

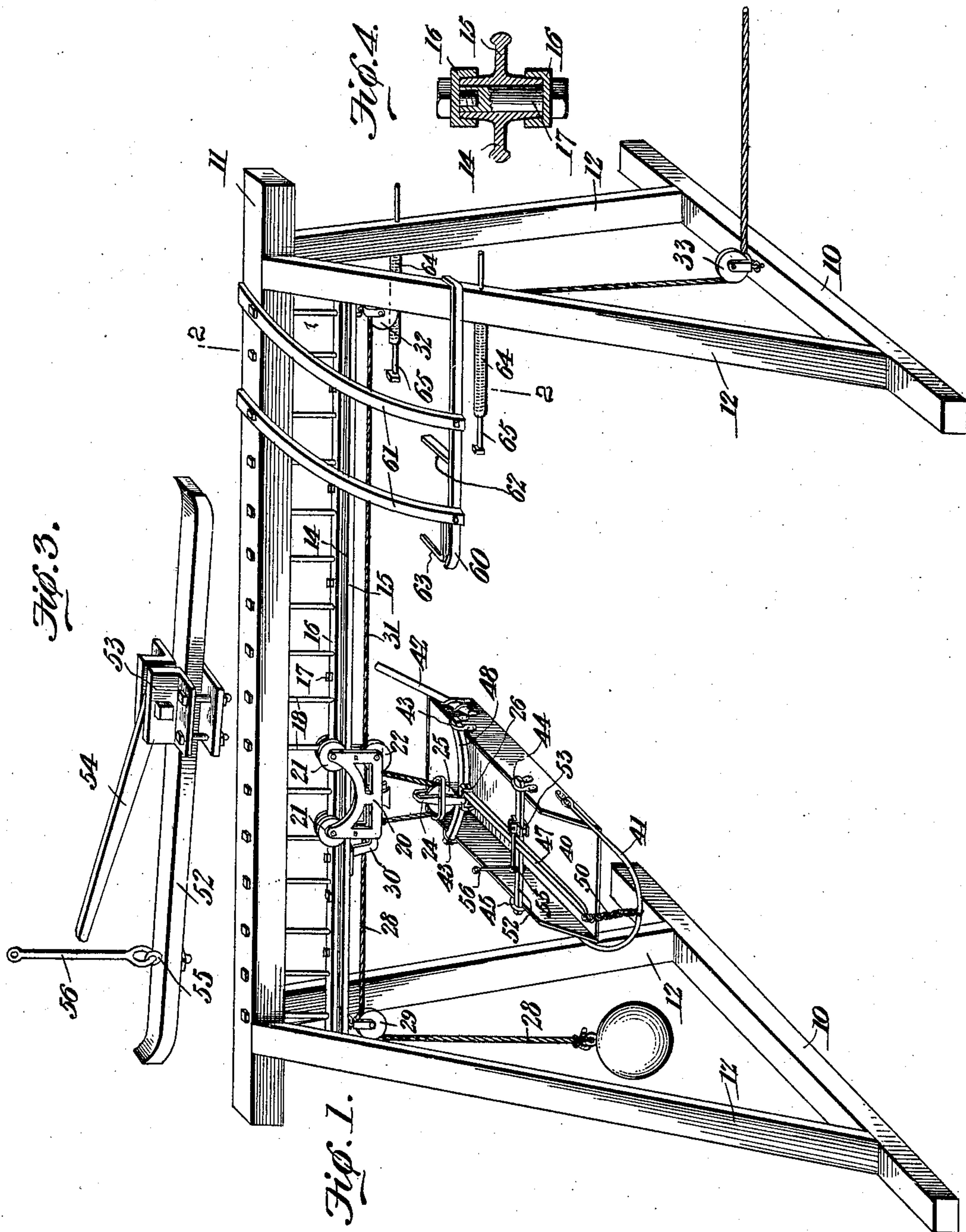
No. 828,431.

PATENTED AUG. 14, 1906.

G. SNOOK.
EXCAVATING AND LOADING APPARATUS.

APPLICATION FILED MAY 8, 1905.

