J. WATSON.

DUMPING WAGON.

APPLICATION FILED JULY 27, 1911.

1,015,105.

Patented Jan. 16, 1912.

2 SHEETS—SHEET 1.

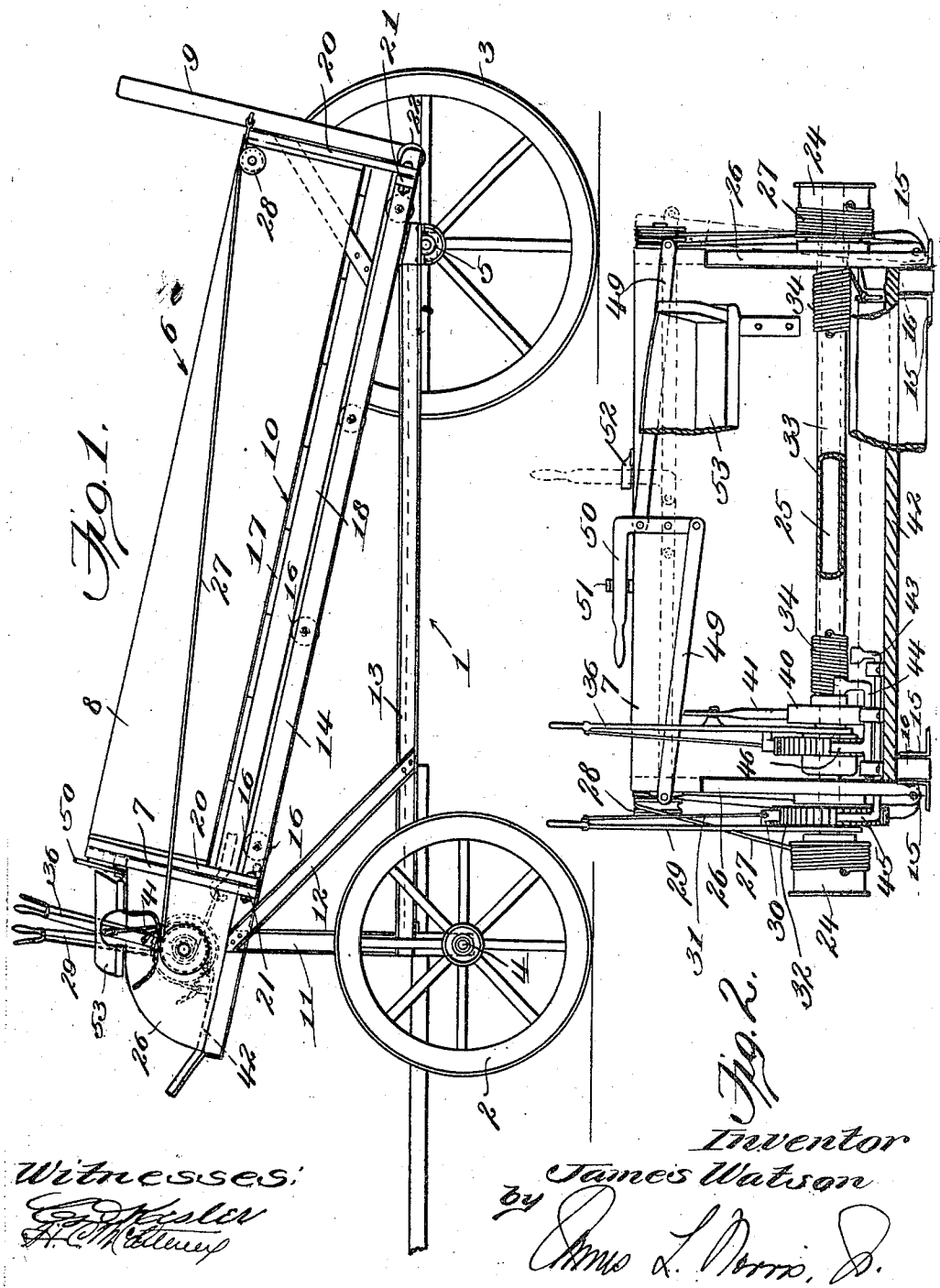

Fig. 1.

Fig. 2.

Witnesses:

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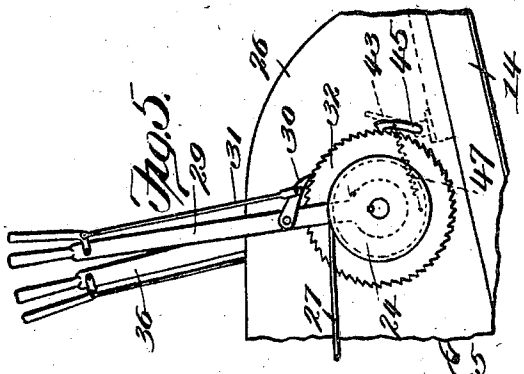

Fig. 5.

