(No Model.)

2 Sheets—Sheet 1.

S. H. HOLT.

WAGON BODY OR RACK ELEVATOR.

No. 435,497. Patented Sept. 2, 1890.

Fig. 1.

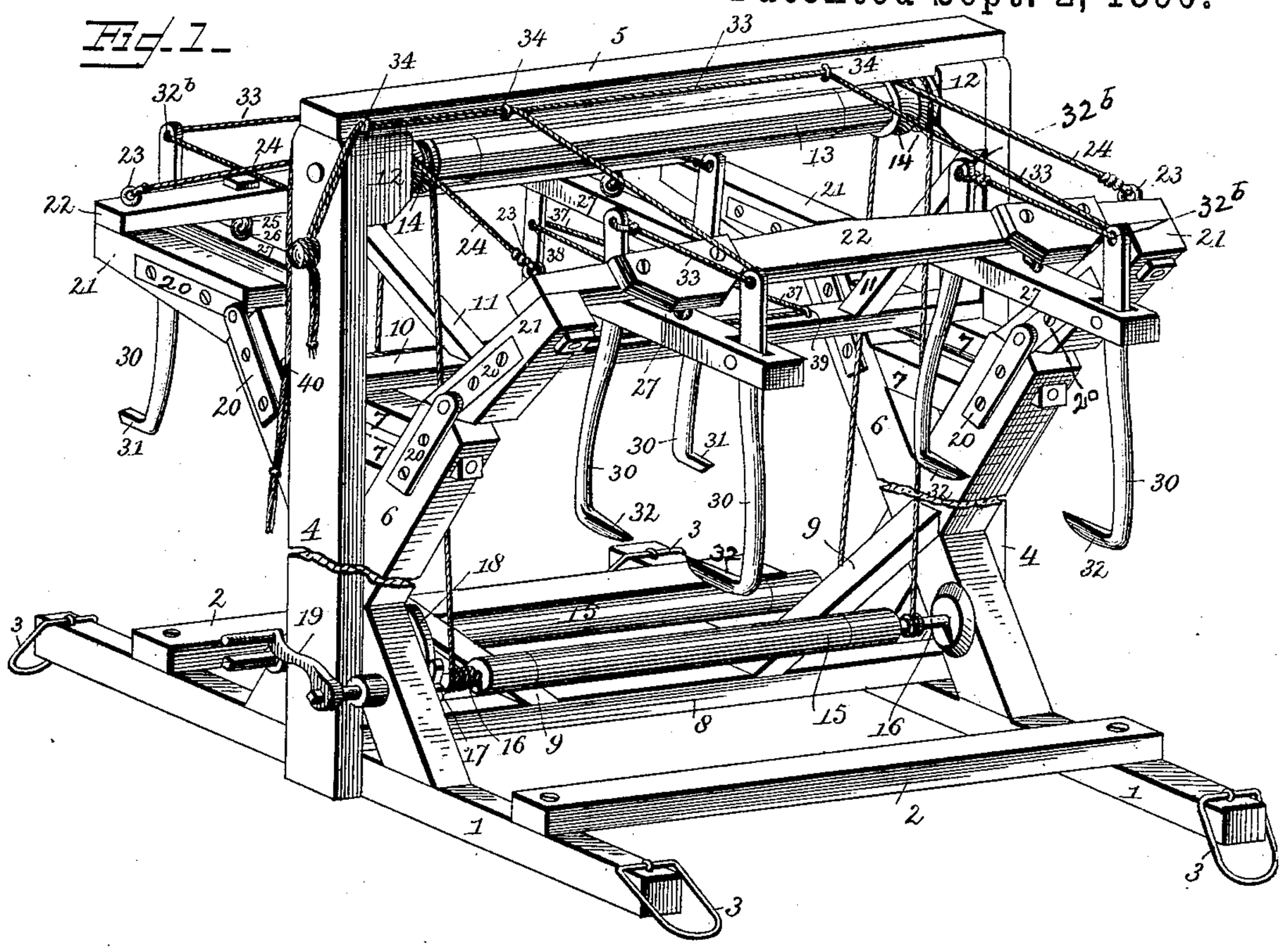
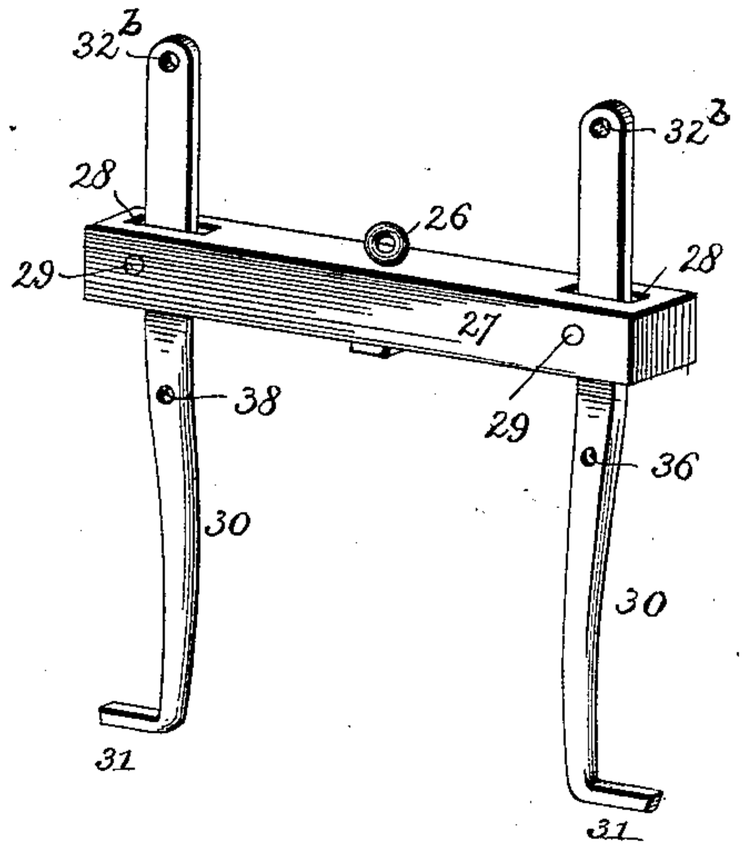


