

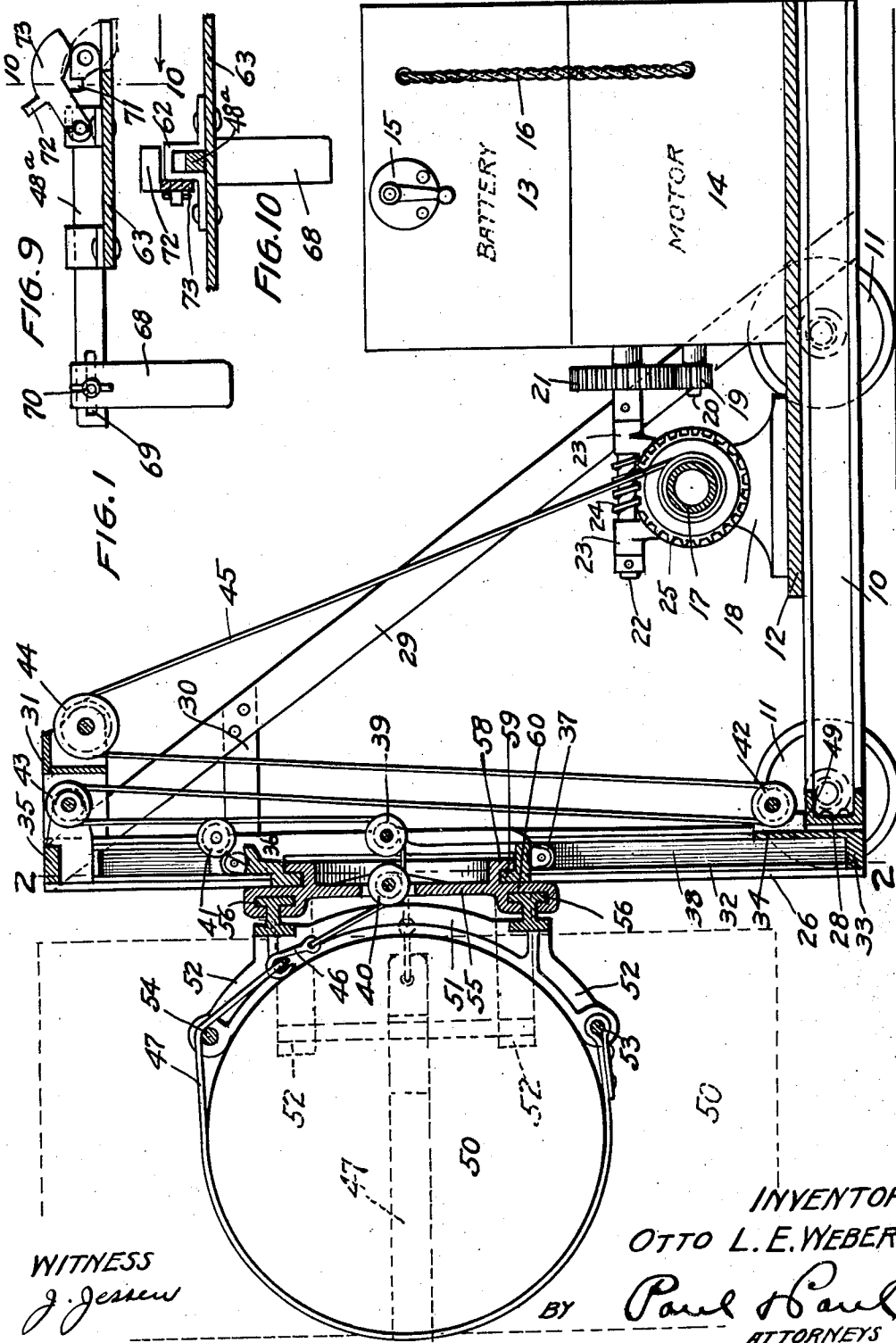
O. L. E. WEBER.
TRUCK.

APPLICATION FILED MAY 8, 1919.

Patented May 10, 1921.

3 SHEETS—SHEET 1.

1,377,978.



