

No. 772,049.

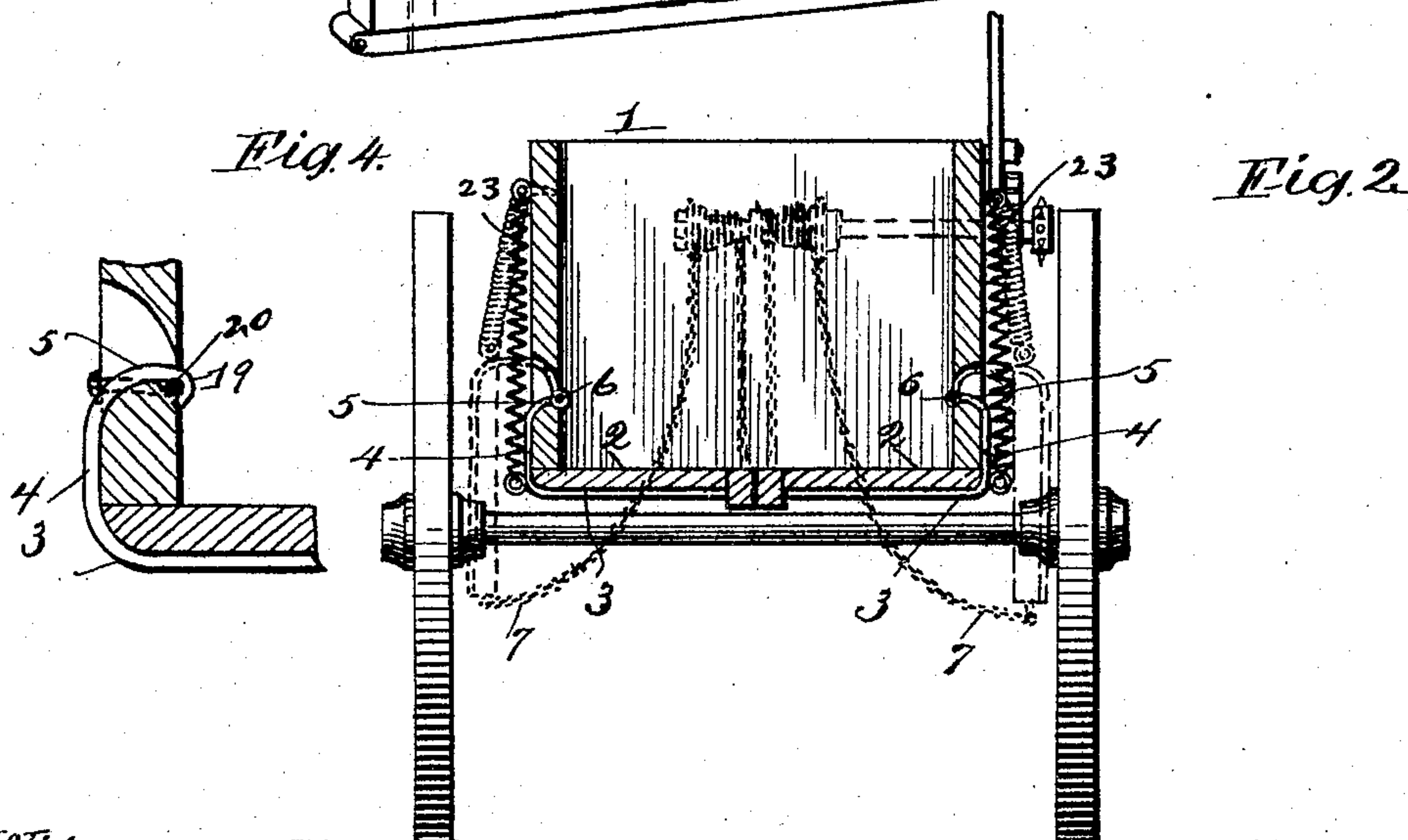
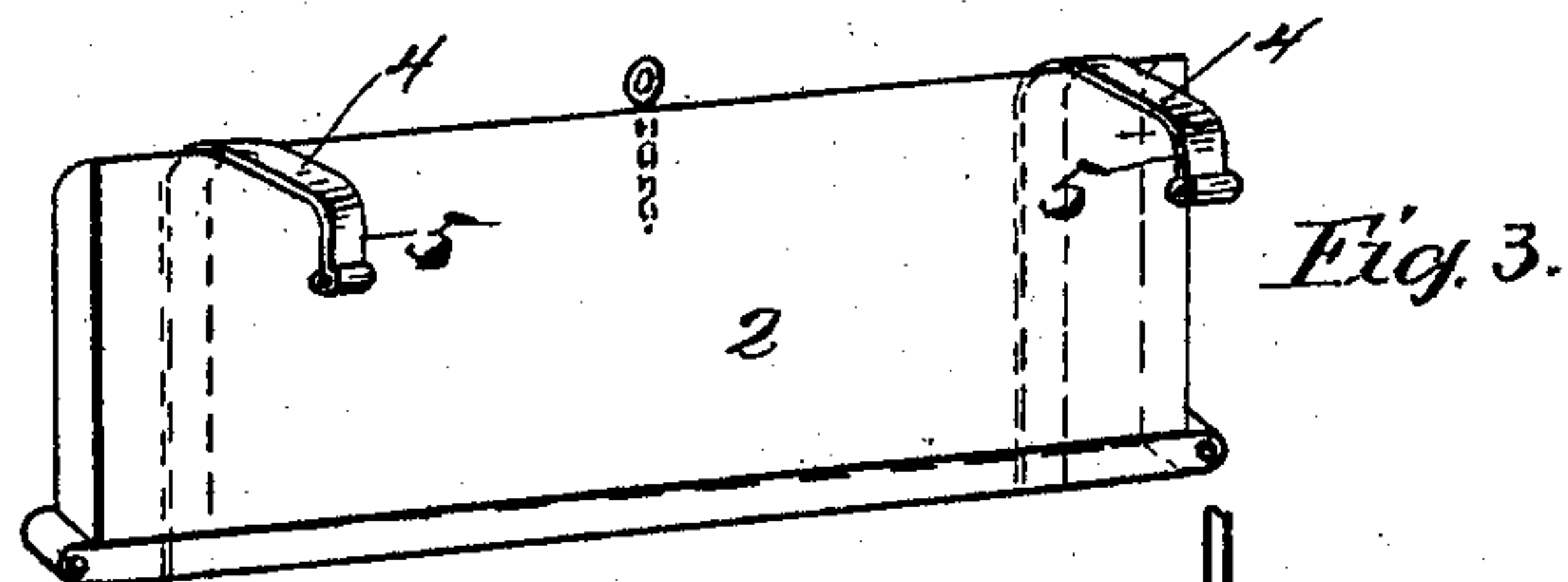