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

S. H. HOLT.

WAGON BODY OR RACK ELEVATOR.

No. 435,497. Patented Sept. 2, 1890.

Fig. 2.

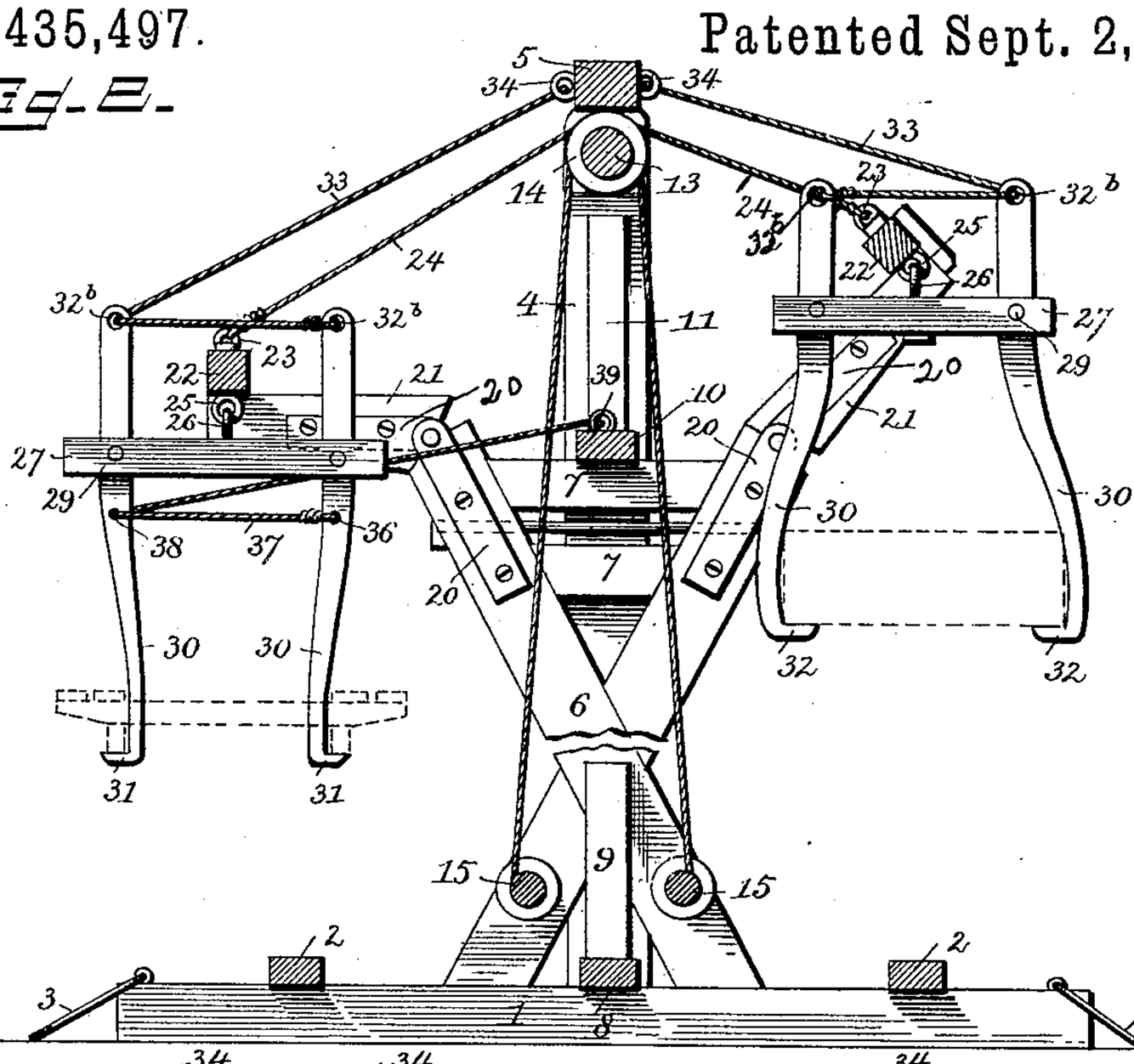
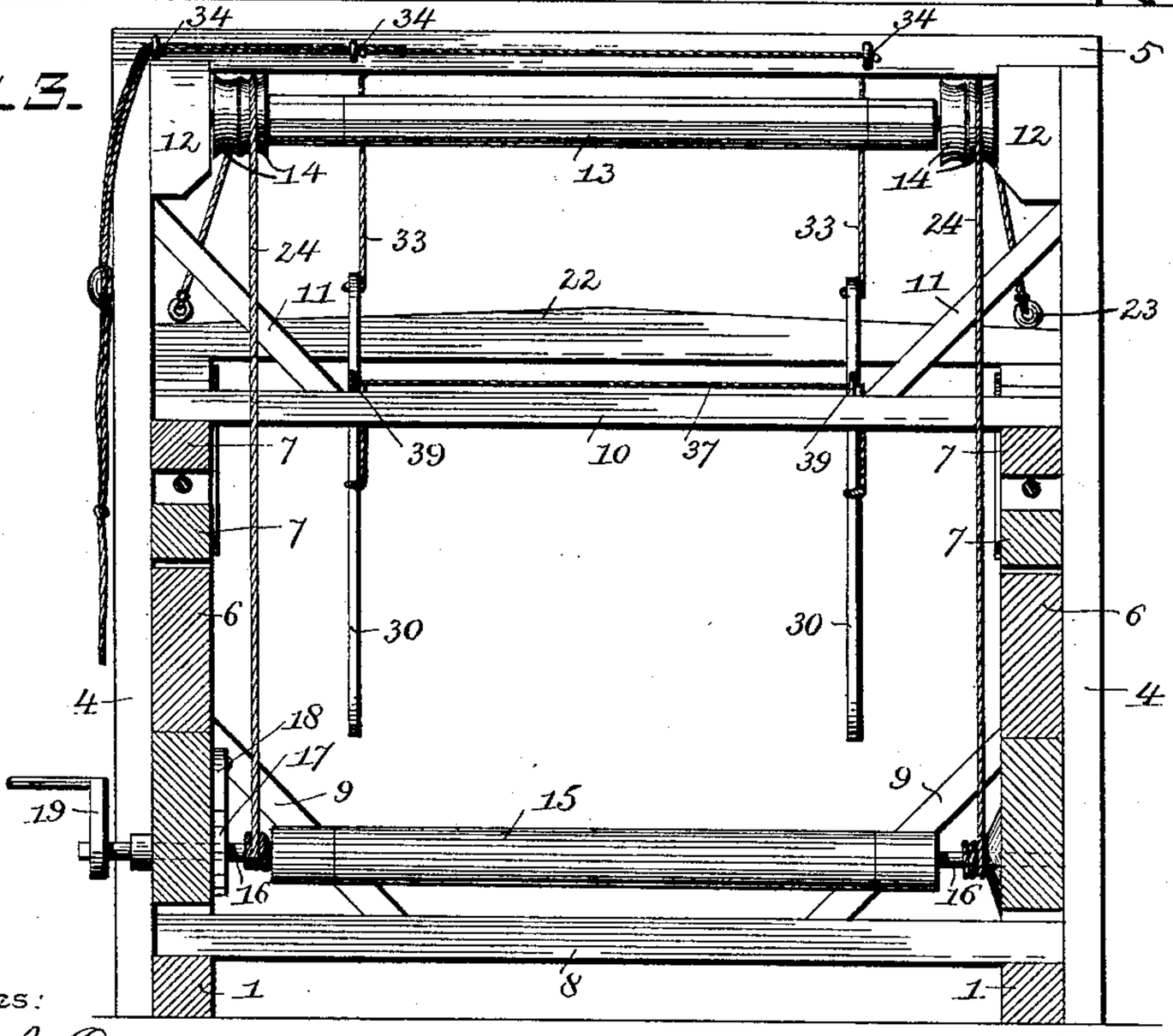


