

J. H. URSBRUCK.
DUMPING VEHICLE.
APPLICATION FILED MAR. 2, 1912.

1,064,574.

Patented June 10, 1913.

3 SHEETS—SHEET 1.

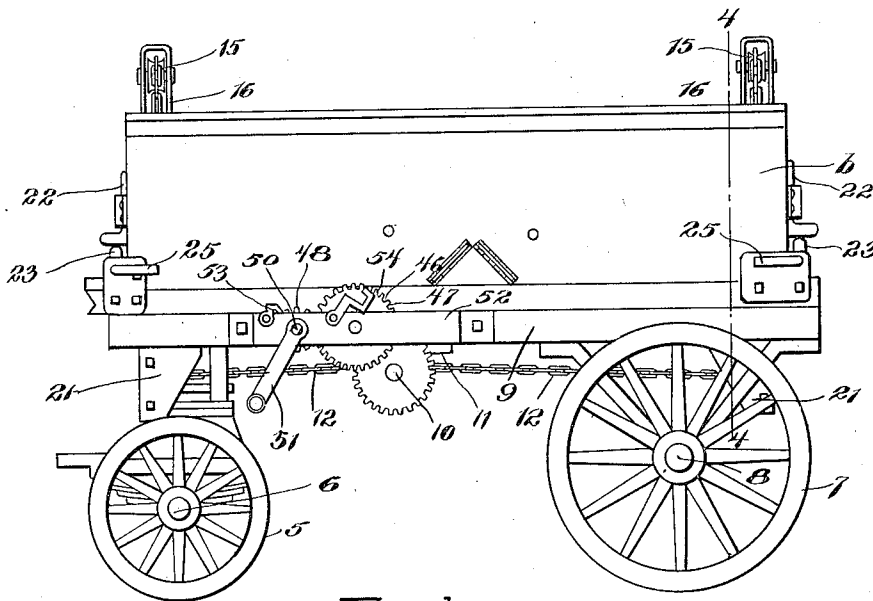


FIG. 1

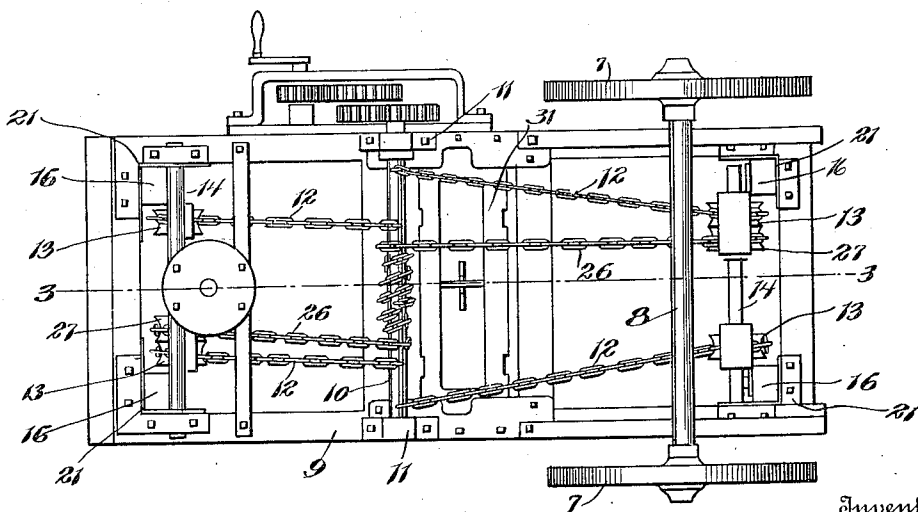


FIG. 2

Inventor

J. H. Ursbruck

Witnesses

W. H. Mulligan
John A. Donaghy

By Victor J. Evans

Attorney

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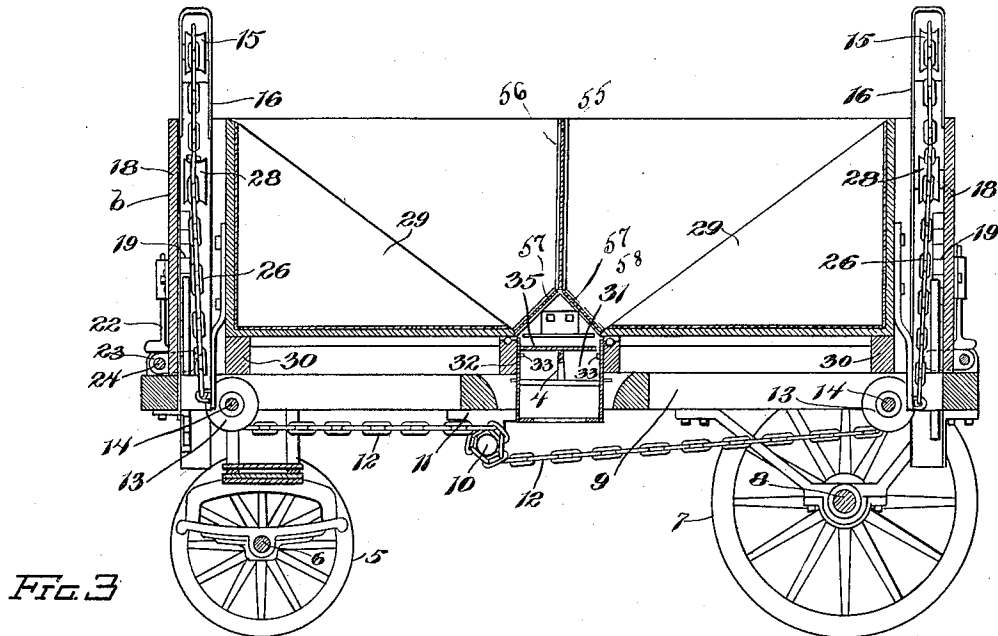


