(No Model.) 3 Sheets—Sheet 1.

O. B. REYNOLDS.

DUMPING WAGON.

No. 604,789. Patented May 31, 1898.

Fig. 1.

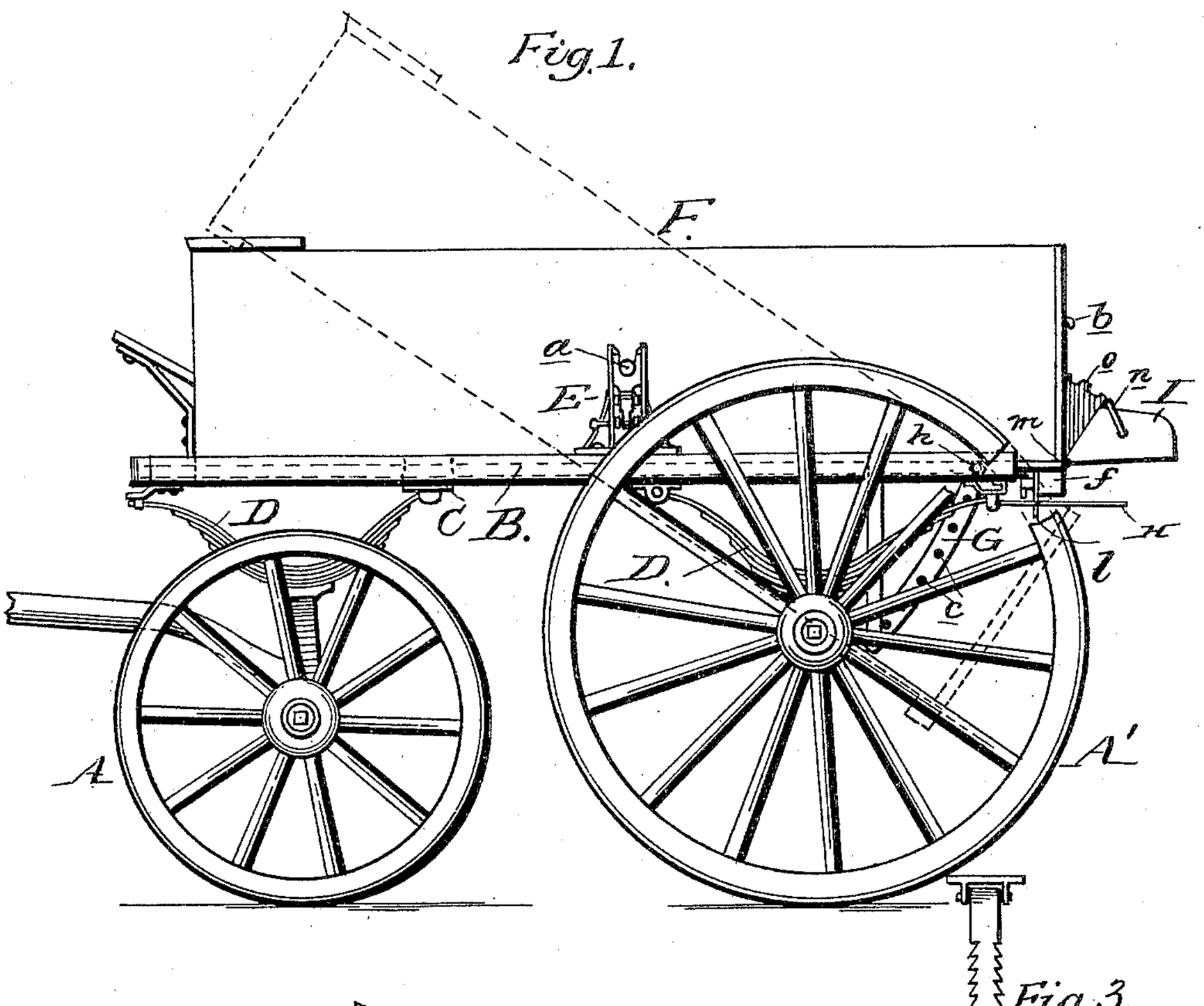

Fig. 2.

