

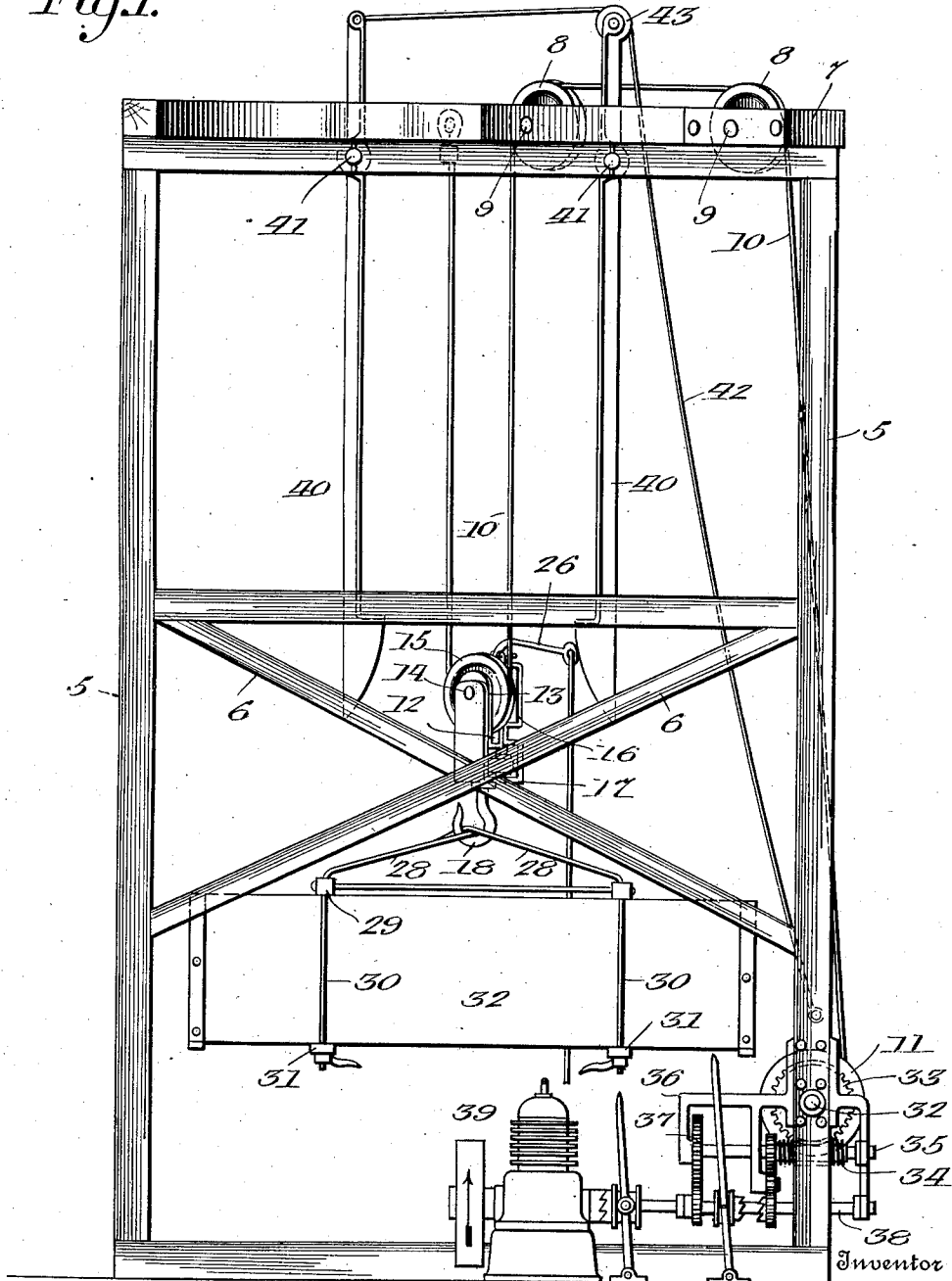
N. PETERSON.
COAL DUMPING DEVICE.
APPLICATION FILED DEC. 2, 1911.

1,025,833.

