

No. 822,778.

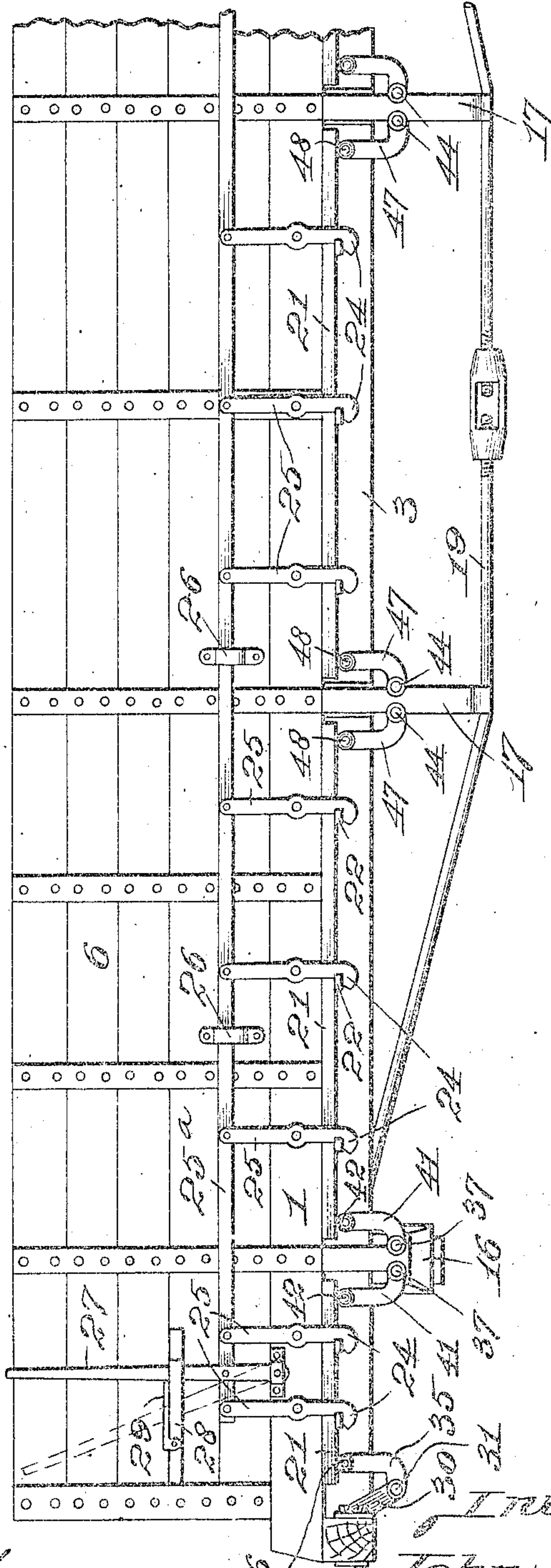
PATENTED JUNE 5, 1906.

J. SHELTON.

DUMP CAR.

APPLICATION FILED AUG. 14, 1905.

3 SHEETS—SHEET 1.



Attest,
W. P. Smith
H. G. Fletcher.

Inventor:
John Shelton,
By Higdon & Fougau
Attys.

No. 822,778.

