J. E. AGLER.

LOADING APPARATUS.

APPLICATION FILED APR. 16, 1908.

921,498.

Patented May 11, 1909.

3 SHEETS—SHEET 1.

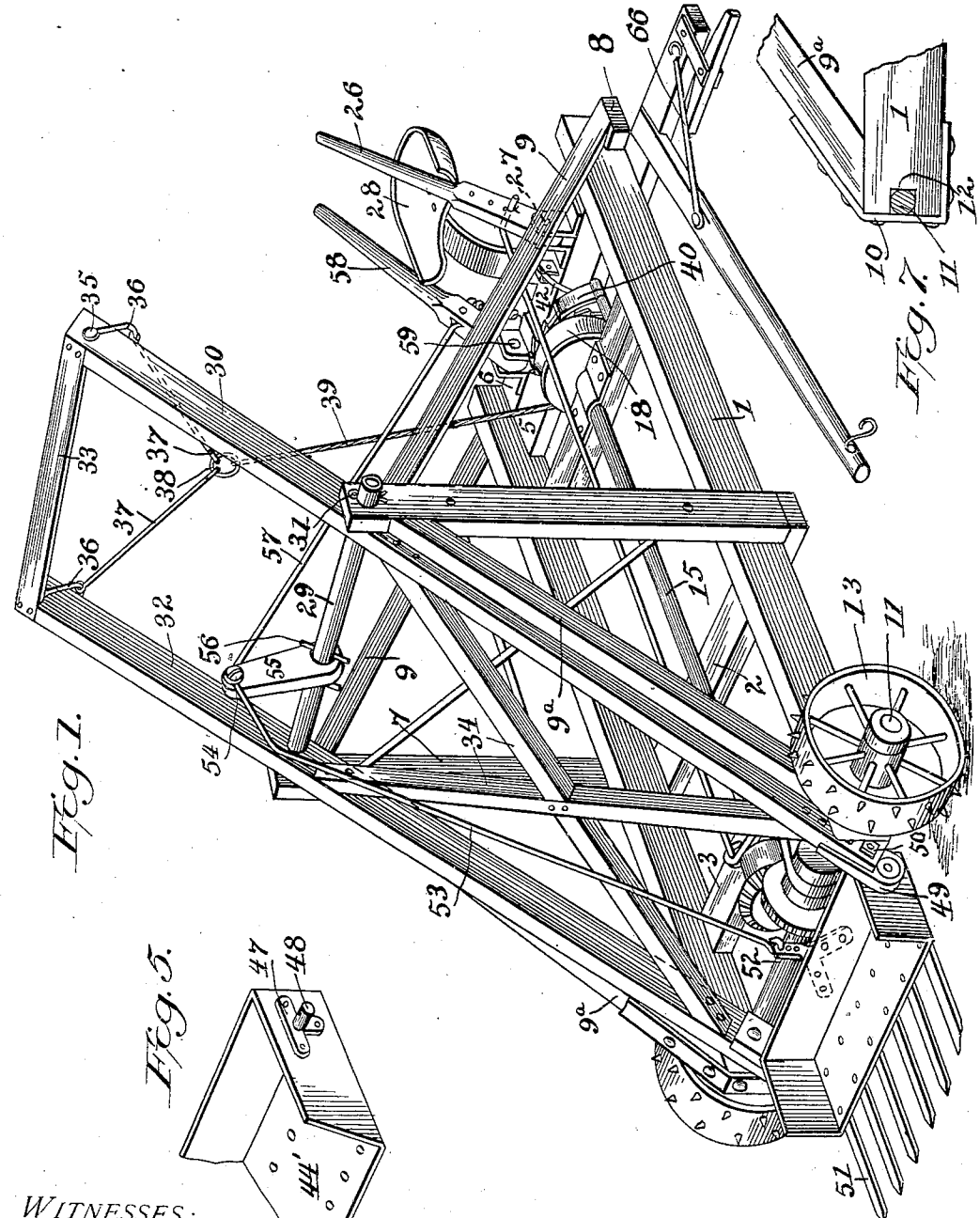

Fig. 1.

Fig. 2.

Fig. 3.

WITNESSES:

C. M. Walker

Irv. L. McCathran.

INVENTOR,

John E. Agler.