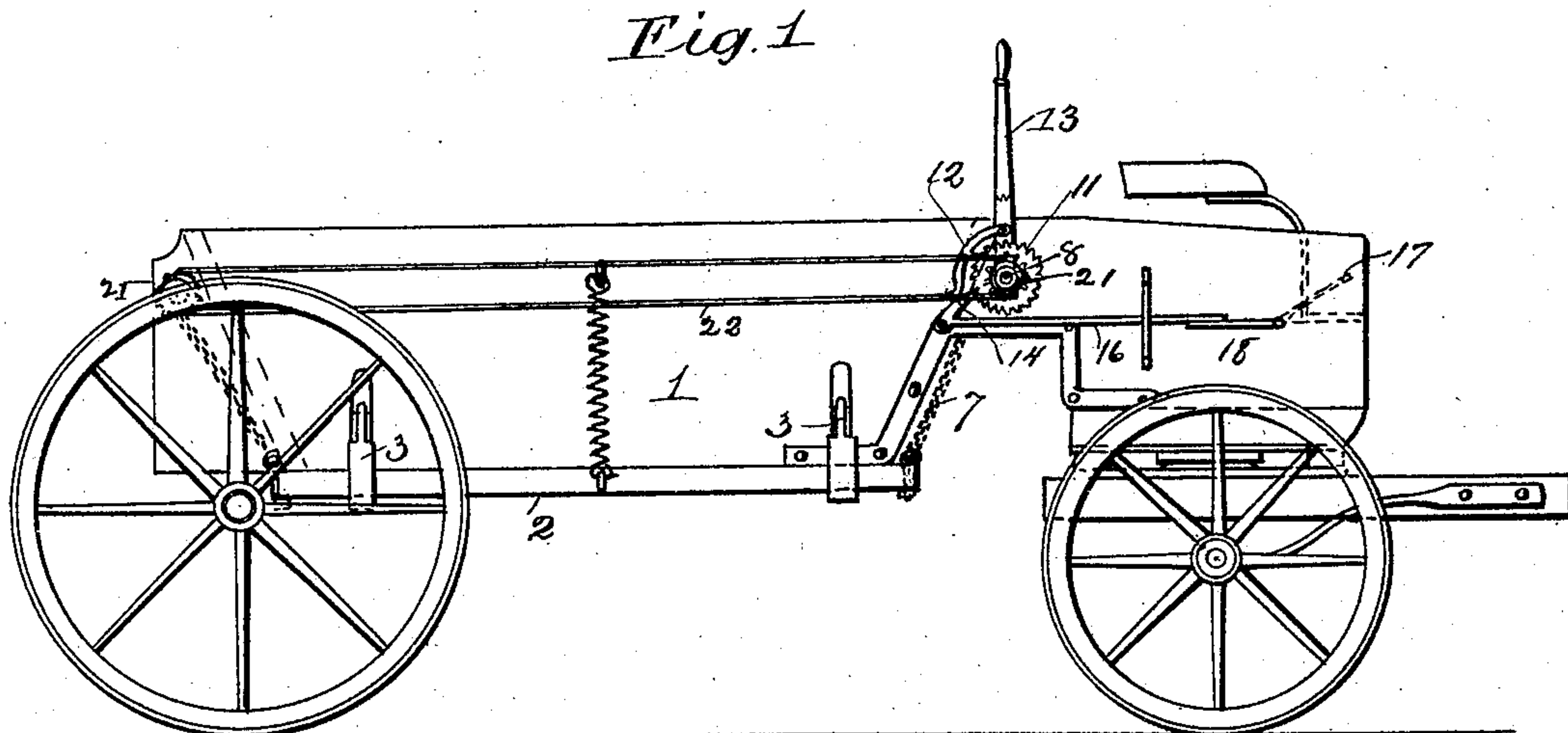
PATENTED OCT. 11, 1904.

