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Patented Oct. 14, 1902.

J. H. FARLOW & G. SCHIMPF.
DUMPING CAR.

(Application filed June 10, 1902.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

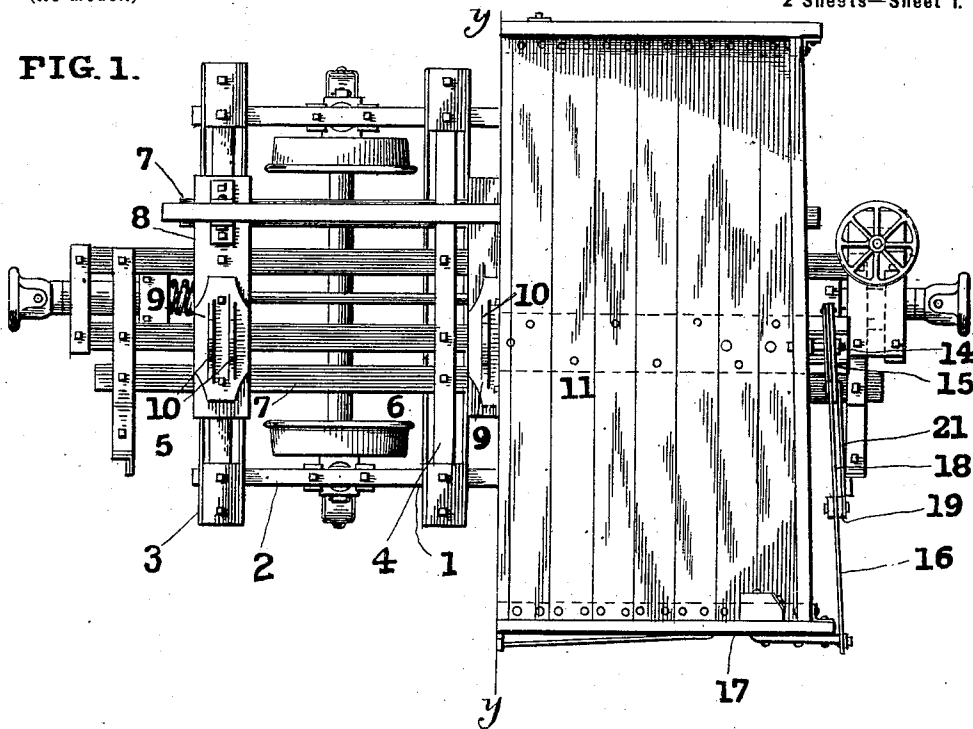
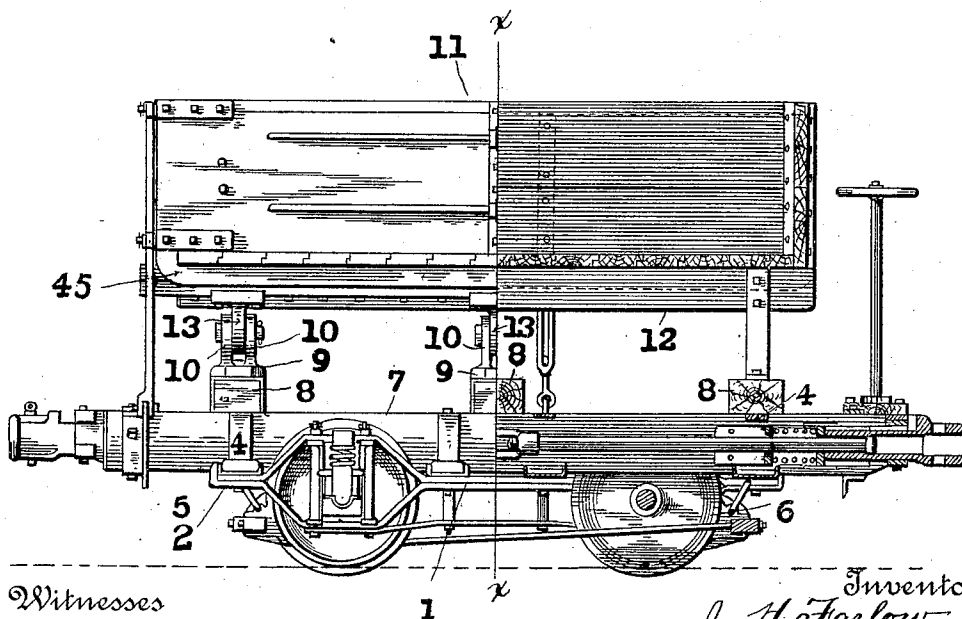


FIG. 2.



