No. 714,483. Patented Nov. 25, 1902.

J. W. HAYWOOD.

DUMP WAGON.

(Application filed May 5, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

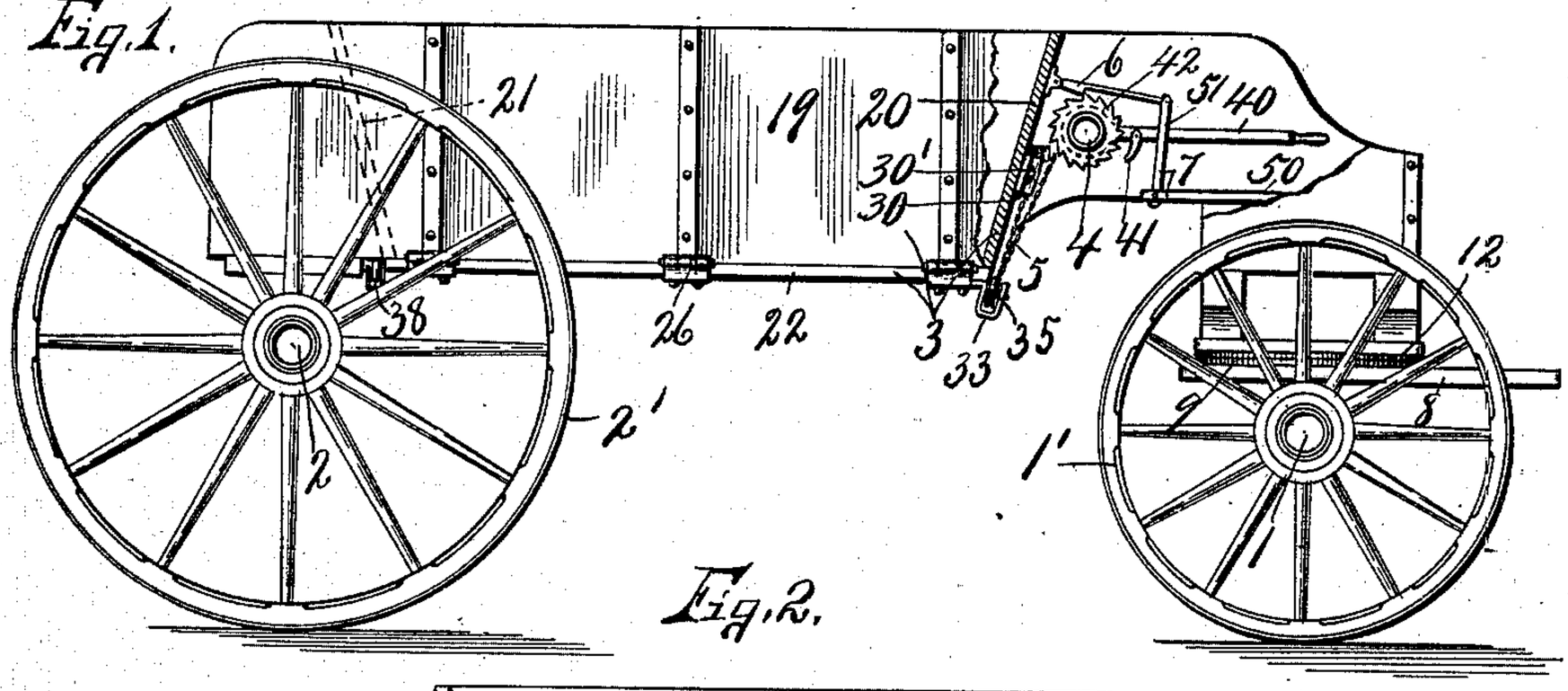


Fig. 2.

