

No. 719,248.

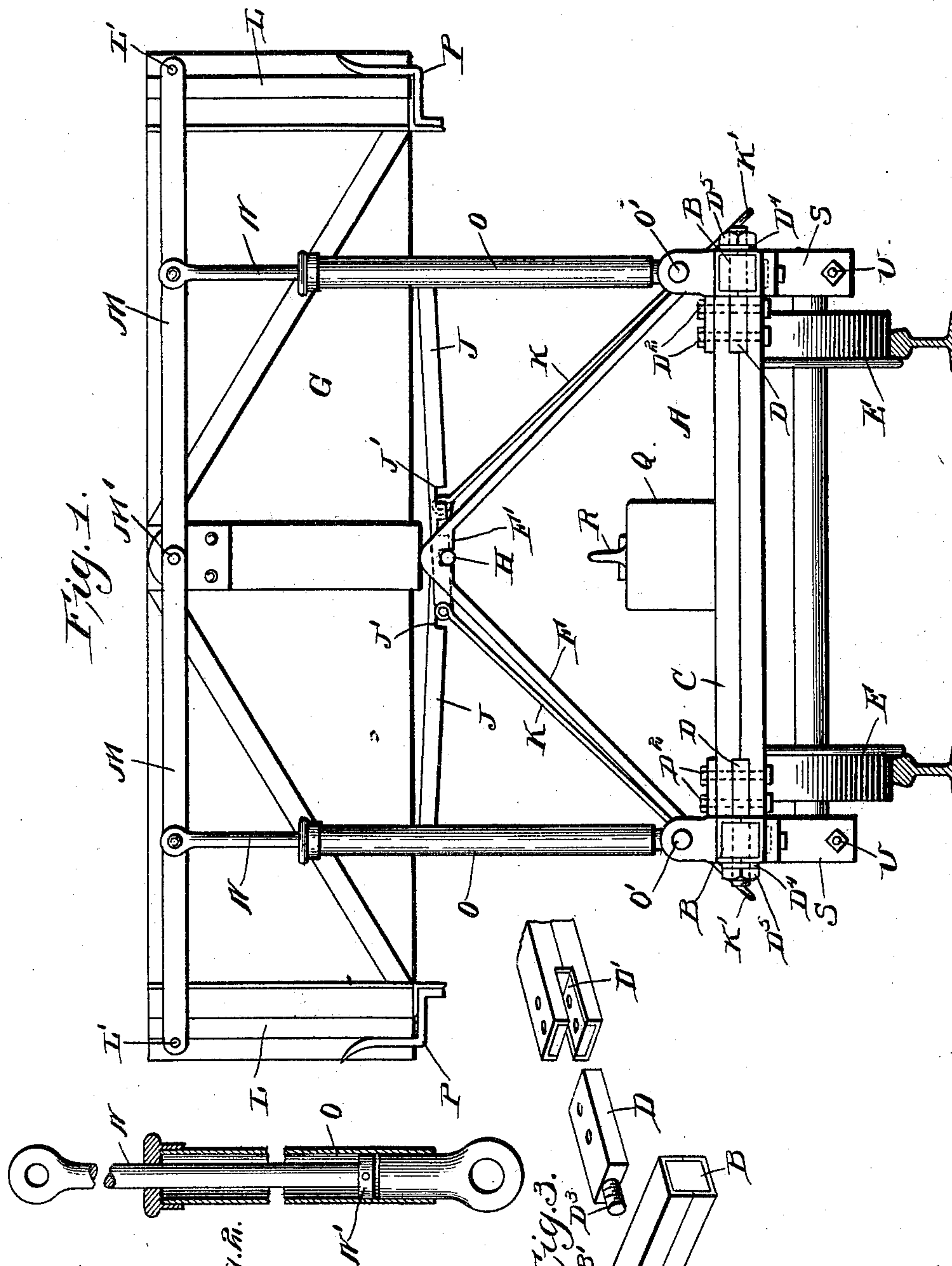
PATENTED JAN. 27, 1903.