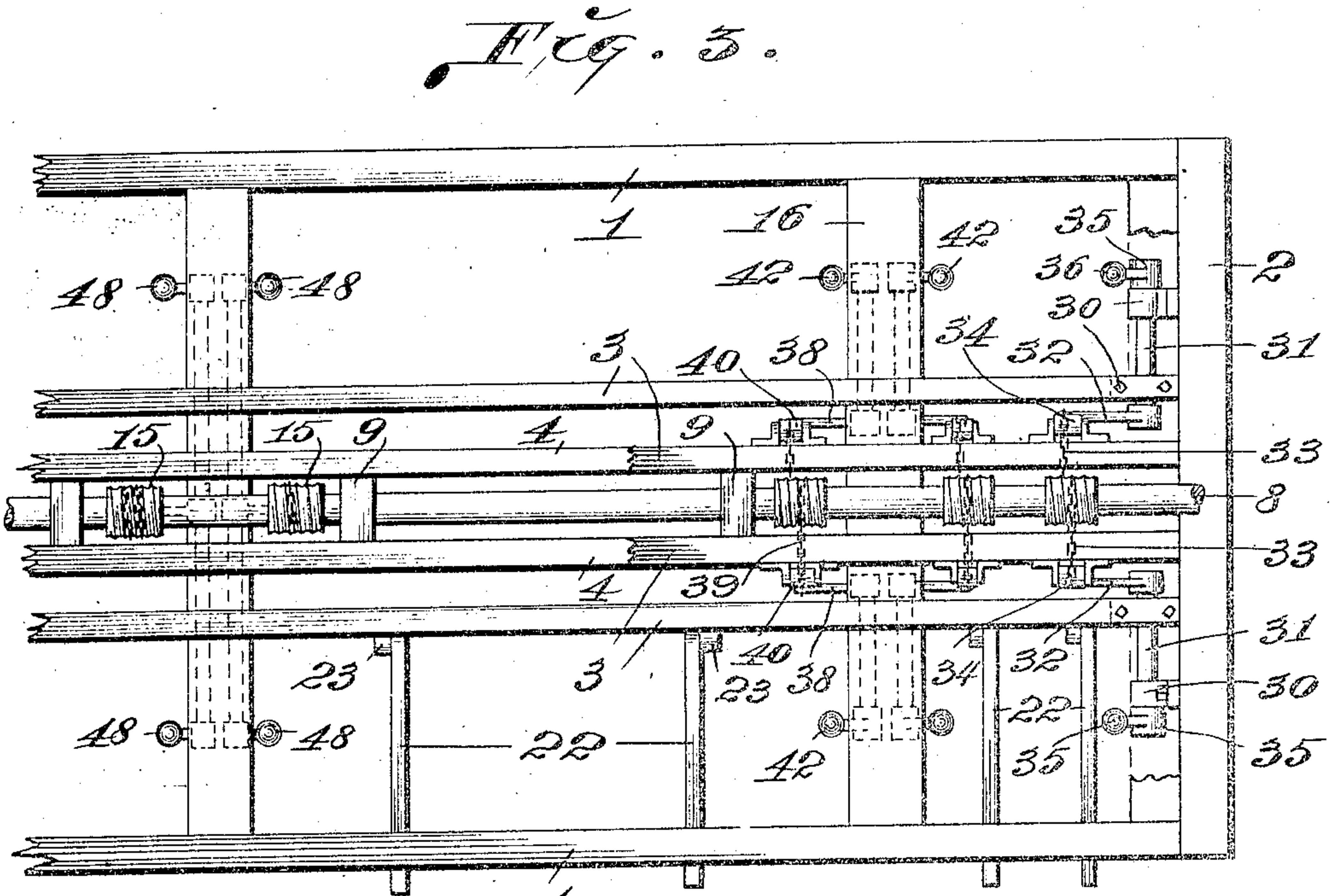
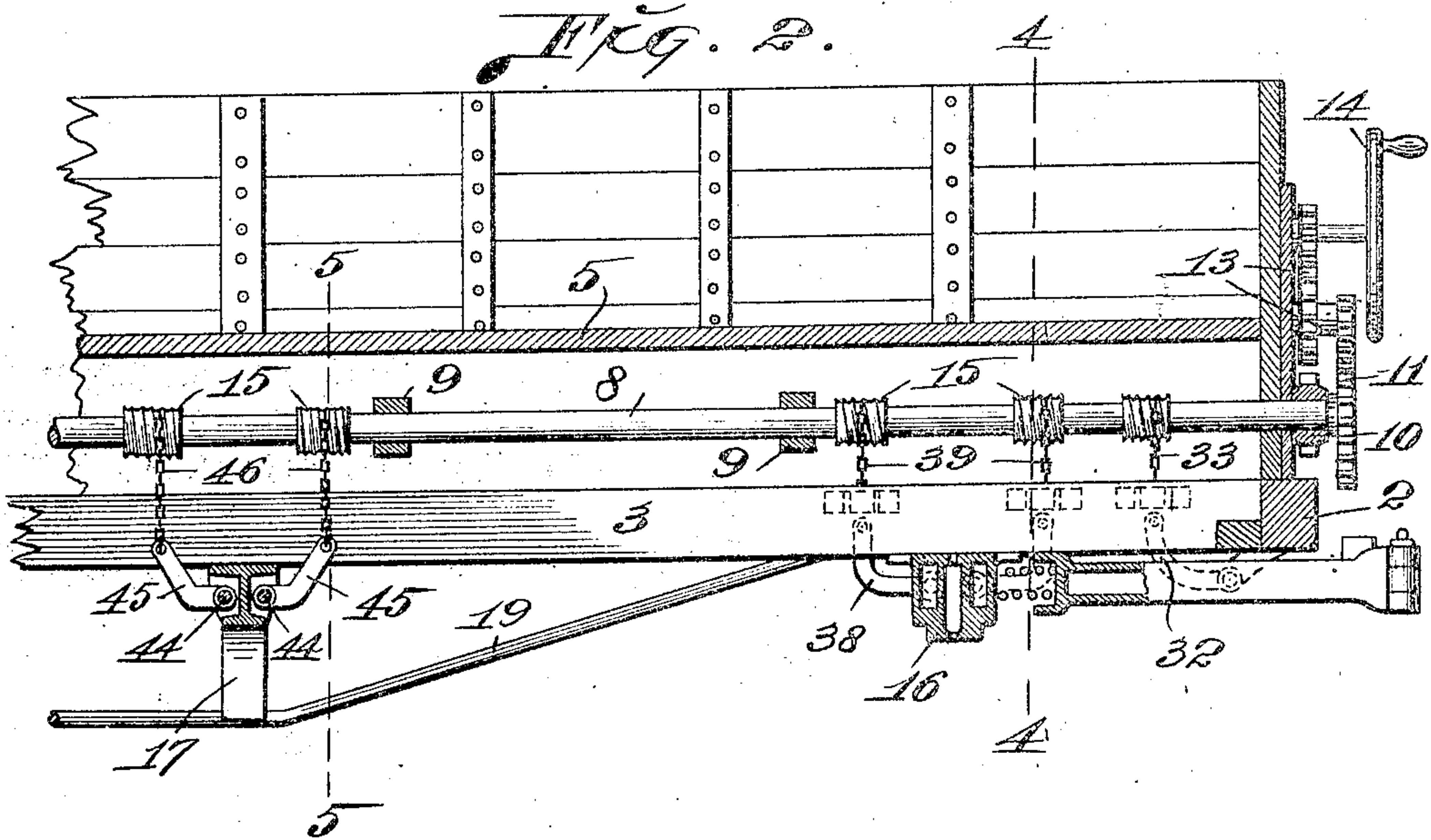
PATENTED JUNE 5, 1906.

