

No. 658,580.

Patented Sept. 25, 1900.

C. S. PHARIS.  
DUMPING WAGON.

(Application filed Jan. 23, 1900.)

(No Model.)

3 Sheets—Sheet 1.

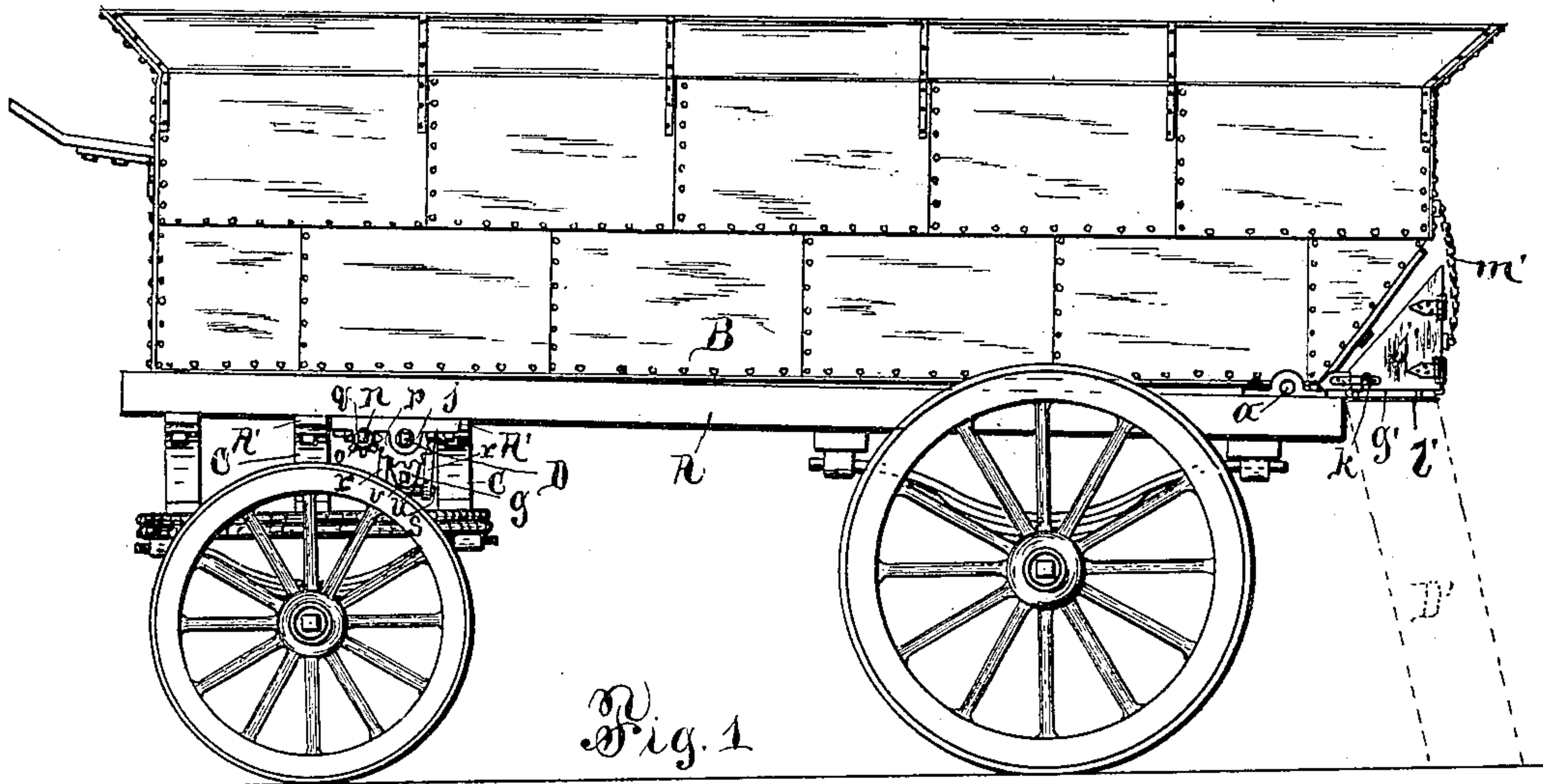


Fig. 1