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2 Sheets—Sheet 2.

FIG. 3.

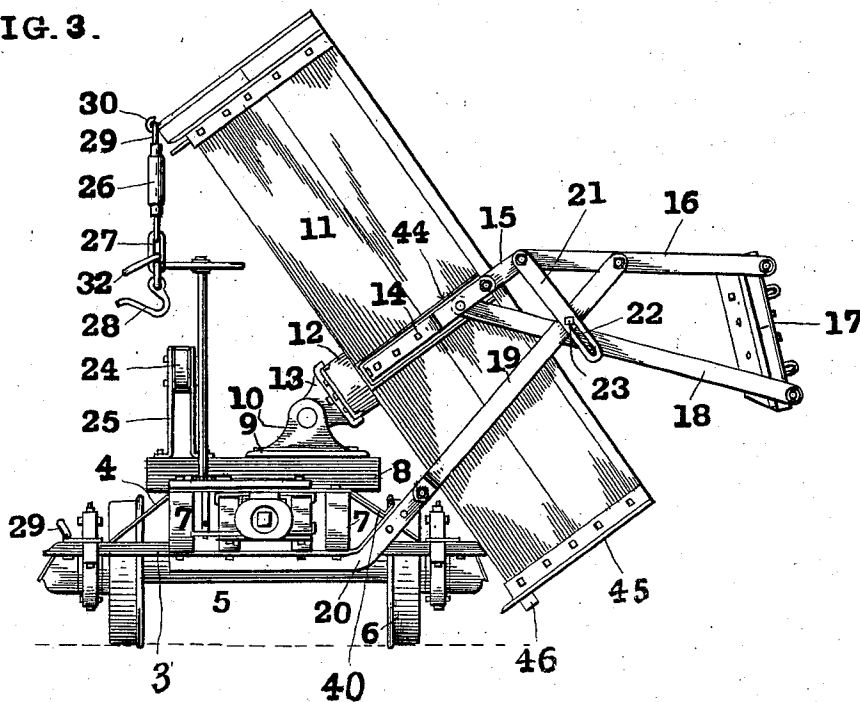
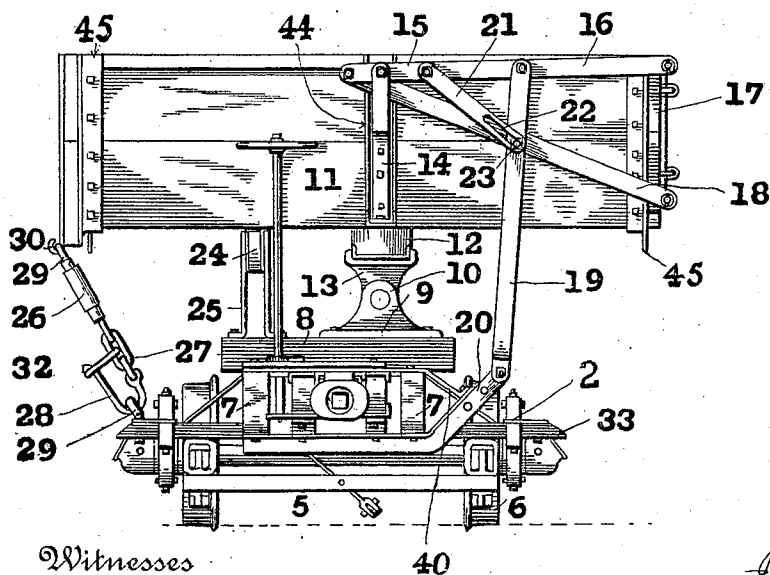


FIG. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 711,420, dated October 14, 1902.