J. SHELTON.

DUMP CAR.

APPLICATION FILED AUG. 14, 1905.

3 SHEETS—SHEET 2.



Attest,
W. Smith,
H. J. Fletcher

Inventor,
John Shelton,
By Higdon & Longan,
attys.

No. 822,778.

PATENTED JUNE 5, 1906.

J. SHELTON.
DUMP CAR.

APPLICATION FILED AUG. 14, 1905.

3 SHEETS—SHEET 3.

Fig. 4.

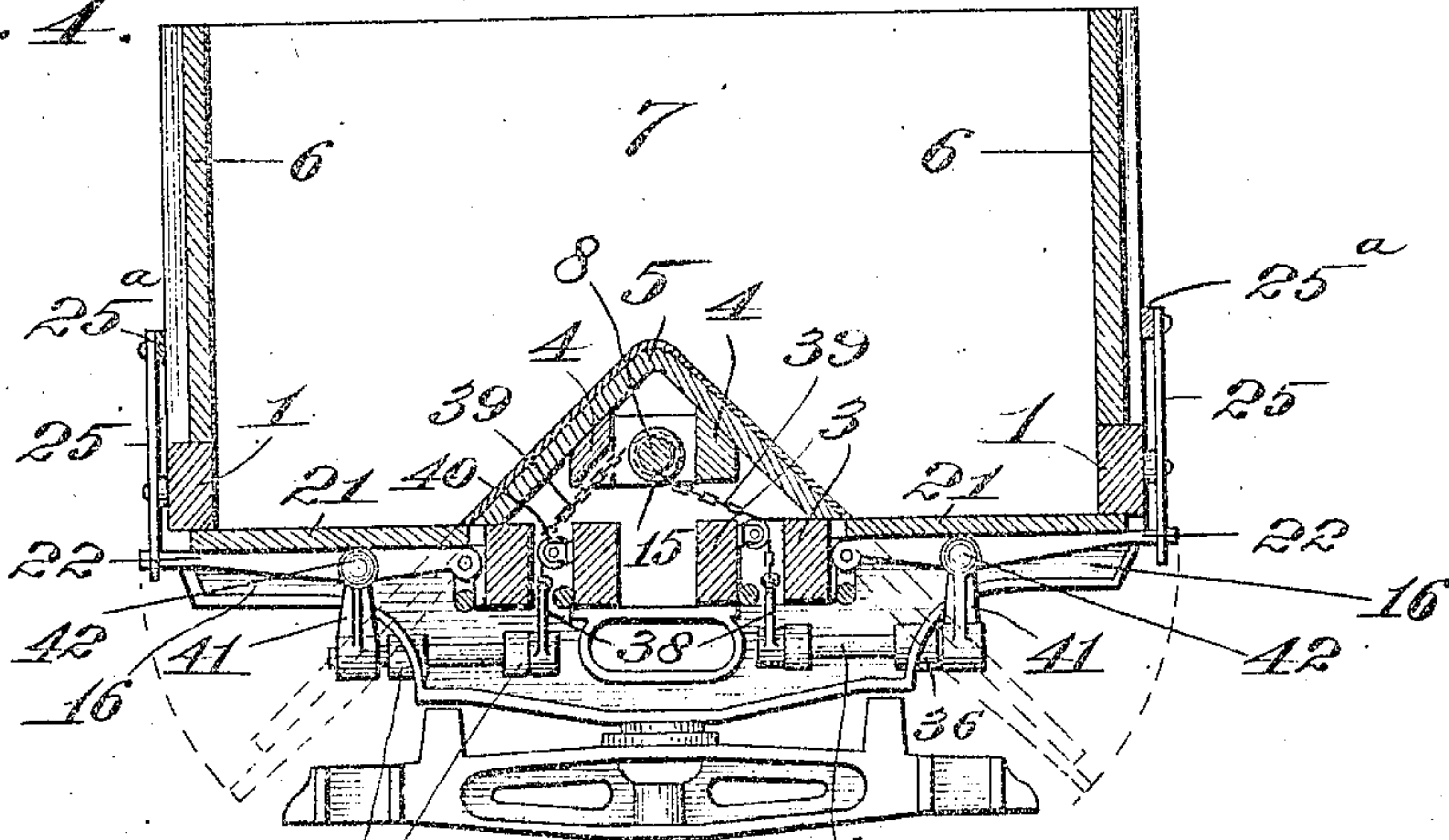


Fig. 5.

