

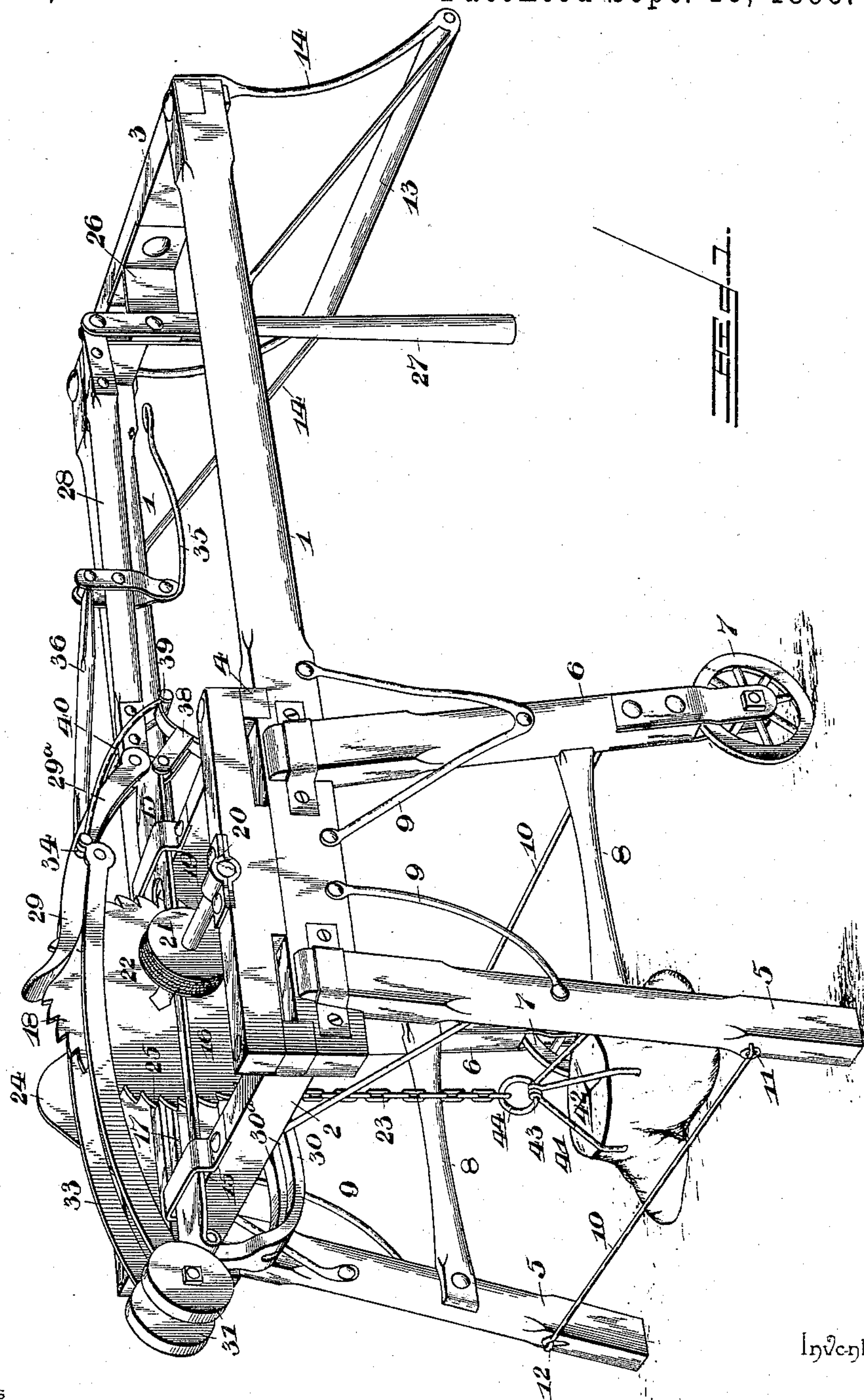
(No Model.)

2 Sheets—Sheet 1.

O. T. JENSEN.
LIFTING DEVICE.

No. 567,681.

Patented Sept. 15, 1896.



Ingvenglor,

Witnesses

W. H. Doyle
C. E. Doyle

By **his** Attorneys.

