

G. H. HULETT.
CONVEYER CARRIAGE.

No. 516,864.

Patented Mar. 20, 1894.

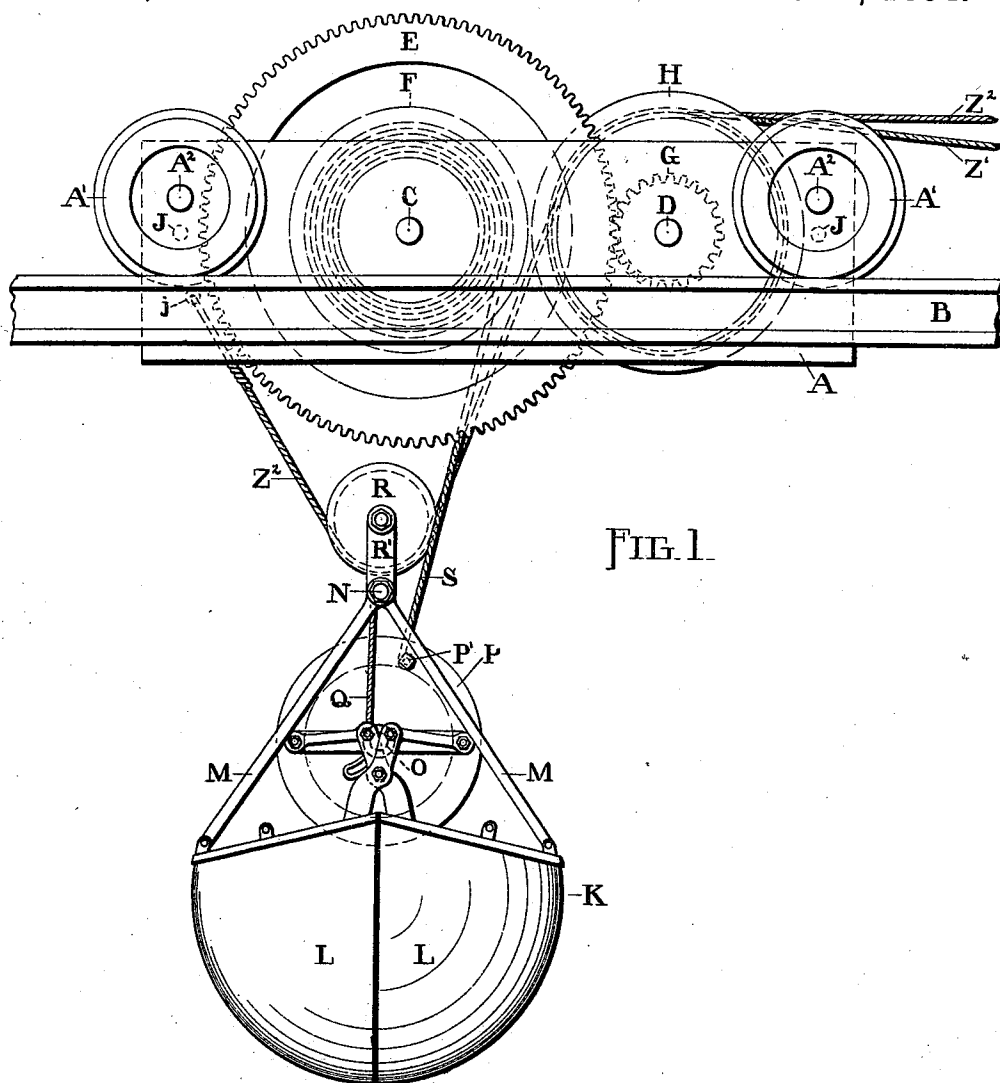


FIG. 1.

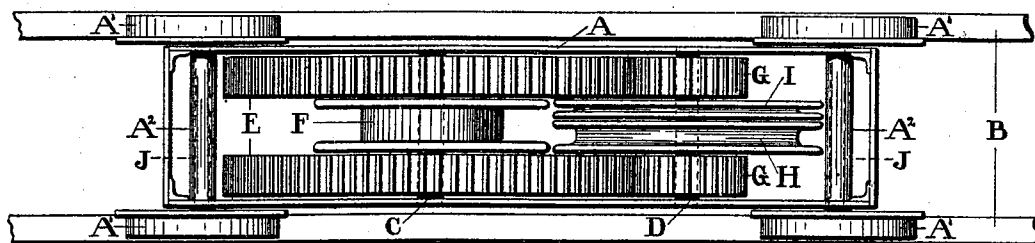


FIG. 2.