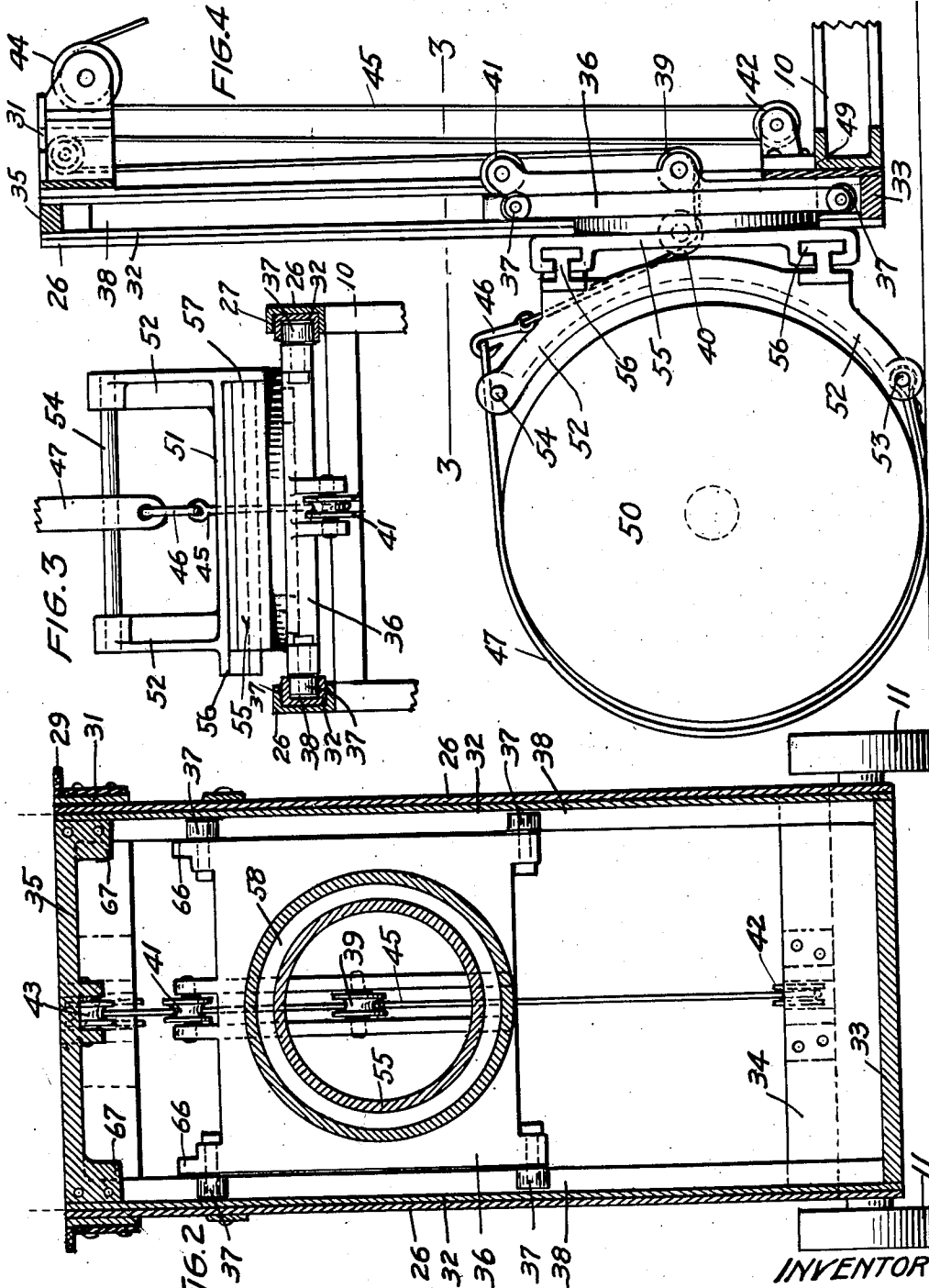
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WITNESS

J. Jernum

INVENTOR
OTTO L. E. WEBER.

