No. 794,517. PATENTED JULY 11, 1905.

J. F. & G. J. KROPP.

HOIST AND CARRIER.

APPLICATION FILED APR. 6, 1904.

2 SHEETS—SHEET 1.

Fig. 2.

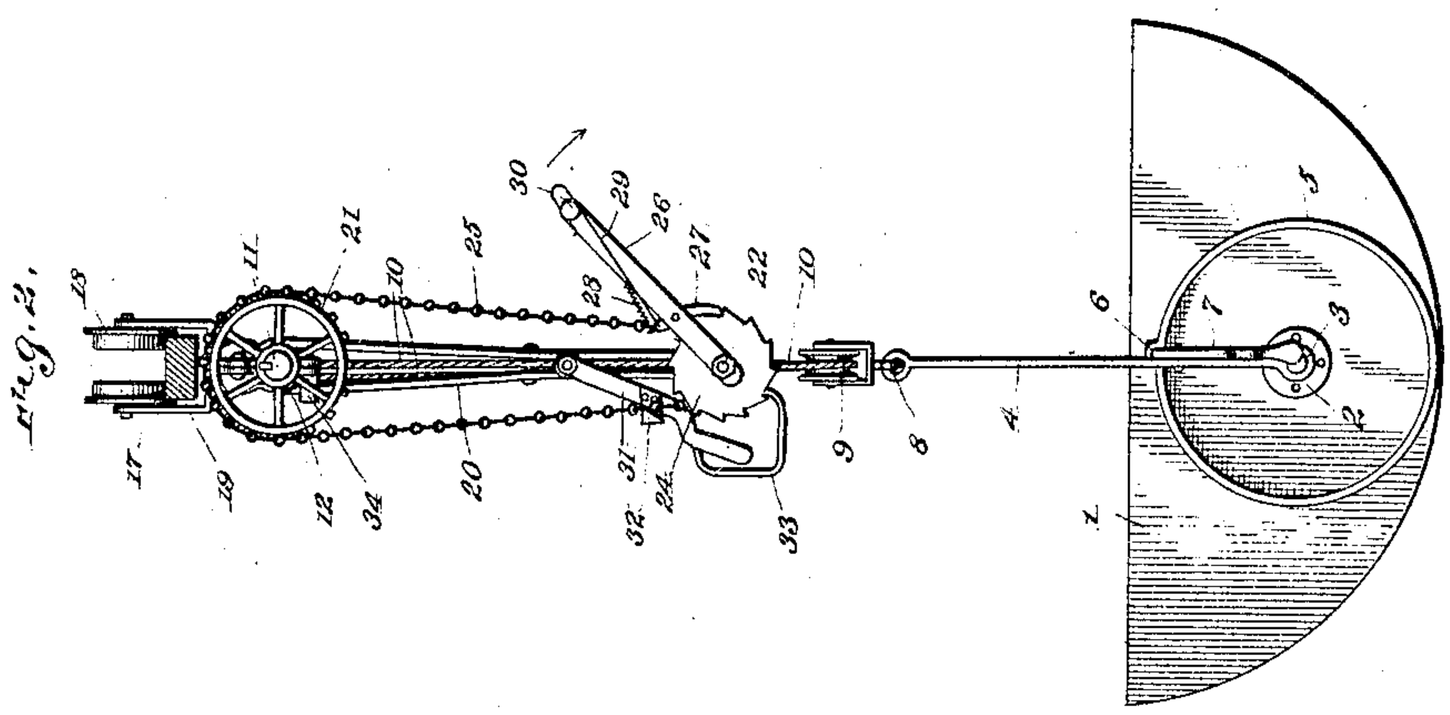
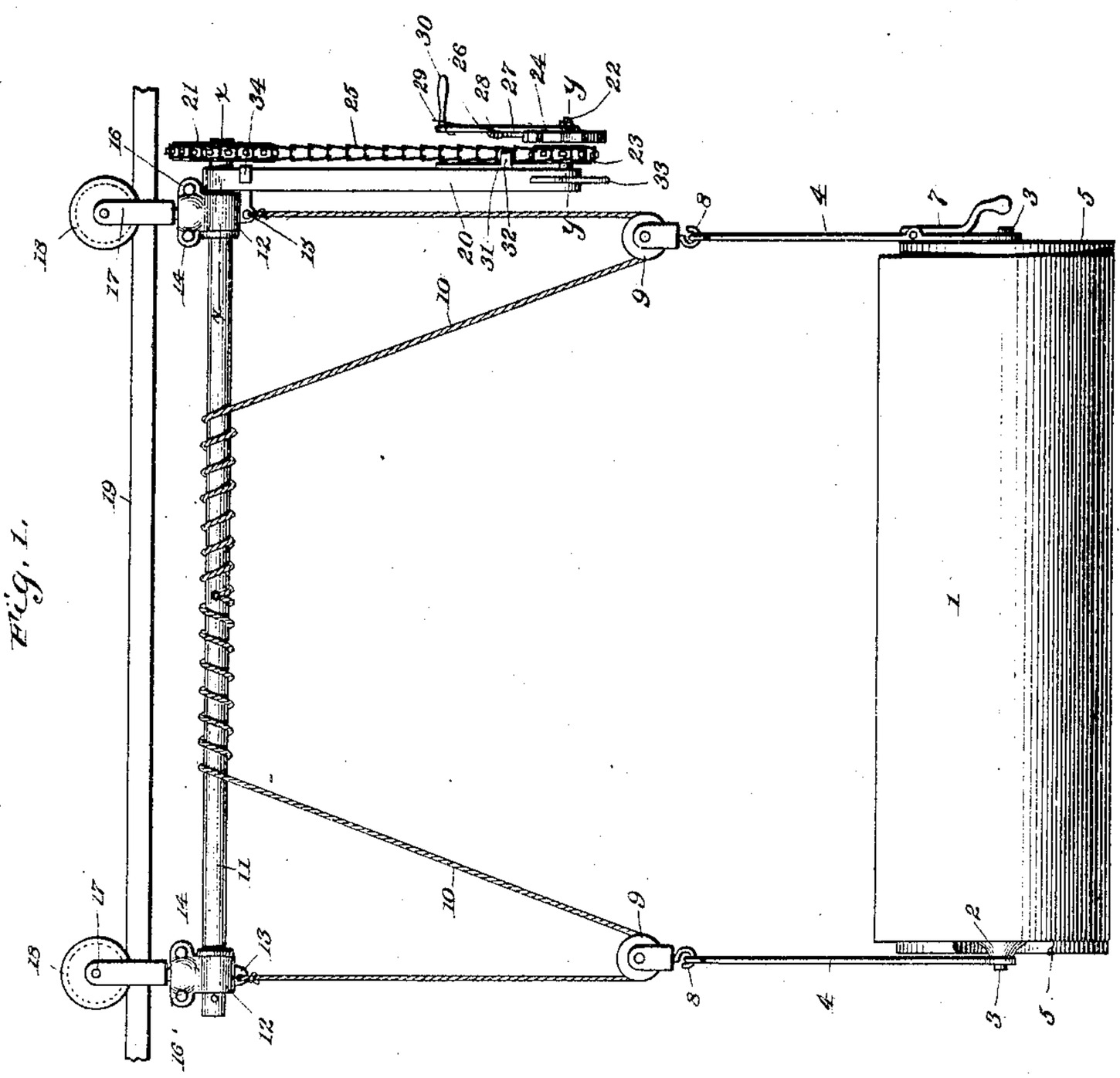