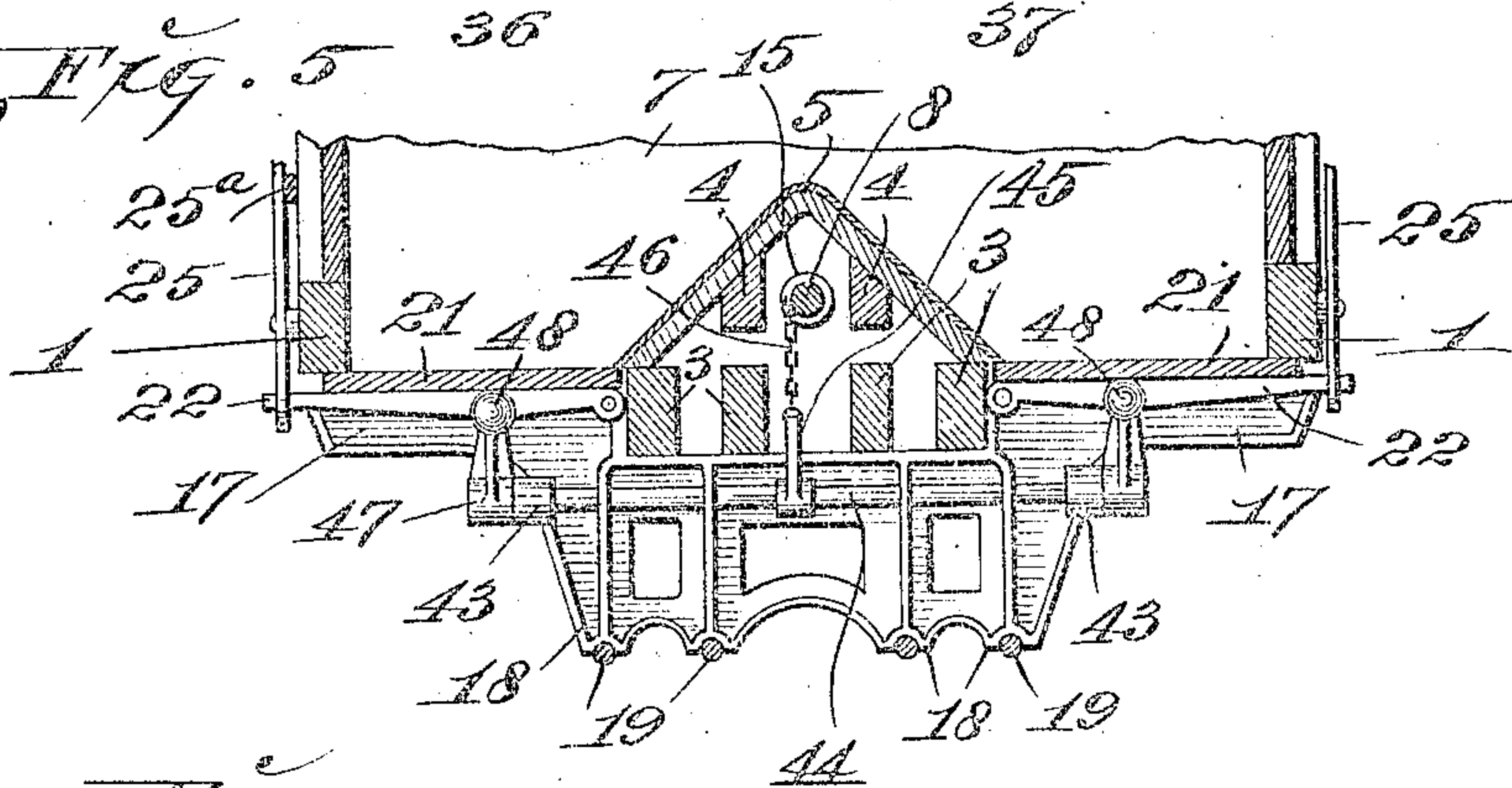