Application filed June 10, 1902. Serial No. 110,999. (No model.)

To all whom it may concern:

Be it known that we, JOHN H. FARLOW, residing at Baltimore, and GEORGE SCHIMPF, residing at Curtis Bay, in the county of Baltimore, State of Maryland, citizens of the United States, have invented certain new and useful Improvements in Dumping-Cars, of which the following is a specification.

The object of our invention is the production of a dumping-car which shall have a single body supported upon two pairs of wheels and adapted to tip sidewise and discharge the load beyond and outside the track-rails, which shall have an improved frame upon which the body is pivoted, which shall be provided with improved means for operating the door or gate in such a manner that the said door will be swung a greater distance than usual from the body to allow the free discharge of coarse material, and which shall possess other and desirable novel features of construction, constituting the same a superior instrumentality for performing the requisite functions of a perfect dumping-car.

Our invention consists in certain novelties of construction and combinations of parts hereinafter set forth and claimed.

In the accompanying drawings, which form a part of this specification, Figure 1 is a plan of a dumping-car embodying our invention, one-half of the tilting car-body or that portion to the left of the line *xx*, Fig. 2, being removed, showing the truck below the same. Fig. 2 is a partial side and partial sectional view on line *yy*, Fig. 1. Fig. 3 is an end view, the car being in tilted position. Fig. 4 is an end view, the car being in horizontal position.

Similar numerals indicate like parts in the several figures of the drawings.

The numeral 1 designates the frame of the truck, said frame being of the diamond style and supported upon coiled springs resting upon the journal-boxes.

6 designates the wheels and axles.

2 designates extensions of the frame; 3, metallic channel-bars with fillings supported upon and secured to the projecting ends of the frame.

7 designates longitudinal beams resting upon the channels 3, as shown; 8, three cross-

beams; 4, braces of iron bent to shape and extended over beams 7 and secured to the ends of the channel-beams.

9 designates castings supported upon the beams 8 at one side of the longitudinal center of the frame, and 10 the perforated flanges or ears of the castings.

To the under side of the car-body and extending longitudinally of the truck is rigidly secured a beam 12, to which are fastened the depending perforated castings 13, which fit between and are pivoted to ears 10 of the castings 9, so that the car-body can be tilted or rocked upon the cross-beams 8.

On each of the opposite sides of the car-body adjacent the ends of the truck is rigidly secured a bar or strap 14, which is provided with an outwardly-projecting upper portion. On the inner face of said upper portion and the upper end thereof is pivoted a bar 15. To one end of each of said bars 15 is pivoted one end of an upper arm 16, which is pivotally connected at its other end with the gate 17 of the car-body, while to the other end of each of said bars 15 is pivoted a lower arm 18, also pivoted to the gate 17. It will be noticed that the arms 16 are pivotally connected to the gate 17 at or near the upper edge and at opposite ends thereof, while the arms 18, which are also longer than the arms 17, are pivotally connected to said gate at or near its lower edge on the opposite ends thereof.

Pivotally connected to each of the arms 16 and intermediate of its ends is an arm 19, which is also pivotally secured to an upper projecting end of a bar 20, rigidly secured to the under side of the beams 7 of the truck, whereby a firm support is furnished for the same. To the pivotal connection of each arm 16 with a bar 15 is pivoted one end of a link 21, the other end of said link being slotted at 22 and movable on a headed stud or pin 23, projecting from an arm 19 through said slot.

To sustain the car-body 11 in horizontal position, a longitudinally-extending beam 24 is provided. The said beam is supported between pairs of strap-irons 25, which are firmly secured to the cross-beams 8.

A locking device to firmly hold the car-body

in its horizontal position consists of a bar or turnbuckle 26, with a chain or other flexible extension 27 and a hook 28, the latter engaging with an eye 29 on the car-truck, while an eye on the upper end of the bar 26 engages a hook 30 on the car-body. A link 32, connecting with the chain 27 and passing over the end of the hook 28, prevents the latter from accidental disengagement.

