No. 807,846. PATENTED DEC. 19, 1905.

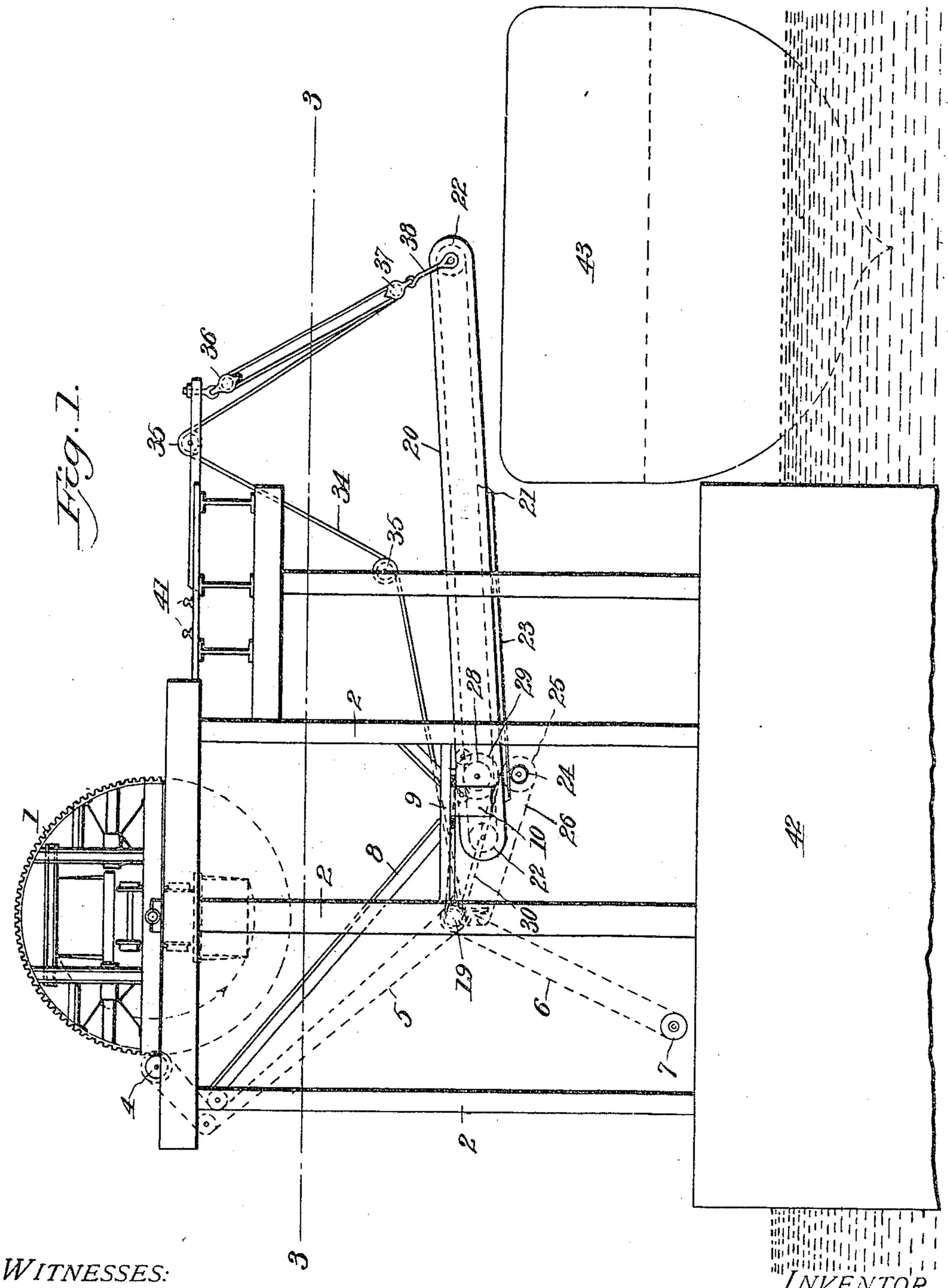
A. MOORE.

CAR DUMP AND CONVEYER.

APPLICATION FILED NOV. 23, 1904.