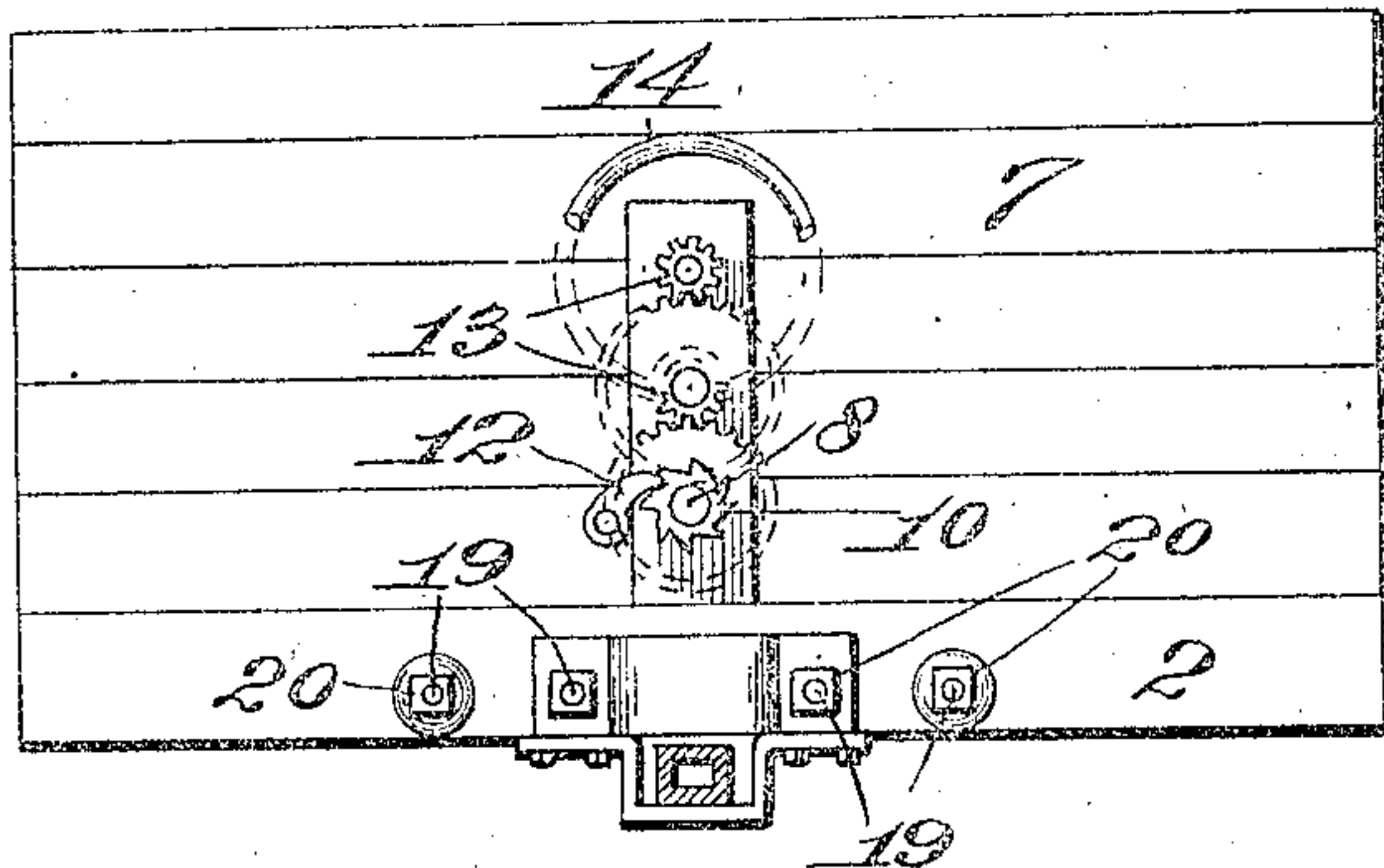