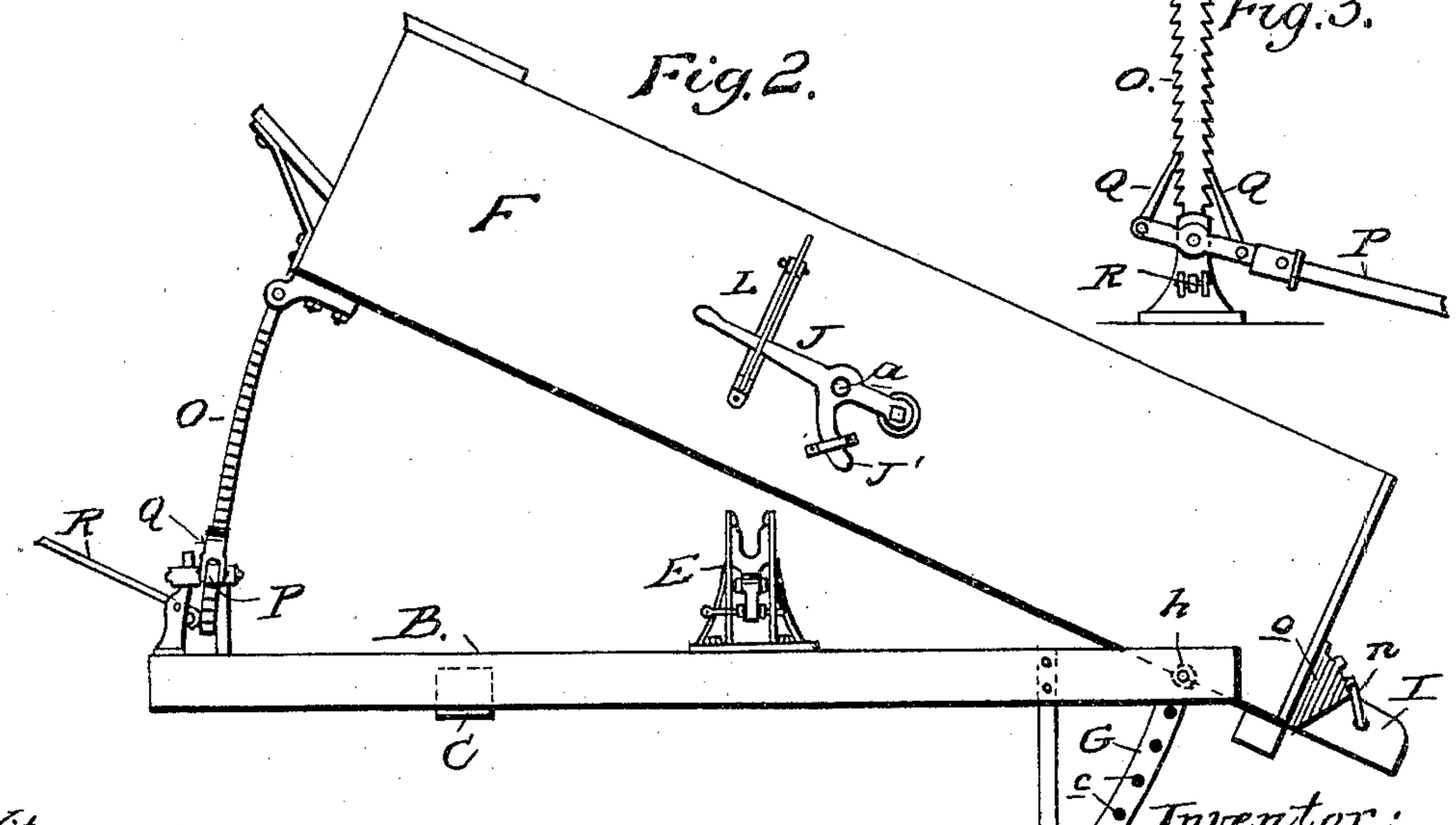

Fig. 3.

Witnesses;
Chapman N. Fowler
J. Edw. Fowler

Inventor;
Oliver B. Reynolds
by P. Walter Fowler
his Attorneys

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Fig. 4.