4 SHEETS—SHEET 1.

Fig. 1.



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4 SHEETS—SHEET 2.

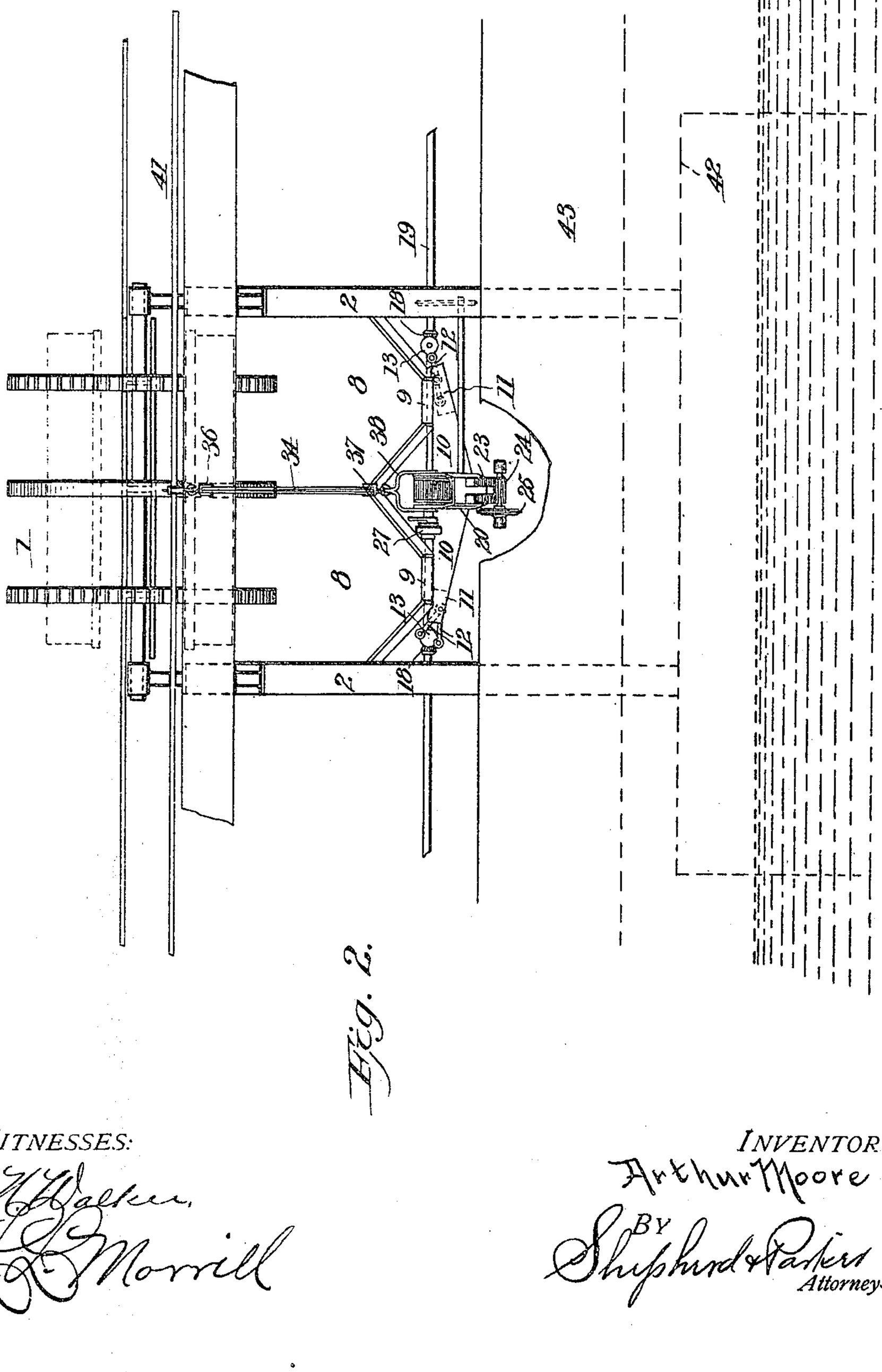

Fig. 2.