J. D. OLCOTT.
DUMP WAGON.

APPLICATION FILED MAY 7, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses

Hellie Evers
Geo. S. Cole

Inventor
John D. Olcott
By Wm. M. Monroe
Attorney

No. 772,049.

PATENTED OCT. 11, 1904.

J. D. OLCOTT.
DUMP WAGON.

APPLICATION FILED MAY 7, 1904.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 5

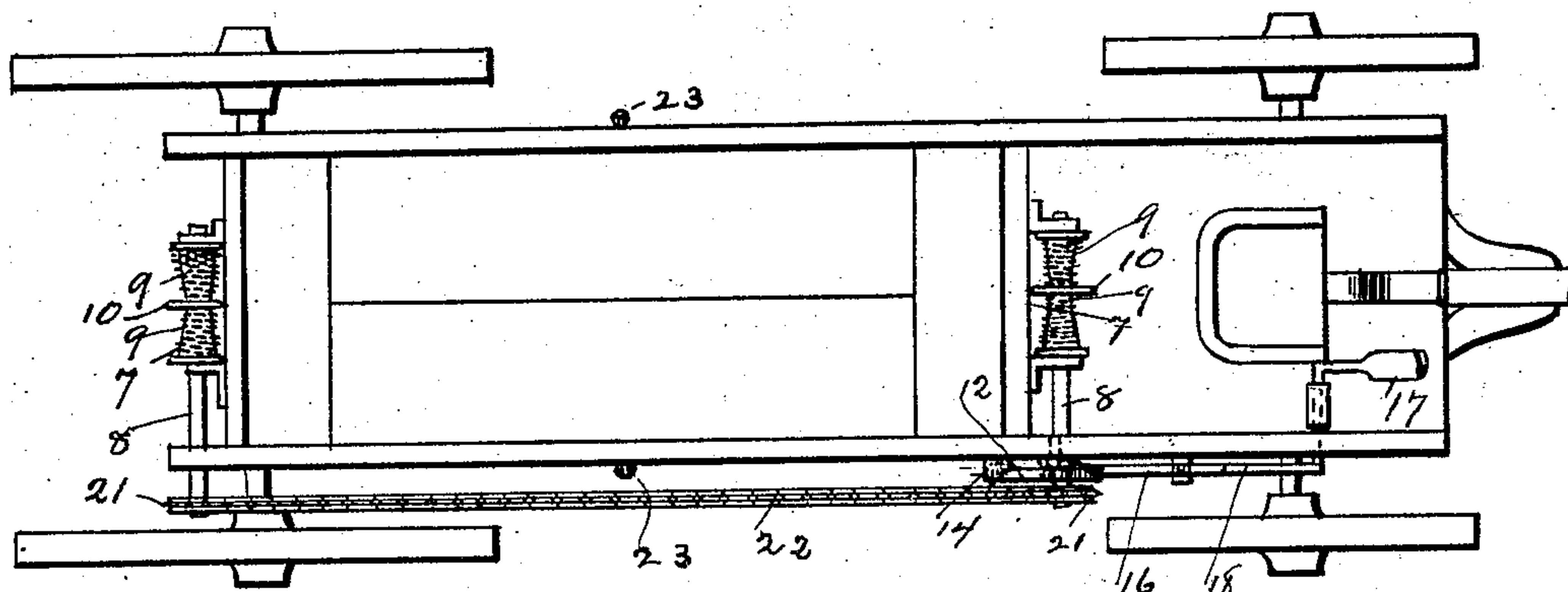


Fig. 8.

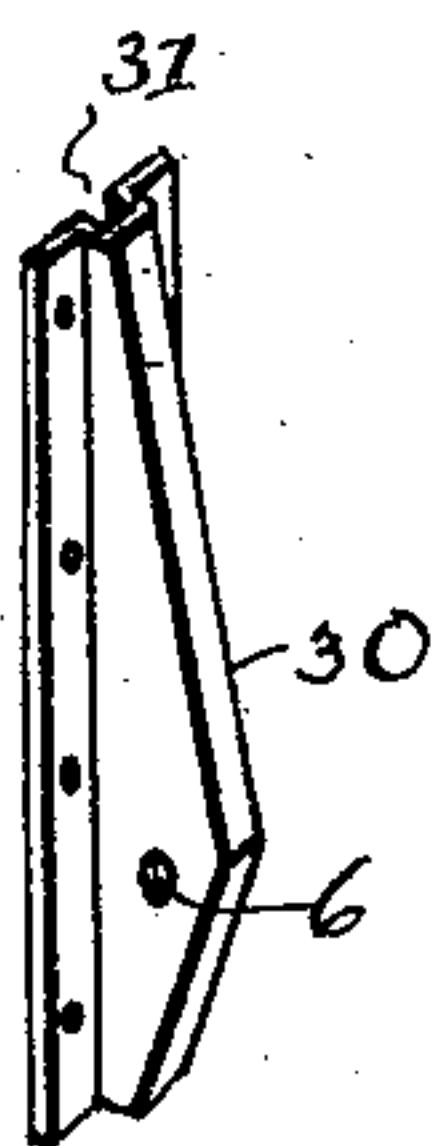


Fig. 6.