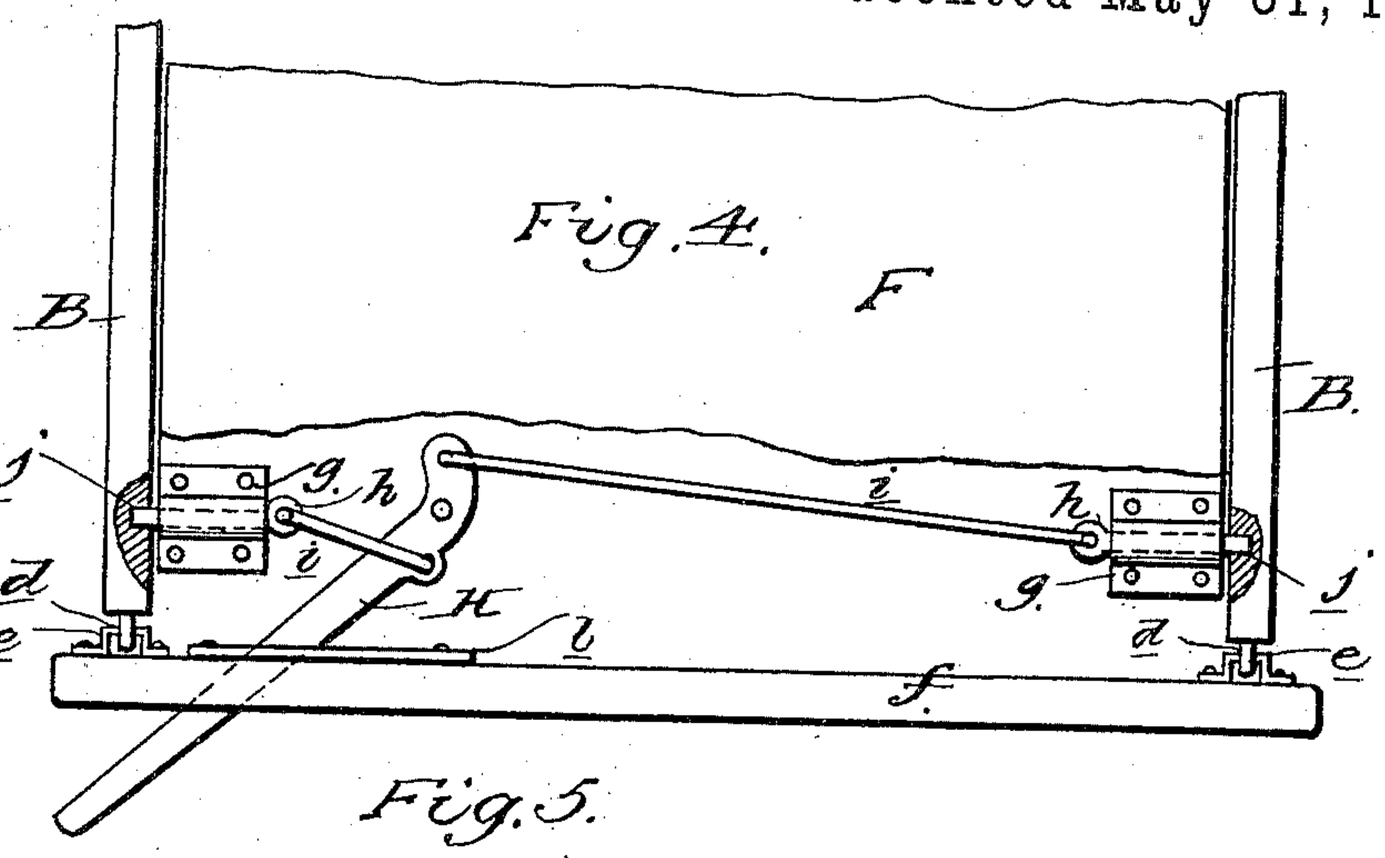


Fig. 5.