2 SHEETS—SHEET 1.



Witnesses
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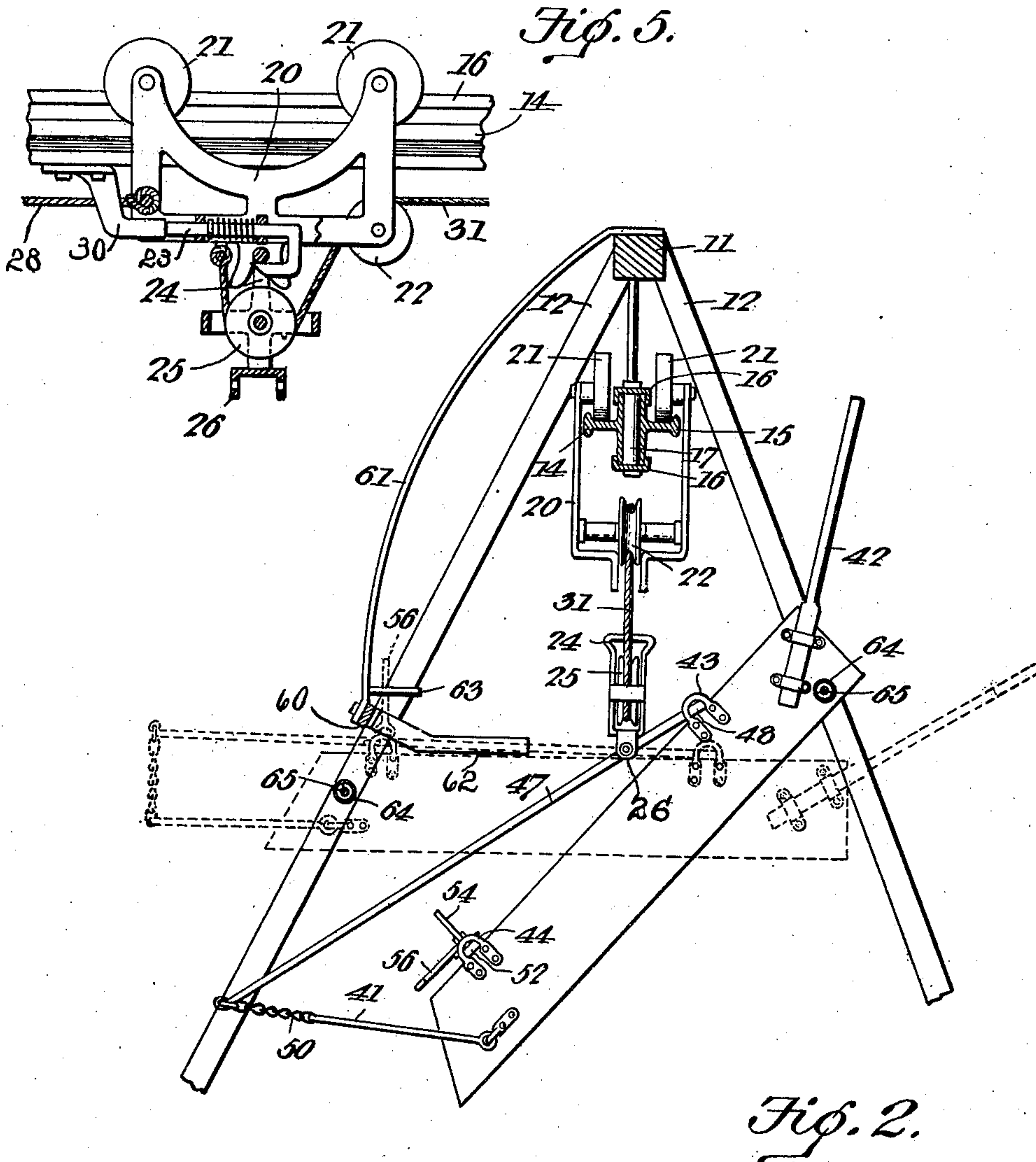
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UNITED STATES PATENT OFFICE.

GEORGE SNOOK, OF ASHLAND, OHIO.

EXCAVATING AND LOADING APPARATUS.

No. 828,431.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed May 8, 1905. Serial No. 259,407.

To all whom it may concern:

Be it known that I, GEORGE SNOOK, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Ohio, have invented a new and useful Excavating and Loading Apparatus, of which the following is a specification.