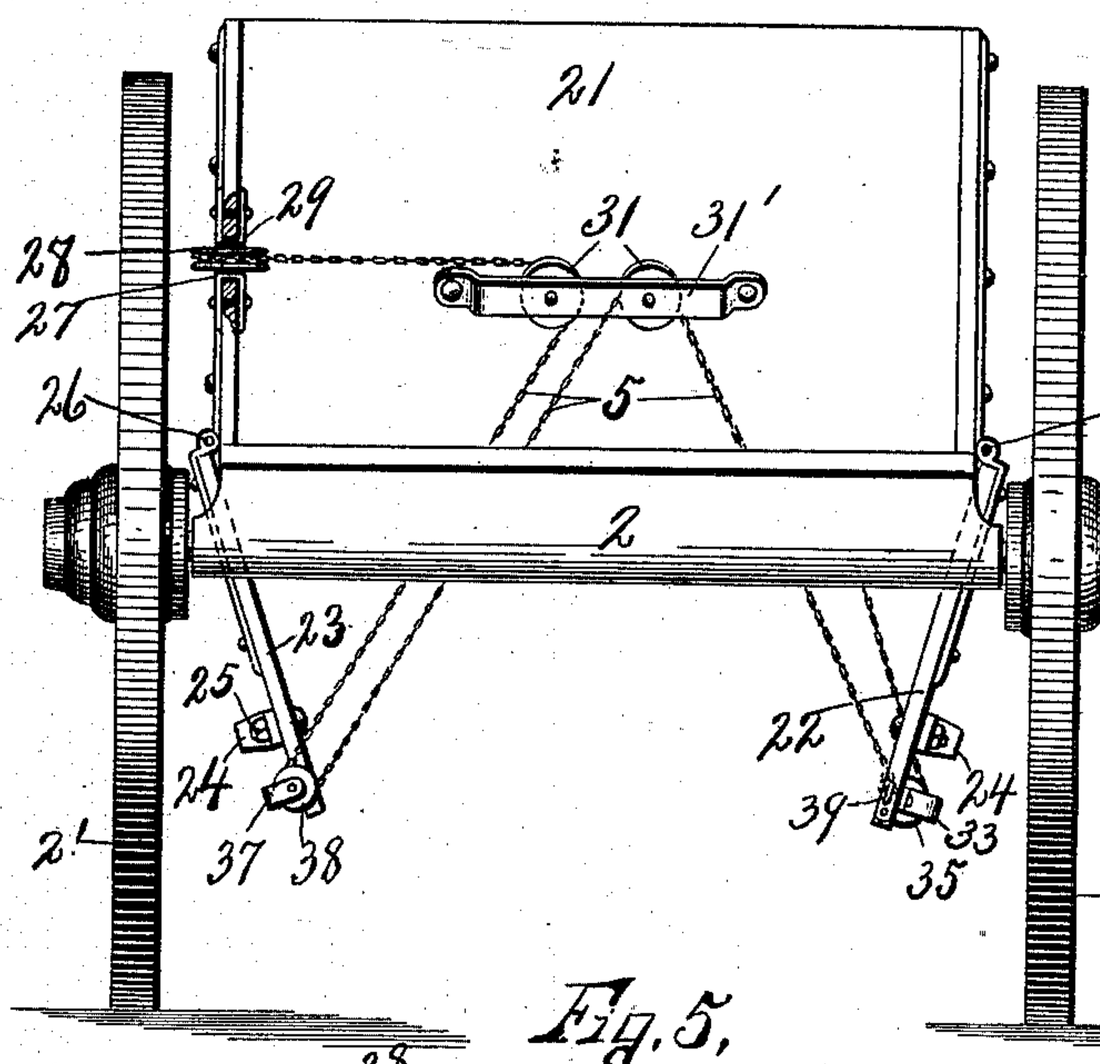


Fig. 6.