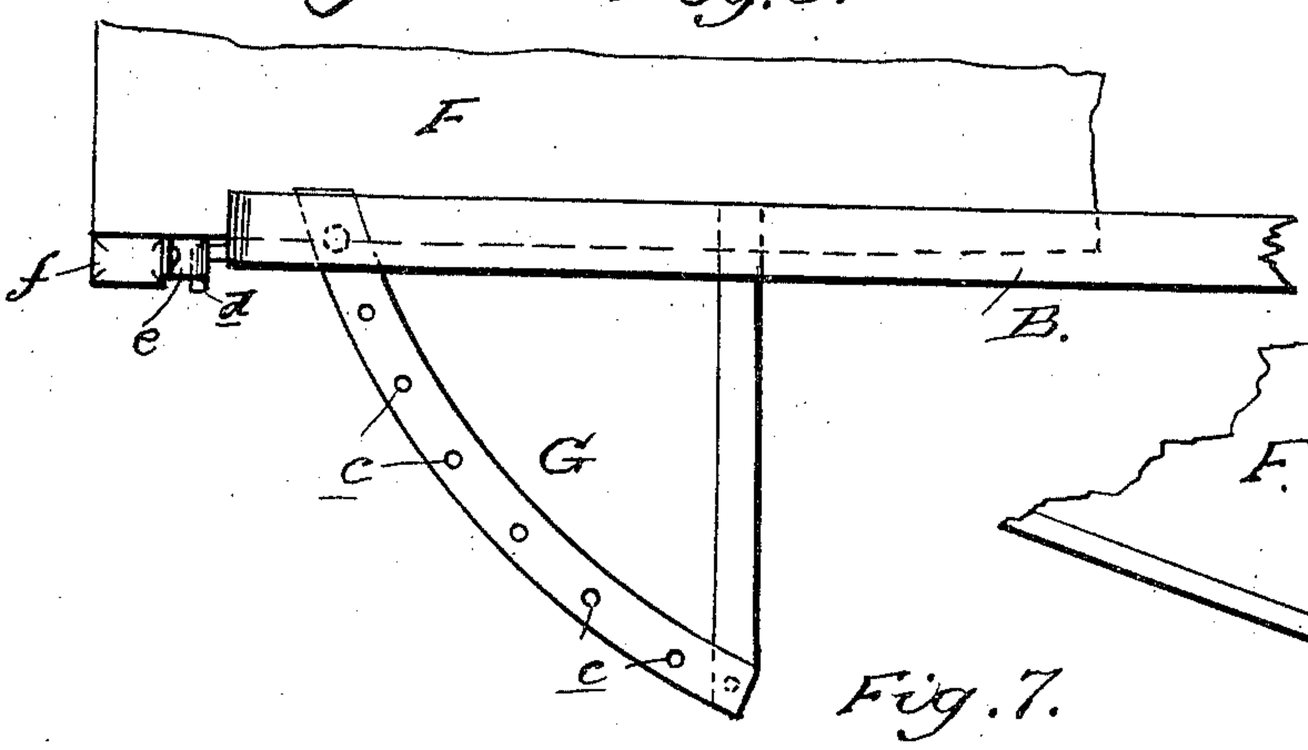


Fig. 6.

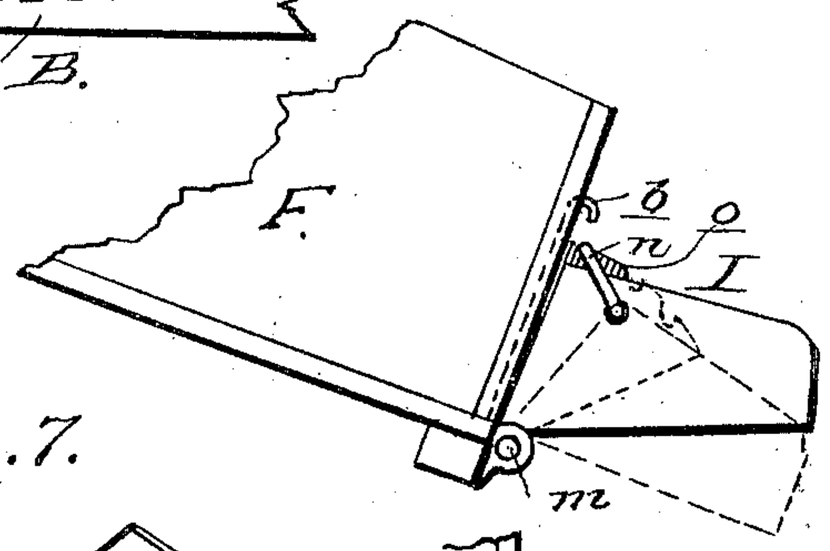


Fig. 7.

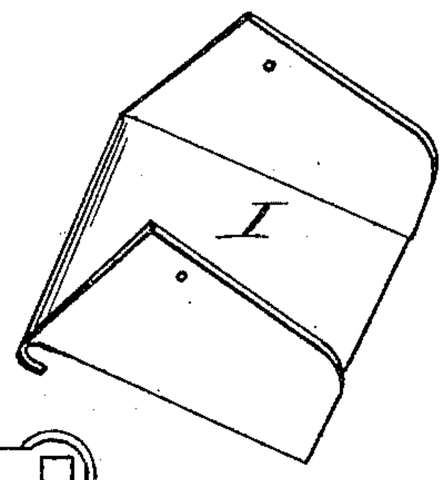


Fig. 8.

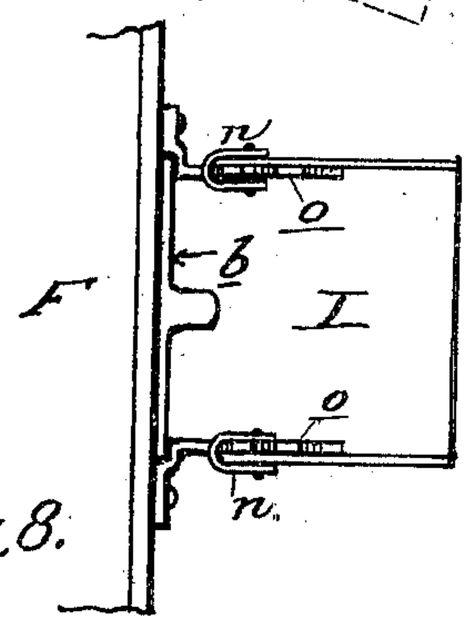


Fig. 10.