This invention relates to excavating and loading apparatus of that general type in which a scoop is first filled with earth or other material by dragging the same along the surface of the ground and thence elevated and conveyed to a dumping-point.

One of the principal objects of the invention is to provide a device of this character that may be wholly automatic in its character to the extent of dumping into a cart or other receptacle and thence returning to an initial loading position.

A further object of the invention is to provide a device of this character that may be quickly adjusted for the elevating and conveying operation.

A still further object of the invention is to provide a device of this character in which an ordinary drag-scoop may be utilized.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a perspective view of an excavating and loading apparatus constructed in accordance with the invention. Fig. 2 is a transverse sectional view of a portion of the same on the line 2 2 of Fig. 1, the parts being shown in position as the scoop is about to descend for a new load. Fig. 3 is a detail perspective view of the latching means, detached. Fig. 4 is a sectional view of the carrying-track. Fig. 5 is a detail sectional view of a portion of the movable carrier and its trigger mechanism.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The frame of the apparatus comprises a pair of sills 10 and a horizontal bar 11, supported by standards and braces 12 of any

suitable construction. The bar 11 is held at a suitable distance from the ground, generally at such a height as to permit the driving of carts thereunder to receive the contents of the scoop, and said beam may be of any desired length.

Depending from the beam is a rail 14, which may be of any suitable construction, the rail in the present instance comprising a pair of wheel-supporting members having vertical flanges 15, that are held together by flanged caps 16 and bolts 17. The rail is connected to the beam 11 by suitable bolts or other supports 18.

Mounted on the rail is a wheeled carrying-frame 20, said frame having two sets of rollers 21 and being further provided with bearings for the support of a sheave 22. Guided in the lower portion of the frame is a spring-pressed bolt 23, that engages a yoke 24, and within the arms of said yoke is pivoted a sheave 25. The lower end of the yoke is provided with a pair of pivot-ears 26 for connection with the scoop or other dirt-receptacle.

One end of the frame is connected to a weighted cable or chain 28, extending over a guiding-sheave 29, that is supported by the main frame, the weight serving to restore the frame and scoop to initial position after each dumping operation, and when so returned the locking-bolt 23 will strike an arm 30, that is adjustably secured to the track 14, and said locking-bolt will be moved from engagement with the yoke 24, permitting the latter and its pendant scoop to fall to the ground in readiness to receive another load. The frame is further provided with an operating-cable 31, one end of which is secured to the frame, and after passing under the sheave 25 passes over the sheave 22 and thence over a pair of sheaves 32 33, the opposite end of the cable or chain being connected to any suitable source of power, a hoisting-engine or draft-animal being generally employed.

The scoop 40 is of the familiar type employed for excavating and leveling, being provided at one end with a yoke 41, to which the draft-animal may be attached, and at its opposite end to guiding-handles 42. To the sides of the scoop are secured yokes 43, these being arranged a short distance to the rear of the center of gravity of the scoop, and at a point near the front of the scoop are two yokes 44 and 45, the latter being hinged, so that it may be conveniently moved to operative and inoperative position. To the ears

26 of the yoke 24 is pivoted a T-shaped bar 47, having two arms 48, which engage with the yokes 43, the last and longer arm being extended toward the free end of the scoop and being provided with a short loop or chain 50, which may be secured to the draft-yoke 41 of the scoop in order to hold the latter up out of the way during the conveying and dumping operation. Extending under the yokes 44 and 45 is a cross-bar 52, on which the longitudinal arm of the bar 47 rests. The cross-bar 52 carries a clamp 53, to which is pivoted one end of a locking-lever 54, that extends over and holds the bar 47. The bar 52 is further provided with an eye-bolt 55, to which is pivoted one end of a latch-lever 56, said latch having an eye for the reception of the end of the lever 54, while the free end of the latch-lever extends upward in a position to be engaged by a fixed stop when the scoop arrives at dumping position.

At one end of the main frame is arranged a horizontal bar 60, one end of which is secured to one of the standards or braces 12, while the opposite end of the bar is supported by curved arms 61, that are secured to the main beam 11. To the bar 60 is secured a pendent stop 62, arranged to engage the bar 47, and carried by one of the bars 61 is a latch-engaging bar, 63. The frame is further provided with one or more horizontally-disposed casings 64, forming carriers for spring-pressed buffers 65, with which the side of the scoop engages prior to the dumping operation.