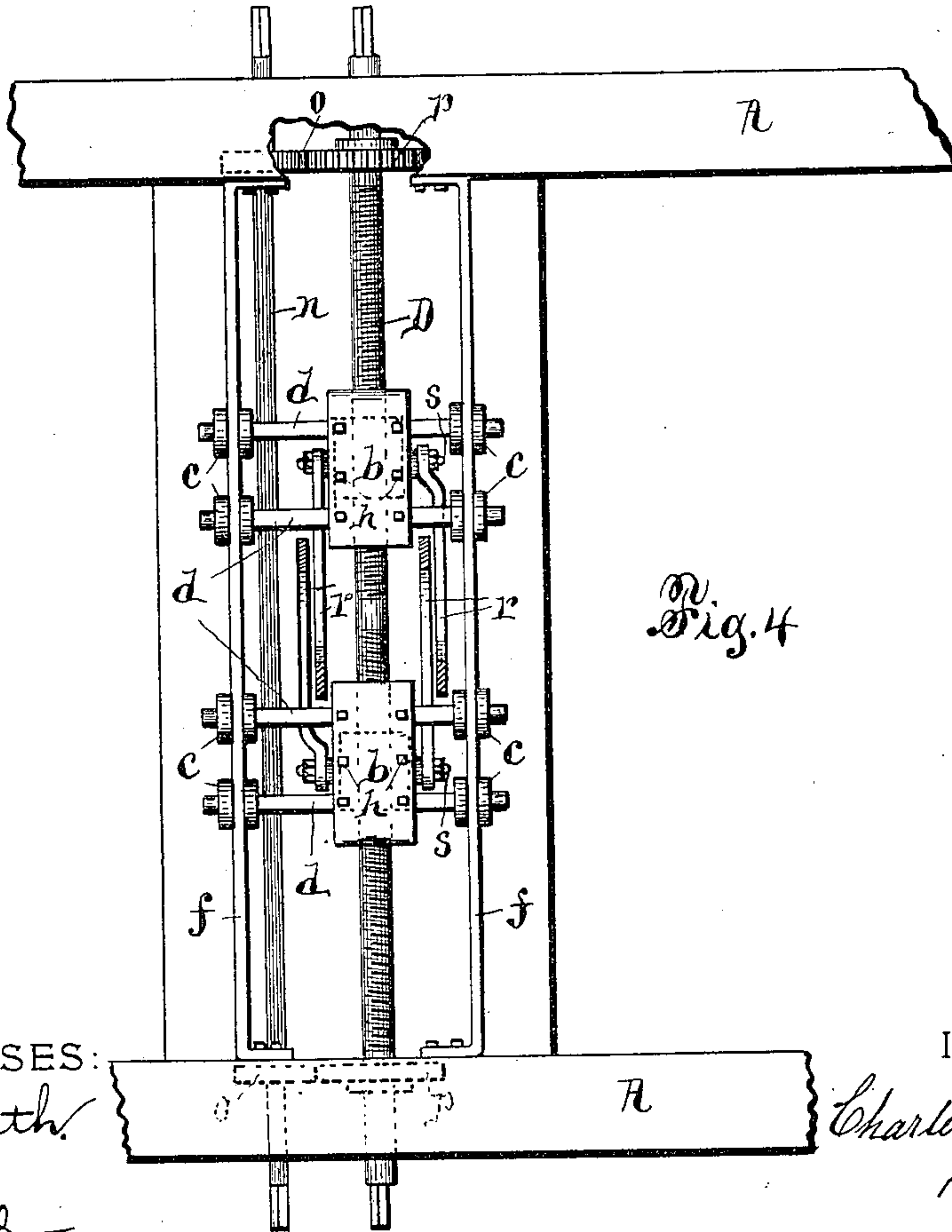


Fig. 4

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