

(No Model.)

G. WORTHINGTON.  
DUMPING WAGON.

No. 422,561.

Patented Mar. 4, 1890.

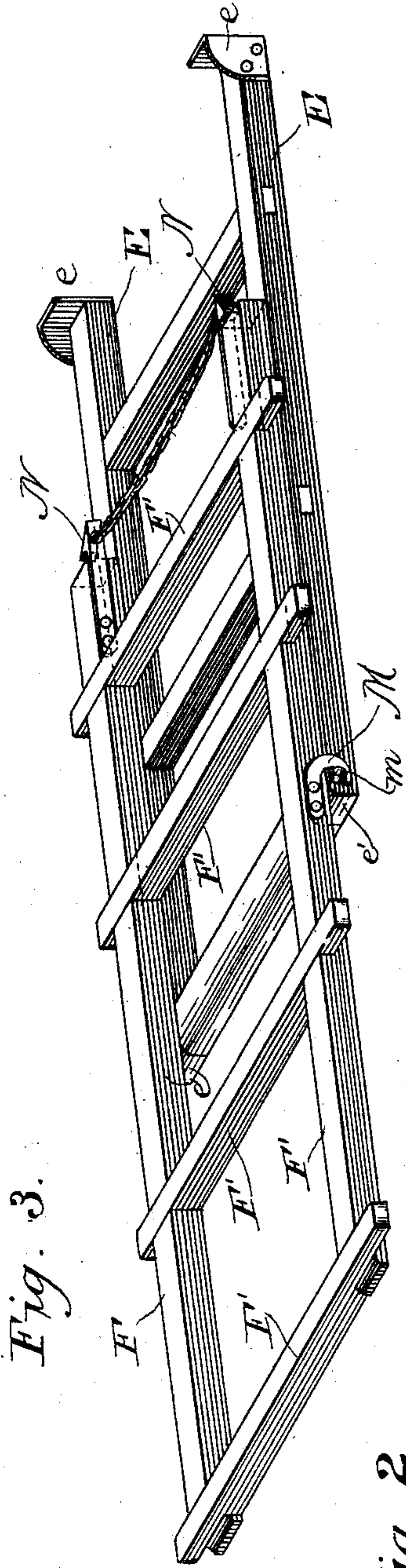


Fig. 3.