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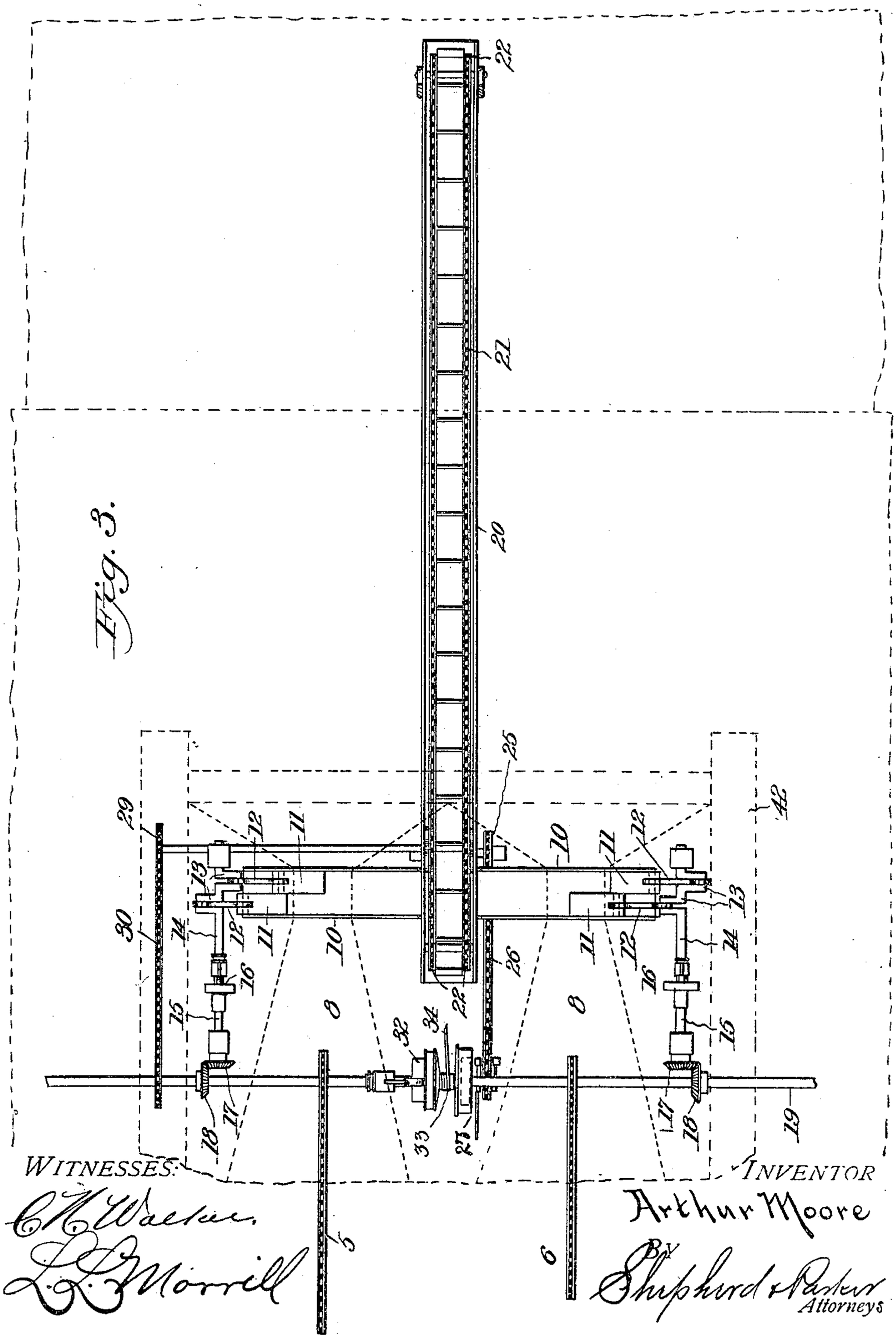
4 SHEETS—SHEET 3.

Fig. 3.



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4 SHEETS—SHEET 4.

Fig. 4.