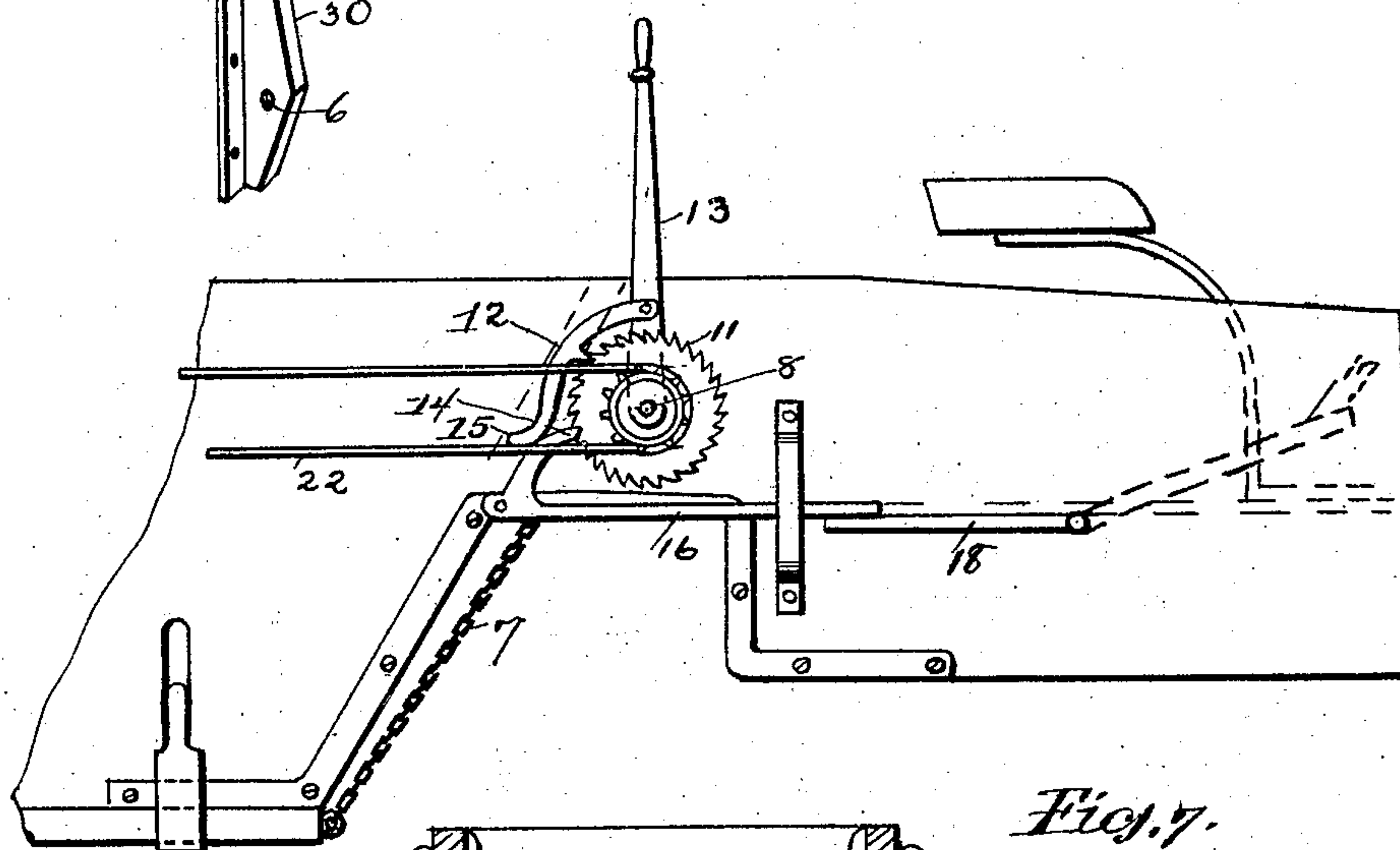