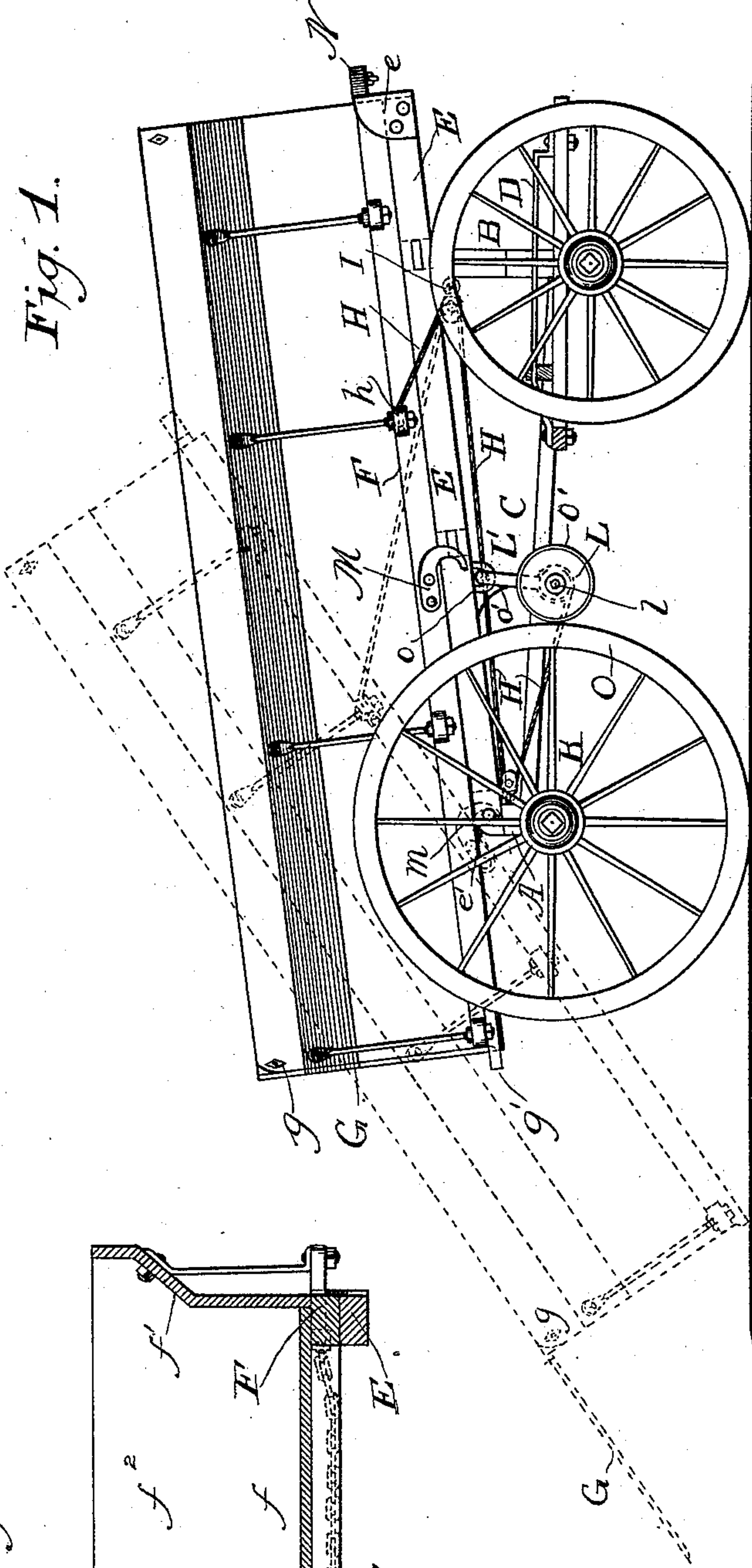


Fig. 1.