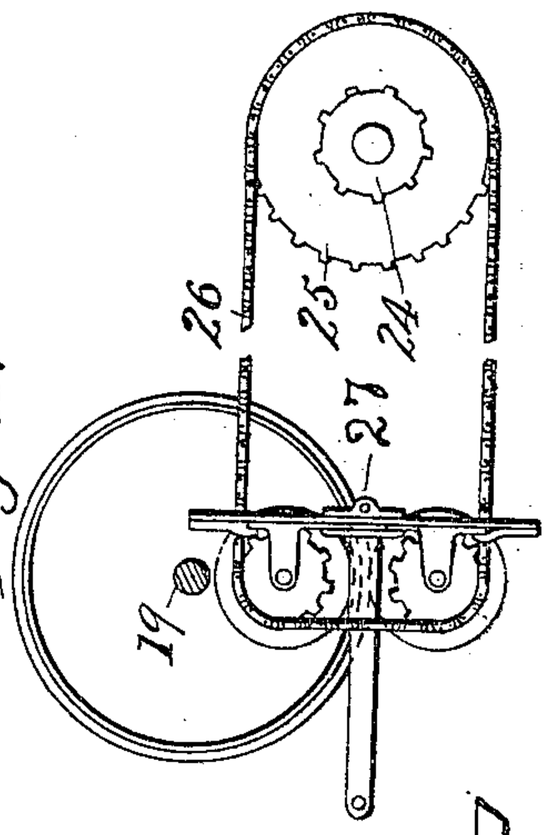


Fig. 5.

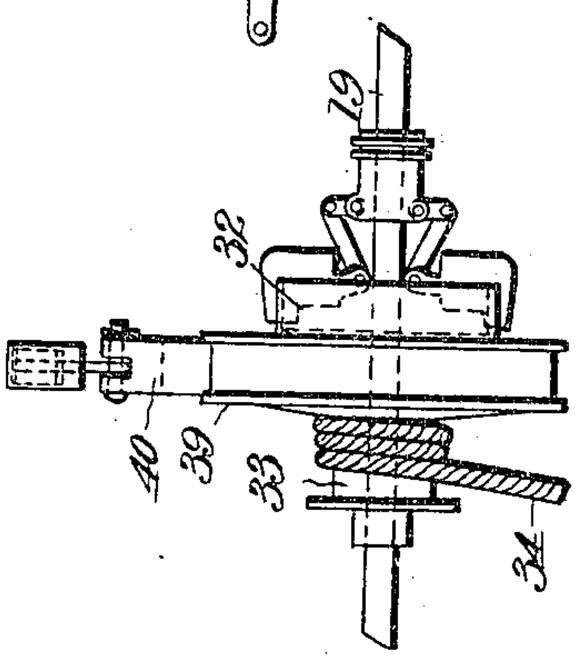


Fig. 6.

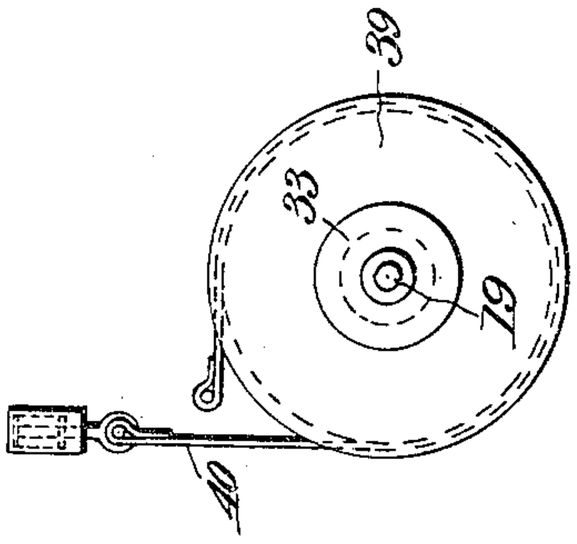


Fig. 8.