J. A. McMANUS.
DUMPING CAR.

APPLICATION FILED SEPT. 6, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:
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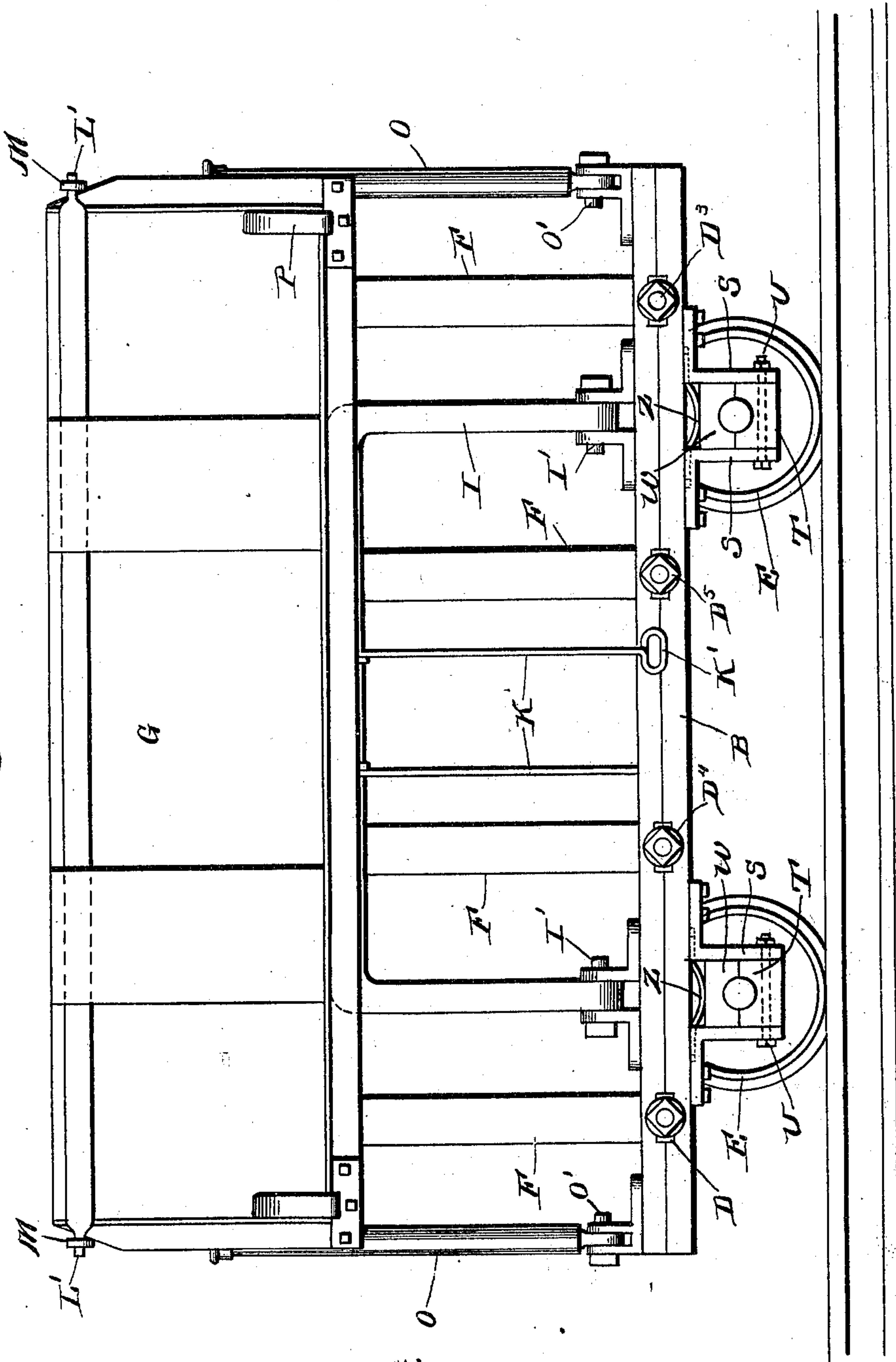
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3 SHEETS—SHEET 2.

Fig. 4.