Fig. 1.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 3.

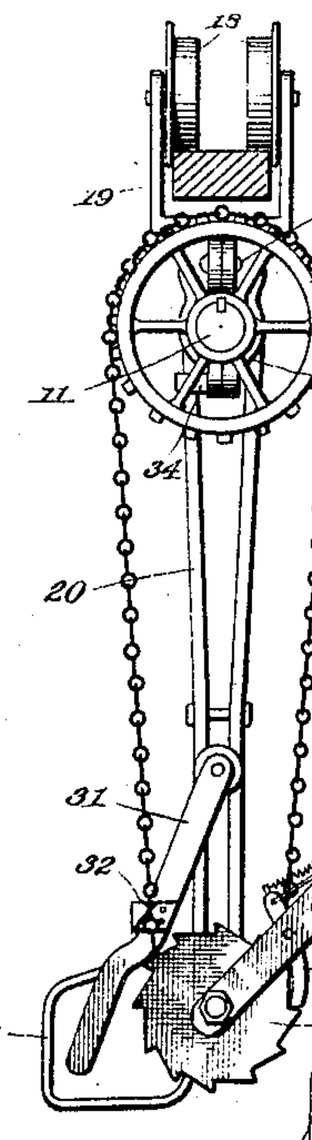

Fig. 4.