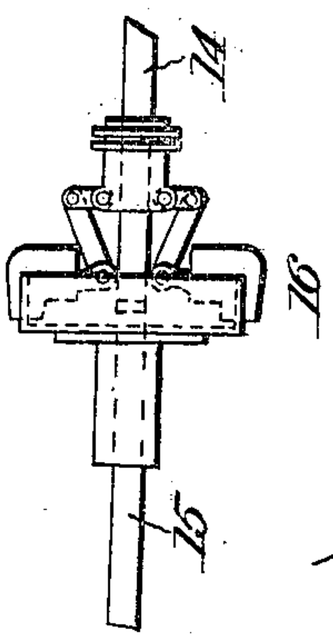
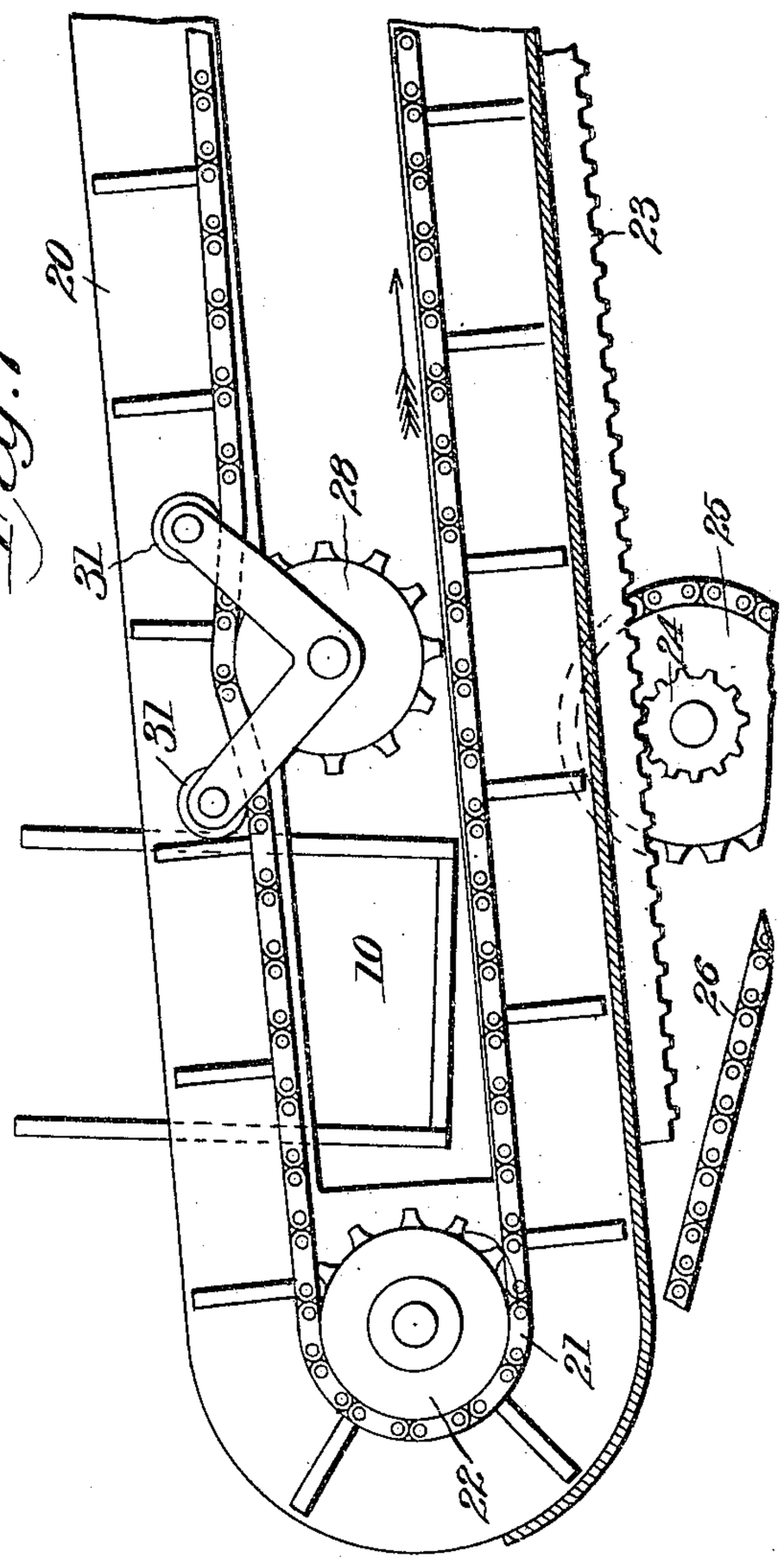


Fig. 7.