BY *Paul & Paul*
ATTORNEYS

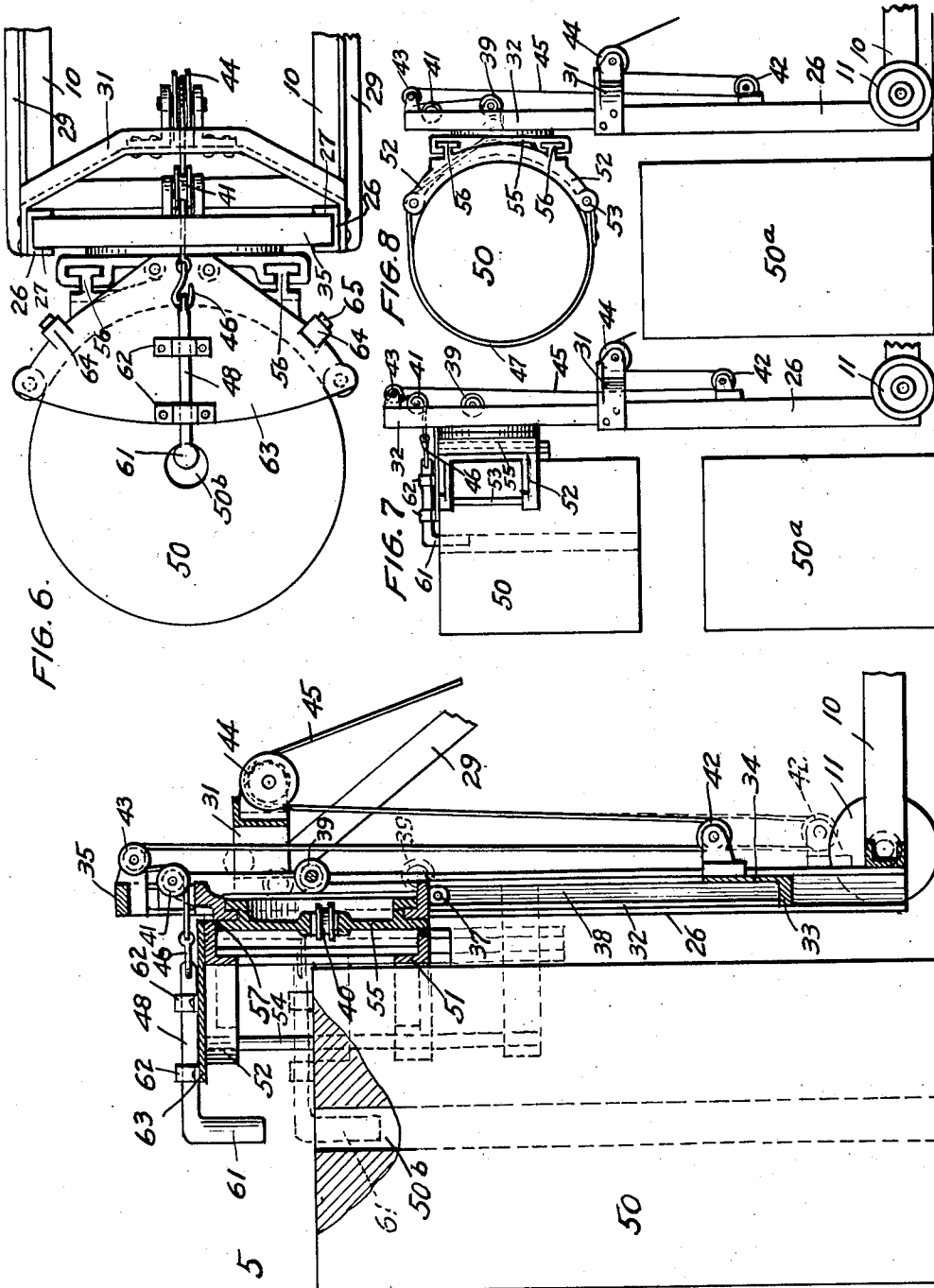
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WITNESS

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FIG. 5

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UNITED STATES PATENT OFFICE.