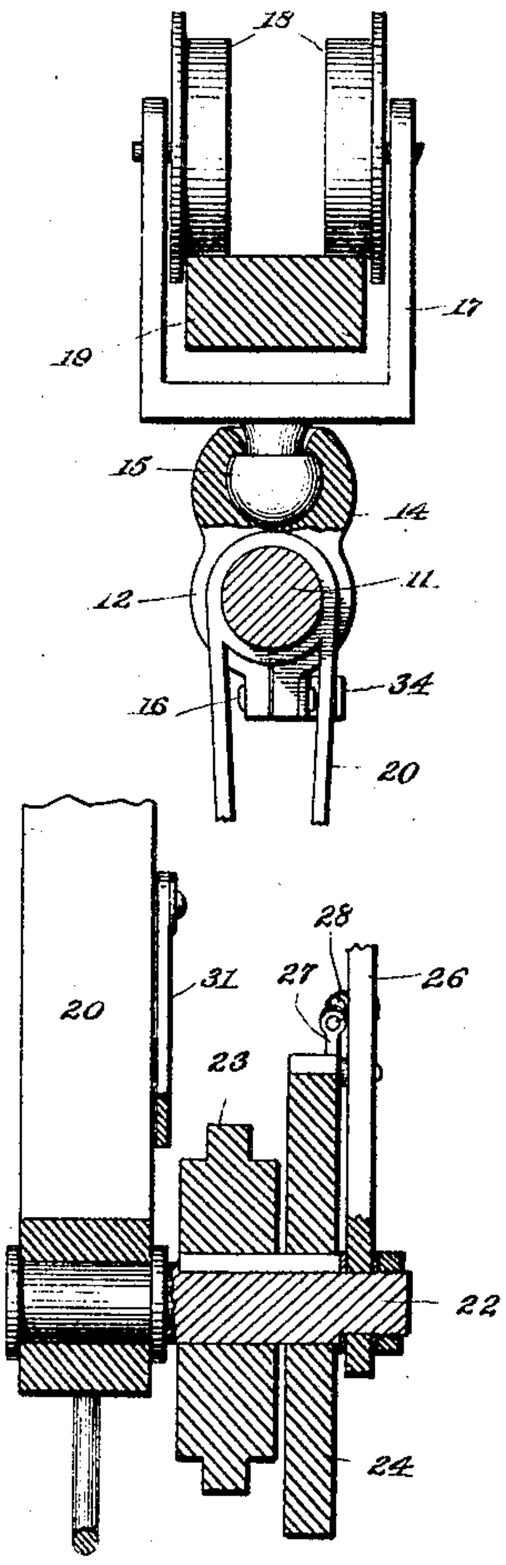

Fig. 5.

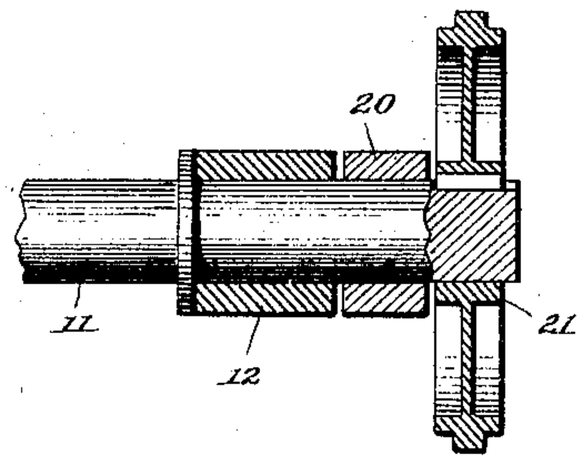

Fig. 8.