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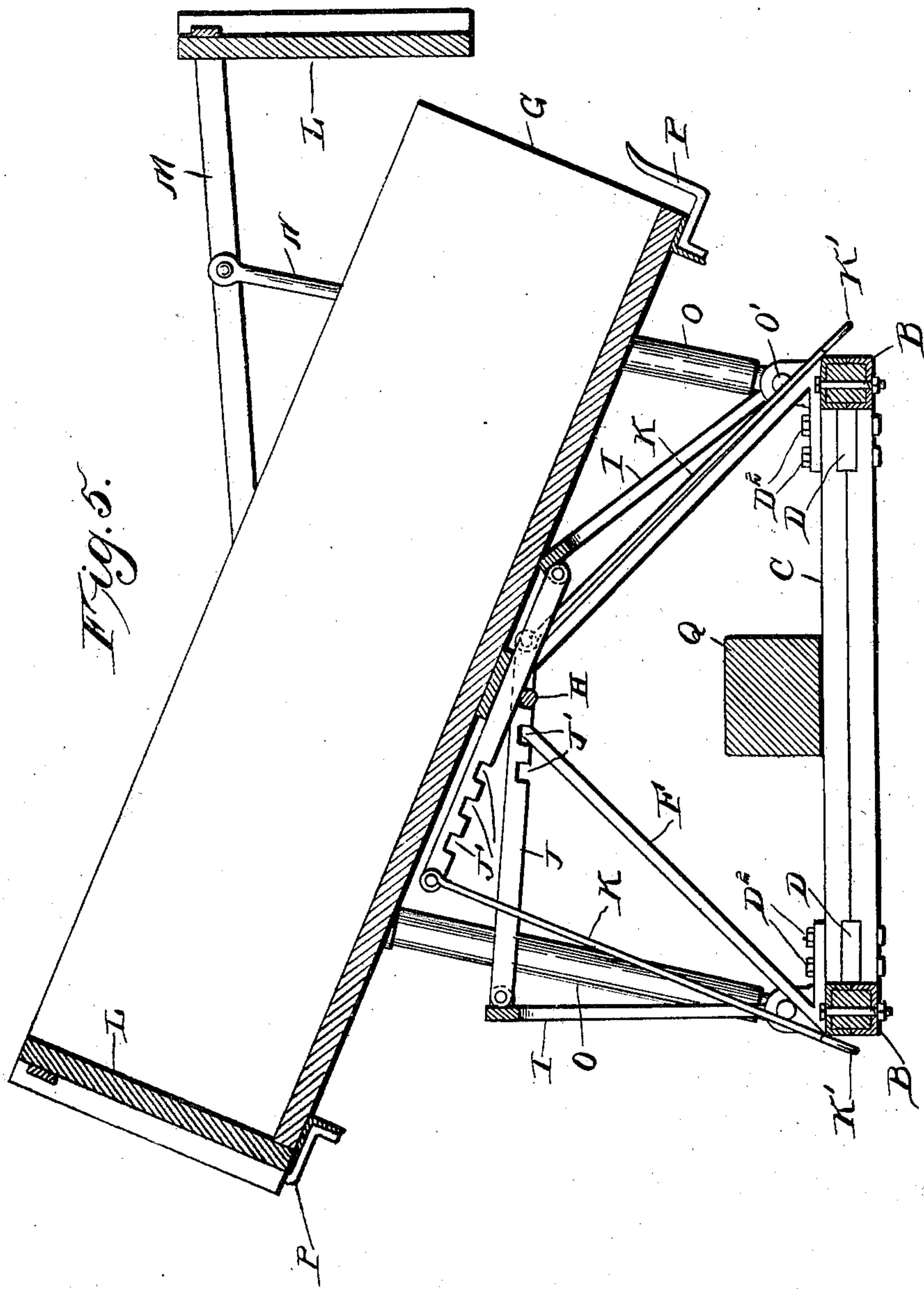
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UNITED STATES PATENT OFFICE.

JOHN A. McMANUS, OF PHILADELPHIA, PENNSYLVANIA.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 719,248, dated January 27, 1903.

Application filed September 6, 1902. Serial No. 122,316. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. McMANUS, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Dumping-Cars, of which the following is a specification.