Ole T. Jensen,

C. Snow & Co.

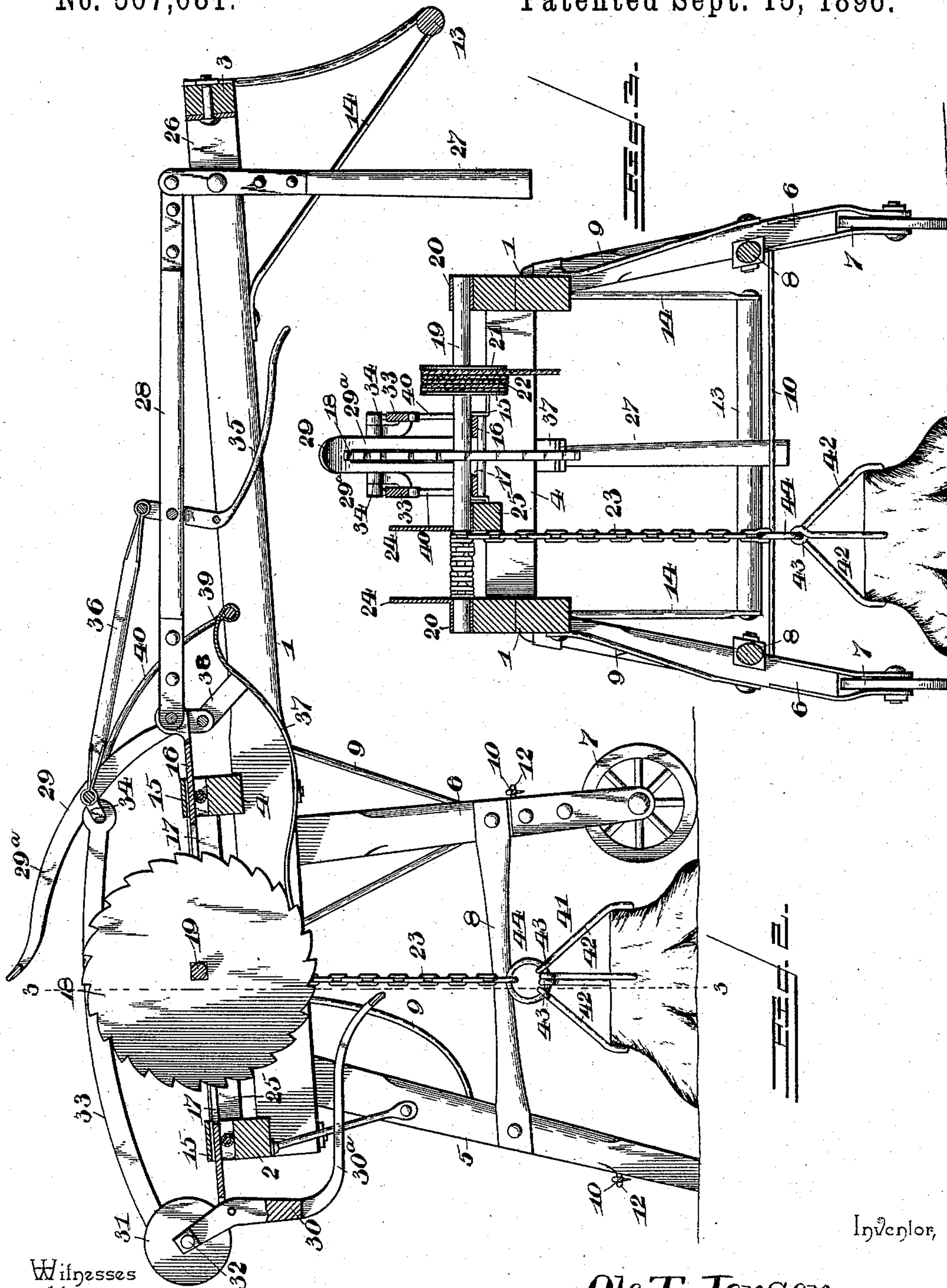
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Inventor,

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UNITED STATES PATENT OFFICE.

OLE T. JENSEN, OF WEATHERFORD, TEXAS.

LIFTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 567,681, dated September 15, 1896.

Application filed January 31, 1896. Serial No. 577,588. (No model.)

To all whom it may concern:

Be it known that I, OLE T. JENSEN, a citizen of the United States, residing at Weatherford, in the county of Parker and State of Texas, have invented a new and useful Lifting Device, of which the following is a specification.