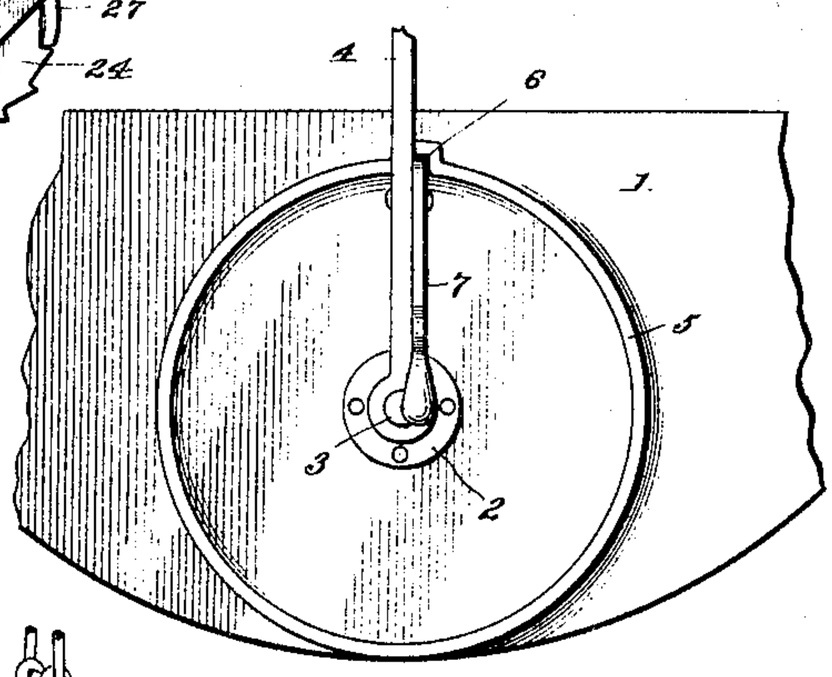

Fig. 7.

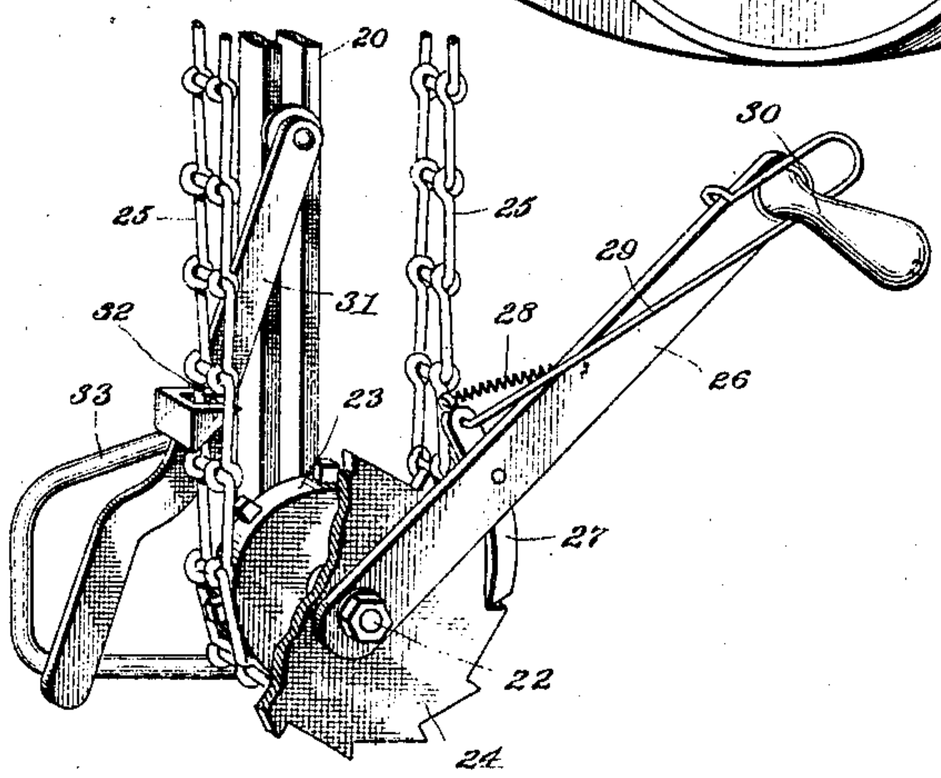

Fig. 6.

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No. 794,517. Patented July 11, 1905.

UNITED STATES PATENT OFFICE.

JACOB F. KROPP AND GEORGE J. KROPP, OF ATTICA, NEW YORK.

HOIST AND CARRIER.

SPECIFICATION forming part of Letters Patent No. 794,517, dated July 11, 1905.

Application filed April 6, 1904. Serial No. 201,884.

To all whom it may concern:

Be it known that we, JACOB F. KROPP and GEORGE J. KROPP, citizens of the United States, residing at Attica, in the county of Wyoming and State of New York, have invented certain new and useful Improvements in Hoists and Carriers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to hoists and carriers, and is particularly designed to produce an efficient and easily-operable device for raising, carrying, and dumping feed, litter, and the like in barns, stables, &c.