My invention relates to a new and useful improvement in dump-cars, and relates to railway-cars used in grading, excavating, and the like for transporting the material excavated and dumping it at the desired place, and has for its object to provide an improved truck-frame which will be comparatively simple and inexpensive and light in weight, yet exceedingly durable; and a further object of my invention is to provide pivoted supports for a box, so that by rocking either one of the pivoted supports upon its pivot the car will be caused to tilt upon that side.

My invention also consists of further improved details which will be hereinafter pointed out.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an end elevation of my improved car; Fig. 2, a longitudinal section through one of the dash-pots, in which a plunger-rod operates to operate one of the side gates; Fig. 3, a perspective view of a portion of one of the side rails and one of the cross-rails of the truck-frame and also of the tenon which connects the two; Fig. 4, a side elevation of my improved car; Fig. 5, a cross-section through my improved car, the running-gear being removed.

A represents the truck-frame, which consists of the side rails B and a series of cross-rails C. Both the side rails and cross-rails are composed of two channel-bars, placed with their channeled surface toward one another, so as to form a rectangular tube, and the space between these channel-bars is filled

with wood, or, in other words, the channel-bars are placed over beams of wood, and bolts are then passed vertically down through both channel-bars and over the beam, thus in reality making a metal-cover wooden beam which is comparatively light and yet exceedingly strong.

The cross-rails C are joined to the side rails by means of a metal tenon D, which is adapted to fit within a mortise D', provided in each end of the cross-rails, and bolts D² passing downward through the ends of the cross-rails and through the tenon secure said tenon in place. The outer end of the tenon protruding beyond the end of the cross-rails is adapted to extend into and through an opening B', provided in the side rails. A screw-threaded stud D³ is formed upon the outer end of the tenon D, and on this stud, outside of the side rails, is first passed a washer D⁴, and then a nut D⁵ is threaded on the stud, and in this way the side rails and cross-rails are rigidly secured together. The wheels E are suitably mounted in suitable bearings depending from the side rails B.

Extending upward from the truck-frame A are a series of triangular frames F, which frames are bolted securely to the cross-rails C of the frame, the bolts D² serving for this purpose.

G represents the box of the car, which rests along its longitudinal center upon the apex of the triangular frames F, and this box is held in position and pivoted upon the top of the triangular frames by means of a rod H, which extends longitudinally the entire length of the box G underneath the crotch of the triangular frames F. Suitable boxes F' may be secured in the crotch of the frames to receive the rod H, and this rod H being secured to the box G at each end thus forms a pivot for the box and at the same time holds the box in place. It will thus be seen that the box is free to tilt upon either side upon the pivot H, the center of the box resting upon the apex of the triangular frames F.

For the purpose of supporting the box in a horizontal position I provide upon each side of the car arches I, which arches are pivoted at their lower ends to the side rails B at the points I'. The box G rests upon the top of these arches upon each side when the arches

are in a vertical position. To each of these arches is connected a bar J, which extends inward over the longitudinal rod H, and this bar is provided upon its inner end with two or three notches J', which notches are adapted to engage the rod H from above, and thus hold the arches I in a vertical position. To the inner end of each of the bars J are loosely connected rods K, which rods terminate in handholds K', so that when it is desired to tilt the car the operator grasps the rod K upon the opposite side of the car from which it is desired to tilt the same and by pressing the bar J upward out of engagement with the rod H and then by means of the rod K pulling the bar toward the operator the arch I upon the opposite side of the car will be rocked inward, as shown in Fig. 5, thus leaving the car free to be tilted upon that side. After the car has been emptied it is only necessary to bring the car to a horizontal position and then replace the arch I to its normal position.

L represents the side gates for the purpose of normally closing each side of the car, and these side gates are pivoted at the point L' upon each end of the car near the upper end of the gates, the pivotal point L' being in the outer end of levers M, the inner end of said levers being pivoted at the point M' to the end of the box G, and intermediate between the two ends of each lever is pivoted a plunger-rod N, the lower end of which is fitted with a plunger N', said plunger fitting and adapted to slide within the dash-pot O, which dash-pot is in turn pivoted at its lower end at the point O' to the side rails B. When the box G is in its normal position, the plungers N are in contact with the bottom of the dash-pot O. Thus when the box is tilted the plunger cannot descend with the box, and therefore holds the lever M and the side gate L upon the tilting side in its normal position, and as the box descends it leaves the side gate, and therefore that side of the box is open and allows the contents to be deposited; but upon the opposite side of the box or the side which rises the side gate is carried upward with the box, and the plunger-rod N also travels upward within the dash-pot O. Therefore the side gates will open automatically no matter upon which side the box is tilted.