BY E. C. Vrooman,

his Attorney,

THE NORRIS PETERS CO., WASHINGTON, D. C.

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3 SHEETS—SHEET 2.

Fig. 4.

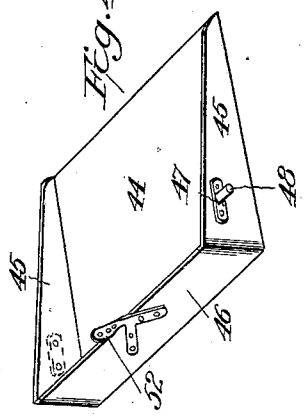

Fig. 2.

Fig. 6.

Witnesses

C. H. Walker

Irv. L. McCathran.

Inventor

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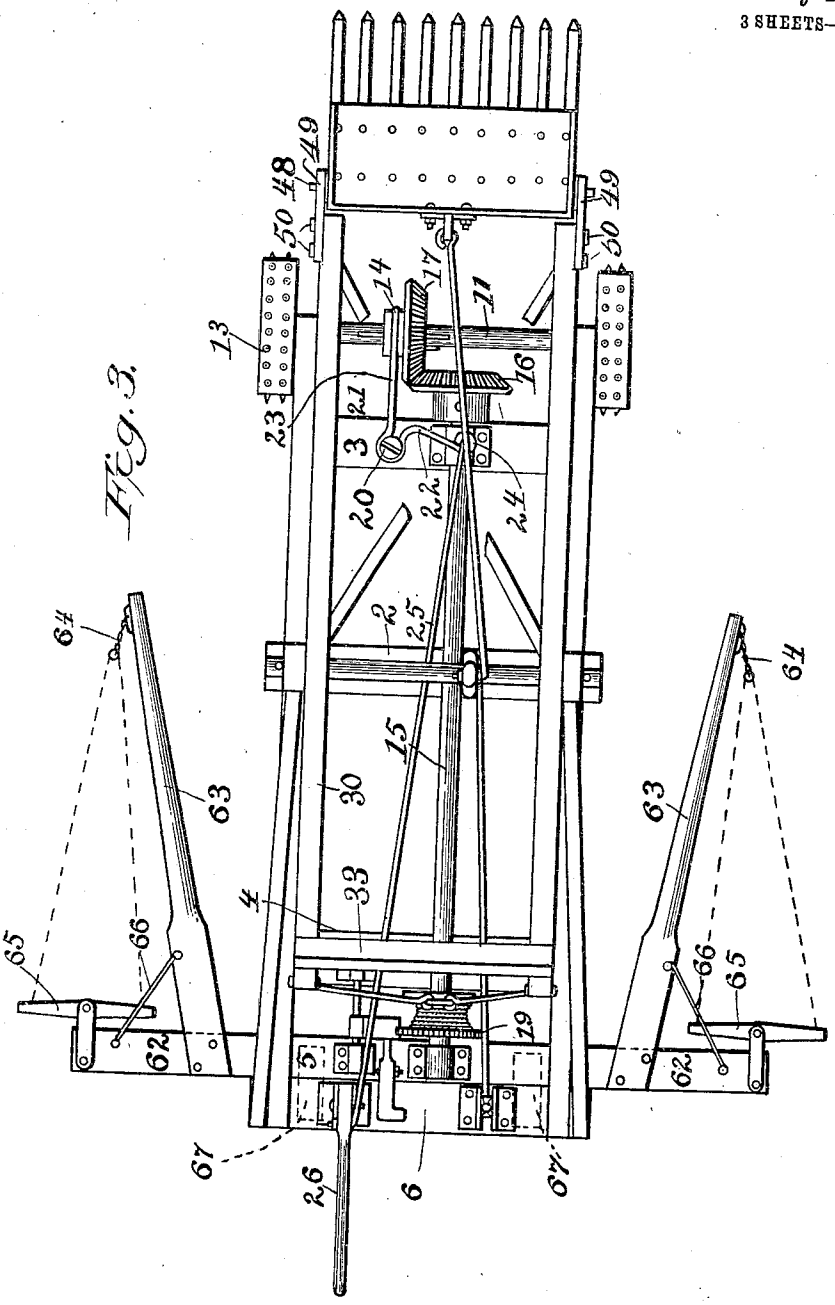
3 SHEETS—SHEET 3.

Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN E. AGLER, OF WAYNE, NEBRASKA.

LOADING APPARATUS.

No. 921,498. Specification of Letters Patent. Patented May 11, 1909.

Application filed April 16, 1908. Serial No. 427,397.

To all whom it may concern:

Be it known that I, JOHN E. AGLER, a citizen of the United States, residing at Wayne, in the county of Wayne and State of Nebraska, have invented certain new and useful Improvements in Loading Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a loading apparatus, which may be used for loading different kinds of material upon a wagon, or, if desired, for the stacking of material in stacks or ricks.

The object of the invention is the provision of means for facilitating the scooping or gathering of material upon a swinging-member and elevating, and, subsequently, displacing said material off of said swinging-member.

Another object of the invention is the provision of means for facilitating the loading of material.

A further object of the invention is the provision of means for controlling the movement of a scoop or fork carried by a pivoted member, whereby the scoopboard or fork may dig into the ground or scoop to a greater depth, and after the same has been lifted in a loaded condition, it can be easily actuated for displacing the load at the option of the operator.

With these and other objects in view, the invention consists of certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings: Figure 1 is a perspective view of an apparatus constructed in accordance with the present invention. Fig. 2 is a longitudinal, vertical sectional view of the mechanism depicted in Fig. 1. Fig. 3 is a top plan view of the apparatus. Fig. 4 is a perspective view of the scoopboard. Fig. 5 is a fragmentary, perspective view of the combined scoop and fork. Fig. 6 is a fragmentary view, in elevation, of the gearing. Fig. 7 is a fragmentary view of the brace connecting the lower end of one of the front, inclined braces and one of the horizontal beams.

The frame of the apparatus comprises a pair of horizontal beams 1 connected by a central, transverse beam 2 and a front end-beam 3, and rear, transverse beams 4, 5, and 6. Central, vertical standards 7 are secured, at their lower ends to extended ends of central beam 2, which beam 2 has its ends projecting beyond the outer, vertical walls or sides of the parallel, primary beams 1. Secured to the extended ends 8 of the rear transverse beams 6, are the lower ends of the inclined bracing-standards 9; the upper inclined standards or braces 9 are secured against the rear, vertical face of the central, vertical standards 7, Fig. 1. A pair of front, inclined, vertical standards 9^a are secured, at their upper ends, against the front edges of the vertical standards 7, near their upper ends, and said standards 9^a rest at their lower ends, upon the upper edges of the beams 1, and are fixedly secured in position, by means of an angle brace 10, Fig. 7.

A supporting shaft 11 is journaled in bifurcated portions 12, forming the front ends of beam 1, and journaled upon said supporting shafts are traction wheels 13, which wheels are provided with roughened or toothed peripheries, so as to grip the ground and facilitate the driving of the mechanism for winding the cord or cable and actuating the pivoted frame hereinafter explained.

Slidably mounted upon shaft 11 is a clutch-member 14, which clutch-member is suitably splined or keyed to the shaft 11 for preventing independent rotary movement of said clutch-member upon said shaft. Extending longitudinally of the frame and journaled in suitable bearings on the transverse beams 3 and 4, is a shaft 15. The shaft 15 is provided, on its front end with a beveled gear 16, fixedly secured thereto, which gear 16 meshes with the beveled gear 17 of the clutch-member 14, whereby, when the beveled gears 16 and 17 mesh and the shaft 11 is rotated, rotary movement will be imparted to shaft 15. The traction-wheels 13 are fixedly secured, by any suitable fastening means, to shaft 11, resulting in shaft 11 being rotated for driving the gears, when the machine is moved over the ground. Fixedly secured to shaft 15, at its rear end, is a drum 18, which drum 18 is provided with a toothed rim 19, Fig. 6.

A pin or fastening-member 20, is secured to the upper portion of the beam 3, Fig. 3, and journaled upon said pin or screw 20, is a lever 21, which comprises a pair of angularly-disposed portions 22 and 23, integrally connected, at their inner ends, by means of an eye partly surrounding the

pivot 20, Fig. 3. The portion 22 terminates at its outer end, in an eye 24, which eye 24 is pivotally connected to a connecting-rod 25; the rod 25 being pivotally connected, at its outer end, with a manually-operated lever 26. The lever 26 is pivotally supported, at 27, upon beam 6, Figs. 1 and 3. The portion 23 of the lever 21 terminates, at its outer end, in an extension partly surrounding and engaging the clutch-member 14, whereby when lever 26 is swung forward, the clutch-member is slid upon the shaft 11 for disengaging the gear 17 from gear 16; it will be obvious that the operator can quickly throw the gear in and out of operation, by swinging lever 26. The operator usually sits in seat 28, secured to beam 6, Figs. 1 and 2.