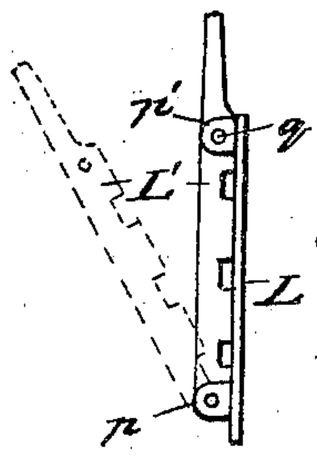
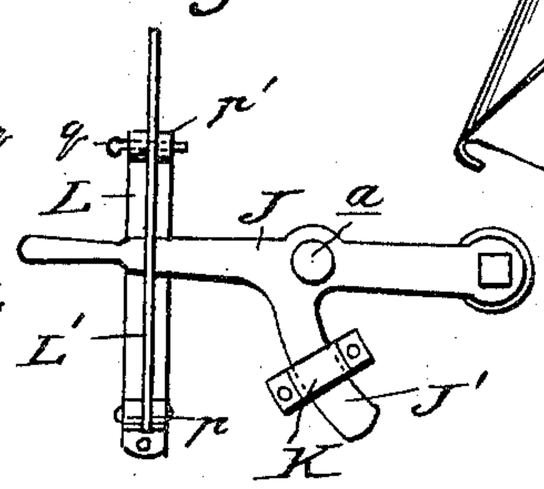


Fig. 9.



WITNESSES

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INVENTOR

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his Attorney

(No Model.)

3 Sheets—Sheet 3.

O. B. REYNOLDS.

DUMPING WAGON.

No. 604,789. Patented May 31, 1898.

Fig. 12.

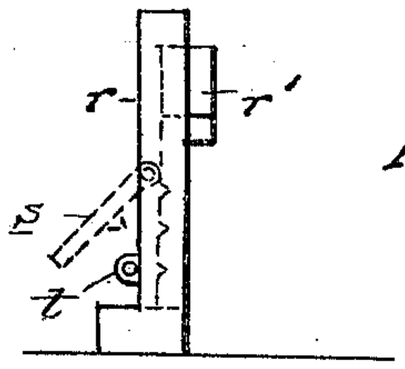


Fig. 11.

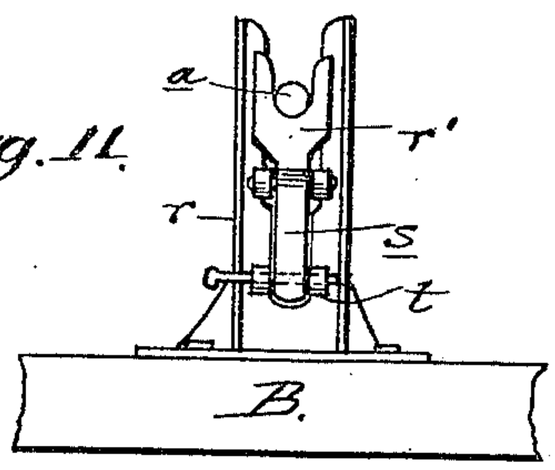


Fig. 15.

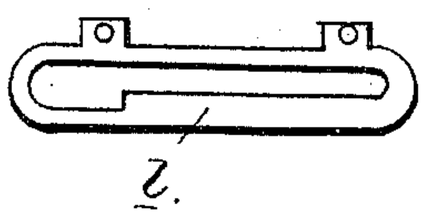


Fig. 13.

Fig. 14.

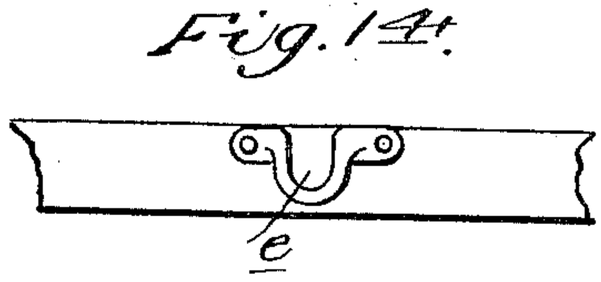


Fig. 16.