Patented May 7, 1912.

3 SHEETS-SHEET 1.

Fig. 1.



Witnesses

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3 SHEETS-SHEET 2.

Fig. 2.

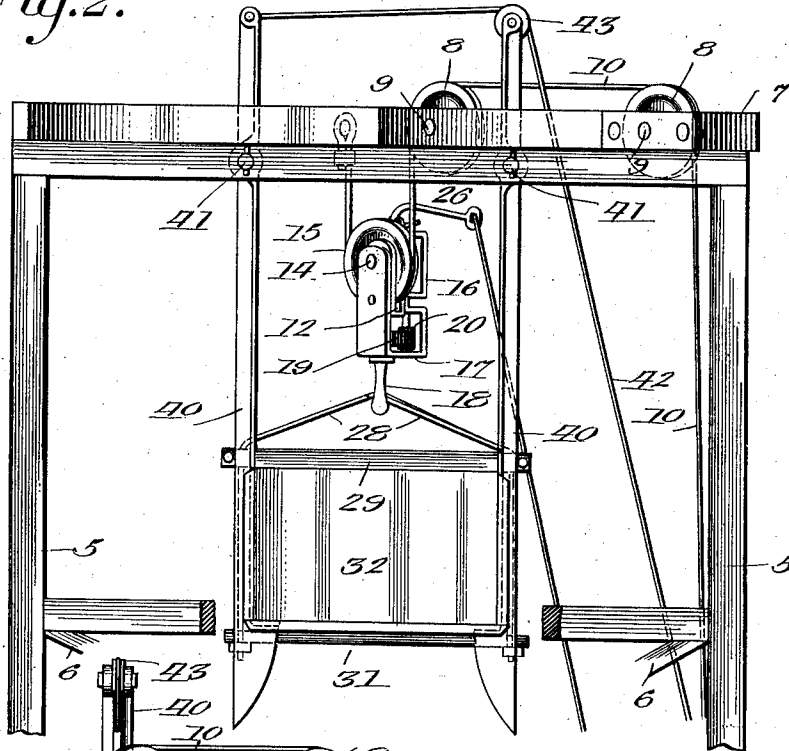
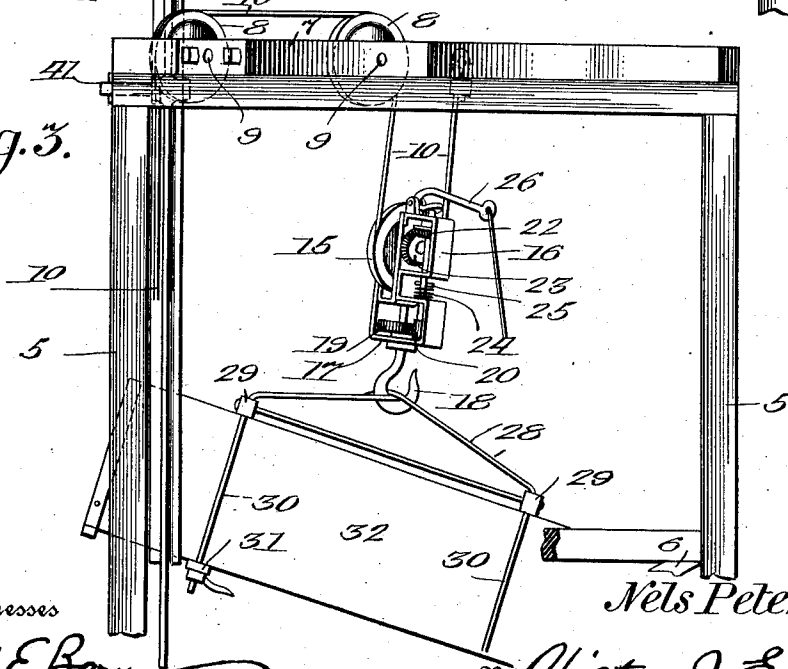