The outer ends 33 of the channel-beam cross-bars are beveled on their upper faces to serve as supports as well as stops for the car-body in its tilted position.

It will be noticed that owing to the construction of the gate-arms as described and shown even when the hook 28 is disconnected from the eye 29 of the truck, the arms 15 and 16, which form a toggle-lever, being in the same line, some force is necessary to tilt the body 11 upon its pivots and away from its supporting-beam 24. However, as force is applied so as to lower the right-hand side of the said car-body the gate 17 will be moved outwardly, the lower end thereof farther than the upper and away from that end of the car-body, the arms 15 turning on their pivotal connections with the bars 14, so that they are out of line with the arms 16, and at the same time links 21, owing to the decreasing distance between the arms 15 and 19, move on the pins 23, so as to occupy the position shown in Fig. 3 or in the opposite end of the slot from that shown in Fig. 4, thereby locking the arms from further movement in that direction. When the car has been emptied and its lower end is lifted, the toggle-lever, composed of arms 15 and 16, is straightened out, and owing to the increasing distance between the arms 15 and 19 the links 21 move on the pins 23, so as to occupy the position shown in Fig. 4, the pins 23 being in the lower ends of the slots or in the opposite ends from what they were when the car-body was in tilted position. When in the position shown in Fig. 4, the links 21 normally aid in keeping the arms 15 and 16 in right line or extended position. When the car-body is in horizontal position and supported on the beam 24, the locking device, consisting of the bar 26 and connected parts, and which is readily detachable from the car-body and truck, prevents the accidental tilting of the body.

By having the parts so proportioned that the lower edge of the gate projects out farther than the upper edge when the car-body is tilted and having the gate above or entirely clear of the open end of the car-body during the dumping of the car the liability or danger of large masses of coal or other contents of the car coming into contact with the said gate is avoided, thereby lessening the chance of damage thereto.

The car-body itself has several novel features of construction. The bottom boards are secured directly to the beam 12, the sides supported by the channel-bars with bent

ends 41, secured to the ends of beam 12, and the ends of the sides are joined to the floor by bent angle-irons 45, which prevent the ends, and especially the open end, from spreading. The floor edge projects at 46 beyond the angle-iron and supports the gate or door when closed. It will be observed that the beam 12 and the pivotal castings are supported upon the cross-beams 8 of the frame at one side of a longitudinal line through the center of the truck-frame, so that when the body is tilted its edge will project beyond the track-rail and frame and discharge the load relatively far outwardly from the same. The body itself in this example is not centrally secured to the beam 12, but one side of the longitudinal center thereof, the disposition being such that the part thereof upon the same side as the support 24 will be of greater weight than the opposite side. As so constructed and arranged the body will when empty remain in its horizontal position and can when tilted be more easily returned to said horizontal position.

We have shown the frame of the truck provided with central draft-timbers and a continuous draw-bar with springs engaging bearings and the shanks of couplers, and we prefer to employ these details of construction.

The mechanism herein described affords a safe and efficient gate-operating mechanism for a dumping-car, permitting the removal of the gate from the end of the car in time for the gate to be above or out of the way of the contents as they descend or slide down the inclined or tilted bottom of the car-body, also for holding said gate in an inclined position, so as to greatly lessen any danger thereto from contacting masses of the said contents. The arrangement of the pivotal points of the dumping mechanism to one side of the longitudinal central line of the frame permits the load to be discharged outwardly beyond the track, and the disposition of the car-body upon the beam 12 at one side of its center facilitates the return of the body from a tilted to a horizontal position and in retaining it in said latter position.

Numerous changes in the details of construction may of course be introduced in the manufacture of the car without constituting a substantial departure. We have shown the angle-bars 20 secured to the beams 7, the ends thereof bent upwardly, and a tension-bar 40 secured to the said bent ends and to the beams 7, the supporting-beam 24 extending the entire length of the truck-frame, and the truck-frame itself supported upon journal-box springs. While these and other specific details of construction are preferable, modifications may be employed to perform the same functions and which will not be considered colorable in their nature.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A support, a tilting body thereon, a gate for said body, arms pivoted to bars on opposite sides of said body, upper and lower arms pivoted to said first-mentioned arms and to said gate at or near its upper and lower edges, arms pivoted to said upper arms and to said support, and means for keeping said first-mentioned and said upper arms in either straightened or bent position, said parts being combined substantially as described.