FIG. 3

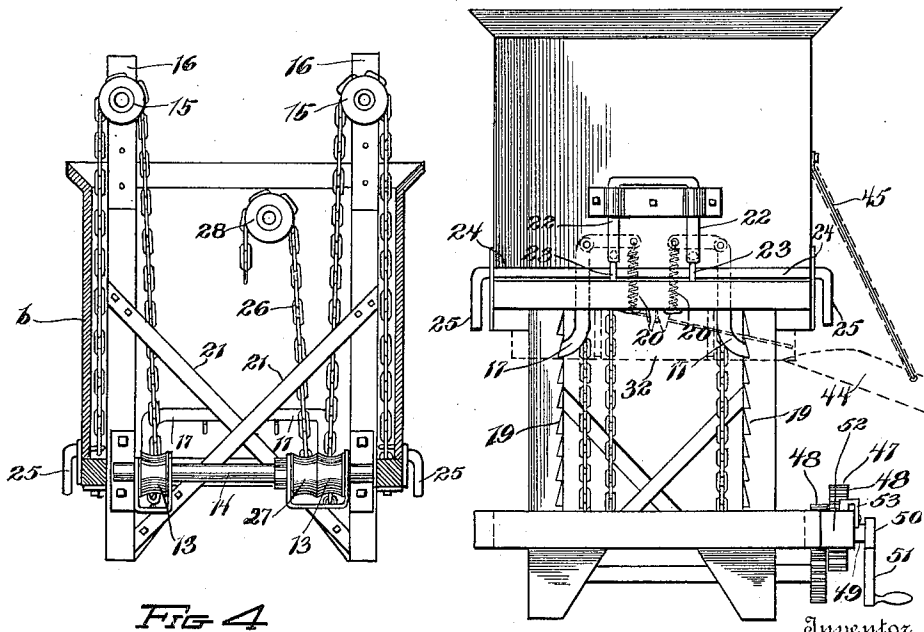


FIG. 4

FIG. 5

Witnesses

Wm. H. Mulligan
John D. Worley

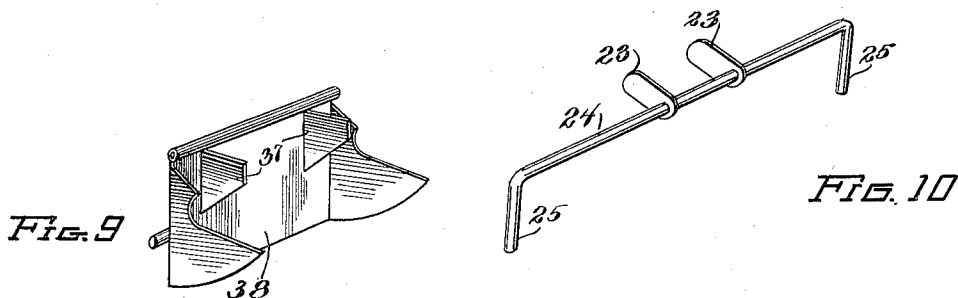
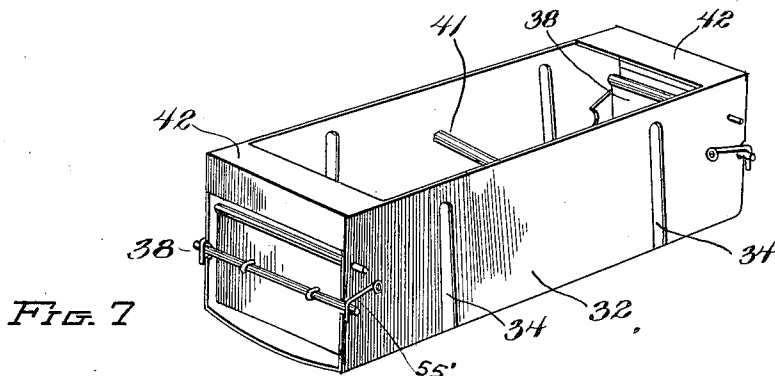
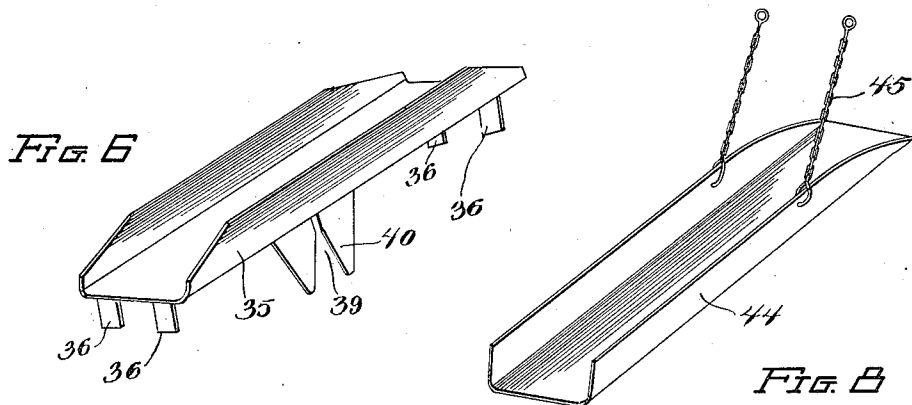
J. H. Ursbruck
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Attorney

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3 SHEETS—SHEET 3.



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J. H. Ursbruck.

Witnesses

Wm. H. Mulligan.
John D. Donagan.

By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

JOHN H. URSBRUCK, OF PHILADELPHIA, PENNSYLVANIA.

DUMPING-VEHICLE.

1,064,574.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed March 2, 1912. Serial No. 681,067.

To all whom it may concern:

Be it known that I, JOHN H. URSBRUCK, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Dumping-Vehicles, of which the following is a specification.

The general object of the invention is to adapt a coal wagon for discharging its contents laterally, whereby, to eliminate the usual practice of turning the wagon so that its rear end will face the place of discharge; and to further adapt a coal wagon for discharging its contents in a place relatively far from the wagon and to which entrance for the coal is had at a point substantially in a horizontal plane with the normal horizontal plane of the body of the wagon; and to this end the invention consists in certain improved constructions, arrangements, and combinations of devices, which will be fully described hereinafter, and then pointed out in the claims.