OTTO L. E. WEBER, OF ST. CLOUD, MINNESOTA.

TRUCK.

1,377,978.

Specification of Letters Patent.

Patented May 10, 1921.

Application filed May 8, 1919. Serial No. 295,770.

To all whom it may concern:

Be it known that I, OTTO L. E. WEBER, a citizen of the United States, resident of St. Cloud, county of Stearns, State of Minnesota, have invented certain new and useful Improvements in Trucks, of which the following is a specification.

The object of my invention is to provide a truck designed particularly for handling roll paper to the end that a large amount of manual labor may be avoided, railway cars may be easily and quickly loaded to their maximum capacity and the rolls stacked on end one upon another and thereby protected from damage.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification,

Figure 1 is a vertical sectional view through a truck embodying my invention.

Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1,

Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 4,

Fig. 4 is a vertical sectional view showing the truck adapted for handling a roll in a horizontal position,

Fig. 5 is a vertical sectional view, showing the truck adapted for handling a roll in an upright or vertical position,

Fig. 6 is a plan view of the truck as shown in Fig. 5,

Fig. 7 illustrates the manner of raising a roll of paper for placing it on end upon another roll,

Fig. 8 is a similar view, showing the operation of placing a roll in a horizontal position upon an upright roll,

Fig. 9 is a detail sectional view of the preferred construction of the roll clamping mechanism,

Fig. 10 is a section on the line 10—10 of Fig. 9.

In the drawing, 10 represents the horizontal frame or base of the truck having the truck wheels 11 and a platform 12. The motive power for the truck is preferably furnished by a storage battery and electric motor (not shown) but mounted on the rear end of the platform 12 within inclosures 13

and 14 respectively. A switch 15 may be arranged conveniently for starting and stopping the motor and wires 16 connect the battery with the motor.

The hoisting drum 17 is mounted on standards 18 upon the platform 12 and is driven from the motor by means of a pinion 19 on the motor shaft 20, a gear 21 on a counter-shaft 22 arranged in bearings 23 on one of the standards 18 and having a worm 24 meshing with a worm wheel 25 rigidly connected to the hoisting drum 17. The drum may be rotated in either direction from the motor by suitable means, not shown but included in the electric circuit. The hoisting frame preferably consists of upright bars 26 having channels rigidly secured to the base 10 at 28 and further fastened by braces 29 and 30. The channel bars 26 are connected at the top by a transverse yoke 31 which prevents spreading of the bars and at the same time affords room for the passage of the hoisting carriages. An auxiliary hoisting carriage, comprising the vertical channel bars 32, the lower horizontal cross bars 33 and 34 and the upper cross bar 35 is arranged to slide in the channels 27 of the bars 26 and a main hoisting carriage 36 has guide rollers 37 adapted to travel in the channels 38 of the bars 32.

Sheaves 39, 40 and 41 are mounted in the carriage 36 and sheaves 42 and 43 are mounted respectively in the lower cross bars 34 and upper cross bar 35 of the auxiliary carriage. A sheave 44 is arranged centrally in the yoke 31 and a chain or cable 45 passes from the hoisting drum 17 over this sheave then under the lower sheave 42 and up over the upper sheave 43 and then down under the sheaves 39 and 40 in the main carriage as shown in Figs. 1 and 4. A hook 46 is secured to the end of the cable 45 for attachment to a clamping strap 47 as shown in Figs. 1 and 4 or to a sliding clamping bar 48 as shown in Figs. 5, 6, and 7. The hoisting carriages normally rest on the base 10 at 49.