WITNESSES:

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INVENTOR:

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By W. H. Burridge,
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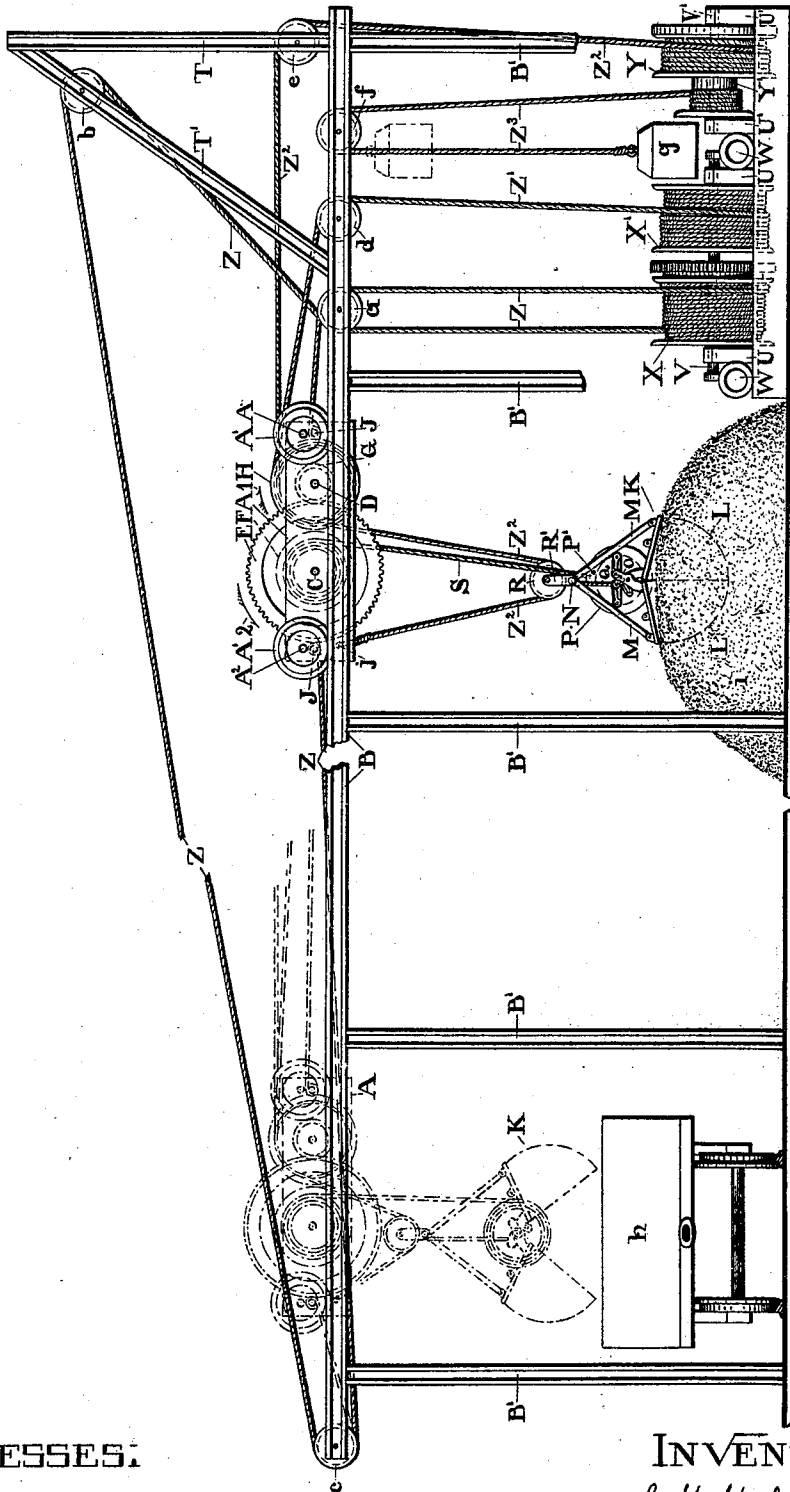
(No Model.)