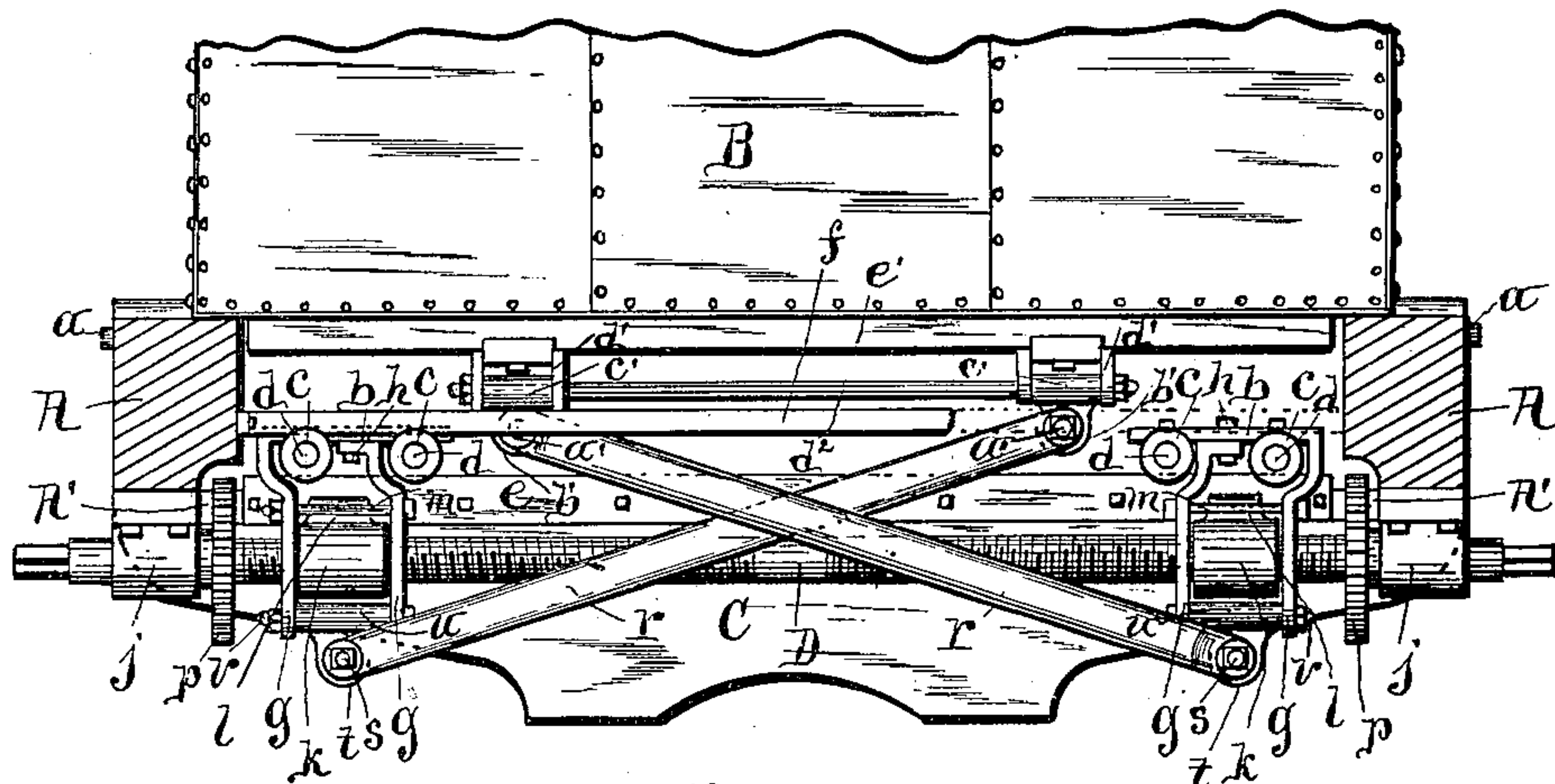
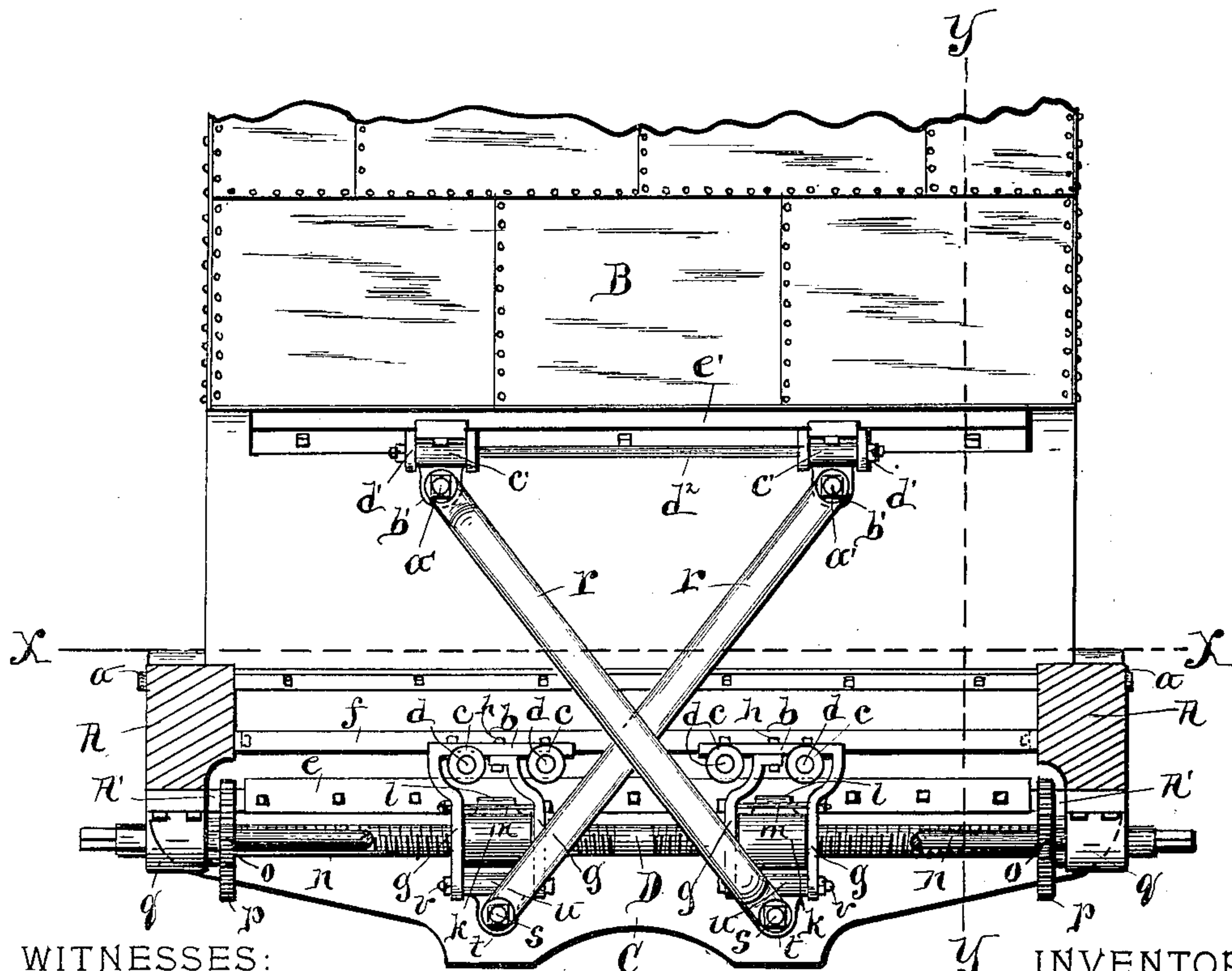