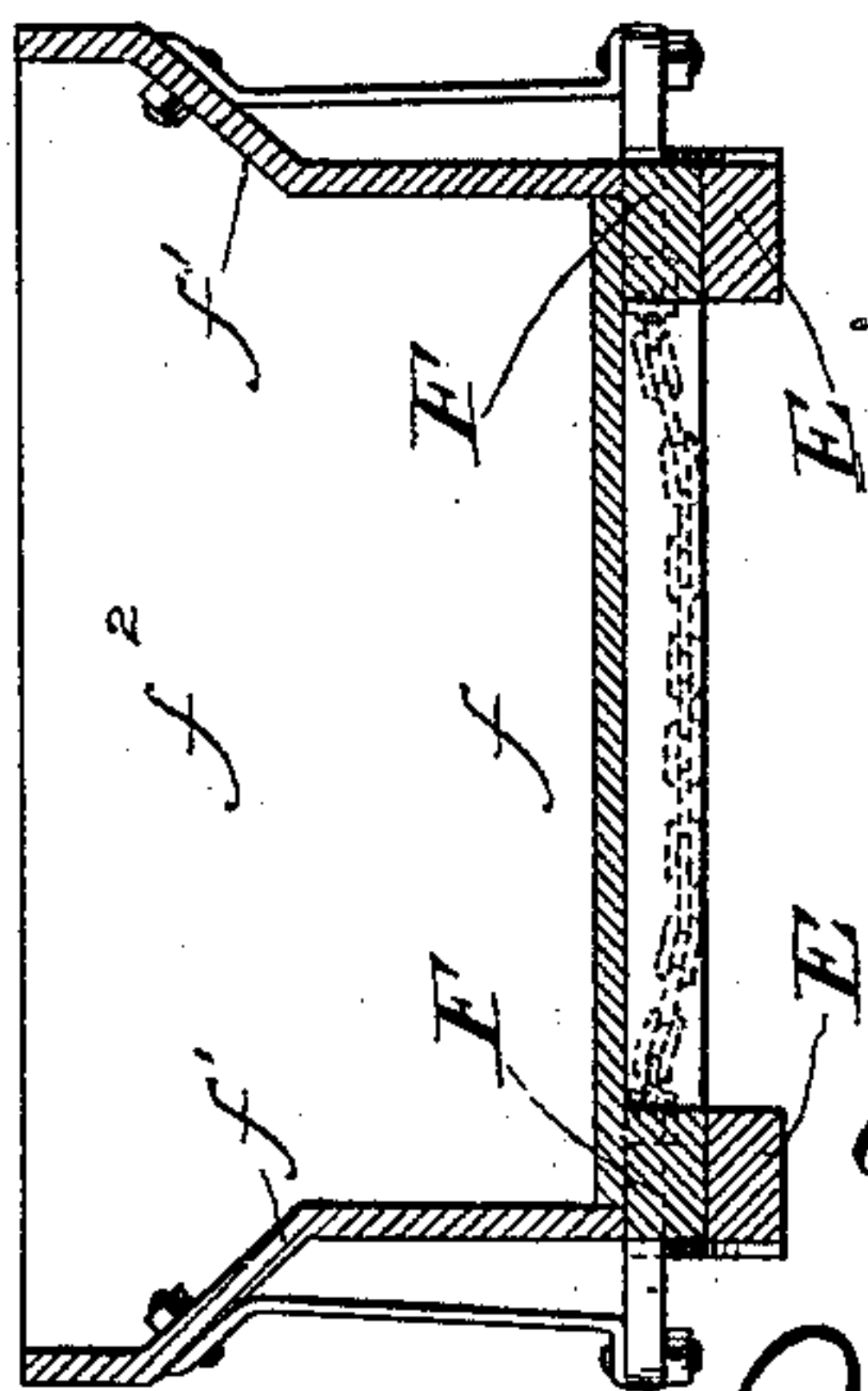


Fig. 2.

Witnesses

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# UNITED STATES PATENT OFFICE.

GEORGE WORTHINGTON, OF CHICAGO, ILLINOIS.

## DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 422,561, dated March 4, 1890.

Application filed July 15, 1889. Serial No. 317,580. (No model.)

### *To all whom it may concern:*

Be it known that I, GEORGE WORTHINGTON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wagons for Carrying Coal and other Materials, of which the following is a specification.

My improvement has for its object to facilitate the dumping of the contents of wagons loaded with all sorts of materials, which are the subject of common conveyance, either in city or farm traffic, and which it is desirable to dump in a body or in heaps on the street, the sidewalk, or the field.

Heretofore it has been customary to make two-wheeled vehicles with the body hinged at or near the axle, so that by pushing up their front ends or bringing a weight to bear on the rear ends or tails they might be tilted to discharge the load, and after being relieved of their contents might be returned to normal position by lifting at the tail or pulling down at the front. It has also been customary to manufacture four-wheeled wagons in such manner that by the use of a jack-screw at their front ends the body part could be raised so as to discharge the contents at the rear end and then lowered again into proper position. My invention, however, has for its object to so construct the bed or body of a dumping-wagon that it will move back and tilt by its weight and the weight of its load, and that it may be thrown back into its normal position to receive a fresh load by the power of the team, whether transmitted through the traction-wheels or through other suitable rotating part of the running-gear, and for the purpose of explaining said invention I will describe the best manner now known to me to apply it.

The drawing represents a wagon constructed according to my invention, the draft-tongue, however, being omitted, and the position of the body of wagon-bed when dumping its load being shown in broken lines.

A represents the rear bolster, which will be, as usual, mounted on a fixed axle, and B the front bolster; C, the wagon-reach, extending from the rear bolster to the upper member of the fifth-wheel D on the traction-frame, or to the front bolster attached to said member.

E represents inclined timbers—one at each side of the wagon—resting at one end upon the bolster on the rear axle and extending

therefrom to and past the front bolster. These timbers are intended to lie beneath and parallel with the side timbers or longitudinal sills of the wagon bed or frame to form supports for such sills in the normal or carrying position of the wagon, and ways for its rearward movement when it is to be tilted. The front ends of these timbers of the wheel-frame will coincide with the front ends of the body-sills and may have caps or corner-pieces to prevent said sills from being pushed beyond them, but at their rear ends they will terminate above the rear axle, while the body-sills will extend rearwardly past them. The front bolster will be of sufficient height to bring the forward ends of timbers higher than the rear ends and at a suitable inclination to permit a sliding contact with the sills to allow the latter to move to the rear by gravity, or in case such inclination is not sufficient for the rearward movement, owing to frictional contact, they will carry anti-friction rolls that the wagon-bed which they support may slide to the rear whenever released. At the rear end they are rounded, as at  $e'$ , or have an anti-friction roll, or are otherwise prepared to facilitate the dumping of the wagon-body.

Said wagon-body is composed of the above-mentioned longitudinal sills F, united by girts F', a suitable flooring  $f$ , with side-boards  $f'$ , and a front board  $f^2$ , and it rests, as to the longitudinal base-sills, in frictional contact with the upper surface of the just-mentioned side timbers of the wheel-frame. At the rear of the wagon-body will be a tail-board G, hinged, as at  $g$ , near the upper edge of the side-boards and secured beneath by a spring catch or catches  $g'$ , projecting from the base-sills or from the end girt or hinged or secured in any other usual and convenient way. Now it will be evident that as the inclined timbers of the wheel-frame are of such slope that the wagon body or bed will move to the rear by its own weight or the weight of its contents, or else on account of the anti-frictional device provided, said body if left to itself will have no permanence, but will either depart from the wheel-frame altogether or will move back and tilt until it is restrained. For the purpose of controlling such movement and preventing it from leaving the wheel-frame whenever it is tilted sufficiently to dump its load, I attach to it at a point  $h$  toward its forward part—that is, in front of its center of



gravity or in front of the axis on which it will tilt—ropes or chains or other flexible connections H, which lead from such point to a tackle-block (or pulley) I, hinged to a suitable part 5 of the supporting-frame or wagon-frame—for instance to the front bolster; thence the rope or chains, (one or two,) one of which may be at each side of the machine, are led to another tackle-block (or pulley) K farther to the rear— 10 as, for instance, near the rear axle or standard therefrom—and then the ropes, chains, or whatever they may be are carried to pulleys L, mounted upon a shaft *l*, which extends from side to side of the machine and is borne by 15 links or supports L, pendent from or attached to the upper timbers of the wheel-frame or other proper carrier.