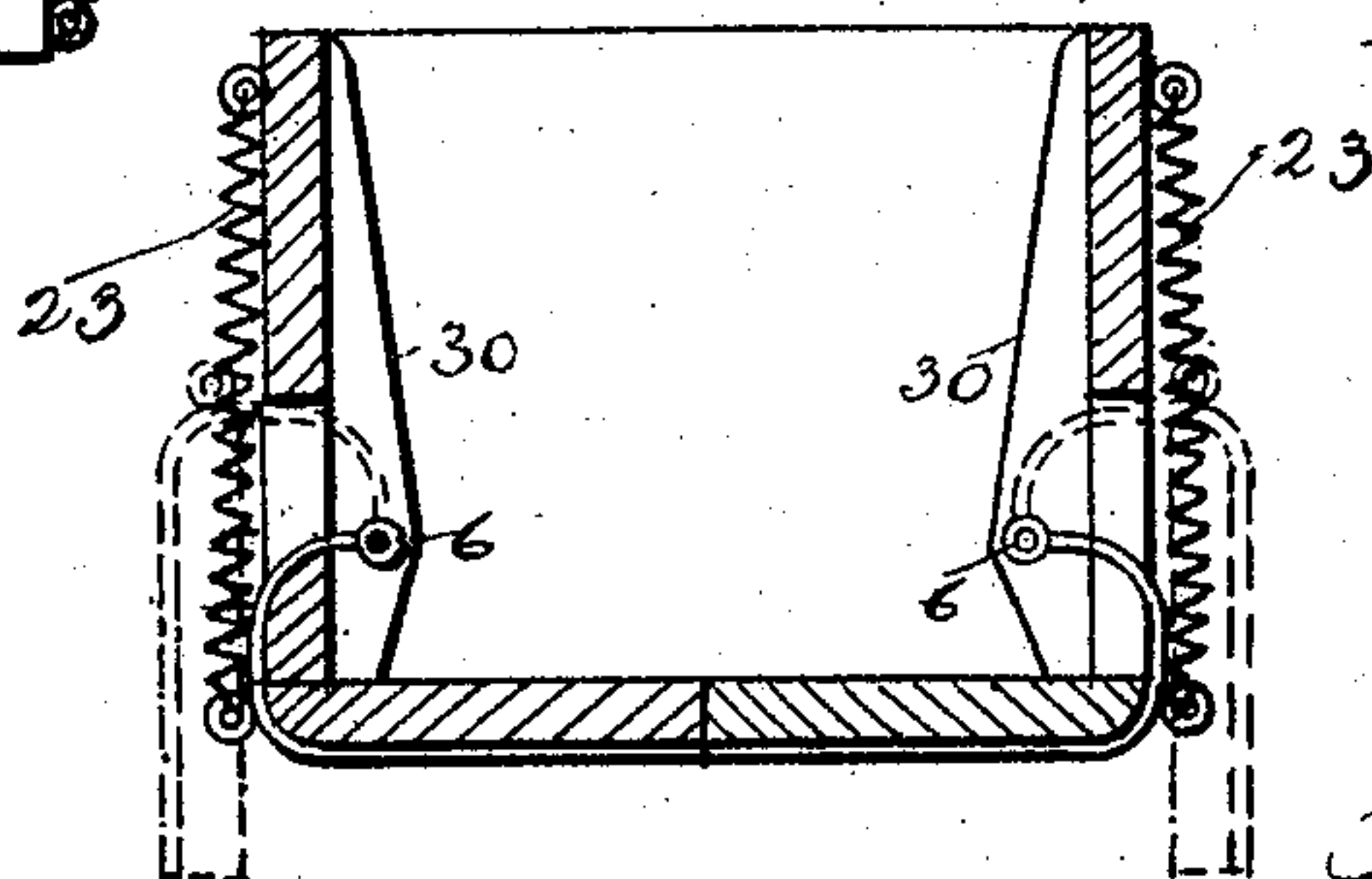