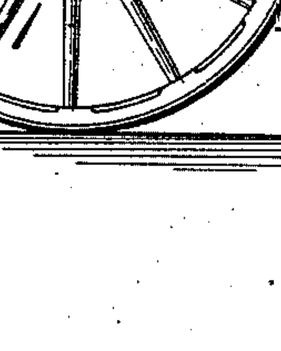
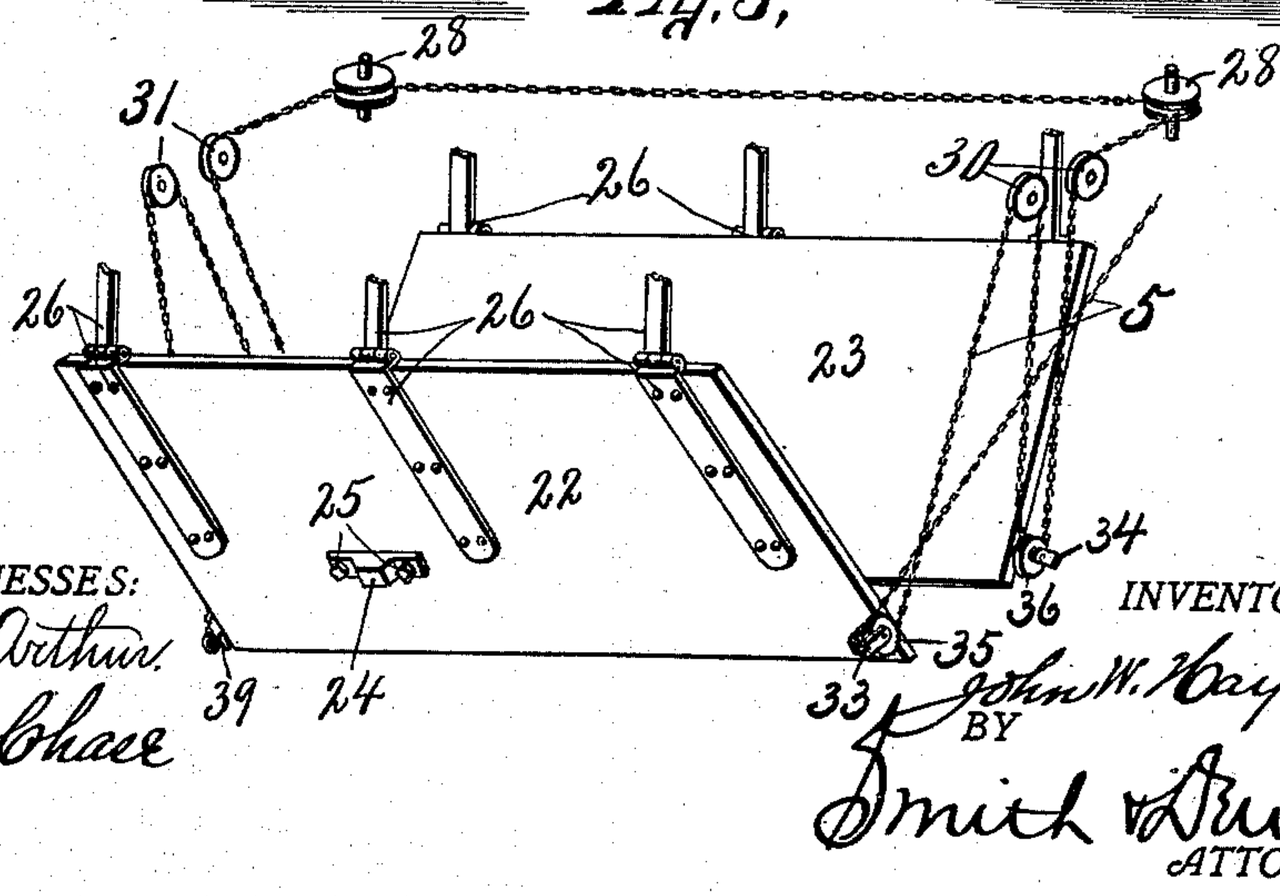


Fig. 5.



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DUMP WAGON.

(Application filed May 5, 1902.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