One object of the invention is to provide means readily operated by hand-power for raising the load and for holding it securely in raised position while traversing an elevated track and until it is desired to be lowered.

It is a further object of the invention to provide means whereby the load can be easily lowered by slight movement of the hands.

Further, means are provided for retarding and controlling the load as it is being lowered, whereby the load can be gradually lowered.

Another object is to provide overhead traction-gear, so arranged that it will readily adapt itself to curves, grades, and other irregularities of the track upon which it is hung.

Still another object is to provide means for maintaining the carrying-receptacle in proper position for holding a load and for permitting the same to be dumped when desired.

The invention also contemplates the novel disposition of the means whereby the receptacle is connected with the actuating means of the device.

A preferable embodiment of the invention is disclosed for purposes of illustration in the accompanying drawings, forming part hereof, and reference to which is made hereinafter. It is to be understood, however, that the invention is susceptible of other adaptations and that it is not restricted to the precise forms shown in the drawings, as various changes can be made in the details of construction within the limits prescribed by the claims without altering the character of the invention or departing from its nature and spirit.

In the drawings like reference characters refer to corresponding parts in the several views, of which—

Figure 1 is a side view of the device. Fig. 2 is an end view thereof. Fig. 3 is an enlarged side view of the hanger and the depending arm with its attendant mechanism. Fig. 4 is an enlarged view of the hanger, partially in section. Fig. 5 is a sectional view on the line $x\,x$, Fig. 1. Fig. 6 is an enlarged view showing the operating-crank and associated parts, together with the chain-pawl. Fig. 7 is a sectional view on the line $y\,y$, Fig. 1; and Fig. 8 is an enlarged end view of the pan, showing the dumping mechanism.

Referring more particularly to the drawings, 1 designates a pan or other suitable receptacle for carrying a load, at each end of which is a journal 2, which turns in a hub 3 of bails 4, which support the pan. At each end of pan 1 there is an annular flange 5, arranged to contact with bails 4 and prevent the latter being caught or struck by the corners of the pan when dumping. On one end of pan 1 flange 5 is provided at the top with an interior recess 6, and upon the bail 4 at the same end of the pan is a pawl 7, so hung that one end will normally engage said recess to keep the pan in proper position for carrying a load. Journals 2 are preferably so placed as to be below the center of gravity of pan 4 when the same is loaded, and therefore when pawl 7 is released from recess 6 the pan will dump itself.

Bails 4 are hung on hooks 8 of pulleys 9, which are suspended from and operate on ropes 10. A winding-shaft 11 is supported near each end in journals 12, and fastened below said journals are eyes 13. One end of each rope 10 is fastened in one of eyes 13 and the other end to the shaft 11 midway journals 12.

When shaft 11 is rotated, ropes 10 are wound upon or unwound from said shaft and pulleys 9 and pan 1 raised or lowered, as the case may be, in accordance with direction of rotation of said shaft.

Each journal 12 is formed by members 14, the lower portions of which embrace shaft 11. The upper portions of members 14 embrace and form a socket for a ball 15, a ball-and-socket joint thus being formed. Members 14

are held together above shaft 11 by bolts 16 on each side of the socket and below said shaft by a bolt 16. Ball 15 depends from a yoke 17 of general U shape, on the upper ends of which are journaled wheels 18, a trolley thus being formed which is arranged to travel on an elevated track 19. The two sets of traction-gear thus formed are kept the proper distance apart by shaft 11, and the ball-and-socket joints permit the device to take with ease short curves, steep grades, or other irregularities in the track.