Fig. 6.



Attest,
M. P. Smith
H. J. Fletcher.

Inventor,
John Shelton
By Higdon & Longan,
Attys

UNITED STATES PATENT OFFICE.

JOHN SHELTON, OF DENVER, COLORADO.

DUMP-CAR.

No. 322,778.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed August 14, 1905. Serial No. 274,221.

To all whom it may concern:

Be it known that I, JOHN SHELTON, a citizen of the United States, and a resident of Denver, Denver county, Colorado, have invented certain new and useful Improvements in Dump-Cars, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to a dump-car; and the object of my invention is to construct a simple and inexpensive car adapted for carrying sand or gravel or material used for road ballast and which car is so arranged as that its load may be evenly distributed on each side of the car-track.

A further object of my invention is to arrange the levers that maintain the doors in the bottom of the car in a closed position in suitable bearings on the body-bolsters and the needle-beams and to operate all of said levers simultaneously from a centrally-arranged longitudinally-extending shaft.

To the above purposes my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the left-hand end of a dump-car of my improved construction, both ends thereof being alike in construction. Fig. 2 is a vertical section taken longitudinally through the center of the right-hand end of one of my improved dump-cars. Fig. 3 is a plan view of one end of the car-frame, which frame comprises the side and center sills, end sill, body-bolster, and needle-beam, and also showing the mechanism for raising the doors and holding them closed. Fig. 4 is a transverse section taken approximately on the line 4 4 of Fig. 2. Fig. 5 is a transverse section taken approximately on the line 5 5 of Fig. 2. Fig. 6 is an end elevation of my improved dump-car, showing the gearing for rotating the longitudinally-extending shaft.

In the construction of my improved car I make use of a pair of side sills 1, the end sills 2, the center sills 3, and immediately above the central pair of center sills is a pair of floor-supporting sills 4. This pair of sills 4 supports an inverted-V-shaped floor or bottom 5, which extends longitudinally throughout the length of the car, and its side

edges or lower ends rest directly upon the outer pair of the center sills 3. The side sills 1 support the side walls 6 of the car, and the end sills support the end walls 7. All of the parts just described are of ordinary well-known construction.

Extending longitudinally through the car between the sills 5 is a continuous shaft 8, the ends of which are suitably journaled in the end walls 7 of the car, and suitable journal-boxes 9 are arranged at various points throughout the length of the car between the sills 4. At one end of the car this shaft 8 projects a short distance, and mounted on said projecting end is a ratchet-wheel 10 and a gear-wheel 11. A pawl 12 is pivotally arranged to one side of the ratchet-wheel 10, the point of which pawl engages the teeth of said ratchet-wheel. The gear-wheel 11 is driven by suitable gearing 13, which last-mentioned gearing is operated by a hand-wheel 14, suitably journaled on the end of the car. Located at suitable points along the shaft 8 are winding-drums 15.