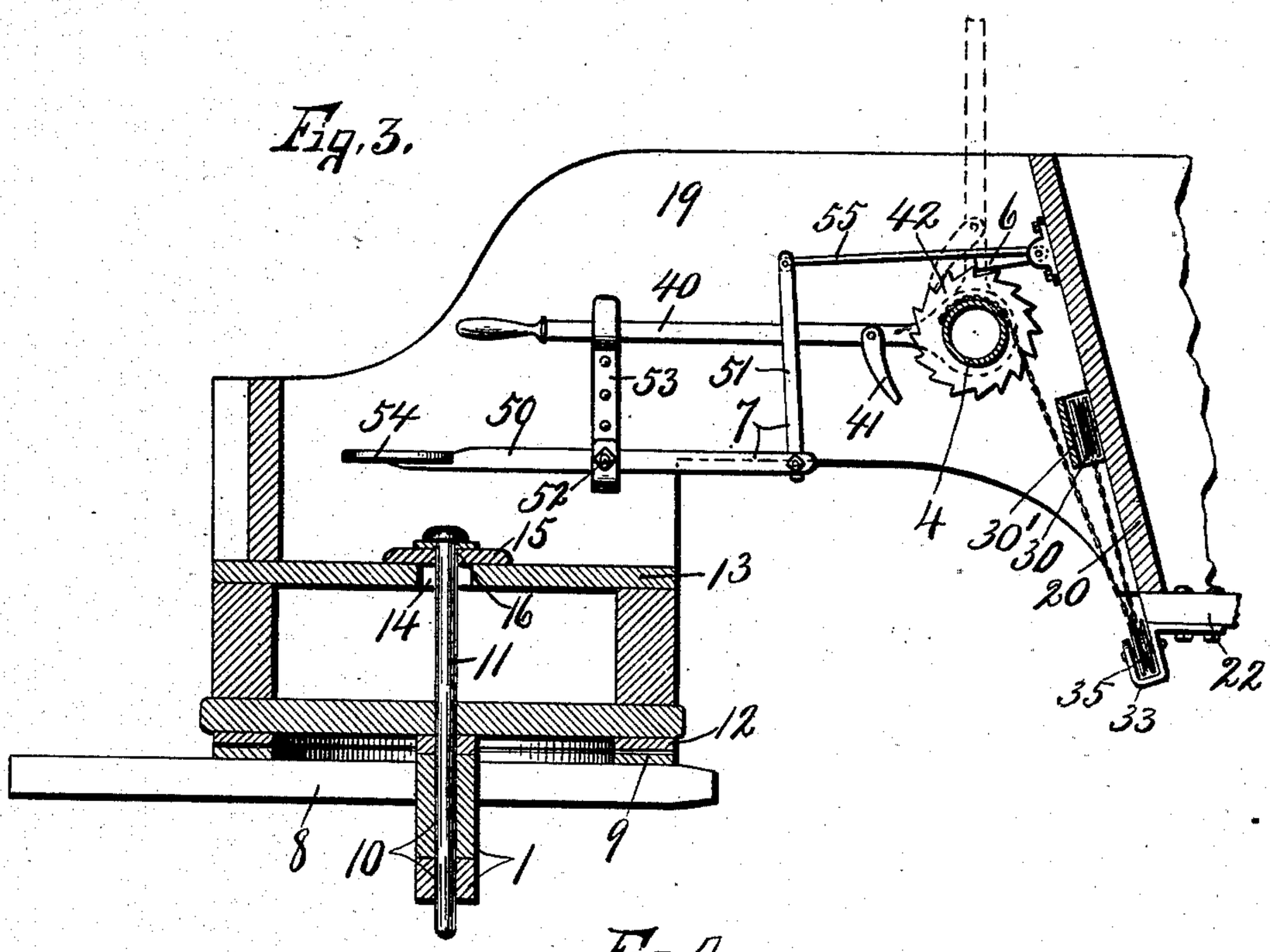


Fig. 4.

