending downwardly from the pivot 54 so that the pawl 53 will be gravitatingly held in ratchet engaging position and the handle 55 provides a means whereby the pawl 53 may be readily swung to a disengaged position. A flexible article elevating member 56 is wound about the drum 46 and trained over the pulley or sheave 43. The elevating member 56 has a hook or article supporting member 57 secured to the free end thereof and which engages on the forward side of the frame 46. Preferably the forward side of the frame 46 has secured thereto a plate 58, which may be in the form of plywood or the like, so that meat or other heavy elongated articles may be suspended from the hook 57 and will not contact with the frame 26. In order to provide a means whereby the elongated article, which is suspended from the hook 57, will be held against undue lateral shifting, I have provided a U-shaped holding bar 59 which has the bight 60 rockably extended through angle members 61 fixed to the rear sides of the frame members 27. The free arms 62 of the U-shaped member 59 are adapted to be swung downwardly and forwardly at a substantially right-angular position, with respect to the covering plate 58 and are held in this right angular position by means of angled stop members 63 which are fixed to the outer sides of the upright channel members 27. The frame locking bars 33 are constantly held with the keepers or notches 38 engaged with the lower fastening members 37 of the plates 36 by means of a spring 64, which is secured at its lower end to an eye 65 carried by the truck 10 and is secured at its upper end to one of the bars 33.

The truck and the hoist or crane is adapted to be held against movement along the floor or plane shaft by means of a U-shaped anchoring or holding member 66 which has the free legs thereof fixed to the shaft 18 and extends rearwardly from the shaft. The bight 67 of the holding member 66 is rearmost and is adapted to engage the floor or plane surface and is adapted to be held against the floor by a foot or the like of the user. A chain or flexible member 68 is secured at one end to the bight 67 being secured to an eye 69 carried by the bight 67 and secured at its other or upper end to an eye bolt 70 which is secured to the transverse connecting bar 15. The holding member 66 is held in disengaged position, which is the dotted line position shown in Figure 3a, by means of a spring clip 71 which is fixed to the rear side of the transverse connecting member 15.

In the use and operation of this device it may be stated that the device has been particularly designed as a portable hoist or crane designed for use in charging or placing articles in a cold locker. The article, which may be a side of meat, is secured to the hook 57 and the article is then elevated so that the article will be suspended on the forward side of the frame 26. The holding bars 62 are swung downwardly to a right angular position with respect to the forward side of the plate or cover 58. The truck and hoist may then be moved to the locker or refrigerator and when in desired position, the anchoring member 66 may be swung downwardly to floor engaging position whereupon the user may place one or both feet on the upper side of the anchoring member 66. The drum 46 may then be operated to either elevate or lower the suspended article until it is in proper position for placing in either the refrigerator, locker or other compartment. This device is of relatively simple construction and provides a portable hoist and truck by means of which elongated or heavy articles may be transported or shifted from one point to another and elevated or lowered to the desired position. This operation can be performed by one person so that the use of this device will be economical, particularly where it is used in a cold storage plant. It will be understood that the pivot members 32 for the hoist frame 26 may be made removable so that the hoist frame may be removed from the truck and the latter used in the manner well known for small hand trucks.

The exact configuration illustrated is regarded as the optimum, but some of the desirable results inherent in this disclosure may be obtained by various slight modifications including some departure from the exact configuration shown, and it is therefore requested that the scope of the invention should be regarded as limited only by the terms of the claims.

What I claim is:

1. A device as described consisting of a platform having connected thereto at its rear end at an obtuse angle an upwardly inclined truck frame with uppermost handles, a pair of wheels resting upon the ground along with said platform, means journaling said wheels upon the truck frame on its rear side, a U-shaped anchoring member having its parallel arms swivelly mounted upon the axle of said wheels with its cross arm extending remotely from said wheels at a downward inclination upon the ground for foot engagement to prop said wheels for lifting the truck frame upon the wheels to elevate the platform, and a straight elongated upright rigid frame positioned at right angles to and upon said platform for supporting a load whose weight is concentrated upon said platform.

2. A device of the kind described consisting of a platform having attached thereto at an obtuse angle a truck frame at its rear, a pair of wheels journaled upon the lower rear side of the truck frame so as to rest along with said platform upon the ground at the same time, foot-engageable means for pressing down upon said wheels while pressing downwardly upon the truck frame to tilt same upon said wheels to elevate the platform, hoisting means carried by said platform, downwardly pressed oppositely arranged bracing arms carried by said hoisting means pivotally and engaging the truck frame adjustably to angularly dispose the hoisting means upon said platform, and means pivotally mounting said hoisting

means upon said platform for shifting its center of gravity towards and from said truck frame.

3. In a device of the kind described a hand truck consisting of a flat platform and an upwardly inclined truck frame formed at an obtuse angle upon the rear end of said platform, journal brackets carried by the rear side of said truck frame at its lower end, an axle mounted in said brackets, a pair of traction wheels made fast upon said axle and having their lower dead centers in line with the under face of said platform, a U-shaped anchoring member having its parallel arms pivotally mounted upon said axle, a chain connecting the outer cross arm of the anchoring member at one end and secured to the truck frame at its other end, and a keeper on said frame in which the cross arm of said anchoring member may be held with a clip-like effect in upright position alongside of the frame.

4. In a device as described, a hand truck including a platform, an upright hoisting boom having its lower end pivotally mounted at the rear end of the platform, a sheave carried by the upper end of the boom, said hand truck including oppositely arranged side bars, a pair of keeper bars mounted longitudinally of the inner sides of the truck frame side bars in spaced relation to provide between them and said bars guide slots, a pair of oppositely arranged brace members formed longitudinally with spaced apart notches, and extending through said guide slots adjustably, bolts passing through said side bars and keeper bars to secure them together, said brace members adapted to have any selective notched portion engaged with two of said bolts to adjustably position them relatively to the truck frame, means pivotally connecting the free ends of said brace members to said boom; springs connected to said bracing members and extending diagonally downwardly for attachment to said truck frame, and a cross bar connecting the brace members at their outermost ends.

5. In a device of the kind described a truck platform, a flat-sided bearing plate having its lower end pivoted to said platform, and having an upper tapering portion with a transverse horizontal edge, a skeleton reinforcement for the rear side of said plate consisting of channel-shaped sills

secured longitudinally and marginally against the marginal portions of said plate and converging conformably to the tapering portions of said plate at their upper ends, the webs of said converging portions of said sills, in a plane with the mentioned transverse horizontal edge, being separated to provide a slit, an upstanding guide communicating with said slit, a bar slidable in said slit and guide, a sheave carried at the top of said slidable bar, and means holding the slidable bar in adjusted position in said guide.

6. A combined hand truck and elevator comprising a platform, a wheeled truck frame connected to said platform and inclined at an obtuse angle thereto, an anchoring member rockably mounted on the lower end of said frame bar extending at a downward and rearward inclination for engagement with the ground for foot engagement to prop said wheels, an upright frame on said platform and a hoisting means carried by said upright frame.

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