2 Sheets—Sheet 2.

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WITNESSES:

To A. Cutter
Harry H. House.

INVENTOR:

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UNITED STATES PATENT OFFICE.

GEORGE H. HULETT, OF CLEVELAND, OHIO.

CONVEYER-CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 516,864, dated March 20, 1894.

Application filed June 7, 1893. Serial No. 476,821. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. HULETT, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Conveyer-Wagons, of which the following is a full, clear, and exact description.

My invention consists of a conveyer wagon provided with two shafts, one of said shafts having two pinions, a winding-sheave and a loose pulley thereon, and the other having two gears and a winding-drum rigidly attached thereto, and suitable ropes or chains leading from or passing over said sheave, pulley and drum. Self-filling buckets are closed and raised with a single rope, hence it will be seen that the usual method of increasing the power which elevates said buckets, by means of differential sheaves, can not be resorted to.

The object of my improvement is to provide a device for operating automatic or drop-bottom, self-filling buckets where differential sheaves are not practical.

In place of differential sheaves I use differential gears in the wagon and am thereby enabled to raise a heavy bucket vertically at slow speed, hold the same and convey it rapidly along a bridge or tram-way.

That my invention may be seen and fully understood by others, reference will be had to the following specification and annexed drawings forming a part thereof, in which—

Figure 1 is a side view of my conveyer wagon showing a closed bucket suspended therefrom; Fig. 2, a plan view of the wagon, and Fig. 3, a side elevation of a tram-way or bridge, illustrating the operation of my device.

Similar letters of reference designate like parts in the drawings and specification.

The wagon A is supported by the wheels A' upon the track B and has the shafts C and D. The wheels A' are affixed to the ends of the axles A³, A². Keyed or otherwise rigidly attached to the shaft C are the gears E, E and the winding-drum F, between said gears. The shaft D has the pinions G, G secured thereto, said pinions meshing with the gears E, E. Between the pinions G, G is the winding-sheave H fast on the shaft D and the pul-

ley I, Fig. 2, loose on said shaft. The rods J, J are fastened to the sides of the wagon A, at each end beneath the two axles A³, for the purpose hereinafter explained.

The bucket K, shown in Figs. 1 and 3, is what is commonly designated as a "clam-shell bucket" and consists of the sections L, L suspended by the arms M from the rod N. The sections L, L are opened and closed by means of the rising and falling shaft O, a toggle-lever mechanism and segmentally-slotted guide-bars, all of which have been made the subjects of other patents; hence a detailed description here is not deemed necessary.

On the shaft O is the winding-drum P and on each side of said drum is a rope Q, connecting said shaft with the rod N. The rod N is attached to the pulley R by the link R'. The rope S, Figs. 1 and 3, is fastened to the winding-drum P, at P', and passes from thence to the drum F, in the wagon A, around which it is wound.

The track B is supported on the uprights, B', Fig. 3, and at one end has the mast T held in place by the brace T'. Below the rear end of the track B are the bearings U, U for the shaft V and the bearings U', U' for the shaft V'.

On the shaft V which may be driven in either direction by the reversible engines W, W, are the winding-drums X and X'. The drum X is loose on the shaft V and controlled by a friction-clutch and brake while the drum X' is rigidly connected to said shaft.

On the shaft V' is the large winding-drum Y having the small drum Y' stiffly attached thereto, and said drums are provided with a brake. The rope Z, Fig. 3, passes from one side of the drum X, over the sheave a, to be attached to the rod J in the rear of the wagon A and, from the opposite side of said drum, around a sheave on the same shaft with the sheave a, over the sheave b on the brace T', and around the sheave c in the forward end of the track B, to be attached to the rod J in the front of said wagon. The sheave b is placed high on the brace T' in order to carry the rope Z clear of the wagon mechanism, when said wagon is on the forward portion of the track B. The rope Z', Figs. 1 and 3, passes from the drum X', over the sheave d, to the winding-sheave H in the wagon A and is wound around and secured to said sheave.