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

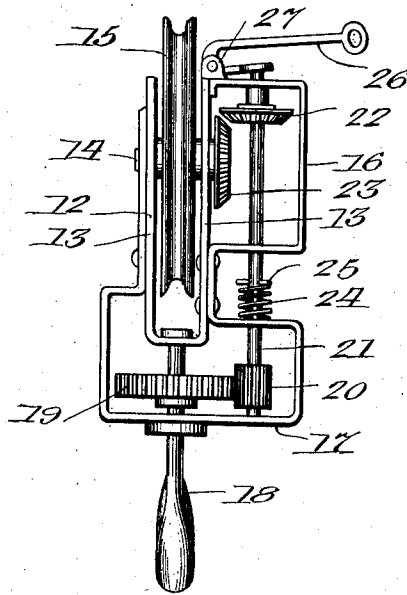
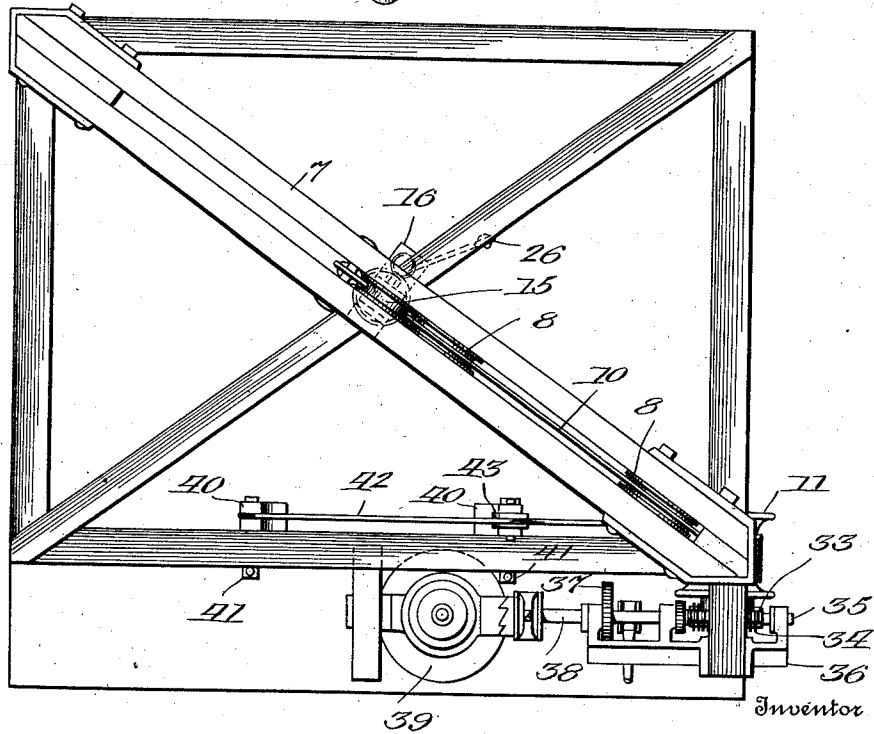


Fig. 5.



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NELS PETERSON, OF CANTON, SOUTH DAKOTA.

COAL-DUMPING DEVICE.

1,025,833.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed December 2, 1911. Serial No. 663,611.

To all whom it may concern:

Be it known that I, NELS PETERSON, a citizen of the United States, residing at Canton, in the county of Lincoln and State of South Dakota, have invented new and useful Improvements in Coal-Dumping Devices, of which the following is a specification.

The invention relates to an unloading apparatus, and more particularly to the class of coal dumping devices.

The primary object of the invention is the provision of a device of this character in which a carrier, such as a wagon body, or the like, may be elevated and caught, so as to permit the convenient dumping of its load into a bin or other depository.

Another object of the invention is the provision of a dumping device, in which a wagon body loaded with material may be raised, so that one end thereof may be caught, so that its opposite end will be lowered for the discharge of its load at the point desired, without requiring the manual handling of the loaded wagon body.

A further object of the invention is the provision of a device of this character in which a novel form of hoisting tackle is employed, so as to raise and shift a load into proper position for the dumping thereof, without requiring the manual handling of the load.

A still further object of the invention is the provision of a device of this character which is simple in construction, thoroughly reliable and efficient in operation, and inexpensive in manufacture.