Transversely arranged beneath each end of the car at suitable distances from the end sills 2 are the body-bolsters 16, which are preferably constructed of cast metal and which are secured to the under sides of the side sills and the center sills 3 in any suitable manner. Transversely arranged beneath the body of the car, at suitable distances from the body-bolsters, are the needle-beams 17, which are preferably formed of cast metal and which are secured in any suitable manner to the under sides of the side sills 1 and the center sills 3. These needle-beams are provided with downwardly-pending portions 18, that serve as saddles or bearings for the truss-rods 19, which extend from said needle-beams upwardly over the central portions of the body-bolsters 16, and from thence to and through the end sills 2, and nuts 20 are positioned on the end of said truss-rods outside the sills 2.

The spaces between the outer pair of center sills 3 and side sills 1 are normally closed by the doors of my improved car. The pairs of doors between the body-bolsters and the end sills are necessarily very short compared to the length of the doors between the body-bolsters and the needle-beams and the pair of doors between the needle-beams. Each door comprises the body portion 21, which is of such a size as to close its corresponding opening, and secured to the under side of

each door is a pair of transversely-arranged bars 22, which perform the function of hinge and latch bars, and the inner ends of said bars are hinged to brackets 23, which are secured to the outer faces of the outer pair of center sills 3. All of these bars 22 on each side of the car extend outwardly beyond the side sills 1, so as to be engaged by hooks 24, formed on the lower ends of latch-levers 25, which are fulcrumed at their centers to the outside faces of the side sills 1, and the upper ends of each set of levers 25 are pivotally connected to a longitudinally-extending bar 25^a, that extends approximately the entire length on each side of the car and operates in keepers 26. Pivotal secured to each side of the car, at one end thereof, is a hand-lever 27, that is also pivotally connected to the corresponding bar 25^a. Each hand-lever 27 operates beneath a keeper 28, to which is pivotally connected a latch 29 for maintaining the hand-lever and the latching-levers 25 in vertical positions. When the latch-levers 25 are in vertical positions, the hooks 24 on the lower ends thereof engage the outer ends of the hinged bars 22, and thus hold the doors 21 in closed positions.

Arranged to rotate in bearings 30, fixed to the inner faces of the end sills 2 and to the under sides of the outer pair of center sills 3, is a pair of short transversely-arranged shafts 31, the inner ends of which terminate just inside the outer pair of center sills 3, and above said inner ends are fixed laterally and upwardly projecting levers 32. Secured to the outer ends of these levers 32 are the lower ends of chains 33, which pass upwardly over pulleys 34, secured to the outer faces of the inner pair of center sills 3, and from thence said chains extend upwardly and are secured to and wind upon one of the winding-drums 15. Fixed to the outer end of each shaft 31 is an upwardly-projecting finger 35, with the upper end of which is formed a ball 36, that rides directly against the under side of the corresponding door 21. Formed integral with the sides of the body-bolster 16 are the pairs of horizontally-alined bearings 36, in each pair of which is arranged for rotation a shaft 37, which is equal in length to the shafts 31, and the inner ends of said shafts, which terminate at points in longitudinal alinement with the inner ends of shafts 31, are provided with the laterally-bent and upwardly-extending levers 38. To the outer ends of these levers 38 are connected the lower ends of chains 39, that extend upwardly over rollers 40, and from thence upwardly, where they wind onto and are secured to the winding-drums 15. Fixed on the outer ends of the shafts 37 are upwardly-projecting fingers 41, that are provided at their upper ends with balls 32, that bear directly against the under sides of the doors 21. Thus the doors between the end sills and the body-bolsters are

engaged by the balls on the ends of the fingers 35 and by the balls on the fingers 41 of that side of the body-bolster that is adjacent the end sill.

Formed integral with each side of each needle-beam 17 is a pair of horizontally-alined bearings 43, and in each pair of bearings on each side of each needle-beam is arranged for rotation a shaft 44. Fixed to the center of each shaft 44 is an outwardly and upwardly projecting lever 45, to the upper end of which is secured the lower end of a chain 46, that extends upwardly and being fixed to and winding upon a corresponding one of the drums 15. Fixed upon the outer ends of each of the shafts 44 are the upwardly-projecting fingers 47, carrying the antifriction-balls 48 on their outer ends, which balls ride directly against the under sides of corresponding ones of the doors 21. Thus each individual door is provided with a pair of the operating-fingers—such as 35, 41, and 47—and all of the chains—such as 34, 39, and 46—wind upon the drums 15 in the same direction, so that the doors all open and close simultaneously with a corresponding rotation of the shaft 8.