The rope Z^2 , Figs. 1 and 3, passes from the drum Y over the sheave e in the mast T, the loose pulley I, Fig. 2, in the wagon A, and beneath the pulley R to be attached to said wagon at j . The pulley R may be dispensed with and the rope Z^2 attached directly to the rod N. The rope Z^3 , Fig. 3, passes from the side of the drum Y' opposite the rope Z^2 , over the sheave f and has the counterweight g pendent therefrom. The purpose of the counterweight g is to take up the slack in the rope Z^2 and the drum Y' is smaller than the drum Y to lessen the space through which said counterweight is obliged to travel for the accommodation of the wagon A.

Assuming that the various parts of my device are in the positions indicated by the full lines in Fig. 3, with the wagon A held in place by the rope Z and the drum X to which the brake is applied, the operation will be as follows: Rotate the drum X' in the direction necessary to wind up the rope Z', which unwinds said rope from the winding-sheave H in the wagon A, and revolves said sheave in the direction of the arrow 1. The winding-sheave H being fast on the shaft D to which the pinions G, G are secured causes said pinions to revolve and they in turn rotate the large gears E, E, fast on the shaft C with the drum F, in the direction of the arrow 2 thus winding up the rope S and raising the bucket K, first closing the same if open. As the bucket K is elevated by the rope S attached to the drum P, the counterweight g descends and takes up the slack in the rope Z^2 . When the bucket K has been raised to the required height, release the brake and connect the drum X with the shaft V at the same time reversing the engines W, W. The drum X' now pays off the rope Z' as fast as the drum X winds up the rope Z on one side and unwinds it from the other and the wagon A is drawn toward the forward end of the track B by said rope Z. As the wagon A is drawn along the track B, the rope Z^2 unwinds from the large drum Y causing the small drum Y' to rotate and take up the rope Z^3 , thus elevating the counterweight g . When the wagon A has reached a point over the car h , Fig. 3, or other desired locality, the drum X is released from the shaft V and held by the brake, which again renders said wagon immovable, and the brake is applied to the drum Y. The bucket K is now suspended by its frame from the rope Z^2 and, as the drum X' continues to pay out the rope Z', the shaft O runs down the ropes Q, winds the rope S onto the drum P from the drum F and opens said bucket. After the contents of the bucket K have been discharged, reverse the engines W, W when the drum X' again takes up the rope Z' until

said bucket is closed and suspended from said rope. Now release the brakes which hold the drums X and Y, at the same time connecting said drum X with the shaft V, and the wagon and bucket are drawn back to their original positions over the stock-pile i ; the counterweight g descending and keeping the rope Z^2 taut. Release the drum X from the shaft V, reapply the brakes to said drum and the drum Y and reverse the engines, the bucket K now opens and is allowed to descend by means of the rope Z^2 which unwinds from the drum Y, said drum rotating under the influence of the brake.

If desired chains may be substituted for the ropes shown and described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a conveyer wagon, a shaft, a winding-sheave and pinions fast thereon, and a pulley loose on said shaft, in combination with a second shaft, and a winding-drum and gears fast on said second shaft, said gears meshing with said pinions, in the manner substantially as and for the purpose set forth.

2. In a conveyer wagon, the shaft D, pinions and a winding-sheave fast thereon, a rope attached to said sheave and passing to a drum on the main driving-shaft, a pulley loose on said shaft D, the drum Y, a drop-bottom bucket, and a rope passing from said drum over said pulley to support the frame or stationary part of said bucket, in combination with the shaft C, gears meshing with said pinions and a winding-drum fast on said drum C, a drum attached to the opening and closing mechanism of said bucket and a rope connecting said winding-drum with said bucket-drum, in the manner substantially as and for the purpose set forth.

3. A conveyer wagon consisting of a body mounted on wheels, two shafts secured to said body, differential gears fast on said shafts, (the small gears or pinions meshing with the large gears,) the winding-sheave H and loose pulley I on the pinion shaft and the winding-drum F on the gear shaft, ropes attached to and leading from said sheave and drum and a rope passing over said pulley to the stationary part of a drop-bottom bucket, in combination with the bucket, the counterweight g , and the actuating mechanism, in the manner substantially as and for the purpose set forth.

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

GEORGE H. HULETT.

Witnesses:

F. A. CUTTER,
BENTLEY MAX BURRIDGE.