Other objects will appear and be better understood from that embodiment of my invention of which the following is a specification, reference being had to the accompanying drawings forming a part hereof, in which:

Figure 1 is a side elevation. Fig. 2 is a bottom plan. Fig. 3 is a vertical longitudinal section. Fig. 4 is a detail vertical cross section. Fig. 5 is a detail end view showing the body in raised position. Fig. 6 is a detail perspective of the tilting platform. Fig. 7 is a detail perspective of the chute box. Fig. 8 is a detail perspective of the chute. Fig. 9 is a detail perspective of one of the chute box doors. Fig. 10 is a detail perspective of the cam rod.

The front or steering wheels 5 are mounted upon the axle 6 and the rear wheels 7 are mounted upon an axle 8 which like the front axle 6 is suitably adapted to support and be connected to the frame 9.

The shaft 10 is journaled in bearings 11 on a frame 9 and is adapted to coil and uncoil suitable flexible elevating elements such as chains 12, which are trained over sheaves or pulleys 13 on short shafts 14 at the opposite end portions of the frame and over sheaves or pulleys 15 at the upper ends of uprights 16 which are arranged at the corner portions of the frame and braced by suitable struts 21.

The uprights 16 extend through the body *b* which is so connected to the chains 12 as to rise from the frame 9 upon which it bears, and is supported when in raised position, when the shaft is so turned as to coil the chains thereon.