Fig. 3.



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UNITED STATES PATENT OFFICE.

SILAS H. HOLT, OF AFTON, IOWA.

WAGON BODY OR RACK ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 435,497, dated September 2, 1890.

Application filed March 6, 1890. Serial No. 342,840. (No model.)

To all whom it may concern:

Be it known that I, SILAS H. HOLT, a citizen of the United States, residing at Afton, in the county of Union and State of Iowa, have invented a new and useful Wagon Body or Rack Elevator, of which the following is a specification.

This invention has relation to derricks of that class adapted to elevate hay-racks and wagon-bodies from their trucks for the purpose of suspending them out of the way.

The objects and advantages of the invention, together with the novel features thereof, will be hereinafter described, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a derrick constructed in accordance with my invention. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a longitudinal section. Fig. 4 is a detail in perspective of one of the hangers.

Like numerals indicate like parts in all the figures of the drawings.

The end sills 1 are connected by the side sills 2, and the former are provided at their ends with pivoted anchor-bails 3, designed to engage fixed objects for the purpose of anchoring the apparatus securely to the ground. From the center of the side sills there project a pair of opposite vertical standards 4, the upper ends of which are connected by a cross-beam 5, the standards and bar constituting a central main frame. Upon each of the end sills 1 and at the inner side of the vertical standards 4 are located X-shaped side frames 6, which frames are suitably braced by means of cross-bars 7. A central bar 8 connects the end sills 1, and inclined braces 9 serve to brace the X-shaped frames, the lower ends of the braces being securely bolted to the central bar 8. The upper cross-bars 7 are connected by a longitudinally-disposed bar 10, and the ends of the bar 10 are provided with inclined braces 11, the upper ends of which are bolted to the upper ends of the standards 4. The standards 4 are provided near their upper ends at their inner sides with bearing-blocks 12, in which there is loosely journaled a longitudinally-disposed shaft 13, provided at each end with a pair of pulleys 14. The lower terminals of the opposite X-shaped frames are connected by longitudinally-disposed shafts 15—one arranged at each side of the central connecting-bar 8—and at both ends of these shafts there are formed windlasses 16, and each of said shafts is provided with a ratchet-wheel 17, engaged by a loose gravity-pawl 18. One end of each shaft 15 is projected through the X-shaped frame and squared and provided with removable cranks 19, whereby the windlass-shafts may be operated.

In straps 20, secured to the upper ends of each of the inclined members of the X-shaped frames, there are pivoted crane-arms 21, which are also provided with straps 20 at each side thereof, which straps are pivotally connected to the companion straps of the frame. Each pair of crane-arms 21 is connected by a cross-bar 22, provided near its ends with eyes 23. Connected to the eyes 23 are cords 24, which extend each over a pulley 14 and pass down and are wound around a windlass 16 upon the windlass-shaft 15 at the opposite side of the machine, so that by operating the windlass-shaft at one side of the machine the pivoted crane-arms at the opposite side thereof are elevated or lowered, and may be maintained in either position by means of the pawl and ratchet 18 and 12, before described.