Fig. 7.



Witnesses
Geo. D. Kain
Geo. S. Cole

Inventor
John D. Olcott
By Wm. H. Horner
Attorney

UNITED STATES PATENT OFFICE.

JOHN D. OLCOTT, OF NORWALK, OHIO.

DUMP-WAGON.

SPECIFICATION forming part of Letters Patent No. 772,049, dated October 11, 1904.

Application filed May 7, 1904. Serial No. 206,862. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. OLCOTT, a citizen of the United States, and a resident of Norwalk, county of Huron, State of Ohio, have invented certain new and useful Improvements in Dump-Wagons, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of dump-wagons in which the bottom of the wagon is divided into two sections arranged to form drop-doors and to open downwardly to permit the dumping of the load.

The objects of the invention are to so hang or pivot the drop-doors upon the sides of the wagon as to insure a considerable elevation of the lower edges of the doors above the dumped material when the doors have swung to the open position, so that the wagon can readily be drawn away from the dump without danger of mutilating the front edges of the doors by striking them against the dump.

I am aware that a dump-wagon has been used in which the material novelty of the hinge-straps for the drop-doors consisted in bending their outer extremities at right angles to the plane of the door and pivoting them at some elevation above the lower edges of the side-boards of the wagon. By this means a slight elevation was given the lower edges of the doors as they swung outward toward complete opening; but the vertical position of the doors could not be obtained except as the doors were pressed outward by the force of the load.

My objects are to obtain a still greater elevation of the doors, and thereby secure greater practicability and efficiency in the use of the wagon than is disclosed in that invention.

To obtain the foregoing and other useful objects, my invention consists in the forms of construction and combination of parts as hereinafter set forth, shown in the accompanying drawings, and specified in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved wagon. Fig. 2 is a transverse section thereof. Fig. 3 is a perspective view of one of the drop-doors,

showing the forms of the hinge-straps. Fig. 4 is a broken section showing one method of pivoting the straps to the wagon sides. Fig. 5 is a plan view of the wagon. Fig. 6 is an enlarged side elevation of front end of wagon-box, showing the ratchet mechanism for the windlass. Fig. 7 is a similar section to Fig. 4, showing the pivots farther within the wagon-body. Fig. 8 is a detail view of cleat which supports the hinge-eyes of the doors.

In the views, 1 is a rectangular wagon-body provided with side pieces and preferably sloping ends. The bottom of this body is divided centrally into two equal sections 2, which are hung by means of hinge-straps 3, secured to their lower faces and projecting at their outer edges. These straps are first bent upwardly at an angle, as at 4, and again inwardly, as at 5, and are pivoted upon the wagon sides at or near their inner faces, as at 6, above their lower edges. If the said straps pass through the wooden sides, as shown in the figures, the wood must be recessed or slotted to receive them. The sharp angles in the straps may be altered, by means of curves, to avoid striking the rear wheel as the doors move outwardly. The inner edges of the doors are supported by means of chains 7 or other flexible connections, which pass from the doors to the windlasses on the end-boards of the wagon, by means of which windlasses the chains are coiled up and the doors are raised to the closed position. The chains are purposely placed exterior to the wagon-body, so as to avoid any excessive friction in the material composing the load and to accelerate the free dumping action thereby.