The dogs 17 which are pivoted on the opposite ends 18—18 of the body *b* are adapted to over-ride ratchet teeth 19 on the uprights 16 during the upward movement of the body and are further adapted such as by the use of springs 20, to interlock with any of said teeth, to prevent downward movement of the body after the same has been adjusted upwardly to the required distance from the frame 9.

The latches 22—22 are adapted to move the dogs from engagement with the ratchets and are adapted to slide on the ends 18—18 and are controlled by cams 23—23 and operating bars 24—24 which are mounted on the ends 18—18 and are turned by crank extensions 25—25.

Flexible elevating elements such as chains 26—26, are so coiled on the shaft 10 as to uncoil during the coiling of the chains 12 on the shaft 10. The chains 26—26 are trained over pulleys or sheaves 27 on the short shafts 14 and over sheaves or pulleys 28 on the ends 18—18 of the body and are so connected to the free ends of the dumping members 29—29, which are pivotally mounted in the body *b* as to raise these free ends when the chains 26—26 are coiled or wound upon the shaft 10.

The platforms or supporting frames 30—30 in the lower portion of the body *b* serve as supports for the dumping members 29—29 when the latter are in their lowered positions, and like the dumping members are arranged on either side of a throat or passage 31 extending crosswise of the body *b* and located at the middle portion thereof.

The open ended chute box 32 is suitably adapted for vertical sliding movement in the throat or passage 31 so that when the body *b* is lowered onto the frame 9 the latter will cause the same to move upwardly and out of the way of the operating devices for the body and dumping members. When the body is raised, however, above the frame 9 the chute box will descend under its own weight and be projected beyond the lower surface of the body, but retained against detachment therefrom by suitable keepers such

as pins 33, which project through slots 34 in the side walls of the chute box.

The tiltable platform 35 which is arranged in the chute box 32 and corresponds in length approximately to the length of the chute box, is held in horizontal position in the chute box by means of depending brackets 36—36 which bear on the lugs 37—37 arranged on the inner faces of the vertically swinging doors 38—38 at the opposite ends of the chute box 32. The vertical recess 39 in the lug or ear 40 which depends from the central portion of the platform 35 loosely receives a cross bar 41 carried by the chute box 32. When the platform is supported by the lugs and brackets this cross bar will be at the lower end portion of the recess so that when one of the doors is raised and the lug thereon moved away from the bracket at one end of the platform, the last-named end of the platform will move downwardly under the weight of the load thereon and below the ledge 42 above the open door, which ledge and its mate at the opposite end of the chute box form end pieces for the platform when the latter is raised and in horizontal position, and prevent the escape of fine coal over the ends of the platform. Now as the said end of the platform moves downwardly and away from the ledge a slight longitudinal or bodily movement of the platform in a direction toward the open door will take place, by virtue of the V-shaped recess 39. This bodily movement of the platform will continue until one of the sides of the recess strikes the cross bar 41 and such bodily movement will be sufficient to enable the upwardly moving end of the platform to clear the intumed portion of the adjacent ledge 42. By this time the upper end of the recess will have contacted with the cross bar so that the platform will turn on the cross bar as a pivot until its descending end bears on the bottom of the chute box 32 and its upper end forms a continuation of the intumed portion of the adjacent ledge.

Now if a chute or conveyer such as indicated at 44, be connected to the side of the body 7 by suitable elements such as chains 45, whereby, it may be adjusted, and with one end under that end of the chute box at which the door is raised and if the body 7 has been adjusted to the required height prior to the opening of the door, the coal from the interior of the body will move downwardly on the platform and onto the chute or conveyer 44 which will direct it to the required place of discharge.

During the foregoing operation if we assume that the dump members are in horizontal position it will be manifest that only that portion of the load arranged directly over and for a short distance to either side of the throat or passage will move down the

platform and out of the body so that after the door has been opened for a relatively short time, coal will cease to move from the body. This will indicate to the operator the necessity for tilting the dump members which operation as before stated, is performed by turning the shaft 10 in a certain direction. Now since the dump members are arranged on opposite sides of the throat or passage 31, it will be evident that when these members are tilted the coal which they contain will move onto the platform and finally onto the chute or conveyer. Provision is made, whereby, the dumping members may be adjusted into positions at substantially right angles to the axis of the throat or passage, to warrant the discharge of all the coal which they contain, onto the platform.