2. A support, a tilting body thereon, a gate for said body, arms pivoted to bars on opposite sides of said body, upper and lower arms pivoted to said gate at or near its upper and lower edges, arms pivoted to said upper arms and to said support, and provided with projecting pins, and links pivoted to the pivotal connection of said first-mentioned and said upper arms and having slots receiving said pins, said parts being combined substantially as described.

3. A dumping-car having a tilting body with a gate therefor, arms pivoted to supports on opposite sides of said body, upper and lower arms respectively pivoted to opposite ends of said first-mentioned arms and to the upper and lower edges of said gate on opposite ends thereof, arms pivoted to said upper arms intermediate of their ends and to bars on the car-truck and provided with projecting pins, and links pivoted to the pivotal connection of said first-mentioned arms and said upper arms, said links having slotted lower ends movable on said pins, said parts being combined substantially as described.

4. A dumping-car having a tilting body on the truck thereof, a gate for said body and operating mechanism for said gate connected with said body-truck and gate, and including arms pivoted to supports on said body, upper arms pivoted to said first-mentioned arms and to said gate and forming toggle-levers, lower arms pivoted to said first-mentioned arms and to said gate, arms pivoted to a fixed bar on said truck and to said upper arms intermediate of their ends and provided with projecting pins, and links pivoted to said toggle-lever arms and having slotted ends movable on said pins, said parts being combined substantially as and for the purpose described.

5. The combination with a dump-car having a pivotal body, of a movable gate; and operating mechanism embracing at each end of the gate, bars 16, 18, pivoted to the gate, a pivoted bar 15 to which are pivoted said bars 16, 18; and a lever 19 pivoted at one end to a fixed support and at the other end to bar 16.

6. In a pivoted dump-car having a swinging gate, the combination with said gate at each end, of bars 16, 18, pivoted bar 15, piv-

oted bar 19, and the slotted bar 21, combined and operating as set forth.

7. The combination with a dumping-car having side frames, longitudinal beams, a swinging gate, and lever-operating mechanism, of a bar 19, pivoted to a support having a bent-up end and a brace, said support and brace being secured to the longitudinal beams.

8. A dump-car having side frames supported on the journal-boxes; cross-bars at the ends and between the pairs of wheels supported by the side frames; longitudinal beams; tension members passed over the longitudinal beams and having their ends secured to the ends of the cross-bars; a pivoted car-body with a swinging gate; and lever mechanism for operating the gate when the body is tilted.

9. The combination in a dump-car, of side frames supported on the journal-boxes; metallic channel-beams at the ends and between the wheels supported on the frames; longitudinal beams 7; metallic tension members passed over beams 7 and having their ends secured to the ends of the channel-beams; cross-beams above the longitudinal beams; and a body pivoted above the cross-beams.

10. The combination in a dump-car of a frame, and a body having an open end, a gate, and gate-operating mechanism, said body pivoted to the frame; the floor-boards of the body secured to a longitudinal beam 12, and the open end of the body provided with an angle-iron 45 bent to a U shape and to which are secured the ends of the floor-boards and the ends of the sides, whereby the flange of the angle-iron prevents the spreading of the sides and their interference with the gate-operating mechanism.

11. The combination in a dump-car, of side frames supported upon the journal-boxes outside the wheels and having extensions 2 at the ends; cross-bars supported upon the extended ends 2 and upon the frames between the pairs of wheels; longitudinal beams 7 located between the wheels and supported upon the cross-bars; cross-beams 8 supported by the beams 7; castings 9 supported upon the beams 8 and at one side of the longitudinal center of the frame; and a car-body having a swinging gate and gate-operating mechanism, said car-body being pivoted to the castings 9; in substance as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN H. FARLOW.
GEO. SCHIMPF.

Witnesses:

ROBERT C. RHODES,
JAMES J. ALLEN.