Fig. 2



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Fig. 3

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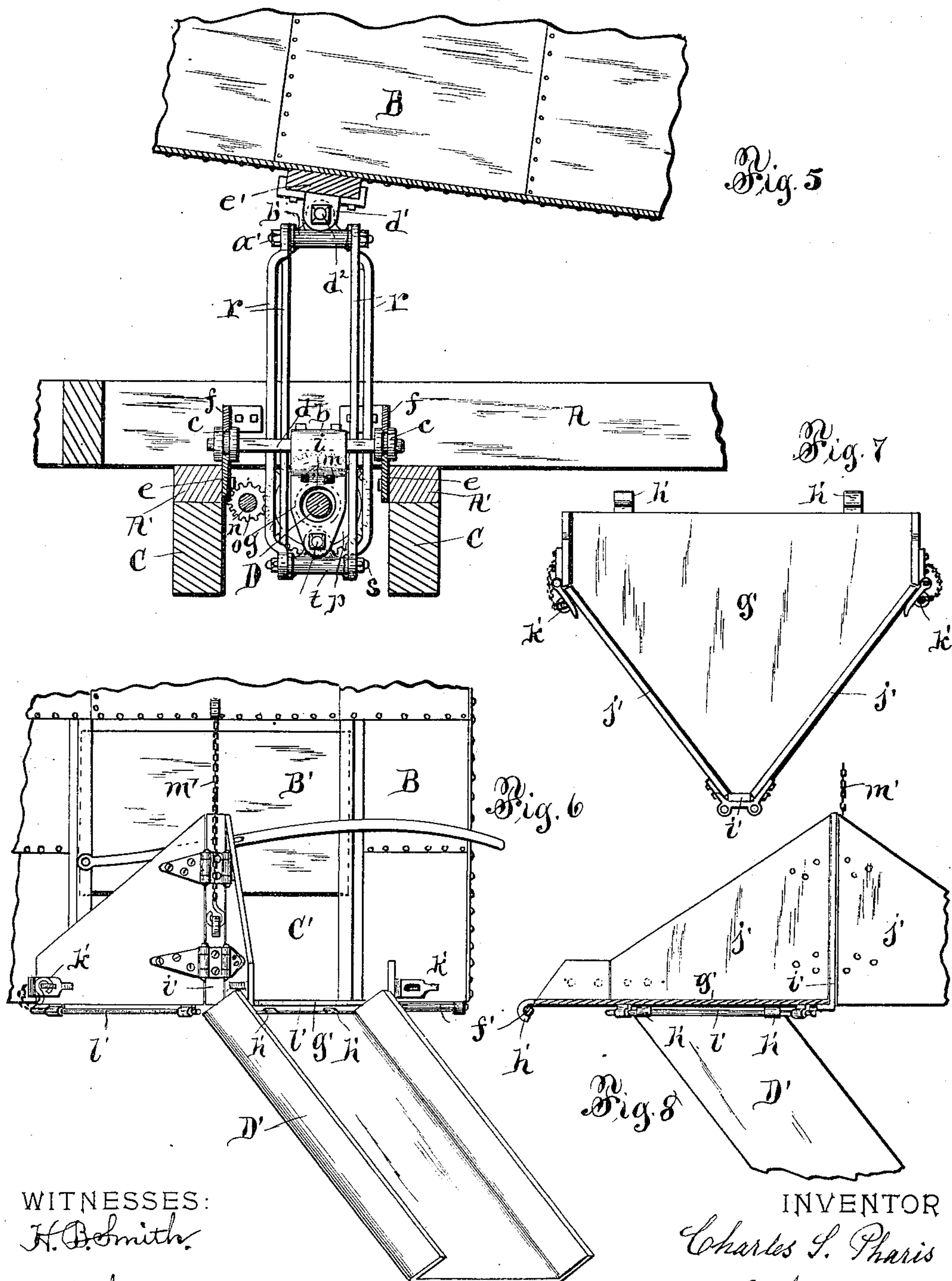


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3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

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## DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 658,580, dated September 25, 1900.

Application filed January 23, 1900. Serial No. 2,462. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES S. PHARIS, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Dumping-Wagons, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of dumping-wagons in which the body is adapted to be tilted endwise and is provided in its rear end with an opening through which the load is automatically discharged, and pertains more particularly to the mechanism for tilting the same.

The invention has special reference to the mechanism shown and described in my United States Patent No. 636,549, issued November 7, 1899, which mechanism comprises, essentially, a revoluble right-and-left screw extending transversely under the front end portion of the wagon-body, nuts applied to said screw, levers extending from said nuts to the body, and means for turning said screw.

In the construction just described the front end of the wagon-body rests upon the nuts, and it has been found that said nuts are liable to bind upon the screw, especially when lifting a very heavy load, and that the screw is subjected to a lateral strain. Therefore said mechanism is more particularly adapted for light loads.

The object of the present invention is to utilize to a certain extent the principle involved in the above mechanism and to combine therewith certain devices whereby the screw will be entirely relieved from lateral strain and the aforesaid binding of the nuts upon the screw will be obviated.

Furthermore, the object of the invention is to provide a simple, strong, and reliable construction and at the same time a mechanism which can be conveniently and easily operated.

To that end the invention consists in the novel construction and arrangement of the component parts of the mechanism, as hereinafter fully described.

The invention relates in the second instance to a device attached to the rear end of the wagon-body for the purpose of directing the

discharge toward either side of the body, which device will be hereinafter fully explained.