Pivotally mounted upon horizontal shaft 29, is a frame 30. Shaft 29 extends through the upper ends of the standards 7, and is, preferably, detachably secured thereto by means of spring-cotters 31. The frame 30 comprises a pair of parallel beams 32, fixedly secured together, at their upper ends, by a transverse end-beam 33. The lower ends of the beams are not connected by a transverse beam, but are spaced apart by means of an X-shaped reinforcing structure, which comprises crossing beams 34; the outer ends of the beams 34 being fixedly secured, by any suitable fastening means, against the inner faces of the parallel beams 32, producing a rigid and durable structure. To the upper end of each beam 32, is pivotally secured, at 35, a U-shaped member 36. Rods 37 are pivotally connected, at their upper ends, to the U-shaped members 36, and the lower ends of the rods are connected by means of a link or loop 38, for the reason that each rod is provided with eyes at its ends. A cable or suitable flexible connecting-means 39 is secured, near one end, to the ring 38, and its other end is fixedly secured to the drum 18, whereby, as the drum 18 is rotated, for winding the cable 39, the frame 30 will be swung upon the transverse, horizontal shaft 29.

A pawl is pivotally mounted, at 41, upon the transverse beams 4 and 6, and said pawl is adapted to engage the toothed flange 19 of the frame for preventing the same from accidentally rotating for permitting the cables 39 to be unwound, but the drum 18 can be permitted to unwind by the operator pressing downward upon the foot-lever 42, which is pivotally mounted upon the beam 5. The foot-lever is provided with an extension 43, which projects under the pawl or dog 40, so that when the foot-lever is swung upon its pivot for raising its lower end, the dog or pawl will be disengaged from the teeth of the drum.

A scoop, as shown in Fig. 4, or a combined scoop and fork, as shown in Figs. 1 to 3, and 5 may be pivotally supported upon the lower end of the beams 32, constituting part of the frame 30. The scoop comprises a bottom 44, ends 45 and a back 46. To each of the ends 45 is secured a metallic plate 47 having an outwardly-extending lug or stub-shaft 48. The stub-shafts 48 of the plates 47 are, preferably, journaled in detachable plates 49, which plates are secured to the inner faces of the beams 32, at their lower end. The securing means for each plate 49 is, preferably, a pair of bolts 50, so that no pivotal movement of the plate is permitted upon the beam, thereby making a secure fastening means for connecting the scoop to the beams 32. The combined scoop and fork is similarly mounted upon beams 32, and, therefore, it is not necessary for me to specifically describe the structure of the connecting means, for by removing the bolts 50, the combined scoop and fork can be detached, and a scoop, as shown in Fig. 4, can be attached. The combined scoop and fork has its bottom 44′ apertured, and to this apertured bottom are secured the tines or fingers 51, by any suitable fastening means, extending through the apertures of the bottom of the scoop.

To the back of the scoop or the combined scoop and fork, is secured a plate 52, which has oppositely-extending fingers through which extends a fastening means for attaching the plate to the back. The plate 52 is provided with an upwardly-extending apertured portion, and, within one of the apertures, is positioned the lower end of rod or bar 53, while the upper end of the rod or bar 53 is pivotally connected, as at 54, to the upper or outer end of the arm 55. The arm 55 is rotatably mounted upon shaft 29, and is normally held near the center of the shaft by any suitable fastening means, as for instance pins 56, at its opposite sides, which pins 56 extend through the shaft 29 and constitute locking collars, for preventing the arm 55 from sliding too far either way upon the shaft 29. To the pivot 54, which may be a screw or any other suitable fastening means, formed upon or attached to arm 55, is also secured a rod 57, the rod 57 being connected, at its upper end, to said arm 55, and its lower end is pivotally connected to the manually-operated lever 58; the lever 58 being pivotally mounted, at 59, upon beam 6, contiguous to seat 28. The lever 53 is mounted, at one side of the seat, while the lever 26 is mounted at the other side. A spring 60 is secured, at its upper end, to the lever 58 above its pivot, and its lower end is attached, as at 61, to beam 6, whereby a downward pull is always exerted upon the lever 58, retaining the same in an outwardly inclined position, Fig. 2, which holds the scoop and fork in substantially a horizontal position for scraping along the