Shaft 11 extends beyond one of journals 12, and near its extended end there is journaled thereon a depending arm 20 and is keyed thereto a sprocket-wheel 21. Near the lower end of arm 20 is journaled a drive-shaft 22, and keyed thereon to rotate therewith are a sprocket-wheel 23 and a ratchet-wheel 24. Motion is transmitted between sprocket-wheels 21 and 23 by a chain 25, disposed therearound. A crank 26 is journaled on shaft 22 at or near its end and adjacent ratchet-wheel 24, and a pawl 27 on said crank is caused to engage the teeth of said ratchet-wheel by a spring 28. A release member 29, fabricated of wire or other suitable material, is connected to pawl 27 and extends therefrom to hand-grip 30 of the crank and is operable to release said pawl from ratchet-wheel 24. A pawl 31 is hung on arm 20, so as to be caused by gravity to contact with chain 25, a tooth 32 on said pawl engaging the links of said chain and being so formed as to operate to stop the movement thereof in one direction and permit its movement in the other direction. A handle 33 is fastened at or near the lower end of arm 20. A lug or catch 34, fastened below journal 12, engages arm 20 and serves to restrict the swinging movement of that arm. Arm 20 serves to bring the operating mechanism within easy reach of the operator. In using this device the operator grasps handle 33 with one hand and moves crank 26 with the other hand in direction of the arrow, Fig. 2. This rotates ratchet-wheel 24 and through the successive means already described raises pan 1. Pawl 31 prevents the descent of said pan by preventing backward movement of chain 25. When the load in pan 1 is very heavy, it is obvious that if the operator so desires the pan can be raised by an "up-and-down" movement of crank 26 through only a segment of its circle of revolution. When the operator lets go handle 33, arm 20 is prevented from being swung around by the weight of the load against track 19 by lug 34. When it is desired to lower the load, pawl 31 is disengaged from chain 25 and pawl 27 from ratchet-wheel 24 by member 29, the ropes 10 being thus permitted to unwind from shaft 11. Crank 26 is somewhat loosely journaled on shaft 23, so that it may be pressed against the side surface of ratchet-wheel 24 and by friction thereon control the descent of pan 1.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a device of the character described, traction devices, journals connected thereto by ball-and-socket joints, a rotatable shaft in said journals, a depending arm, means on said arm for rotating said shaft, and means on said shaft for raising a load.

2. In a device of the character described, a traction device, a winding-shaft, a hanger comprising companion members arranged to embrace a ball depending from said traction device and to form a journal for said shaft, a depending arm, means on said arm for rotating said shaft, and means on said shaft for raising a load.

3. In a device of the character described, traction devices, journals connected thereto by ball-and-socket joints, a rotatable shaft in said journals, a depending arm, a lug on one of said journals for restricting movement of said arm, means on said arm for rotating said shaft, and means on said shaft for raising a load.

4. In a device of the character described, traction devices, a winding-shaft, means connected to said shaft for raising a load, a sprocket-wheel on said shaft, a supporting-arm, a drive-shaft, a sprocket-wheel on said drive-shaft, a belt-chain connecting said sprocket-wheels, and a pawl arranged to engage said chain.

5. In a device of the character described, traction devices, a winding-shaft thereon, means connected to said shaft for raising a load, a sprocket-wheel on said shaft, a depending arm on said shaft, a drive-shaft on said depending arm, a sprocket-wheel and a ratchet-wheel keyed thereon and a crank journaled thereon, a belt-chain connecting said sprocket-wheels, a pawl on said arm arranged to engage said chain, and a pawl on said crank for engaging said ratchet-wheel.

6. In a device of the character described, a receptacle hung upon bails, and an annular flange on each end of said receptacle and arranged to engage said bails.

7. In a device of the character described, a receptacle hung upon bails, an annular flange on one end of said receptacle, and means operating in said flange for permitting said receptacle to be dumped.

8. In a device of the character described, a receptacle hung upon bails, an annular flange on one end of said receptacle and arranged to engage one of said bails, and a pawl operating in a recess in said flange for permitting said receptacle to be dumped.

9. In a device of the character described, a receptacle hung upon bails, an annular flange on one end of said receptacle and arranged to engage one of said bails, and a pawl on one of said bails operating in a recess in said flange for permitting said receptacle to be dumped.

10. In a device of the character described, a receptacle hung upon bails, a flange on one end of said receptacle and arranged to engage one of said bails, and a weight-controlled pawl operating in a recess in said flange for permitting said receptacle to be dumped.

11. In a device of the character described, traction devices, a rotatable shaft thereon, a depending arm, means on said arm for rotating said shaft, ropes arranged to wind upon said shaft, a receptacle hung upon said ropes, annular flanges on each end of said receptacle, and means operating in one of said flanges for permitting said receptacle to be dumped.

12. In a device of the character described, traction devices, a rotatable shaft thereon, a depending arm, means on said arm for rotating said shaft, a receptacle, bails connecting said receptacle with said ropes, and flanges on each end of said receptacle arranged to engage said bails.

In testimony whereof we affix our signatures in presence of two witnesses.

JACOB F. KROPP.
GEORGE J. KROPP.

Witnesses:
C. W. BALDWIN,
O. H. HOPKINS.