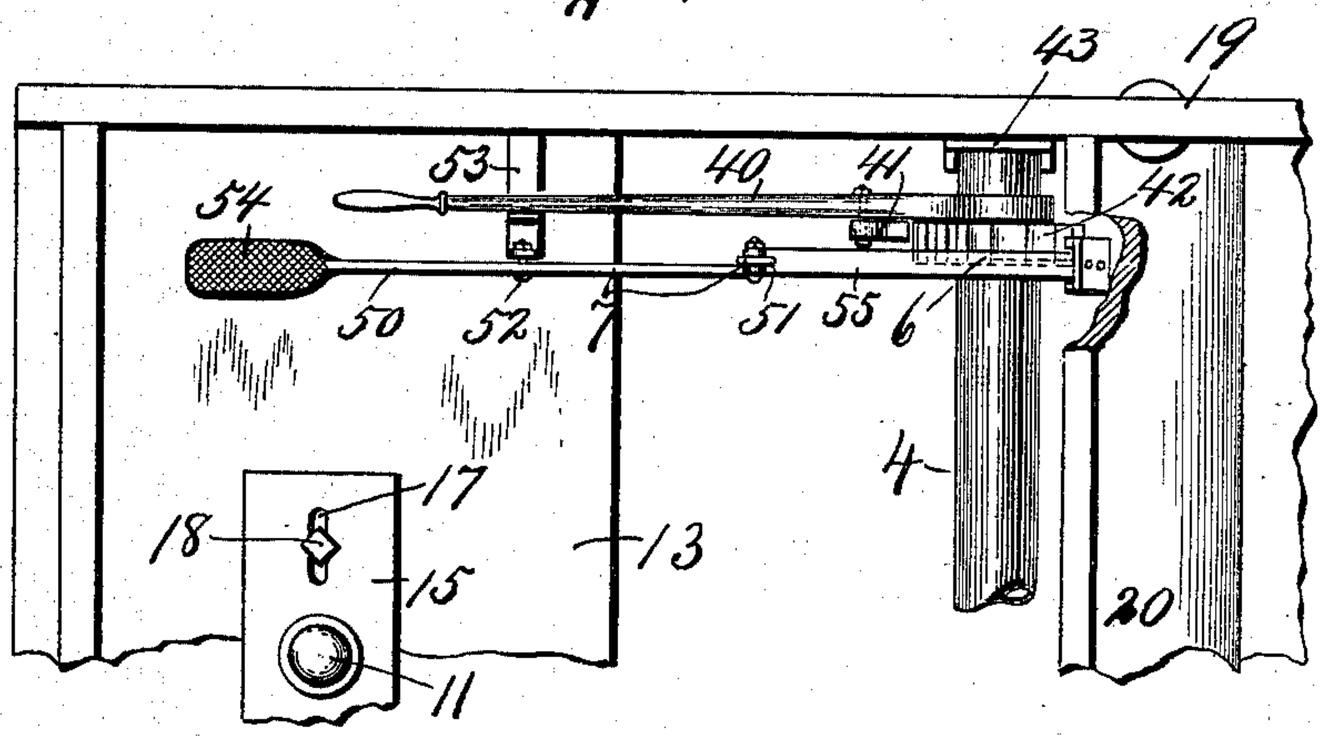
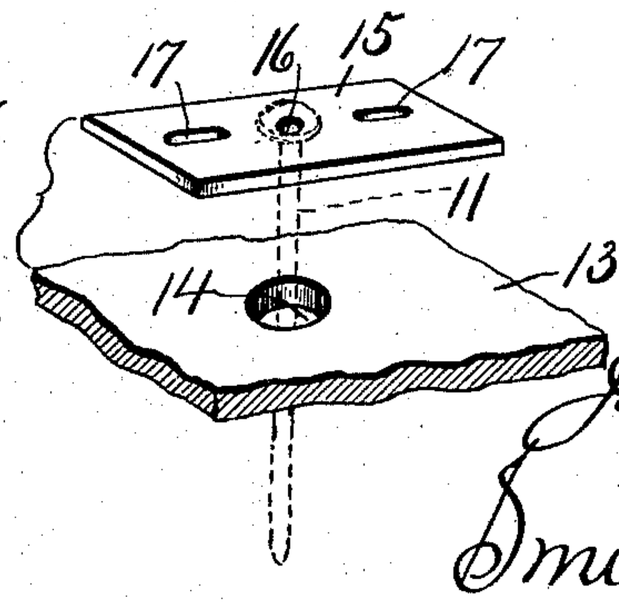


Fig. 7.



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UNITED STATES PATENT OFFICE.

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DUMP-WAGON.

SPECIFICATION forming part of Letters Patent No. 714,483, dated November 25, 1902.

Application filed May 5, 1902. Serial No. 105,993. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HAYWOOD, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Dump-Wagons, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in dump-wagons, having more particular reference to that class in which the bottom walls of the dump-box is composed of laterally-swinging bottom doors.

One of the objects of this invention is to enable the operator to draw the opposite ends of the meeting edges of the doors to their closed position with a single cable, whereby any inequality in the movement of the doors may be readily taken up, so that one end of the doors may be closed as tightly as the other.

Another object is to provide a gravity-detent in conjunction with a ratchet on the winding-drum for the cable for holding the swinging bottom doors in their closed position.

A further object is to provide means actuated by the operator for forcing and holding the detent out of its operative position.

A still further object is to mount the lower end of the king-bolt rigidly in the axle and to provide a sliding plate mounted upon the front platform of the frame of the body of the vehicle for receiving the upper end of the king-bolt to permit the plate to slide laterally upon the platform as the axle and body of the wagon are tilted relatively to each other, and another object is to provide a suitable stop on the doors adapted to engage the felly of the wheel for limiting the outward swing of the doors.