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ARTHUR MOORE, OF WAR EAGLE, WEST VIRGINIA.

CAR-DUMP AND CONVEYER.

No. 807,846. Specification of Letters Patent. Patented Dec. 19, 1905.

Application filed November 23, 1904. Serial No. 234,057.

To all whom it may concern:

Be it known that I, ARTHUR MOORE, a citizen of the United States, residing at War Eagle, in the county of Mingo and State of West Virginia, have invented certain new and useful Improvements in Car-Dumps and Conveyers, of which the following is a specification.

My invention relates to car-dumps and conveyers, and especially to that class wherein the car is turned entirely over and the material dumped out and a conveyer in conjunction therewith for conveying the dumped material as to a vessel or a second car.

The car-dump used in connection with this device is the dump shown and described in my application Serial No. 207,960 for an automatic revolving car-dump, filed in the United States Patent Office May 14, 1904, and my later application for an improvement in the said dump.

The object of my invention is to provide a device wherein a car is turned entirely over by the dump described in my said applications and beneath which is disposed a bin for the receipt of the dump material.

A further object of my invention is to provide the bin with a hopper-bottom and dispose a conveyer in communication with such hopper-bottom, adapted to take the material from the bin and convey it to some point at a varying distance and height relative to the bin—as, for instance, to load it upon a vessel.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a view in end elevation of my improved dump and conveyer shown in position for dumping a car of material and conveying the dumped material to a vessel. Fig. 2 is a view in side elevation of my improved car-dump. Fig. 3 is a sectional plan view taken on line 3 3 of Fig. 1. Fig. 4 is a detail view of the friction-clutch for moving the conveyer-trough longitudinally. Fig. 5 is a detail view of the friction-clutch for raising and lowering the outer end of the conveyer. Fig. 6 is a detail view of the band-brake adapted to hold the outer end of the conveyer at a desired height. Fig. 7 is a detail view of the conveyer-trough, showing the endless flight therein with the means for operating the endless flight and for moving the conveyer-trough longitudinally. Fig. 8 is a detail view of the friction-clutch for operating the reciprocating feeders.

Like characters of reference designate corresponding parts throughout the several views.

In the preferred embodiment of my invention I mount my improved automatic revolving car-dump, as described in my application Serial No. 207,960, as at 1, and upon any convenient structure, as the frame 2. The dump 1 is adapted to automatically rotate, as described in my said application, or to be rotated by the pinion 4, receiving motion through the medium of chains 5 and 6 from any source of power, as 7. Within the structure 2 and beneath the dump 1 is disposed a bin 8, having flaring sides to form a hopper-bottom, as at 9. Below the hopper-bottom 9 and communicating therewith are disposed the inclined chutes 10, preferably inclined from each side toward the center longitudinally of the frame structure. Within the chutes 10 are mounted the feeders 11, which are given a reciprocating movement within the chutes 10 through the medium of rods 12, receiving motion from cranks 13 upon shafts 14. The shafts 14 receive motion from shafts 15 through the medium of friction-clutches 16. (Shown in detail at Fig. 8.) The shafts 15 are provided with beveled gears 17, adapted to engage and be rotated by beveled gears 18 upon a line-shafting 19. The line-shaft 19 may receive motion through the medium of chain 6 from the power 7.

Below a central opening in the chutes 10 is disposed a conveyer-trough 20, supplied with an endless flight 21, operating over sprockets 22 at opposite ends of the trough 20. The conveyer-trough 20 is provided upon its lower side with a longitudinally-disposed rack 23, engaging a pinion 24. The pinion 24 is adapted to be rotated in either direction through the medium of a sprocket 25 and chain 26, receiving motion from a friction-clutch 27 upon line-shaft 19 and shown in detail in Fig. 4. Adjacent to the chute 10 is mounted a sprocket 28, engaging the chain of the endless flight 21 and receiving rotary motion through sprocket 29 and chain 30 from line-shaft 19. Two idlers 31 are provided to hold the chain of the endless flight in contact with the sprocket 28.