With these and other objects in view, the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a front elevation of an apparatus constructed in accordance with the invention, and showing a loaded wagon body supported in the lift and slightly raised. Fig. 2 is a similar view with the wagon body raised and in position prior to the dumping thereof. Fig. 3 is a side elevation of the apparatus, showing the wagon body in dumping position. Fig. 4 is an enlarged detail view of the block tackle. Fig. 5 is a top plan view of the apparatus.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

Referring to the drawings by numerals, the apparatus comprises a frame, including uprights 5, braces 6, and a pair of spaced parallel top cross sills or beams 7, between which are arranged guide pulleys 8, journaled upon axles 9 having their bearings in the said beams or sills, and over which is trained a hoisting cable 10, one end of which is suitably fixed between the sills or beams 7, and the opposite end of which is adapted to be wound upon and unwound from a windlass or drum 11 operated from driving mechanism, presently described.

Adapted to be suspended by the cable 10 is a pulley block, comprising a substantially U-shaped frame 12, in the limbs of the side cheeks 13 of which is journaled a pulley supporting spindle or axle 14, on which is fixed a peripherally grooved pulley 15, about which is trained the cable 10. Fixed to the side cheeks 13 of the frame 12 is a strap iron which forms side and bottom yokes 16 and 17, respectively, the closed end of the frame 12 being connected with a swiveled hoisting hook 18 which is also passed through a suitable guide opening in the bottom yoke 17, and carries a gear 19 meshing with a pinion 20 fixed to a vertical shaft 21 journaled in both the side and bottom yokes 16 and 17. The shaft is slidable in said yokes and carries a bevel gear 22 adapted for engagement with and disengagement from a companion bevel gear 23 fixed to one end of the spindle 14 of the pulley wheel 15. On the meshing of the said gears 22 and 23, while the pulley 15 is being rotated by the cable 10, the hoisting hook 18 will be rotated for the turning of a load connected therewith, for the positioning of the load for a purpose presently described.

Surrounding the shaft 21 is a coiled expansion spring 24, one end of which engages a cross pin 25 fixed in said shaft, and its opposite end engages the lower yoke 17, the spring being designed to normally hold the gear 22 out of mesh with the gear 23, and in this manner prevent the rotation of the hoisting hook 18.

Arranged above the side yoke 16 is a hand operable arm 26, the same being pivoted to a bracket 27 fixed to one side cheek 13 of the

frame 12, so as to hold the said lever 26 in alinement with the upper free end of the shaft 21, whereby on pulling downwardly upon the arm 26, it will move the shaft downwardly in the side and bottom yokes 16 and 17 to bring the gear 22 into engagement with the gear 23, so that when the pulley wheel 15 rotates, a similar movement will be imparted to the hoisting hook 18, as will be apparent.

Removably engaged with the hoisting hook 18 are the suspension cables 28 of a hoist, the latter comprising a rectangular shaped frame 29, in which are arranged, at the corners thereof, depending retaining rods 30 detachably engaging cross supporting beams 31, upon which is adapted to rest a wagon body 32, so that its load, when hoisted or elevated a predetermined height, may be dumped, in a manner presently described.

Mounted in a pair of the standards 5 of the frame is a horizontal shaft 32', to which is fixed the drum 11, one end of the same being formed with a worm gear 33, meshing with a worm screw 34, the same being fixed to a counter shaft 35 supported in suitable bearings 36 fixed to one of the standards 5 of the frame, one end of said shaft 35 being connected, through the medium of gearing 37, with the reversing shaft 38 operated by a suitable motor 39, which, when in action, will cause the winding of the cable 10 on the windlass 11, or the unwinding of the same therefrom. When the cable 10 is being wound upon the windlass 11, the lift is elevated, so as to raise the wagon body 22 to the desired height for dumping thereof. Mounted upon the top front cross beam or sill of the frame are latch arms 40, the same being pivoted, at 41, to said top front cross sill or beam for swinging movement. The upper ends of the said arms 40 are projected above the top of the frame, and one of the same has connected thereto one end of a pull cable 42, while the opposite arm is provided with a guide pulley 43, over which the said cable 42 is trained, the arms 40 being adapted to catch one end of the wagon body 22 when raised into the path of the same, so that the opposite end of the wagon body, when lowered, will discharge its load. It is understood, of course, that to lower the delivery end of the wagon body it will be necessary slightly to unwind the cable 10 from the windlass or drum 11, after the lift has been raised the desired height in the frame, and thus the load will be discharged at one side of the frame into a bin or depository. It will be apparent that when the cable 42 is pulled the latch arms 40 at their upper ends will be caused to swing inwardly toward each other thereby spreading the free ends of the arms thus releasing the wagon box