surface of the ground. By the operator swinging lever 58 forward, the front end of the combined scoop and fork will be thrown downward to dig deeper into the earth or a pile of substance to be removed. Therefore, it will be obvious that I have provided means for controlling the depth to which the scoop is to be inserted under a pile of dirt or like material, and, furthermore, owing to the peculiar structure of the connecting means between plate 52 and lever 58, the scoop is normally held in a horizontal position during the swinging of the frame 30 upward, but when the scoop has obtained the desired position, or when the scoop is positioned above the receptacle into which the load carried by the scoop is to be emptied, by swinging the lever 58 forward, the scoop can be quickly dumped.

The beam 5 is extended beyond opposite sides of the frame, and to each extended end 62, is secured an outwardly-extending shaft or beam 63. A hook 64 is pivotally connected to the shaft or beam 63, near its outer end, for facilitating the attaching of a draft animal thereto. The extending-end 62 of the beam is provided with a swingle-tree 65, and extending, preferably, above the swingle-tree is a brace 66, which is connected, at one end, to beam or shaft 63, and at its opposite end to the extended portion 62 of beam 5 near its outer end. It will, therefore, be noted that I have provided at each side of the frame, a peculiar structure for attaching a draft animal, so that the loader can be forced over the ground.

The rear end of the apparatus is supported upon a pair of wheels 67, which are journaled upon swivel-supports 68, so that the apparatus or mechanism can be turned easily and quickly in any direction.

It is to be noted that the load-receiving and holding means is pivotally mounted between and upon the lower ends of the swinging-frame, and that by the operator working lever 26, when the apparatus is traveling over the ground, the load-lifting and holding means can be quickly lifted and dumped, and while the load-lifting and conveying means is being filled, the gearing can be thrown out of operation, until the load is ready to be lifted and discharged from its holding-device.

From the foregoing, it will be understood that I have produced a very durable and simple apparatus for loading and unloading a receptacle, and, furthermore, it is to be noted that my mechanism may be used for loading dirt, manure, or any other substance of like nature, onto a car or into a wagon, and, besides, the device may be used as a hay or straw loader.

What I claim is:

1. In an apparatus of the class described, the combination with a wheeled frame, of a swinging-frame carried by said wheeled-frame, load-receiving and holding means carried by said swinging-frame, an arm rotatably mounted upon said wheeled-frame, a lever pivotally mounted upon said wheeled frame, a rod connected at one end to said load-receiving and holding-means and at its opposite end to said arm, a rod connected at one end to said lever and at its opposite end to said rod, and means for moving said swinging-frame upon said wheeled-frame.

2. In an apparatus of the class described, the combination with a frame, of a scoop pivotally mounted upon said frame, an arm pivotally mounted upon said frame, said scoop provided with an extension, means adjustably connecting said arms to said extension, a lever pivotally mounted upon said frame, means connecting said lever to said arm, and means connected to said frame and to said lever, for normally exerting an outward pull upon said lever for holding said scoop in position for retaining a load.

3. In an apparatus of the class described, the combination with a frame provided with central standards, a shaft carried by said standards, a scoop, means pivotally mounting said scoop upon said shaft, of an arm rotatably mounted upon said shaft, an inclined rod pivotally connected at one end of said arm, means adjustably connecting the other end of said rod to said scoop, an outwardly-extending lever carried by said frame, means connecting said outwardly-extending lever to said arm, and means for normally holding said lever in its outwardly-extending position.