The paper roll represented by the numeral 50 is held in a saddle or cradle 51 attached to the main carriage 36 and having semi-circular or V-shaped arms 52 partially embracing the roll and connected by vertical rods 53 and 54. The cradle 51 is detachably connected to a rotatable or swiveled block 55, preferably by means of dovetailed or slotted grooves in the block in

which the tongues 56 of the cradle enters, the cradle resting against a suitable stop as at 57. (See Figs. 3 and 5.) The swiveled block 55 forms a part of the hoisting carriage 36 and is mounted in an annular opening in the center of the carriage and rotatably supported by means of the interlocking annular flanges 58, 59 and 60. The sheave 39 is mounted in the main carriage and the sheave 40 in the block 55, and the location of the sheaves is such that the cable 45 passing under both sheaves is directly in the center of rotation of the block. The sheaves 39 and 40 are used only when handling rolls in the horizontal position or up-ending the rolls as indicated in dotted lines in Fig. 1, but when rolls in a vertical position are to be handled, as when loading cars, the cable is removed from the sheaves 39 and 40 and brought under the sheave 41 at the top of the auxiliary frame and the hook 46 is attached to the clamping bar 48 Fig. 6. This bar is provided with a downwardly turned arm 61, adapted to enter the core opening in the roll, and slides horizontally in suitable guide ways 62 on a plate 63, that is detachably secured to the cradle arms 52 as by lugs 64 and screws or pins 65. (See Fig. 6.) The plate 63 is removed and a strap 47 is attached to the rod 53 of the cradle arms 52 when the rolls are to be handled in a horizontal position. The strap being stretched out upon the ground, the roll is rolled over it, after which the strap is brought around the roll and attached to the hook 46 as illustrated in Fig. 4. The motor is then started to rotate the drum 17 and as the slack of the cable is taken up, the roll is drawn tight against the cradle arms and a continuous rotation of the drum causes the main carriage 36 to rise in the auxiliary carriage. When the roll has been raised sufficiently from the ground, as in Figs. 1 and 2, and if it is desired to up-end the roll the motor is stopped and the roll is swung around with the swiveled block to a vertical position, after which the motor is started in the reverse direction to let the roll down on the ground. If it is desired to double deck the rolls with the upper roll horizontal as in Fig. 8, the hoisting drum is kept rotating until the main carriage engages the upper cross bar 35 of the auxiliary carriage as by the lugs 66 striking the cross bar at 67, when continued hoisting causes the two carriages to rise together in the channel bars 26 to the desired height, after which the roll 50 may be let down on top of the vertical roll 50^a. As the cable slackens the hook 46 is automatically released from the strap 47, and the truck may then be moved on its wheels and the cradle lowered for raising another roll. For vertical handling or double tiering rolls in the

vertical position, as in Fig. 7, the strap 47 is removed and the plate 63 and hook 46 are attached as heretofore described, the carriage is hoisted to the proper position with respect to the roll, as in Fig. 5. The carriage is then lowered to drop the clamp bar 48 into the core opening 50^b as indicated in dotted lines and as the hoisting drum is again reversed to hoist the roll, the first effect is to clamp the roll tight against the cradle and a continued hoisting raises the roll to the desired height as in Fig. 7, for placing it on top of another roll.

For the purpose of adapting the hoisting truck more readily for handling different size rolls in a vertical position and to enable one man to handle both the truck proper and the hoisting device, I prefer to construct the clamp bar 48 as shown in Figs. 9 and 10. This clamp is provided with a slotted core plug 68 and horizontally adjustable on the bar 48^a by means of a slot 69 and secured by a bolt 70. At its inner end the bar is also provided with a transverse notch 71 into which a locking finger 72 of a pivoted latch 73 is adapted to enter for the purpose of temporarily locking the bar against movement, while the plug 68 is inserted into the core opening of the roll. The latch 73 is disengaged from the notch 71 to allow the bar to be moved lengthwise to draw the roll against the cradle at the beginning of the hoisting operation.

It is evident that the cradle or saddle 51 may be easily detached from the carriage block 55 and other forms of carriers substituted therefor to adapt the truck for handling crates, bundles or packages of different kinds.

I may partially counter-balance the weight of the roll on the forward end of the truck by means of the battery and motor at the rear end, but other counter-balancing means, not shown, may be used. It is evident that the hoisting drum may be of any suitable type and its operation may be performed in various ways and many changes and modifications may be made in the details of construction without altering the principle or scope of the invention. I do not, therefore, confine myself to the particular construction herein shown.