Upon the line-shaft 19 is also mounted a friction-clutch 32, provided with a winding-drum 33, upon which may be wound a rope or cable 34, which, extending through and guided by pulleys 35 and block 36 and fall-block 37, is adapted to raise and lower the outer end of the conveyer. The fall-block 37 is secured to the conveyer-trough by bail 38. Rigidly secured to the winding-drum 33 is a band-wheel 39, adapted to receive a brake-band 40 to hold the conveyer at any desired height vertically.

Upon any convenient portion of the structure not otherwise occupied may be placed rails, as at 41, for storing cars either empty or loaded.

It is found very convenient to mount my dump and conveyer upon a pier, as 42, where the material dumped from the cars may be conveniently loaded into vessels, as 43.

The operation of my improved dumping-conveyer is as follows: With a car disposed as indicated within the dump 1 the said car may be turned entirely over either by the unbalanced weight of the car in the manner described in my said former application or by the pinion 4, receiving power from any convenient source, as 7. As the car turns over the contained material will fall into the bin 8 and by reason of the sloping sides slide through the hopper-bottoms 9 into the chutes 10. By the manipulation of the friction-clutch 16 the feeders 11 may be given a reciprocating motion, forcing the material down along the incline of the bottom of chutes 10 and into the conveyer 20. The endless flight, receiving motion through sprocket 28 and chain 30, will carry the material in the direction indicated by the arrow and permit it to be discharged at the outer end of the conveyer. The position of the outer end of the conveyer may be varied to suit the requirements as follows: By manipulation of the friction-clutch 27 the pinion 24 may be rotated in either direction and the conveyer moved longitudinally until its outer end is above the desired point. The outer end may be raised and lowered through the medium of friction-clutch 32 and rope 34, communicating with the outer end of the conveyer, and such outer end held at the desired vertical point by tightening the band-brake 40 upon the band-wheel 39. The friction-clutch 16 is interposed between the shafts 14 and 15, so that the feeders 11 may be operated or not, as desired.

It is obvious that numerous minor changes in the form and construction of my improved dump and conveyer may be made without departing from the spirit of my invention or the scope of the claims.

Having thus described my invention, what I claim as novel, and desire to secure by Letters Patent, is—

1. A device of the character described, comprising a dump adapted to turn a car entirely over, a bin adapted to receive the contents of the car, a conveyer disposed to receive material from the bin, means for positively feeding material from the bin to the conveyer and means for manipulating the conveyer to deliver material at varying distances and heights relative to the bin.

2. A device of the character described, comprising a dump adapted to turn a car entirely over, a bin disposed below and adapted to receive material from the car, a conveyer disposed to convey material from the bin and deliver it at varying distances and heights relative to the bin, reciprocating feeders disposed to positively feed material from the bin to the conveyer and means for mechanically operating the dump conveyer and feeders.

3. A device of the character described, comprising a dump adapted to unload material from a car, a longitudinally-movable conveyer adapted to receive the dumped material, a rack secured to the conveyer-trough, a pinion adapted to engage the rack and means for rotating the pinion in either direction to move the conveyer to deposit the material at varying distances from the dump.

4. A device of the character described, comprising a dump adapted to unload material from a car, a longitudinally-movable conveyer adapted to receive the dumped material, a rack secured to the conveyer-trough, a pinion adapted to engage the rack, means for rotating the pinion in either direction to move the conveyer to deposit the material at varying distances from the dump and means for raising and lowering the outer end of the conveyer-trough to deposit the material at various heights relative to the dump.

5. A combined dump and conveyer comprising a dump adapted to turn a car entirely over, a bin disposed to receive the dumped material, a longitudinally and angularly movable conveyer disposed to receive material from the bin, reciprocating feeders adapted to positively feed material from the bin to the conveyer, means for rotating the dump, reciprocating the feeders, operating the conveyer, moving the conveyer longitudinally in either direction and for raising and lowering the outer end of the conveyer all from the same source of power.

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

ARTHUR MOORE.

Witnesses:
N. V. JAMES,
ALBERT JAMES.