In the operation of the device the scoop is loaded in the usual manner and is dragged along by the draft-animal until it reaches a position immediately below the initial position of the carrier-frame 20. The workman then places the bars 47 and 52 in place, bringing the longitudinal arm of the bar 47 down over the bar 52 and then locking the same in place by engaging the free end of the lever 54 in the latch 56. The draft-animal or other power is then applied to the end of the cable 31 and the first movement results in the hoisting of the scoop until the yoke 24 is engaged and held by the bolt 23. This being accomplished the continued stress of the cable 31 will move the scoop to the right until the side of the scoop strikes against the buffers 65 and gradually checks this movement. At this time the latch 56 will engage the bar 63, and about the same time the side of the bar 47 will strike against the stop 62. When the latch is released, the weight of the scoop and its contents will immediately cause the scoop to tip and its forward end descends to dump the load into a cart or other suitable receptacle. The swinging movement of the scoop is at the pivot-point 26, and the bar 47 is held in a practically stationary position during the dumping operation, its outer end engaging under the bar 60, so that the scoop is free

to move to the dumping position and at the same time the draft-yoke 41 will be held up as the dirt passes from the scoop. On detaching the animal or other power the weighted cable or chain 28 will return the carrier and scoop to initial position, and on so returning the arm 30 engages the bolt 23 and moves the latter to release position, permitting the scoop and its attached arms or bars to descend by gravity. The arms are then detached from the scoop and the latter again filled in the usual manner.

Having thus described the invention, what is claimed is—

1. The combination with a frame, of a suspended rail, a carrier mounted thereon, a catch on the carrier, a yoke adapted to engage the catch, guiding-sheaves on the carrier, a yoke, a T-shaped bar having a pivotal connection with the yoke, a dirt-receptacle, means for connecting the transverse arms of said T-shaped bar to the receptacle, detachable cross-bar on the receptacle, means for locking the longitudinal arm of the T-shaped bar to said cross-bar, and means for automatically unlocking the bars when the receptacle arrives at dumping position.

2. The combination with a frame, of a suspended rail, a carrier on the rail, a dirt-receptacle, an auxiliary frame detachably secured to both the carrier and the dirt-receptacle, said frame including a pair of scoop-engaging members, one of which has a pivotal connection with the scoop, means for locking said members, and means for disengaging the members from each other when the receptacle arrives at dumping position.

3. The combination with a frame, of a rail, a carrier thereon, a dirt-receptacle having a plurality of spaced yokes, a T-shaped bar having its transverse arms engaged by one pair of yokes, a cross-bar engaged by the second pair of yokes, a locking-lever carried by the cross-bar and serving to engage the longitudinal arm of said T-shaped bar, a latch for locking the lever in place, and means adjacent to the dumping-point of the receptacle for engaging the latch.

4. The combination with a wheeled carrier, and means for supporting the same, of a dirt-receptacle, a T-shaped bar having its transverse arms connected to the receptacle, means for connecting the draft-yoke of the receptacle to the longitudinal arm of the bar, a cross-bar, a lever carried thereby and engaging said longitudinal arm, a catch for locking the lever in position, means for connecting the T-shaped bar to the carrier, a frame, a stop arranged on the frame in the path of movement of the lever, and means for preventing upward movement of the longitudinal arm during the dumping of the receptacle.

5. The combination with a wheeled carrier, of a dirt-receptacle, a frame having a

pivotal connection with the carrier, and pivotally connected to the receptacle at a point to the rear of the center of gravity of the latter, and means for preventing upward movement of the front of said frame during the dumping of the receptacle.

6. The combination with a wheeled carrier, of a dirt-receptacle, a frame having a pivotal connection with the carrier and with the receptacle, a main carrying-frame, a bar supported by said frame and arranged to engage the receptacle-carrying frame and pre-

vent upward movement of the latter during the dumping of the receptacle, and stops carried by said main frame for engaging and limiting the movement of said receptacle. 15

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

GEORGE SNOOK.

Witnesses:

GEO. A. NICOL.

L. B. FOX.