Lest the wagon-body slide completely off of the wheel-frame when moving to the rear, 20 and for the purpose of causing it to tilt properly at the moment it reaches a suitable position, the hook M or other limiting device is arranged on one or both of the longitudinal sills of the body at a proper intermediary 25 length, and a stop or stops *m*, located on one or both side bars of the wheel-frame close to its rear end, so that whenever the body has progressed so far to the rear as to bring the hook against the stops a hinge-connection will 30 be established, permitting the body to tilt, but not to disengage the hook from the stop.

Lest the wagon-body or receptacle should tilt at times when it is not desired, any suitable catch or catches N will be applied at or 35 near the front end upon the body-frame and latch over the corner caps or stops *e* on the timbers of the wheel-frame, or conversely, and will be made controllable at will, so that the driver or attendant can instantly release the 40 body-frame when it is desired to discharge the load. Now it will be evident that, supposing the links which support the pulleys and their shaft to be rigid with the upper timbers of the wheel-frame, the wagon-body, when 45 loaded, can move to the rear and tilt on the rounded rear ends of said timbers or on anti-friction wheels or pulleys located at such ends, and that when it is desired to return the body to position I can apply a 50 crank to the squared end of the shaft which carries these pulleys, and thereby turn said shaft and wind up the ropes, drawing down the front end of the wagon-body, and finally bringing it to its normal position 55 by means of said ropes; but in order to apply the draft of the team to the purpose of winding up the ropes I have mounted the links which carry the pulleys and pulley-shaft in eyes or other hinge-connections *o*, 60 which will allow the lower ends of said links to be drawn into contact with the periphery of the rear wheels O, or any gearing corresponding thereto, so that when the wagon-body is tilted said pulleys, with their enlarged peripheries O', will be in frictional 65 contact with the tires of the wheels, and upon

the starting forward of the team will be turned thereby and wind up the ropes, and consequently restore the wagon-body to position without the interposition of the attendant. 70 When the body is not dumping, the friction-peripheries of the rollers or pulleys must, obviously, be held out of action. The shaft carrying the pulleys may therefore be kept away from the wheel-frame by means of 75 a spring *p'* pressing against said shaft or the frame by which it is carried, and will be forced into contact for action by the weight of the loaded body whenever the latter is released and starts back to tilt. 80

Having thus described my invention, I do not propose to limit myself to the specific devices employed, since it is evident that the draft of the team may be transferred to the tilting wagon-body through rotating parts of 85 the running-gear other than those I have described, and that whether the connection between the back and body and the motor is frictional or by spur-gear the principle of my invention will remain the same; but 90

What I do consider as my invention and claim herein is—

1. The combination, substantially as hereinbefore set forth, of a wagon-body, a wheel-frame therefor, supporting the wagon-body in 95 such manner that it will tend to move to the rear, a stop to prevent its rearward movement at a proper point for tilting, and a flexible connection between said wagon-body and a winding-pulley on the wheel-frame, and means 100 whereby said pulley may be thrown into action with a rotating part of the running-gear, whereby the body may be returned to position after discharging its load.

2. The combination, substantially as hereinbefore set forth, of the wagon-body, the wheel-frame therefor, inclined to the rear that the body may be brought to a dumping position, a stop to limit the rearward movement 105 of the body, a rotating part of the running-gear, a pulley in a swinging frame, and a flexible connection between said pulley or a shaft therefrom, whereby frictional contact with the rotating part will be established 110 whenever the wagon-body is dumped and said body returned to position by the draft of the team. 115

3. The combination, substantially as hereinbefore set forth, of the inclined wheel-frame, the wagon-body, the hook or catch, the 120 stop on the rear timbers of the wheel-frame, the pulley and its shaft mounted in swinging links, and the ropes extending from the front of the wagon-frame over tackle-blocks to said pulley and arranged to draw it into 125 contact with one of the rear wheel-rims that it may be driven by friction when the team starts.

GEORGE WORTHINGTON.

Witnesses:

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