My invention relates to lifting devices, and particularly to the mechanism adapted for use as a stump-puller and for elevating heavy weights, the object in view being to provide a simple and efficient construction and arrangement of parts whereby sufficient power for elevating heavy weights may be communicated to a rotary shaft or drum, and whereby the means communicating motion to the drum may be moved out of operative position and a brake simultaneously applied in order to relieve the operating-lever from strain when the mechanism is at rest.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a lifting device embodying my invention, the parts being shown in operative position. Fig. 2 is a longitudinal section of the same, showing the pawls thrown out of operative relation with the ratchet-teeth of the driving-wheel. Fig. 3 is a transverse section taken in a plane indicated by the line 3 3 of Fig. 2.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The combined supporting-frame and truck comprises side bars 1, connected at their front and rear ends by cross-bars 2 and 3 and at an intermediate point by a cross-bar 4, and depending from the side bars contiguous to their front ends are front and rear legs or standards 5 and 6, upon the latter of which are mounted supporting-wheels 7. The front and rear legs or standards at each side of the frame are connected by longitudinal braces 8 and the bracket-braces 9, and said legs or standards are further connected in pairs by transverse braces 10, which are detachable at one end to provide for their disconnection to allow the frame to be arranged over a

stump or other object to be elevated when such object is of too great a height to pass under said braces. After the frame has been arranged in the proper position for elevating the object, said braces may be returned to their normal positions, as shown in Fig. 1. In the construction illustrated the braces consist of metallic rods, which are connected by interlocking eyes 11 to the legs or standards at one side of the frame and are hook-shaped at the other end to engage staples or keepers 12 upon the legs or standards at the other side of the frame. A handle-bar 13 is supported by hangers 14 from the rear side of the frame to enable the operator to move the machine from place to place, as required.

Mounted in longitudinally-alined guides 15 upon the cross-bars 2 and 4 is a slide 16, which is longitudinally slotted, as shown at 17, to allow movement of the slide without interference with a peripherally-ratchet-toothed driving-wheel 18, secured to the center of a transverse shaft or drum 19, said shaft or drum being mounted in bearings 20 on the side bars of the frame. Fixed to the shaft or drum upon one side of the plane of the driving-wheel is a spool 21, adapted for raising objects of small or medium weight, a cable 22 being attached thereto, and secured at one end to the shaft or drum upon the other side of the plane of the operating-wheel is a lifting-chain 23, at a point between parallel guide-plates 24, arranged, respectively, upon the contiguous side bar of the frame and an auxiliary bar 25, which is parallel with said side bar.

Mounted on a bracket 26, projecting forwardly from the cross-bar 3, is an operating or hand lever 27, the upper end of which is connected with the rear end of the sliding plate by means of a pitman 28, whereby reciprocatory movement of the plate may be produced by oscillation of the operating-lever. Pivottally mounted upon the sliding plate at its opposite extremities and arranged, respectively, above and below the plane of said plate are the operating-pawls 29 and 30, the same being longitudinally slotted to form parallel guide-arms 29^a and 30^a, which are arranged, respectively, upon opposite sides of the plane of the operating-wheel to prevent lateral displacement of the engaging extremi-

ties of the pawls. The upper pawl 29, which is mounted upon the rear end of the sliding plate, is held by gravity in operative relation with the teeth of the pawl, and the lower pawl 30, which is disposed at its free end to engage the teeth at the lower side of the wheel, is held in operative position by means of weights 31, secured to lateral studs 32, formed by a T-head extension of the pawl 30 above its pivotal point. In the construction illustrated said weights are formed on the front extremities of trip-arms 33, and the rear extremities of said trip-arms are loosely connected to the opposite sides of the upper pawl 29 by means of links 34 to allow movement of the pawl 30 independently of the pawl 29.

Mounted upon the pitman 28 at an intermediate point is a trip-lever 35, which in the construction illustrated is of bell-crank shape, and the upper arm of this lever is connected by means of a link 36 with the pawl 29 at an intermediate point, whereby downward movement of the free end of the lever draws rearwardly upon the pawl 29 and upon the T-head extension of the pawl 30 to disengage said pawls from the teeth of the operating-wheel, as indicated in Fig. 2.

In connection with the above-described construction I also employ a brake having a shoe 37 pivotally connected to the sliding plate at its rear end by means of ears 38, and having an extension 39, which is connected by side links 40 to the pawl 29 at an intermediate point. As the pawls are disengaged from the operating-wheel by the depression of the rear free end of the trip-lever 35 downward pressure is communicated through the side links 40 to the rearward extension of the shoe, and hence the front extremity of the shoe is brought into engagement with a ratchet-tooth of said wheel to lock the latter against backward rotation. In this way the operating-lever is relieved of strain when the mechanism is at rest, said brake being brought into operative relation with the wheel simultaneously with the disengagement of the operating-pawls.