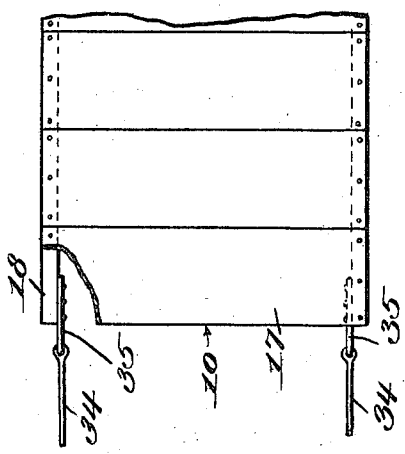

Fig. 6.

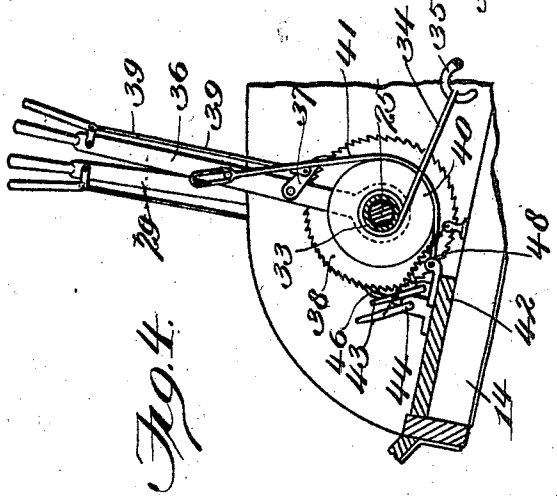

Fig. 4.

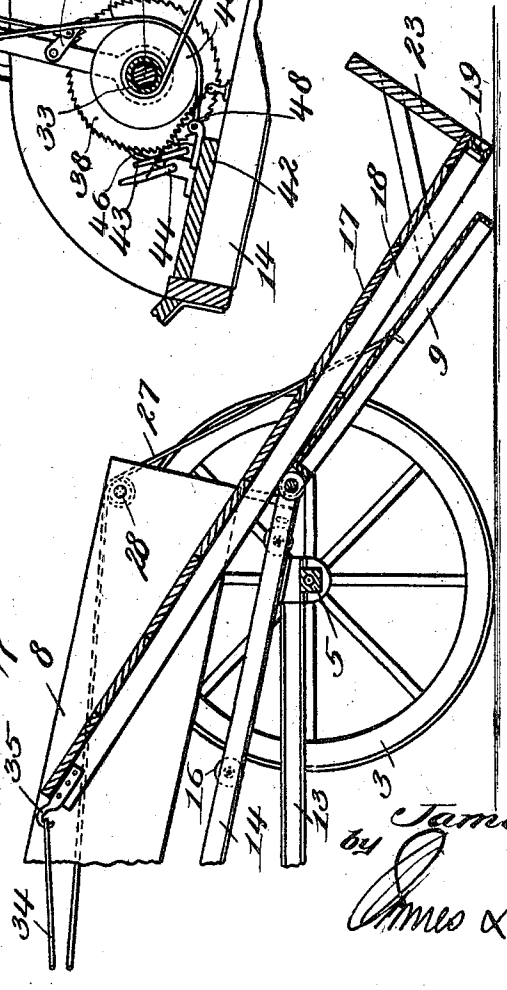

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

JAMES WATSON, OF WILMINGTON, DELAWARE.

DUMPING-WAGON.

1,015,105. Specification of Letters Patent. Patented Jan. 16, 1912.

Application filed July 27, 1911. Serial No. 640,856.

To all whom it may concern:

Be it known that I, JAMES WATSON, a citizen of the United States, residing at Wilmington, in the county of Newcastle and State of Delaware, have invented new and useful Improvements in Dumping-Wagons, of which the following is a specification.

This invention relates to dumping wagons, and more especially to wagons which are designed for hauling and unloading brick, hewn stone, cement blocks and similar articles and material.

It comprehends, briefly, an improved wagon body, the component parts of which are so constructed and arranged as to permit the brick or blocks to be unloaded without being jarred or chipped or broken at their corners.