4. In an apparatus of the class described, the combination with a frame, a swinging-frame carried by said first-mentioned frame, load-receiving and holding-means carried by said swinging-frame, of a gear-device carried by said first-mentioned frame, said gear-device embodying a drum, means for rotating said frame, said means comprising a shaft, a slidable clutch mounted upon said shaft, said clutch provided with a beveled gear, a beveled gear meshing with said first-mentioned beveled gear and fixedly secured against independent rotary movement upon said frame, a lever pivotally mounted upon said first-mentioned frame and coöperating with said slidable gear for throwing the same in and out of operation, said lever formed from a single-piece of material provided with substantially right-angled portions, said right-angled portions connected at their inner ends by means of an integral eye, one of said right-angled portions provided with an eye, each eye being partly opened, for facilitating the assembling of the same with the coöperating parts, and manually-operated lever means connected to one of the eyes of said lever and being

capable of controlling movement of said clutch.

5. In an apparatus of the class described, the combination with a support, of a swinging-frame carried by said support, load-receiving and holding means carried by said swinging-frame, a drum carried by said support, means for rotating said drum, a pair of U-shaped members pivotally connected to said swinging-frame, rods pivotally connected to said U-shaped members at one end, a link connecting the opposite ends of said rods, and flexible means fixedly secured near one end to said link and to said frame near its other end, whereby, when said drum is rotated, said frame will be swung upon a support.

6. In an apparatus of the class described, the combination with a support, of a pivotally-mounted frame carried by said support, said pivotally-mounted frame comprising a pair of beams, a U-shaped member pivotally connected to each beam near its upper end, means connecting said U-shaped members, a drum carried by said support, flexible means connecting said drum and connecting means of the U-shaped members, and means for rotating said frame for swinging said pivotally-mounted frame upon said support.

7. In an apparatus of the class described, the combination with a support, of a movable frame carried by said support, a scoop pivotally mounted upon said movable support, and lever and link means carried by said support and coöperating with said scoop for controlling the pitch of the same relative to the ground and the dumping thereof.

8. In an apparatus of the class described, the combination with a frame, load-receiving and elevating means carried by said frame, of a beam projecting upon opposite sides of said frame, shafts fixedly secured at their inner ends to the projected ends of said beams, a swingle-tree attached to the projected ends of said beam outside of said shafts, a brace connecting said shafts intermediate their ends, to the projected ends of the beam near their outer ends.

9. In an apparatus of the class described, the combination with a frame, of means for receiving, elevating, and dumping a load carried by said frame, draft animal attaching means secured to each side of said frame, said attaching means comprising a projecting beam, a shaft or beam positioned at an angle to the sides of said frame and fixedly secured at its inner end to said projecting beam, a brace connected at its outer end to said shaft and at its inner end to said projecting beam, and a swingle-tree pivotally mounted on the projected end of said beam.

10. In an apparatus of the class described, the combination with a wheeled-frame, of a swinging-frame provided with load-receiving means carried by said wheeled-frame, of a gearing-device coöperating with said swinging-frame, said gearing-device provided with a drum having a toothed flange, a pawl coöperating with the teeth of said flange, a foot-operating device pivotally mounted upon said frame and coöperating with said pawl for raising the inner end thereof, said foot-device comprising a support, a foot-engaging plate pivotally mounted upon said support, said plate provided with an extension positioned under the pawl, whereby, when the operator engages the foot-engaging portion, the pawl can be raised for releasing the drum.

11. In an apparatus of the class described, the combination of a pair of horizontal beams provided with bifurcated ends, a shaft journaled in the bifurcated end, a sliding clutch-member mounted upon said shaft, braces surrounding the ends of said beams and securing said shaft within said bifurcated ends, rod-receiving and holding means movably mounted above said beams, and means coöperating with said clutch-member for raising and lowering said load-receiving and holding means.

12. In an apparatus of the class described, the combination with a support, of a swinging frame carried by said support, said swinging frame provided, at its lower end, with cut-out portions, plates positioned in said cut-out portions, means detachably securing said plates to said cut-out portions, load-receiving and holding means pivotally mounted upon the lower ends of said plates, means for swinging said frame upon the support and controlling the movement of said load-receiving and holding means.

13. In a device of the character described, the combination with a supporting frame, of a swinging frame pivoted near its center upon said supporting frame, said swinging frame provided with load-receiving and holding means, at its lower end, means connected to the upper end of said swinging frame for swinging the same upon the supporting frame, and link and lever means pivotally mounted upon the supporting frame, between the sides of the swinging frame, and connected to the load-receiving and holding means, whereby movement of said holding means is controlled.

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

JOHN E. AGLER.

Witnesses:
F. L. NESBY,
E. W. CULLEN.