I claim as my invention:

1. A truck comprising a frame, a carriage mounted for vertical movement therein, a block on the carriage mounted for rotation on a horizontal axis, means for clamping the article to be lifted on said block, means to raise and lower said carriage, and means adapted upon raising of the carriage to actuate said article-clamping means.

2. A truck comprising a frame, a carriage mounted for vertical movement therein, a block mounted for rotary movement in said carriage, a cradle having a seat to fit

the periphery of a roll of paper, means for encircling the roll of paper to clamp it in said cradle, and means for raising and lowering said carriage and block.

5 3. A truck comprising a frame, a carriage mounted for vertical movement therein, a saddle supported for rotary movement on a horizontal axis in said carriage, and having a surface to receive a roll of paper, a
10 band for encircling the paper and a lifting cable connected with said band for clamping it in said saddle and having a running connection with said frame and carriage for simultaneously clamping said roll and lifting said carriage.

4. A truck comprising a frame, a carriage mounted for vertical movement therein, a block having a rotary movement in said carriage, a saddle having T-shaped heads fitting correspondingly shaped slots in said carriage and provided with a surface to receive a cylindrical object to be lifted, means for clamping the object in said saddle, and means for lifting said carriage and
25 saddle.

5. A truck comprising a frame, a carriage mounted for vertical movement therein, a saddle supported by said carriage for rotary movement on a horizontal axis and having arms adapted to partially encircle the object to be lifted, a strap connected to one of said arms and adapted to pass around the object to be lifted, means connected with said strap for tightening it around the
30 object, and means for lifting said carriage and saddle.

6. A truck comprising a frame, a carriage mounted for vertical movement therein, a saddle supported by said carriage for rotary movement on a horizontal axis, a lifting cable having a running connection with said frame and with said carriage, and means connected with said cable and said carriage to automatically clamp the article
40 to be lifted against said saddle when a pulling strain is applied to said lifting cable.

7. A truck comprising a frame, a main carriage mounted for vertical movement therein and having means for clamping the article to be lifted, a secondary carriage mounted for movement with said main carriage when said main carriage reaches the normal limit of its upward movement, and means for raising and lowering said main
50 and secondary carriages.

8. A truck comprising a frame, a main carriage having means for clamping the article to be lifted thereto, a secondary car-

riage having guides whereon said main carriage is movable, said secondary carriage
60 being mounted for upward movement when said main carriage reaches the limit of its guides therein, and means for raising and lowering said main and secondary carriages.

9. A truck comprising a frame, a main carriage mounted for vertical movement and having means for clamping the article to be lifted thereto, a secondary carriage, guides on said secondary carriage wherein said main carriage is movable, said secondary
65 carriage being normally stationary but mounted for upward movement when said main carriage reaches the limit of its guides therein, and an operating cable having running connections with said frame and with
70 said main and secondary carriages.

10. A truck comprising a platform and upright standards thereon, a carriage mounted for vertical movement in said standards, a saddle supported by said carriage for rotary movement on a horizontal axis and having a seat for the article to be lifted, a cable having a running connection with said frame and standards and said carriage and a winding drum and motive power therefor
80 mounted on said platform.

11. A truck comprising a platform, upright standards thereon, guides in said standards, a secondary carriage vertically movable in said guides, guides on the secondary carriage, a main carriage vertically movable in said guides in said secondary carriage, said secondary carriage being normally stationary, means for clamping the article to be lifted to said main carriage, a
90 cable having running connections with said frame and with said main carriage, said secondary carriage being lifted when said main carriage reaches the limit of its upward movement and a winding drum mounted
100 on said platform and connected with said cable and having an operating means.

12. A truck comprising a frame, a carriage mounted for vertical movement therein, flexible means having a running connection with said carriage for raising or lowering it in said frame, and a cradle having a seat thereon for the article to be lifted removably supported by said carriage.

In witness whereof, I have hereunto set
110 my hand this 30th day of April, 1919.

OTTO L. E. WEBER.

Witnesses:

M. T. COLE,
D. R. HARVEY.