

UNITED STATES PATENT OFFICE.

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DIRT-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 519,753, dated May 15, 1894.

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To all whom it may concern:

Be it known that I, JOSHUA M. YOUNGER, a citizen of the United States, residing at Sloan, in the county of Woodbury and State of Iowa, have invented a new and useful Dirt-Loading Machine, with an Improvement on Rod-Carriers and an Improvement on Automatic Locks for Rod-Carriers, of which the following is a specification.

My invention relates to dirt loading machines, and consists in certain details of construction and arrangement of parts herein-after more particularly described in the specification, illustrated in the accompanying drawings, and pointed out in the claim.

Its object is to provide a machine for conveying to, and loading dirt upon a wagon, car or other receptacle, which shall be strong, economical and simple in construction, and convenient and effective in operation.

In the drawings—Figure 1 is a perspective view of my machine. Fig. 2 is a vertical sectional view of the carrier when locked in position at the lower end of the carrier rod or track. Fig. 3 is a similar sectional view showing the carrier when moving along the track.

Referring more particularly to the drawings by letter, in which similar letters indicate like parts, A represents an upright frame, broad at the base and narrow at the top, and having its upper or top side inclined downward from rear to front. This frame consists of the long supports or legs J, at the rear end, the shorter supports J' at the front end, the diagonal side braces J², the horizontal side braces J³, and the inclined top piece J⁴.

Pivottally suspended from brackets V, W, depending from the opposite ends of the top piece J⁴, is a rod F, which forms the track for the carrier K, which will be presently described. The bracket V at the front or lower end of the frame is shorter than the bracket W at the opposite end, and both are provided with eyes at their lower ends to receive the ends of the rod or track. In order that this rod or track may be parallel with the top piece J⁴, and yet reach the eye of the short bracket V, a sharp bend is formed in said rod near its lower end as shown in Figs. 1 and 2. This construction affords a lateral movement

to the lower portion of the rod and allows it to swing from side to side in bracket V. It is not, however, essential that the top piece of the frame from which the track is suspended should be inclined, or that the track be parallel with it, as it is obvious that the forward lower end of the track may be made to swing in the same manner from a horizontal top piece.

The carrier K is composed of the triangular or heart-shaped sides on either side of the rod F, united at their points by bolts or rivets, the broad or bifurcated end being downward. Between the sides above the rod is journaled a grooved friction wheel Q, which bears upon the rod or track and supports the carrier. Between the lower and rear legs or points is journaled a similar friction wheel S, over which the elevator rope C passes. Between the opposite or front points of the carrier frame K is pivoted a locking latch R, shown in detail in Figs. 2 and 3, and to the arm of which the end of the rope C is secured.

T is a pulley block to which are attached the chains B, from which the scraper A' is suspended, which holds the dirt. One end of the elevator rope C is secured to the arm of the latch R, thence passes beneath the pulley in the block T, up over friction wheel S in the lower rear corner of the carrier frame, then over the pulley D, suspended from a hook G, formed at the rear end of track F, down around pulley D' secured to the frame near its bottom, and thence out to the team or motor where the power is applied at the front of the machine.

M is the apron or receiver intended to receive the dirt dumped from the scraper. It is pivottally secured at its rear end to the supports J at the rearward end of the machine, at any suitable height from the ground, and its front end is suspended by ropes N extending upward over pulleys P, secured to the supports J, and the ends attached to the counter weights O, whereby the apron is maintained normally in a horizontal position, but when loaded the weight of the load causes it to incline downwardly and discharge its load, and the counter weights bring it back to its normal position.

L is the dumping block for the scraper, and consists of an upward projection from a

cross piece secured to the frame in rear of the apron M.

At the bend of the rod or track F, near its lower end, is rigidly attached a block, H, which forms a stop for the carrier K, and to which the carrier may be securely locked. This locking mechanism consists of a dog U, shown in Figs. 2 and 3, pivoted at one end within the sides of the carrier frame, and having in its upper edge a rectangular recess corresponding with and adapted to receive the block H. The outer or free end of this dog is formed with a concave face adapted to receive and engage the convex face of the inner end of the locking latch R, when both are in line with each other, as shown in Fig. 2.

E are supporting wheels secured at the bottom of the frame A, designed to be employed when necessary to move or change the location of the machine. These wheels are journaled in the ends of levers X, pivotally attached to the horizontal braces J³ by the pivotal bolts Y located at a short distance from the ends of the levers to which the wheels are journaled and which form fulcrums for the levers. The machine is raised upon the supporting wheels by turning the levers to a vertical position, when the upper ends of the levers are held and secured in position by the yokes Z pivotally attached to the diagonal braces J².

Having described the construction of the various parts of my machine in detail, I will proceed to describe its operation. Assuming the carrier K to occupy the position upon the rod or track shown in Fig. 3, the elevator rope C is slackened, permitting the carrier K to run down the inclined track F until the left hand side of the recess in the upper edge of the dog U comes in contact with the stop H. This contact causes the dog U to automatically turn upward on its pivot and embrace stop H within its recess, at the same time releasing the latch R, which by the weight of the scraper is caused to turn to the position shown in Fig. 2, its outer convex end turning on its pivot, enters the concave recess in the free end of the dog U, while the scraper descends to the earth ready to be manipulated by the operator. During the manipulation of the scraper the carrier remains in its locked position. When the scraper is filled and ready to ascend, the power is applied at the outer end of rope C, which, as the rope becomes taut, hauls the scraper A' with its load up to the car-

rier and turns the arm of the latch toward the rear, releasing the dog U, which drops away from the stop H against the inner end of latch R, and locks it in position as shown in Fig. 3, thus holding the pulley block suspending the scraper, to the carrier, where it remains secured until again released by the contact of the dog U with the block H at the lower end of the track. The continued power exerted upon the rope causes the carrier to proceed up the track F, carrying the scraper forward until its mouth strikes the dumping block L and is arrested. The continued forward movement of the carrier raises the rear end of the scraper and causes it to dump its load upon the apron M, from which it is discharged into the receptacle provided. By reason of the single rail F upon which the carrier is supported and travels, and its swinging connection at the lower end with bracket V, whereby a considerable lateral motion is allowed the lower end of the track, much latitude is afforded for the manipulation of the scraper, permitting it to cover a wide range of ground in front of the machine when loading, and by reason of its upper end being held at a fixed point and stationary in bracket W, the loaded scraper is directed automatically and uniformly to the discharging point and caused to strike the dumping block without deviating to the right or left.

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

In a dirt conveyer and loader, the combination with a portable supporting frame provided with an inclined single track journaled at a fixed point at its upper end and at its lower end allowed to swing laterally, of a carrier adapted to run upon said track, a pivoted lever arm to which the actuating rope is attached, said arm having its pivoted end convex, a dog pivoted at one end within the carrier frame and having an angular recess in its upper edge adapted to engage a track-stop, and a concave recess in its free end adapted to engage the convex end of the lever arm, a stop H secured to and at the lower end of the track, substantially as and for the purpose described.

JOSHUA M. YOUNGER.

Witnesses:

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