In the accompanying drawings, Figure 1 is a side view of a dumping-wagon embodying my improvements. Figs. 2 and 3 are transverse sections through the body-supporting frame and taken in front of the mechanism and showing the body in its normal and tilted positions, respectively, the shaft for turning the screw being omitted in Fig. 2. Fig. 4 is a longitudinal section on line X X in Fig. 3. Fig. 5 is a vertical section on line Y Y in Fig. 3. Fig. 6 is a view of a portion of the rear end of the wagon-body, illustrating the aforesaid device for directing the discharge toward either side of said body. Fig. 7 is a plan view of said device. Fig. 8 is a longitudinal section of the same.

Similar letters of reference indicate corresponding parts.

A represents a frame which is rigidly mounted upon the running-gear, which latter may be of any suitable construction.

B denotes the wagon-body, which is pivotally supported at its rear end on the frame A, as indicated at *a* and clearly shown in Fig. 1 of the drawings, the front end portion of which body rests upon said frame when the same is in its lowered or normal position. Under said front end portion of the body is located the mechanism for raising and lowering the same, which mechanism will now be described.

*b b* are two carriers, each of which is provided with two pairs of grooved rollers *c c*, which are journaled upon shafts *d d*, rigidly secured to said carrier and by which the carriers travel upon transverse tracks *e e*, secured to the inner sides of bars *A' A'*, fastened on top of the bolsters *C C*, and over the tracks *e e* are auxiliary tracks *f f*, which are secured to the frame A. From each of said carriers depends a pair of hangers *g g*, one of which is formed integral with said carrier and the other secured thereto by means of bolts *h*, although both may be formed integral with the same.

D is a right-and-left revoluble screw which passes through openings *i i* in the hangers *g g* and independent thereof and is journaled in suitable bearings *j j*, secured to the



underside of the frame A. Said screw is parallel with the aforesaid tracks and is provided with two nuts *k k*, interposed between the respective pairs of hangers *g g*, and said nuts are each formed with a lip *l*, which is between two bolts *m m*, secured to the hangers, whereby the nut is prevented from turning on said screw. The screw receives its rotation from a shaft *n*, which is parallel thereto and connected to the screw by means of pinions *o o* and gears *p p*, secured to the shaft and screw, respectively. Said shaft is journaled in bearings *q q* on the under side of the frame A, and the ends thereof are formed square or otherwise for the attachment of a hand-crank. (Not shown.) The ends of the screw are similarly formed, so that the hand-crank may be applied directly to said screw, which is desirable in lowering the wagon-body.

*r r* denote braces which extend in pairs from the respective hangers *g g* to the wagon-body B and crossing each other, each of said pairs being pivotally connected to one of the hangers below the screw D by means of a bolt *s* passing through the braces and through a sleeve *t*, formed integral with a sleeve *u*, which is secured to said hanger by a bolt *v*. Said pairs of braces are also pivoted to the body and at points equidistant from the center of the width thereof by means of bolts *a' a'* passing through the braces and through sleeves *b' b'*, formed integral with sleeves *c' c'*, which are in turn pivoted to brackets *d' d'* by means of a bolt *d'*, which brackets are attached to a cross-bar *e'*, secured to the under side of the body.

The operation of the described mechanism is as follows: When the screw D is rotated, the nuts *k k* thereon are made to travel toward each other and by engaging the hangers *g g* are sustained against rotation, as aforesaid. The carriers *b b* are caused to travel likewise on tracks *e e*, whereby the braces *r r* lift the body B, as shown in Fig. 3 of the drawings. When the body has been elevated, the gate B' at the rear end of the body is raised, whereby the load is automatically discharged through the opening C'. When it is desired to convey the discharge directly to the rear of the wagon, a chute D' may be employed, in which case said chute is detachably connected to a rod *f'*, secured to the under side of the body. In cases where it is necessary to discharge the load toward either side of the wagon-body I provide the device hereinbefore referred to and which is clearly illustrated in Figs. 6, 7, and 8 of the drawings. This device comprises a guide *g'*, consisting of a plate disposed flatwise and provided at its forward end with hooks *h' h'*, by which it is detachably connected to the aforesaid rod *f'*. Said guide has its side edges converging rearward, as clearly shown in Fig. 7, and at the point of convergency is secured a post *i'*, to which are hinged wings *j' j'*. Said wings are each provided with a suitable catch *k'* at its free

end by which to lock the same to the guide. By retaining the wing on one side to the guide in its locked position it will be seen that the discharge will be directed toward the opposite side.