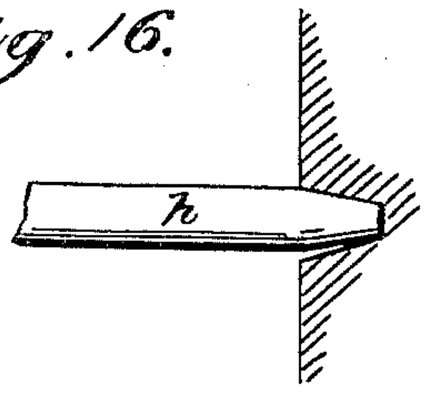
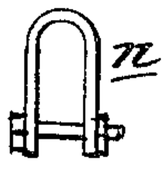


Fig. 17.



WITNESSES

Chapman & N. Fowler

J. Edw. Fowler

INVENTOR

Oliver B. Reynolds

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his Attorney

UNITED STATES PATENT OFFICE.

OLIVER B. REYNOLDS, OF BROCKTON, MASSACHUSETTS.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 604,789, dated May 31, 1898.

Application filed August 16, 1897. Serial No. 648,430. (No model.)

To all whom it may concern:

Be it known that I, OLIVER B. REYNOLDS, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Dumping-Wagons, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of vehicles designed for hauling heavy loads and commonly known as "dumping-wagons;" and my invention consists of the parts and the constructions and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming part of this specification and in which similar letters of reference indicate corresponding parts in the several views, Figure 1 represents a side elevation of a dumping-wagon embodying my invention and showing by dotted lines the movement of the centrally-fulcrumed tiltable body. Fig. 2 represents the body elevated and pivotally hung at its rear end and showing at the front end the means for elevating said end and swinging the body about its rear fulcrums. Fig. 3 is a detail of the lifting-jack arrangement for elevating the front end of the body. Fig. 4 is a bottom view of a portion of the body, showing the means for locking the body to the side-bars of the frame of the vehicle. Fig. 5 is a side view of Fig. 4. Figs. 6, 7, and 8 illustrate detached views of the adjustable end gate or chute. Figs. 9, 10, 11, 12, 13, 14, 15, 16, and 17 are details of construction to be hereinafter referred to.

In constructing my improved wagon I use any appropriate and well-known form of running-gear, comprising front and rear wheels A A′, and a frame consisting of longitudinal side-bars B and one or more cross-bars C, said frame being supported upon springs D, as shown in Fig. 1. To the side-bars B are bolted or otherwise rigidly secured the vertical hangers or standards E, having open bearings at their upper ends to receive the journals or trunnions *a*, projecting from the sides of the wagon-body. These trunnions and their bearings or standards are centrally located with respect to the wagon-body, whereby when the body is loaded the weight is equally distributed or balanced, and the body may be tilted about the central axis thus formed with the exercise of a minimum of power. The wagon-body F is otherwise of any usual and appropriate construction, depending on the character of the use to which it is put. It has an end discharge controlled by a vertically-sliding gate or valve *b*, and it has an adjustable end chute which will be hereinafter specifically described.

Depending from the rear portion of each of the side-bars B is a curved bracket G, having a series of holes or sockets *c*, which in connection with certain features to be presently described enable the wagon-body to be tilted and secured at different inclinations.

As it is desirable to prevent the body from movement toward and from the side-bars B of the main frame, I secure to the end of the side-bars the outwardly-projecting studs *d*, Fig. 4, and adapt these for dropping into engagement with slots or open bearings *e* in castings or brackets secured to the inner sides of a cross-bar *f* on the under side of the rear portion of the body, as shown in Figs. 1, 4, and 5, these connections being such that when the body is tilted about its central fulcrum or bearing the engagement of the studs and slotted brackets is readily broken, so as not to interfere with the tilting action of said body.

To lock the body to the side-bars, I may use various means; but the preferred one is shown in Fig. 4 as consisting of suitable guides or plates *g*, bolted or secured to the under side of the body, near the rear end thereof, and provided with bolts *h*, slidable therein and actuated simultaneously by means of rods *i*, connecting the inner ends of the bolts with a horizontal hand-lever H, fulcrumed to the body and having the rods *i* connecting with it on opposite sides of and equidistant from its pivot, said lever projecting from the rear of the vehicle, so that it may be readily operated to retract the bolts from their engagement with the stationary side-bars and thereby enable the wagon-body to be readily tilted about its centrally-located side trunnions. This lever H will also be found useful in effecting the tilting of the body after the bolts are withdrawn, and the outer ends of the bolts are preferably made tapering or wedge-shaped, Fig. 16, so that when forced into the holes or sockets *j* in the inner faces of the side-bars B they tend to slightly raise the rear end of the body B and thereby remove

the weight of the load from the central side trunnions and transfer it to two strong bolts at the rear, it being understood that the front portion of the body is supported by the cross-bar C. (Shown in Figs. 1 and 2.)