To this end the invention consists in the combination, construction, and arrangement of the parts of a dump-wagon, as hereinafter fully described, and pointed out in the claims.

Referring to the drawings, Figures 1 and 2 are respectively side and rear elevations of a dump-wagon embodying the various features of my invention, portions of the side of the body being broken away in Fig. 1 to show the front wall and winding mechanism, the doors being shown in a closed position in Fig. 1 and in their open position in Fig. 2. Fig. 3 is an enlarged longitudinal section through the front portion of the frame and dump-box, showing particularly the fifth-wheel and king-bolt connection, the means for rotating the winding-drum, and also the means for holding the drum and the doors connected thereto in their operative positions. Fig. 4 is a top plan of the parts seen in Fig. 1, except that the fifth-wheel is omitted. Fig. 5 is a perspective view of the detached doors and the cable for closing the same. Fig. 6 is a detail view of the door-stop shown in engagement with the felly and the door of one of the rear wheels. Fig. 7 is a detail view of the sliding plate for the king-bolt and a fragmentary portion of the platform upon which said slide-plate moves.

Similar reference characters indicate corresponding parts in all the views.

In the drawings I have shown a dump-wagon consisting of front and rear axles 1 and 2, a wagon body or frame having a dump-box 3, a drum 4, and cable 5, connected to operate the doors of the dump-box, a detent 6, and suitable mechanism 7, controlled by the operator for releasing the detent, and means for rotating the drum.

Mounted upon the axles 1 and 2 are suitable front and rear wheels 1′ and 2′, the front axle being provided with the usual hounds 8 and fifth-wheel section 9, and is also provided with an aperture 10 to receive the lower end of a king-bolt 11.

The forward end of the main body of the vehicle is provided with the usual fifth-wheel section 12 and a platform 13, having an elongated aperture 14, which receives the upper end of the king-bolt 11. Movable upon this platform 13 is a sliding plate 15, having a central aperture 16 and an elongated slot 17, the aperture 16 receiving the extreme upper end of the king-bolt and closely fitting the same, and the slots 17 receive suitable bolts or screws 18, which permit the plate to be moved endwise transversely of the body as the king-bolt is rocked by the tilting movement of the axle when the wheels are passed over uneven surfaces. This arrangement of the king-bolt, with its lower end secured to the axle and its upper end playing in the elongated opening 14 and secured to the sliding plate 15, prevents the pounding and consequent wearing

away of the platform 13 and at the same time firmly holds the forward end of the body in proper relative position upon the hounds.

The dump-box 3 is provided with side, front, and rear walls 19, 20, and 21 and with a bottom wall composed of separate sections or doors 22 and 23, which are hinged at their outer longitudinal edges to the lower longitudinal edges of the sides 19 in such manner as to meet in a line substantially midway between the side walls 19 and to automatically swing outwardly toward the rear wheels by their own gravity during the operation of discharging the contents of the box.

In order to limit the outward movement of the free edges of the doors 22 and 23 and to prevent any injury thereto by contact with the wheels, I provide each of said doors with a suitable stop or wearing-plate 24, which are so arranged as to engage the tire or felly of the rear wheel in front of its axle. These stops 24 are usually formed of metal and are secured to the outer faces of the doors by clamping-bolts or screws 25.

The doors 22 and 23 are hinged to the side walls 19 by any desired form of hinge, as strap-hinges 26, the corresponding hinge-sections being secured to the side walls and the other sections to the lower faces of the doors by screws or bolts. One of these side walls 19 is provided with a pair of openings 27 in proximity to the adjacent ends of the front and rear end walls 20 and 21 for receiving rollers or sheaves 28, which are journaled in suitable bearings 29.

Journaled in a bracket 30′, substantially midway between the opposite ends of the front wall, is an additional pair of rollers or sheaves 30, a similar pair of sheaves 31 being also journaled on a bracket 31′, secured to the outer face of the rear end wall 21 at substantially its central portion.

The forward ends of the meeting edges of the doors 22 and 23 are provided with bearings 33 and 34 for receiving additional sheaves 35 and 36, the rear end of the door 23 being also provided with a bearing 37, which receives a roller or sheave 38, and the rear end of the meeting edge of the door 22 is provided with a suitable engaging member, as an eyelet or hook 39.