A structural embodiment of the invention is illustrated in the accompanying drawings, whereof—

Figure 1 is a side elevation of the complete wagon; Fig. 2 is an enlarged elevation, with parts in section and broken away, of the front end of the wagon body; Fig. 3 is a fragmental longitudinal vertical section of the wagon; Figs. 4 and 5 are detail views, respectively, of the devices for operating the movable bottom and the end gate; and Fig. 6 is a fragmental plan view of said bottom.

Referring to said drawings, 1 indicates, generally, the running gear of the wagon, 2 and 3 the front and rear wheels, which are carried by the corresponding axles 4 and 5, and 6 the wagon body. The first-mentioned element may be of any preferred or conventional type, and, hence, requires no description, the wagon as a whole being adapted for propulsion either by a suitable motor or by draft animals.

The wagon body, wherein the improvements primarily reside, consists in the present instance of front and side members 7 and 8, an end gate 9 and a movable bottom 10, the body as a whole being stationary and being supported upon the running gear in an inclined position, with its front end resting upon braces 11 and 12. These braces are secured at their lower ends to the side sills 13 of the running gear, and at their upper ends to the forward portions of a pair of upwardly and forwardly inclined sills 14 which constitute the base of the wagon body, the latter sills being fastened at their rear ends to the sills 13 and consisting each of a pair of spaced parallel bars 15 having rollers 16 supported therebetween at suitable intervals. The movable bottom 10 is supported upon the aforesaid sills 14 and may advantageously consist of a platform 17 to whose under face there is secured a pair of longitudinal rails 18 that rest upon the rollers 16, the rear ends of the rails being connected by a cross-rail 19. The front member 7 is likewise secured to the sills 14, and the sides also are connected thereto, so as to be capable of outward movement during the unloading operation, as hereinafter described, said sides being preferably provided at their ends with vertical ribs or cleats 20 whose lower ends extend across said sills and are hinged to ears or lugs 21 provided upon the outer sill members or bars. The end gate 9 is hinged at its lower end to the rear ends of the body sills 14, as indicated by the numeral 22, and, when in raised position, is adapted to rest against an upstanding end piece 23 provided upon the platform 17.

From the foregoing, it will be seen that the arrangement and mounting of the movable parts of the wagon body are such that the end gate will tend to swing or drop into open position, with its free end resting upon the ground, as depicted in Fig. 3, while the bottom 10 will slide or travel down the sills 14 until it reaches the then open gate, whereupon it will continue its travel down the latter and will finally pass beyond the same and occupy a position upon the ground. Mechanisms are, therefore, provided for restoring said gate and bottom to their original positions, and additional mechanism is also provided for effecting the outward and return movements of the swinging sides. For controlling the gate, there is provided, in the present construction, a pair of drums 24 which are keyed to the projecting ends of a shaft 25 journaled in the side extensions 26 at the front end of the wagon body, these drums having connected thereto the forward ends of a pair of chains, cables or similar flexible elements 27 which pass over pulleys 28 attached to the upper rear corners of the sides 8 and are secured to the central portions of the side edges of the gate. Rotation of these drums in one direction will, therefore, wind up the chains and, in consequence, raise said gate into its normal or closed position. To effect the operation of shaft 25 requisite for such rotation, there

is provided an oscillatory lever 29 that is loosely mounted thereon adjacent one of the drums, said lever being provided with a pawl 30 and a controlling rod 31 therefor, which pawl engages the teeth of a ratchet 32 fast on said shaft.

Upon shaft 25 there is loosely fitted a tube or sleeve 33 to which are secured the forward ends of a pair of chains, cables or other flexible elements 34, the rear ends of these chains being attached to hooks 35 or similar fastening devices secured to the front ends of the platform rails 18. Said sleeve is rotated through the intermediary of an oscillatory lever 36 in the opposite direction to shaft 25, the lever carrying a pawl 37, which engages a reversely-toothed ratchet 38 fast on the sleeve, and a controlling rod 39 for said pawl. Rotation of said sleeve in the manner indicated will, therefore, wind up the chains 34 and draw the bottom into its proper position in the wagon body and upon the sills 14, as will be apparent, the movements of said bottom being facilitated by the employment of the rails 18 and the rollers 16 upon which the latter travel. Means is provided for controlling the above-described downward movement of said bottom, such means consisting of a brake device which preferably comprises a disk 40 secured to sleeve 33 adjacent lever 36, and a brake strap 41 that is passed around said disk and is connected at one end to said lever and at the other end to a bracket mounted upon the foot board 42 at the front of the wagon body. Provision is also made for preventing backward rotation of the ratchets 32 and 38. For this purpose, a pair of pedal levers 43 and 44 is preferably employed, the lever 43 being formed or provided with a pawl arm 45 which engages the first-named ratchet, and the lever 44 with a similar pawl arm 46 that engages the other ratchet, said arms having controlling springs 47 and 48 associated therewith. Both levers are journaled in bearings provided upon said foot board, the lever 43 extending through an opening in the adjacent extension 26.