When the device just described is employed, the chute D' is attached to the guide *g'*, preferably by means of a rod *l'*, secured to the under side of the guide, although any other suitable attachment may be employed. I provide two of the rods *l'*, which rods are parallel to the aforesaid converging side edges of the guide.

To support the outer or rear end of the guide *g'*, I preferably provide a chain *m'*, secured at its lower end to the aforesaid post *i'* and its upper end to the body B.

In reference to the mechanism hereinbefore described for elevating and lowering the wagon-body it should be noted that the same may be located under the central portion of the body, as well as in the position shown. I therefore do not limit myself in that respect.

What I claim as my invention is—

1. The combination with the running-gear, a frame mounted thereon and the wagon-body pivoted at its rear end directly to said frame, of a right-and-left transverse screw supported revolubly on said frame, carriers movable on said frame, nuts applied to said screw and moving said carriers, and rigidly connected to the carriers, and braces transmitting vertical motion from said carriers to the front end of the body.

2. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivoted at its rear end directly to said frame, of a transverse right-and-left screw supported revolubly on said frame, carriers movable on said frame, nuts applied to said screw and moving said carriers, and rigidly connected to the carriers, and braces crossing each other and transmitting vertical movement from the carriers to the front end of the body at points equidistant from the center of the width thereof.

3. The combination with the running-gear, a frame mounted stationary thereon, and the wagon-body pivoted at its rear end directly to said frame, of a transverse right-and-left screw journaled in bearings on said frame, tracks sustained on said frame parallel with said screw, carriers mounted movably on said tracks, nuts applied to the screw and moving said carriers and rigidly connected to the carriers, and braces extending from the carriers to the body and pivotally connected to said parts.

4. The combination with the running-gear, a frame mounted stationary thereon, and the wagon-body pivoted at its rear end directly to said frame, of a revoluble horizontal right-and-left screw supported transversely on the forward portion of the frame, two pairs of tracks sustained on said frame parallel with the screw, nuts applied to the screw, carriers provided with rollers traveling between said



pairs of tracks and moving said carriers, and braces crossing each other and transmitting vertical movement from the carriers to the front end portion of the body as set forth.

5 5. The combination with the running-gear, a frame mounted stationary thereon, and the wagon-body pivotally supported at its rear end on said frame, of a revoluble right-and-left screw supported transversely on the forward portion of the frame, two pairs of  
10 tracks secured to said frame parallel with the screw, carriers provided with rollers traveling between said pairs of tracks, hangers depending from said carriers, nuts rigidly  
15 connected to said hangers and mounted on the aforesaid screw, and braces extending from said hangers beneath the screw to the front end portion of the body as set forth.

6. The combination with the running-gear, a frame mounted stationary thereon, and the wagon-body pivotally supported at its rear end on said frame, of a revoluble right-and-left screw, supported transversely on the forward portion of said frame, two pairs of  
25 tracks secured to the frame parallel with the screw, carriers provided with rollers traveling between said pairs of tracks, nuts applied to the screw and rigidly connected to said carriers, brackets fastened to the body, a rod tying the brackets to each other, sleeves  
30 mounted on said rod, and braces crossing each other and connecting the aforesaid carriers to the sleeves on the opposite ends of the aforesaid rod as set forth.

35 7. The combination with the running-gear, a frame mounted stationary thereon, and the wagon-body pivotally supported at its rear end on said frame, of a revoluble right-and-left screw supported transversely on the forward portion of the frame, tracks secured to  
40 said frame parallel with the screw, carriers riding on said tracks, hangers depending from said carriers, nuts sustained on said hangers and connected to the screw, brackets fastened to the body at opposite sides of the center thereof, sleeves pivotally supported on  
45 said brackets, and braces crossing each other and connected to the hangers beneath the nuts and to the aforesaid sleeves as set forth.

50 8. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivotally mounted at its rear end on said frame, two pairs of tracks secured to said frame, carriers provided with rollers  
55 traveling between said pairs of tracks and connected to the front end portion of said body to raise and lower the same, a transverse revoluble right-and-left screw journaled on the frame, and nuts on said screw and  
60 moving said carriers and rigidly connected to the same substantially as described.

9. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivoted at its rear end directly to the frame, of two pairs of tracks secured to the  
65 frame, carriers provided with rollers travel-

ing between said pairs of tracks, a pair of hangers depending from each of said carriers and provided with openings, a transverse revoluble right-and-left screw journaled on said  
70 frame and passing through said openings and independent of the hangers, nuts on said screw and rigidly connected to said hangers, and braces extending from said hangers, below the screw, to the body, substantially as  
75 described.

10. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivoted at its rear directly to said frame, of two pairs of tracks secured to said frame, carriers provided with rollers traveling between  
80 said tracks and connected to the front end portion of the body to raise and lower the same, and means to move said carriers substantially as described.

11. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivoted at its rear end directly to said frame, of two pairs of tracks secured to said frame, carriers provided with rollers traveling  
85 between said tracks, hangers depending from said carriers, braces extending from said hangers to the body and pivotally connected to said parts, and means engaging said hangers to transmit motion to said carriers substantially as described.

12. The combination with the running-gear, a frame mounted thereon, and the wagon-body pivotally supported at its rear end on the frame, of tracks secured to said frame, carriers riding on said tracks, hangers depending from said carriers, and provided with  
90 openings, a revoluble right-and-left screw journaled on the aforesaid frame and passing through said openings independent of the hangers, nuts between said hangers and applied to the screw, lips formed on said nuts, means on the hangers engaging said lips to prevent said nuts from turning, and braces  
95 extending from said hangers to the wagon-body substantially as described.

13. The combination with the wagon-body provided with a discharge-gate, of wings sustained adjustably at the center of the width of said gate to guide the discharge from either  
100 side of the body, and provided with means for locking the same in operative position substantially as described.

14. The combination with the wagon-body provided with a discharge-gate, of a rearwardly-extending guide detachably secured to said body at the base of the discharge-opening and having its sides converging rearwardly, wings secured adjustably on said  
105 guide to direct the discharge toward either side of the body, and chute-supports on said guide and parallel to the sides thereof substantially as set forth.

15. The combination with the wagon-body provided with a discharge-gate, of a rearwardly-extending guide detachably connected to said body at the base of the discharge-  
110 115 120 125 130



opening and provided at its rear end with a post, wings hinged to said post to direct the discharge toward either side of the body, means to lock the free ends of said wings to the guide, and chute-supports on the under side of said guide, substantially as described.

16. The combination with the wagon-body provided with a discharge-gate, of a guide detachably connected to the body at the base of the discharge-opening and consisting of a plate having its side edges converging rearwardly, and wings pivoted to said guide at the point of convergency to direct the discharge toward either side of the body, and means to lock the free ends of said wings to the guide, substantially as set forth.

17. The combination with the wagon-body provided with a discharge-gate, of a guide detachably connected to the body at the base of the discharge-opening and consisting of a plate having its side edges converging rearwardly, a post secured to said guide at the point of convergency, wings hinged to said post to direct the discharge toward either side of the body, independent means for locking each of the wings in operative position and chute-supports secured to said guide substantially as set forth.

18. The combination with the wagon-body provided with a discharge-gate and a transverse rod secured to the under side thereof, of a rearwardly-extending guide consisting of a plate provided with hooks by which it is detachably connected to said rod, and having its side edges converging rearwardly, a post secured to said guide at the point of convergency, wings hinged to said post to direct the discharge toward either side of the body, rods secured to the under side of said guide and

parallel to its side edges to support the chute substantially as set forth.

19. The combination with the wagon-body provided with a discharge-gate, of a rearwardly-extending guide detachably connected to said body at the base of the discharge-opening, means for supporting the rear end of said guide, a post secured to the guide at the center of its width, wings hinged at one of their ends to said post to direct the discharge toward either side of the body, catches for locking the free ends of said wings to the guide, and chute-supports on said guide substantially as set forth.

20. The combination with the wagon-body provided with a discharge-gate, of a rearwardly-extending guide detachably connected to said body at the base of the discharge-opening, a post secured to the rear end of said guide, means connecting said post to the body to support the rear end of the guide, wings hinged to said post to direct the discharge toward either side of the body, means for locking the wings to the guide, and a chute detachably connected to said guide, as set forth.

21. The combination with the wagon-body provided with a discharge-gate, of a guide extending across the base of the discharge-opening and having its sides converging rearward, wings sustained over the center of the width of said guide and adjustable to direct the discharge toward either side of the body, and means to lock said wings to the guide and parallel to the sides thereof, substantially as described.

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Witnesses:

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