It is necessary to form the shafts 31 and 37 in pairs at each end of the car in order to accommodate the draft-rigging and draw-heads of the car.

When the doors 21 of my improved car are closed, so that the car can be loaded, the shaft 8 is rotated so as to cause the ball-bearings on the upper ends of all of the fingers to elevate the doors, and said fingers are maintained in vertical positions by the engagement of the pawl 12 against the teeth of the ratchet-wheel 10, thus preventing a backward rotation of said shaft 8. The hooks 24 engage the outer ends of the bars 22, and thus hold the doors locked in closed positions. When it is desired to dump a loaded car, the pawl 12 is disengaged from the ratchet-wheel 10, after which the hand-levers 27 on each side of the car are engaged, and after the latches 29 have been elevated the hand-levers are pulled to one side in such a manner as to disengage the hooks from the outer ends of the bars 22. The weight of the sand, gravel, or other material in the car will as soon as these hooks are released cause the doors to swing downwardly on their hinges, and in so doing all of the shafts 31, 37, and 44 are rocked, and all of the chains unwind from their respective drums, necessarily rotating the shaft 8. Thus the floor or bottom of the car is inclined in both directions and the contents of said car automatically discharged. To close the doors of the car, the operator manipulates the hand-wheel 14 to drive the gearing 13 and by this means rotates the shaft 8, winding the various chains upon the drums 15, and consequently rocks all of the shafts 31, 37, and 44, which brings all of the

fingers carried by said shafts into vertical positions, and as a result the doors are moved upwardly into horizontal positions, and then said doors are locked by manipulating the hand-levers 27 so as to cause the hooks 24 on the lower ends of the latch-levers 25 to reengage the outer ends of all of the hinge-bars 22.

My improved dump-car is simple in construction and operation, very evenly discharges its load on each side of the track, dumps automatically by the weight of the load, and can be very readily closed after being dumped.

I claim—

1. In a dump-car, a car-body, body-bolsters and needle-beams secured to the under side thereof, bearings formed integral with the side faces of said body-bolsters and needle-beams, rock-shafts journaled in said bearings, fingers fixed to the outer ends of all of the rock-shafts, dumping-doors hinged to the under side of the car-body against which the fingers engage, means whereby said dumping-doors are held in a locked position, and means whereby all of the rock-shafts are simultaneously rotated; substantially as specified.

2. In a dump-car, a series of dumping-doors hinged to the under side of the car-body, rock-shafts lying parallel with and journaled to the body-bolsters and needle-beams of the car-body, fingers carried by the outer ends of the rock-shafts, balls carried by the fingers for engaging against the doors, and means whereby all of the rock-shafts are simultaneously rocked; substantially as specified.

3. In a dump-car, a car-body, body-bolsters and needle-beams secured to said body, journal-bearings formed integral with the side faces of said bolsters and needle-beams, shafts arranged for rotation in said journal-bearings, fingers fixed to the outer ends of said shafts, balls integral with the upper ends

of said fingers, and dumping-doors hinged to the under side of the car-frame against which the balls engage; substantially as specified.

4. In a dump-car, a car-body, body-bolsters and needle-beams secured to the under side of the car-body, journal-bearings formed integral with the sides of the bolsters and needle-beams, rock-shafts arranged in said journal-bearings, door-engaging fingers fixed upon said rock-shafts, a shaft extending longitudinally throughout the car, winding drums thereon, chains winding upon said drums and arranged to actuate the rock-shafts, and doors hinged to the under side of the car-body which are engaged by the door-engaging fingers; substantially as specified.

5. In a dump-car, a car-body, body-bolsters and needle-beams secured to said body, journal-bearings formed integral with the side faces of said bolsters and needle-beams, shafts arranged for rotation in said journal-bearings, fingers fixed to the outer ends of said shafts, and dumping-doors hinged to the under side of the car-frame against which the ends of the fingers engage; substantially as specified.

6. In a dump-car, a car-body, body-bolsters and needle-beams secured to said body, journal-bearings formed integral with and wholly on the side faces of said bolsters and needle-beams, shafts arranged for rotation in said journal-bearings, fingers fixed to the outer ends of said shafts, dumping-doors hinged to the under side of the car-frame against which the fingers engage, and means whereby all of the rock-shafts are simultaneously operated; substantially as specified.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

JOHN SHELTON.

Witnesses:

M. P. SMITH,

E. M. HARRINGTON.