For operating the shaft 10 I make use of a reducing train of gearing 46 in which is included a gear wheel 47 secured to one end of the shaft 10 and also a pinion 48 mounted upon a shaft 49 which has a non-cylindrical end portion 50 to extend through a correspondingly shaped opening in a crank handle 51. The train 46 is contained in a suitable frame 52 and a dog 53 is provided which is adapted to over-ride the teeth of the pinion 48 when the same is turned in a direction so as to cause the shaft 10 to turn and wind the flexible elements and raise the body, but is adapted to coöperate with the dogs 17 to prevent downward movement of the body when the crank handle 51 is released. A second dog 54 is provided and is adapted to over-ride the teeth of the pinion when the same is turned in a direction reverse to that in which it turns during the upward movement of the body, this dog 54 being also adapted to interlock with the pinion and prevent movement thereof in the reverse direction. Thus, in operation and with the body in lowered position the dog 54 is thrown back after which the crank handle 51 is turned until the body is raised to the required height. The chute or conveyer 44 is now connected to that side of the body adjacent to the point of deposit, as previously described, after which the door 38 immediately above the chute is unlatched by unlatching the latch 55' thereof. This done the platform will be tilted and the coal moved down the platform and chute or conveyer as before stated. After the coal ceases to move the dog 54 is thrown forwardly and into engagement with the pinion and the dog 53 thrown backwardly. This done the crank handle 51 is turned in a direction reverse to that in which it was turned previously or while elevating the body. This will have the effect of tilting the dumping members and causing the discharge of the remainder of the coal.

With the body elevated and the dump

members tilted the said dump members are first lowered which may be done by disengaging the dog 54 and turning the crank handle in a direction reverse to that in which it was turned to tilt the dump members or if desired, the dump members may be allowed to gravitate to their normal horizontal positions after the dog 54 has been raised. It will be observed that during the movements of the dump members the body will be held against downward movement by virtue of the dogs 17. Now with the dump members in lowered position and the dog 53 in engagement with the pinion 48, the crank extensions 25—25 are turned so as to enable the cams 23—23 on the operating bars 24—24 to operate the latches to disengage the dogs. This done the dog 53 is moved away from the pinion and the body lowered either by turning the crank handle in a direction reverse to that in which it was turned to raise the body, or by permitting the body to descend by gravity. A division wall 55 is removably fitted between guides 56, and bears on oblique slides 57—57, which are removable through openings 58 in either side of the body of the wagon. The slides 57—57 cooperate with the wall 55 to divide the interior of the body into two compartments, each of which may, upon removal of the slide which seals it, be the open end to discharge its contents into the chute.

Although I have shown all the chains connected to one shaft, it will be manifest that a plurality of shafts may be employed and connected together by suitable gearing, in which event, those chains which raise one end of the body and one of the dumping members, will be connected to the shaft nearest that end.

Although I have shown and described one embodiment of my invention it is to be understood that I am not to be limited to the specific arrangement and construction of parts since various changes may be made, within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim as new is:

1. In a dumping vehicle, the combination with a supporting frame; of a vertically movable body arranged on the frame, means

for moving the body bodily upward, up-rights carried by the frame and extending through the body and forming guides for the movements thereof, dog and ratchet structures associated with the body and up-rights, serving to secure the body in raised position, and means including a cam rod to actuate the dog and ratchet to permit the body to return to normal position.

2. In a dumping vehicle, the combination with a supporting frame; of a vertically adjustable body arranged on the supporting frame, tiltable dump members arranged in the body, means for securing the body in adjusted position, and a single means for independently adjusting the body and tilting the dump members.

3. In a dumping vehicle, the combination with a supporting frame; of a vertically adjustable body arranged on the supporting frame, tiltable dump members arranged in the body, means for securing the body in adjusted position, and means including a single train of gearing for independently adjusting the body and tilting the dump members.

4. In a dumping vehicle, the combination with a supporting frame; of a vertically adjustable body arranged on the supporting frame, tiltable dump members arranged in the body, means for securing the body in adjusted position, and means including a shaft and a plurality of reversely wound flexible elements thereon for independently adjusting the body and tilting the dump members.

5. In a dumping vehicle, the combination with a supporting frame; of a vertically adjustable body arranged on the supporting frame, tiltable dump members arranged in the body, means for securing the body in adjusted position, and means for adjusting the body and tilting the dump members and including a shaft adapted when turned in one direction to move the body and when turned in the opposite direction to move the dump members.

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

JOHN H. URSBRUCK.

Witnesses:

LOUIS B. URSBRUCK,
JOHN F. H. HAUS.