The mechanism for operating the two movable sides may and preferably does comprise a pair of oppositely-extending rods 49 connected at their outer ends to the forward upper corners of said sides and at their inner ends to the vertical arm of an L-shaped lever 50. This lever is pivoted to the front member 7 of the wagon body, the pivot bolt passing through the aforementioned vertical arm thereof midway between the points of connection of the rod ends, as shown in Fig. 2. Suitable catches 51 and 52 may be employed for holding the main or horizontal arm of said lever in its two positions. The driver's seat 53 is secured to the said front member of the wagon body, the several levers 28, 36 and 50 being within easy reach of the occupant thereof.

The operation of the invention is believed to be apparent from the foregoing and to require, therefore, a mere outlining, as follows: When the contents of the wagon are to be unloaded, the end gate is first lowered by releasing pawls 30 and 45, the gate swinging downward of its own weight until its free end rests upon the ground. The lever 50 is next shifted into its dotted line position in Fig. 2, thus forcing the sides 8 to move outwardly, so as to relieve any side pressure which may have arisen during transit. The movable bottom is then allowed to slide slowly down the sills 14 by releasing the pawls 37 and 46, the lever 36 being shifted at the same time to set the brake device, and, accordingly, control the movement of said bottom. When the bottom has moved downward until its lower end rests upon the ground, the brake is released and the wagon slowly advanced, thus enabling the bottom to slide down said gate and eventually occupy a position flat upon the ground. It will be seen, therefore, that all danger of the bricks, blocks or other articles being chipped or broken during unloading is practically entirely obviated, since the downward movement of the bottom is wholly under the control of the driver and can be kept at an extremely slow speed, so as to completely preclude jarring.

As will be understood, the sills 14, with which the wagon body is provided, constitute a main downwardly inclined track upon which the movable bottom is normally supported. In like manner, the end gate, when lowered, constitutes, in effect, an auxiliary or supplemental track which supports the bottom after the same has left the main track and guides and supports said bottom during its passage onto the ground.

I claim as my invention:

1. A body for dumping wagons provided with a movable bottom, an inclined track along which the same is adapted to travel, and a pair of movable sides, means for moving said bottom in one direction along said track, and means for simultaneously moving said sides toward or from each other.

2. A body for dumping wagons provided with a pair of movable sides, a downwardly inclined track, a movable end gate located at the lower end of the track, and a movable bottom adapted to travel along said track and onto and across said gate when the latter is lowered, separate mechanisms for raising said bottom and said gate, and means for simultaneously moving said sides toward or from each other.

3. A body for dumping wagons provided with a downwardly inclined track, a mov-

able end gate located at the lower end thereof, and a movable bottom adapted to travel along said track and onto and across said gate when the latter is lowered, a brake for controlling the downward movement of said bottom, and means for returning said bottom to its initial position.

4. A body for dumping wagons provided with a downwardly inclined track, a movable end gate located at the lower end thereof, and a movable bottom adapted to travel along said track and onto and across said gate when the latter is lowered, a rotary element located at the front end of the wagon body, flexible connecting means between said element and said bottom, a lever for rotating said element to wind up said connecting means thereon and raise said bottom, and a brake device operatively connected to said lever for controlling the downward movement of said bottom.

5. A body for dumping wagons provided with a pair of movable sides, a lever pivoted to the front member of said body and connected with said sides for simultaneously moving the same toward or from each other, and separate retaining devices carried by said front member for engagement with said lever, to hold the latter in its normal and actuated positions.

6. The combination, with a wagon body provided with a movable end gate adapted to be raised and lowered, and with a movable bottom adapted to travel over and across said gate when the latter is lowered, of a shaft journaled in said body and having a drum secured to each end thereof, a pair of flexible elements connected at their front ends to said drums and at their rear ends to said gate, means for rotating said shaft to wind and unwind said flexible elements, a sleeve rotatably fitted on said shaft, a pair of flexible elements connected at their front ends to said sleeve and at their rear ends to the front end of said bottom, and additional means for rotating said sleeve, to wind and unwind the second-named flexible elements.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES WATSON.

Witnesses:
CHARLES M. TOWNSEND,
CARROLL W. GRIFFITH.