A plate *l* (see Fig. 15) is secured to the rear cross-bar *f* of the body and has a slot *i'*, in which the lever H passes, the slot being widened at one end to enable the lever to drop therein and be held against accidental movement. In addition to these features the body is provided with an adjustable chute at its discharge end and in communication with its tail-gate. This chute I is shown in detail in Figs. 6, 7, and 8, and consists of a three-sided body hinged at *m* to the lower edge of the tail-board and provided with pivoted links *n*, adapted to hook over and embrace the notched or toothed edges of suitable plates *o*, projecting edgewise from the rear of the body. By this arrangement the inclination of the chute may be changed at pleasure. It may be held in a horizontal position when the wagon-body is tilted to enable the contents of the body to be shoveled out of the chute, or it may be still further elevated to entirely shut off the flow of the material. When in the position shown in Fig. 1 and the dotted position of Fig. 6, it serves to direct the flow of the discharging material in the usual manner. In any of its adjustments it is securely held by the links *n* dropping into engagement with the notched plates *o*.

If the wagon-body is centrally suspended and is fully loaded, the weight will be evenly distributed and nicely balanced and the body can be readily tilted; but if the body is loaded with about, say, one-half of its capacity it would be much more easily tilted if its point of suspension was correspondingly lowered on the body, so as to be located approximately in the center of the load. Now if the pivots or trunnions have their positions on the body changed the supporting-standards must also be changed to properly receive the trunnions in their newly-adjusted positions, so that the body when in a horizontal position may assume the same position on the main frame or side-bars B. To accomplish these results, I show in Figs. 9 to 14, inclusive, the detailed construction of the standards and their connections. The trunnions are carried by levers J, fulcrumed at one end to the body and having handle-pieces at the opposite ends, said levers having curved extensions or members J' from their under sides and movable through guides K. There is also secured on each side of the body a bar or plate L, with spaced lugs or ears at each end, while a companion bar or plate L' is pivoted between the lower lugs or ears *p* and has its inner face recessed or notched at different points. The free end of each of the levers J passes across one of the plates or bars L, and the other plate or bar is latched or closed upon it, so that the lever will rest in one of the recesses or notches, after which the upper end of said bar or plate is secured between the upper lugs or ears *p'* on the bar or plate L by means of a pin *q* or other fastening. Thus the trunnions *a* may be raised and lowered in vertical planes by unlatching the member L' and raising or lowering the lever J, after which the parts are latched and the lever fixedly secured, as before described.

To accommodate the adjustments of the trunnions, I make the hanger or standard also capable of vertical adjustment. This is done by forming the hanger or standard of a fixed and movable member, the fixed member *r* being slotted or channeled and the movable member *r'* being slidably secured therein and having an open-top bearing for the trunnion *a*. The movable members are adjusted vertically to correspond with the adjustment of the trunnions, and said members are each fixed in their adjusted positions by means of a clasp or hinged or swinging plate *s*, pivotally secured to the stationary member *r* and having a lug on its inner face to enter one of the series of notches or grooves formed in the adjacent face of the movable member *r'*, said hinged or swinging plate or clasp *s* being in turn secured between lugs *t* on the member *r* by means of a pin or fastening, as shown in Figs. 11 and 12.

The description so far relates entirely to the tilting of the body about a central axis, as this is the easiest method of dumping a loaded wagon, owing to the fact that the weight is equally distributed and balanced; but when such a wagon-body is tilted the rear end lowers in the same proportion as the front end raises. In some instances it is desirable that the rear or discharge end should maintain its height without regard to the elevation of the front end, and I provide for this by the construction shown in Figs. 2, 3, and 4. The bolts *h* in this instance serve as fulcrums about which the body tilts, and the positions of these bolts may be changed by making them engage the holes in the brackets, these said bolts being operated by the lever and connections before described as furnishing the means for locking the body to the side-bars B.

The elevation of the front end is accomplished by means of the lifting-jack arrangement shown in Figs. 2 and 3 and consisting of a curved and double-faced ratchet-bar O, hingedly secured to the lower front edge of the body, and a fulcrumed lever P and double-acting pawls Q, whereby the rack-bar and body are raised. To lower the front end of the body from its elevated position, the pawls are thrown out of engagement with the ratchet-faces of the bar, and by pressing on the long arm of a fulcrumed lever R the short arm of the lever acts to force the lower free end of the ratchet-bar against the wall of the slotted guide in which said free end moves, thereby controlling the descent of the body.