Connected to the lifting-chain is a grappling device 41, which in the construction illustrated consists of a plurality of grappling-hooks 42, loosely connected by means of links 43 with a ring 44, suitably secured to the extremity of the chain.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a lifting device, the combination with a supporting-frame, of a slidable plate, a ratchet-toothed operating-wheel secured to a shaft or drum, oppositely-disposed pawls arranged in operative relation with said wheel and mounted upon the slidable plate, and means for communicating reciprocatory

movement to the plate, substantially as specified.

2. In a lifting device, the combination with a supporting-frame and a shaft or drum mounted thereon, of a ratchet-toothed operating-wheel fixed to the shaft or drum, a slidable plate mounted upon the frame, upper and lower pawls mounted upon the plate and arranged at their free ends in operative relation with the toothed periphery of the wheel, said pawls being longitudinally slotted to form parallel guide-arms arranged upon opposite sides of the plane of the wheel, and means for communicating reciprocatory movement to the plate, substantially as specified.

3. In a lifting device, the combination with a supporting-frame, and a shaft or drum mounted thereon, of a peripherally-toothed operating-wheel fixed to the shaft or drum, oppositely-disposed pawls mounted upon the slidable plate and arranged at their free ends in operative relation with the periphery of said wheel, trip-arms connecting the pawls for simultaneous movement, whereby the pawls may be simultaneously disengaged from the wheel, a trip-lever operatively connected with one of the pawls, and means for communicating reciprocatory movement to the slidable plate, substantially as specified.

4. In a lifting device, the combination with a supporting-frame, and a shaft mounted thereon, of a peripherally-toothed operating-wheel fixed to the shaft or drum, a slidable plate, and means for communicating reciprocatory movement thereto, said means including an operating or hand lever and a pitman connecting the hand-lever to the plate, oppositely-disposed pawls pivoted to the plate and arranged at their free ends in operative relation with said wheel, trip-arms connecting the pawls for simultaneous movement, a trip-lever mounted upon said pitman, and a link connecting the trip-lever to one of the pawls, substantially as specified.

5. In a lifting device, the combination with a supporting-frame and a shaft or drum mounted thereon, of a peripherally-toothed operating-wheel fixed to the shaft or drum, a slidable plate, and means for communicating reciprocatory movement thereto, upper and lower oppositely-disposed pawls 29 and 30 mounted upon the plate and arranged at their free ends in operative relation with said wheel, the lower pawl being extended beyond its pivotal point, weights mounted upon the extension of said lower pawl, trip-arms attached at one end to said weights and loosely connected at the other end to the upper pawl, and a trip-lever operatively connected with the upper pawl, substantially as specified.

6. In a lifting device, the combination with a supporting-frame and a shaft or drum mounted thereon, of a peripherally-toothed operating-wheel fixed to the shaft or drum, a slidable plate, and means for communicating reciprocatory movement thereto, upper and

lower pawls pivotally mounted upon the plate at its opposite ends and arranged at their free extremities in operative relation with said wheel, the lower pawl being extended beyond its pivotal point and weighted to hold it normally in operative position, trip-arms connected at one end to the extension of the lower pawl and loosely connected by links to an intermediate point of the upper pawl to allow a limited independent movement of the lower pawl, and trip devices connected to one of the pawls to disengage the same from the operating-wheel, substantially as specified.

7. In a lifting device, the combination with a supporting-frame and a shaft or drum mounted thereon and carrying a toothed operating-pawl, of a slidable plate, and means for communicating reciprocatory movement thereto, connected pawls mounted upon the plate and arranged at their free ends in operative relation with said wheel, trip devices connected to one of the pawls and adapted when operated to disengage both pawls from the operating-wheel, a pivotal brake-shoe mounted upon the plate and provided beyond its fulcrum with an extension, and links connecting the contiguous pawl with the extension

of the brake-shoe, whereby when said pawls are disengaged from the operating-wheel the brake-shoe is thrown into operative engagement therewith, substantially as specified.

8. In a lifting device, the combination of a frame having front and rear legs or standards and provided at the lower extremities of its rear legs or standards with supporting-wheels upon which the frame may be balanced and transported, adjustable transverse front and rear braces connecting the transversely-opposite legs or standards and detachably connected at one end to allow the frame to be moved horizontally over an object to be elevated, a transverse shaft or drum mounted upon the frame between the planes of the front and rear legs or standards, and means for communicating rotary motion thereto, substantially as specified.

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

OLE T. JENSEN.

Witnesses:

JOHN L. JACKSON,
A. C. R. MORGAN.