Any practical form of windlass might be employed with the improved manner of suspending the doors; but I think best to employ oppositely-placed conical drums 9 on each windlass-shaft 8, the tapered extremities of the drums abutting together. This form of construction enables the chains to coil and uncoil on the drums without overlapping in the slightest degree. The disk 10 separates the chains. A ratchet device is shown in Figs. 1 and 6, where 11 is the ratchet-wheel, 12 is a pawl upon the operating-lever 13, and 14 is a pawl or keeper pivoted upon the

wagon. The pawl 12 engages at its extended extremity 15 with the pawl 14, and a horizontal arm or extension 16 therefrom enables the driver to release both pawls from the ratchet-wheel 11 by means of the foot-lever 17 and rear arm 18, which lies under the arm 16. The keeper 14 checks the ratchet-wheel when the operator is windlassing up the doors, and the foot-lever releases both pawls and permits the chains to play out and drop the doors for dumping.

The entire action of the wagon is characterized by great freedom and practical utility.

The peculiar form of hinge enables the doors to rise automatically by swinging back to some distance above the dump, the U shape of the strap-hinges permitting such action, and the doors can readily be closed by means of the windlass-chains.

The windlass is alike at each end of the wagon, and sprocket-wheels 21 upon the windlass-shafts are connected by means of the endless chain 22, so that the ends of the doors move simultaneously.

Although the shape of the hinge-straps permits of considerable elevation of the doors, they will not, if left to themselves, hang vertically. To accomplish this, I provide means whereby they can be raised still higher upon their pivots and stand vertically outside the wagon-box. This is accomplished by means of springs 23, secured to the outer sides of the wagon-body and to the outer edges of the doors. The act of windlassing the doors will readily close them against the tension of the springs; but as soon as the doors swing downwardly the momentum thereof, together with the tension of the springs, will at once raise the doors to the vertical position. If the doors do not stand vertically, they oppose some resistance to the fall of the load, since the load must hold them back until it is discharged. Still greater efficiency in the dumping action is therefore obtained by means of the springs and also a greater elevation of the doors, as clearly seen by inspection of Fig. 2 in dotted lines.

The exact form of pivot for the straps is not important to the invention; but in Fig. 4 I show a hook form of eye 19 set over a staple 20.

Fig. 7 shows the hinge-eyes set still farther within the body of the wagon and supported upon cleats 30, secured to the inner sides of the wagon. These cleats are shown made of sheet metal bent to inclose the hinge-eyes, as seen in Fig. 8, and also serve to stiffen and support the side-boards of the wagon. The open upper extremities 31 also can be used as sockets for the brackets to support the top box. This may be said to be the preferable form of construction.

An advantage found in this method of supporting the doors is that the wagon sides form

a resting place for the hinge-straps, and so relieve the pivots from a large amount of the strain otherwise brought to bear upon them.

The exact position of the pivotal points of support for the doors on the wagon sides may be varied at pleasure; but the farther within the sides they are placed the less danger there will be of the doors striking the wheels as they rise. They may even be placed upon the exterior of the wagon sides if the wheels are far enough apart to permit it.

The twice-bent double-elbow or U shape of the hinge-straps is important, slight variations of the angle not interfering with the action heretofore described.

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

1. The combination with the body of a dump-wagon, of drop-doors forming the bottom thereof, flexible connections substantially as described, arranged to support the inner edges of said doors, and pivot-hinges for the outer edges comprising, upwardly-bent straps secured at their lower edges to said doors, and provided with inwardly-bent upper extremities, and pivot-eyes upon said extremities, and pivotal means of attachment for said eyes within the outer planes of the sides of the wagon, substantially as described.

2. The combination with the rectangular body of a dump-wagon, of a bottom therefor centrally divided to form drop-doors, flexible means for supporting the inner edges of said doors, and pivot-hinges for the outer edges of said doors, comprising hinge-straps upon the doors twice bent at approximately right angles and extending inwardly at their upper extremities, and pivotal supports for said straps within the outer planes of said wagon sides, substantially as described.