The means for elevating the doors to their closed position consists, essentially, of the drum 4, cable 5, and a hand-lever 40, provided with a pawl 41 for engaging the ratchet 42, secured to the drum 4. This drum is journaled at its opposite ends in open-sided brackets 43, which are secured to the inner faces of the side walls 19 in front of the end wall 20. This being the usual mounting for the drum, it is believed to be unnecessary to further describe the same.

The ratchet 42 is preferably secured at one end of the drum, and the operating member 40 is loosely journaled on the drum in proximity to the ratchet-wheel, and the pawl 41 is pivotally mounted upon the lever 40 in such manner that when the lever is elevated to a vertical position the pawl will drop automatically into engagement with one of the teeth of the ratchet-wheel, and as the lever is then rocked forwardly the drum 4 will be rotated in the same direction to wind the cable thereon. This cable and the method of connecting the same to the doors form one of the essential features of my invention, as it is believed to be new to operate both doors from both ends with a single cable. As seen in the drawings, Figs. 1 and 5, one end of this cable, the forward end, is secured to the drum 4 by any desired fastening means and is then passed around the sheave 35 and over one of the sheaves 30 and is continued around the sheave 36, over the other sheave 30, and is then passed around the sheaves 28 at the outside of the box and is continued over one of the sheaves 31 around the sheave or roller 38 at the end of the door 23 opposite to the roller 36, after which it is continued over the other roller or sheave 30 on the rear end wall, and its opposite end is then secured to the eyelet 39 at the end of the door 22 opposite to the sheave 35. This forms a continuous connection from the drum to the opposite ends of the meeting edges of the doors and permits the doors to be elevated or drawn to their closed position firmly against the lower edges of the end walls 20 and 21. This arrangement of the cable and sheaves also acts as an equalizer to take up any inequality of movement of the opposite ends of the meeting edges of the doors. For instance, if the meeting ends at one edge of the door should be drawn to its closed position before the other end has reached the limit of its movement the continued winding of the cable upon the drum would force said other end to full limit of its movement. This is an important feature of this class of dump-wagons, and it prevents any openings or cracks through which the contents of the dump-box may sift.

Another important feature of my invention is the means for controlling the operation of the detent 6. This means preferably consists of a foot-lever 50 and a link 51, the lever 50 being pivoted at 52 to a bracket 53, secured to one of the side walls 19, its forward end being provided with a foot-engaging portion 54 and its rear end is connected to the lower end of the link 51, the opposite ends of said link being connected to an extension 55 of the detent 6. The connection between the detent 6 and the foot-lever 50 is so arranged that the gravity of the connecting parts automatically forces the detent into engagement with the teeth of the ratchet, thereby obviating the use of any springs.

The operation of my invention will now be readily understood upon reference to the foregoing description and the accompanying drawings, and it will be noted that some change may be made in the manner of connecting the cable from the drum to the doors without departing from the spirit of my in-

vention. Therefore I do not limit myself to the precise construction and arrangement shown and described.

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

1. In a dump-wagon, a dump-box having movable bottom walls or doors, sheaves secured to the opposite ends of one of the doors and an additional sheave secured to one end of the other door, a drum and a cable passed over said sheaves and having one end connected to the other end of said other door and its opposite end connected to the drum, and idlers supporting the intermediate portions of the cable for the purpose described.

2. In a dump-wagon, the combination of a dump-box having front and rear and side walls, doors hinged to the lower edges of the side walls and having their free edges meeting substantially midway between the side walls, bearings secured to the opposite ends of the meeting edges of the doors, a pair of sheaves secured to each of the front and rear end walls, additional sheaves at the ends of said end wall, a drum, and a cable passed around said sheaves and having one end connected to the drum and its other end engaged with the bearings at the doors.

3. In a dump-wagon, a dump-box having a bottom wall formed of sections hinged to the side walls of the box, each of said sections being provided with a wearing-plate adapted to engage a portion of the wheels for the purpose described.

In witness whereof I have hereunto set my hand this 2d day of May, 1902.

JOHN W. HAYWOOD.

Witnesses:
HOWARD P. DENISON,
MILDRED M. NOTT.