From each of the bars 22 there depends a pair of eyebolts 25, and loosely connected with each of the eyebolts is an oppositely-disposed eyebolt 26, projecting from a cross-head 27. The cross-heads 27 are recessed, as at 28, near their opposite ends, and pivoted within each of the recesses, as at 29, are loosely-suspended gravity gripping-arms 30. The arms 30 of one crane terminate at the lower ends in outwardly-disposed hooks 31, and those of the other crane in inwardly-disposed hooks 32, so that those arms having the outwardly-disposed hooks 31 are adapted to be lowered between the side bars of a hay-rick, while those having the arms and loops 32 are designed to be lowered over, embrace, and take under the body of a wagon. The gripping-arms project above their pivots and are provided with eyes 32^b. Cords 33 have their inner ends connected to the eyes of the inner arms, thence pass through the eyes of the opposite or outer arms, and are carried

upward and passed through guide-eyes 34 and are connected at the side of one of the uprights 4. By drawing upon either one of the pair of cords the gripping-arms are drawn together at their upper ends and separated at their lower ends. Below their pivots the gripping-arms at the inner ends of the cross-heads are each perforated, as at 36, and to the same are fastened cords 37, which cords pass through perforations 38, formed in the opposite set of arms, are thence carried inward, and passed through guide-eyes 39 upon the central cross-bar 10 and to a side guide-eye 40, at which point the two cords are merged into one. It will be apparent that by operating these cords the inner ends of the grippers are drawn toward each other.

The operation of my invention is as follows: The crane being raised, the gripper-opening cords (if those grippers for elevating a wagon-body be employed) are drawn upon, which separates the lower ends of the grippers. The pawl 18 is withdrawn from a locked position with the ratchet 17, and by operating the windlass-crank the rope is unwound and the crane lowered over the wagon-body. The cords are now loosened, so that the gripper-arms may drop by gravity and embrace the wagon-body. The windlass is now operated in the reverse direction, so that the crane is elevated, and after the load has been discharged the crane is lowered, and by operating the cords the lower ends of the gripping-arms are distended and the wagon-body lowered upon the truck. The operation of the opposite crane-arm is similar, with the exception that the lower cords with which the latter are provided are first operated to contract the lower ends of the grippers, and after the crane has been lowered the upper cords are operated to expand the same, and thus they pass between and take under the side bars of the rick. It will be noticed that when the cranes are elevated either partially or wholly they may be maintained at the desired elevation by means of the gravity-pawl 18, intermeshing with the ratchet.

Having thus described my invention, what I claim is—

1. The combination, with a base, a central vertical frame mounted thereon, side frames mounted on the base, a shaft provided with a pulley journaled in the upper portion of the central vertical frame, and a windlass-shaft journaled in and near the lower ends of the said side frames, of crane-arms hinged to the upper ends of the said side frames, a cross-bar connecting the said crane-arms, cross-heads suspended from the said bar, grippers pivotally suspended in the cross-heads, ropes connected to the grippers for operating the same, and ropes for raising and lowering the crane-arms, said ropes being connected at their upper ends to the crane-arms, passed over the pulleys of the central frame, and connected at their lower ends to the windlass-shaft, substantially as specified.

2. The combination, with a base and a central vertical frame mounted thereon, of opposite side frames rising from the base, crane-arms hinged to the side frames, a bar connecting said arms, cross-heads depending from the bar, opposite pairs of L-shaped grippers pivoted in the cross-heads and provided above their pivots with eyes, opposite ropes connected to the eyes of the inner grippers, passed loosely through the eyes of the opposite grippers rearwardly, and through guides located upon the central frame, an upper pulley-shaft journaled in the upper end of the central frame, a lower windlass-shaft in the lower side frames, and ropes connected to the crane-arms, passed over the pulley-shaft, and connected to the windlass-shaft, substantially as specified.

3. In a machine of the class described, the combination, with opposite crane-arms and means for operating the same, of cross-heads loosely suspended from the arms, opposite pivoted grippers mounted in the cross-heads and terminating at their lower ends in hooks and having their upper ends provided with perforations, and opposite cords connected at their inner ends with the perforations of the inner arm and passing through the perforations of the opposite arm, thence back again, and through suitable guide-eyes, substantially as specified.

4. In a machine of the class described, the base and central frame, combined with the hinged crane-arms, on each side of the central frame carrying the grippers, and operating-cables for the cranes, as set forth.

5. The combination, with a base and a central frame, of opposite X-shaped frames mounted on the base, crane-arms connected with the opposite ends of the frame, bars connecting the crane-arms, grippers depending from the said bars, and operating-cables connected with the arms, substantially as specified.

6. The base and the central frame having the opposite X-shaped frames, crane-arms hinged to the X-shaped frames and carrying the grippers, the shaft 13 at the top and the windlass 15 at the bottom, and the operating-cables mounted on the windlass and passing over the shaft and connected to the cranes, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

SILAS H. HOLT.

Witnesses:
M. V. ASHBY,
J. R. YOUNG.