3. The combination with a dump-wagon body, of a bottom therefor centrally divided to form two drop-doors, flexible means for supporting the inner edges of the doors, means for closing and releasing the same, and means for pivotally connecting the outer edges of the doors and wagon sides whereby the doors will be elevated bodily up the wagon sides when released, comprising hinge-straps twice bent at approximately right angles and pivoted to said wagon sides, substantially as described.

4. The combination with the body of a dump-wagon, of a bottom therefor comprising drop-doors, flexible means for supporting said doors, means for releasing said doors at their inner edges, and pivotal connections for the outer edges of said doors, with the sides of the wagon, consisting of hinge-straps twice bent at approximately right angles, and having their upper extremities extending inwardly, and pivots upon said wagon sides to which the said extremities are attached, and means

for supporting the said drop-doors in a vertical and elevated position when released, substantially as described.

5 5. The combination with a dump-wagon body, of a bottom therefor comprising duplicate drop-doors, means for supporting and releasing said doors at their inner edges, means for pivotally supporting said doors at their outer edges, comprising twice-bent hinge-
10 straps, secured at their lower ends to said doors, and extending inwardly at their upper extremities, and cleats upon the inner faces of the wagon sides to which said inner extremities are pivoted, substantially as described.

15 6. The combination with the body of a dump-wagon, of drop-doors forming the bottom thereof, flexible means for securing the inner edges of the doors, means for releasing said flexible means, and means for pivoting the
20 drop-doors to obtain elevation thereof upon the outsides of the wagon when released, and a spring for each door arranged to support the same in the vertical position when released.

25 7. The combination with the side of a dump-wagon of a drop-door, and a pivoted connection for its outer edge with the wagon side, comprising hinge-straps secured to said drop-door at its outer edge, said straps being bent
30 upwardly, and at the upper ends, inwardly, recesses in the wagon side through which said inwardly-bent strap extremities pass, and pivotal points of attachment for said strap extremities, within the plane of the outer side of said wagon side, substantially as described.

35 8. In a dump-wagon, a box, in combination with gravity drop-doors, hinge-straps supporting said doors, the lower extremities of said straps being secured to said doors, and their upper extremities being twice bent to
40 form separate angles, pivotal supports for said straps secured to the inner sides of said box, between the upper and lower edges thereof, the said sides of said wagon-box being provided with slots through which said straps
45 pass, and said supports being adapted to inclose said strap extremities and pivotal points, substantially as described.

50 9. The combination with the sides of a dump-wagon of drop-doors forming the bottom thereof, and means for pivoting the outer ends of the doors to the wagon sides, consisting of upwardly and inwardly bent hinge-straps, secured to said wagon sides above their lower edges, whereby the upper edges of the doors

will rise above the points of pivotal attachment when opened to a vertical position, substantially as described. 55

10. In a dump-wagon a box provided with pivoted gravity drop-doors in combination with means for closing said doors from their
60 inner edges, and for releasing the same, double-elbow hinge-straps to which said doors are secured at their outer edges and pivotal upper extremities for said hinge-straps secured to said wagon sides, substantially as described. 65

11. In combination with the sides of a dump-wagon or other receptacle, gravity drop-doors, pivotally supported at their outer edges on
70 said receptacle sides, above the lower edges thereof, the said pivotal supports permitting the doors when dropped to the vertical position to rise at their upper edges above the pivotal points of support upon said wagon
75 sides, and means for raising said drop-doors, automatically to the vertical position, substantially as described.

12. The combination with the sides of a dump-wagon, of gravity drop-doors pivotally supported at their outer edges on fixed pivots,
80 on said wagon sides, for downward, outward, and upward movement, means for raising said doors automatically up the sides of the wagon, flexible means for closing said doors, and oppositely-placed conical windlass-drums, upon
85 which said flexible means are wound, and means for releasing said windlass-drums, substantially as set forth.

13. A hinge-strap for the drop-door of a dump-wagon body, comprising a portion attached to the outer edge of said door, and having
90 its upper extremity bent inwardly over said door, and a portion in said extremity adapted for pivotal attachment to said wagon-body.

14. In a dump-wagon, the combination with
95 the wagon-box, of two gravity drop-doors, means for pivotally supporting said doors on said wagon sides, comprising U-shaped or twice-bent straps secured to the outer edges of said doors, and pivotal supports at their
100 upper extremities upon said wagon sides, substantially as described.

In testimony whereof I hereunto set my hand this 27th day of April, 1904.

JOHN D. OLCOTT.

Witnesses:

GEO. S. COLE,

WM. M. MONROE.