From this description it will be seen that I am enabled to suspend a load centrally and tilt the body about a central axis. I am also

permitted to change the axis of the body with relation to the weight carried, and when circumstances require tilt the body about a rear fulcrum and fix it in any position during the period of dumping.

My wagon is simple in its construction and may be turned so that its front gear will stand at right angles to the body. It is easily operated and altogether is very desirable for hauling and discharging coal, gravel, and other materials.

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

1. In a dumping-wagon, a tilting body having trunnions about which it tilts and means whereby the trunnions are maintained approximately in the center of gravity of the load.

2. A dumping-wagon having a tilting body, trunnions about which the body tilts and means for adjusting the position of the trunnions on the body whereby the center of movement of the body is essentially the center of gravity of the load.

3. In a dumping-wagon, the side-bars having vertically-disposed standards or hangers, the body having centrally-located trunnions pivotally mounted in said standards whereby the body is substantially balanced and is tiltable about said trunnions, slidable bolts on the body, adapted to engage the side-bars to detachably lock the body thereto, said bolts having their outer ends made tapering or wedge-shaped and adapted to slightly elevate the rear end of the body and thereby remove the weight of the load from the trunnions, and a lever and connections whereby the bolts are operated and made to engage and disengage the side-bars.

4. In a dumping-wagon, the centrally-pivoted body, in combination with slide-bolts for locking said body with a stationary part of the wagon, said bolts having tapering or wedge-shaped ends adapted to slightly elevate the rear end of the body and thereby remove the weight of the load from the pivots about which the body tilts, a lever and rods connecting the bolts with the lever upon each side of the pivot of the latter, and a means for holding the lever against accidental movement.

5. A dumping-wagon having a body with trunnions at its center adapted to enter open bearings in hangers on the main frame whereby the body is substantially balanced and tiltable about its central axis, bolts at the rear of the body and locking the same to the frame, and means for elevating the forward end of the body whereby the trunnions are lifted out of their bearings and the body tilted about the locking-bolts.

6. In a dumping-wagon the body portion, the stationary frame and means for supporting and elevating the front end of said body, bolts connecting the rear portion of the body to said frame and means whereby the bolts may be adjusted in vertical planes to vary the inclination of the body, said bolts serving as pivots about which the body is tiltable.

7. In a dumping-wagon, the side-bars of the main frame, a bracket depending from each of said bars and provided with a vertical series of holes or sockets, a tiltable body and bolts carried by the body and fitted to said series of holes or sockets and adjustably securing the rear of the body to said bars, and forming the axis about which the body is tiltable when its front end is raised.

8. In a dumping-wagon, the body thereof having a discharge, in combination with a chute pivotally secured to said body, plates projecting from the body and having notched edges, and links on the chute adapted to detachably engage said edges and thereby secure the chute in its adjusted positions.

9. A dumping-wagon having a body provided with vertically-adjustable trunnions about which it tilts, in combination with a frame having hangers or standards to receive said trunnions.

10. A dumping-wagon having a body provided with centrally-located side trunnions, means for vertically adjusting said trunnions, hangers or standards for the trunnions and means whereby they are adjusted vertically to correspond with the adjustment of the trunnions.

11. In a dumping-wagon, the stationary frame, and the tiltable body, in combination with levers fulcrumed to said body and provided with trunnions, a latching device for detachably securing the free end of the lever in its adjusted positions, and hangers or standards on the stationary frame each consisting of a channeled or slotted fixed member, a vertically-adjustable member having a bearing for said trunnions and a means for securing the movable member in its adjusted positions.

12. In a dumping-wagon, the combination of the frame having adjustable hangers or standards, of a tiltable body having levers fulcrumed to its sides and provided with trunnions, and latching devices for the levers each consisting of a stationary member, a member hinged or pivoted thereto, and provided with recesses or notches adapted to receive the free end of the lever and means for detachably securing the movable member.

13. In a dumping-wagon and in combination with a tiltable body having side trunnions, the hangers or standards in which the trunnions are mounted, each consisting of a stationary and channeled member, a vertically-slidable member having notches, a pivoted or hinged plate on the fixed member, having a lug to engage said notches and means for detachably securing said plate.

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

OLIVER B. REYNOLDS.

Witnesses:

W. R. CLIFFORD,

S. J. WOEB.