therefrom. On the raising of the lift, when the wagon body is fastened therein, the hoisting hook 18 will be automatically turned from the position shown in Fig. 1 to a position whereby one end of the wagon body will be caught by the latch arms 40, thereby permitting its opposite end to lower for the discharge of the load from the wagon body at one side of the frame. Upon pulling upon the cable 42, the arms will be caused to separate, thereby releasing the wagon body, so that on reversing the rotation of the shaft 38, the hoisting cable 10 will be unwound therefrom, for the lowering of the wagon body.

From the foregoing, taken in connection with the accompanying drawings, it is thought that the construction and operation of the invention will be readily understood, without requiring a more extended explanation.

What is claimed is:

1. In an apparatus of the class described, a frame having spaced parallel cross beams at its top, guide pulleys journaled between the beams, and hoisting cable trained over said pulleys and having one end fixed between the cross beams, motor controlled winding and unwinding means for said cable, a pulley block sustained by the cable and having a pulley wheel engaging said cable and rotated on the tightening or slackening thereof, a hook swiveled in said block for turning movement, connections between said last named pulley and the hook for rotating same on the slackening or drawing taut of the cables, means for normally holding said connections between the last named pulley and said hook out of engagement therewith, and means for throwing said connection into engagement with the said last named pulley and hook.

2. In an apparatus of the class described, a frame having spaced parallel cross beams at its top, guide pulleys journaled between the beams, and hoisting cable trained over said pulleys and having one end fixed between the cross beams, motor controlled winding and unwinding means for said cable, a pulley block sustained by the cable and having a pulley wheel engaging said cable and rotated on the tightening or slackening thereof, a hook swiveled in said block for turning movement, connections between said last named pulley and the hook for rotating same on the slackening or drawing taut of the cables, means for normally holding said connections between the last named pulley and said hook out of engagement therewith, means for throwing said connection into engagement with the said last named pulley and hook, and a lift connected with said hook.

3. In an apparatus of the class described, a frame having spaced parallel cross beams

at its top, guide pulleys journaled between the beams, and hoisting cable trained over said pulleys and having one end fixed between the cross beams, motor controlled winding and unwinding means for said cable, a pulley block sustained by the cable and having a pulley wheel engaging said cable and rotated on the tightening or slackening thereof, a hook swiveled in said block for turning movement, connections between said last named pulley and the hook for rotating same on the slackening or drawing taut of the cables, means for normally holding said connections between the last named pulley and said hook out of engagement with the said last named pulley and hook, a lift connected with said hook, and a manually actuated means controlling said first named means.

4. In an apparatus of the class described, a frame having spaced parallel cross beams at its top, guide pulleys journaled between the beams, and hoisting cable trained over said pulleys and having one end fixed between the cross beams, motor controlled winding and unwinding means for said

cable, a pulley block sustained by the cable and having a pulley wheel engaging said cable and rotated on the tightening or slackening thereof, a hook swiveled in said block for turning movement, connections between said last named pulley and the hook for rotating same on the slackening or drawing taut of the cables, means for normally holding said connections between the last named pulley and said hook out of engagement therewith, means for throwing said connection into engagement with the said last named pulley and hook, a lift connected with said hook, a manually actuated means controlling said first named means, and a means connected with the frame and engageable with one end of a load carrier supported in said lift for assisting the dumping of such load when elevated.

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

NELS PETERSON.

Witnesses:

OLE MATHISON,
KNUTE BRANDSGARD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."