P represents clips secured to the sides at the lower end of the car and adapted to receive the lower end of the side gates and hold them in position.

I am aware of the existence of tilting dump-cars in which the side gates are automatically opened as the car is tilted; but in all of said cars the lever connected to the side gate is secured rigidly thereto, while in my invention the side gates are pivoted to the lever, which is a great advantage, owing to the fact that if the car contains large rocks, soft coal, &c., and the rocks or lumps of coal are too large to pass between the bottom of the box and the bottom of the side gate when the box is tilted the rocks or large lumps of coal in fall-

ing against the side gates may pass out of the box, because of the fact that the side gates will swing with the passage of the large lumps of material and after the same have passed resume their normal position. Therefore by pivoting the side gates to the levers I virtually have an opening from the side of the box much greater than the opening of cars of the ordinary construction, or, in other words, I gain the distance between the bottom of the side gate and its pivotal point.

Q represents a beam running longitudinally of the car and resting upon the cross-rails C to the upper surface. At each end of this beam are connected the coupling devices R.

The bearing of the truck-wheels consists of angular supports S, bolted to the under side of the side rails and depending therefrom. Secured between each set of these angular supports below the axle is a block of wood or similar material T, which is secured in place by a bolt U passing through said block of wood and also through the lower ends of the angular supports S. Above the axle between the angular supports is arranged a bearing-block W, of brass or other suitable material, and above this bearing-block is arranged a spring Z, which is interposed between the bearing-block and the under side of the side rails. Thus a very simple but effective and durable bearing-box is furnished.

Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In a dump-car, a truck-frame consisting of side rails and cross-rails, each of said side rails and cross-rails composed of two channel-bars inclosing a wooden core, tenons secured to the cross-rails and projecting through the side rails, a nut threaded upon the outer end of the tenon outside of the side rails for securing the frame together, a series of triangular frames arising from the truck-frame, a box resting upon the apex of the triangular frames and pivoted thereto, supports for said box arranged upon each side of the car and pivoted at their lower ends to the truck-frame, means for rocking said supports toward the center of the car for the purpose of allowing the box to tilt, and side gates on the box adapted to be opened automatically when the box is tilted, as and for the purpose specified.

2. In combination with a box-car of the character described, a truck-frame composed of two side rails and a series of cross-rails, each of said side rails and cross-rails composed of a wooden core and a metallic covering, metallic tenons for joining the cross-rails to the side rails, said tenons bolted in the ends of the cross-rails and projecting beyond the ends of the same, the projecting ends of the tenons passing through the side rails, screw-threaded studs formed upon the outer ends of the tenons, a washer surrounding the screw-

threaded stud upon the outside of the side rails, and a nut threaded upon the outer end of the stud for the purpose of securing the frame together, as specified.

5 3. In combination with a dump-car of the character described, a truck-frame consisting of two side rails and a series of cross-rails, each of said side rails and cross-rails consisting of two channel-bars placed with the chan-
10 nel toward one another so as to form a rectangular hollow tube, a wooden core fitting within the two channel-bars, vertical bolts passing through the channel-bars and through the wooden core, and means for securing the
15 cross-rails to the side rails, as and for the purpose specified.

4. In a dump-car, the combination with a truck, of a box, triangular frames arising from the truck upon the apex of which the
20 box is adapted to rest, a longitudinal rod secured to the box at each end and passing through the crotches of the triangular frames for the purpose of pivoting said box to said frames, arch-shaped supports arranged upon
25 each side of the car and pivoted at their lower ends to the side rails of the truck-frame, the box adapted to be normally held in a horizontal position by said supports, rods connected with each arch-shaped support and
30 extending across underneath the car above the longitudinal rod to the opposite side of the car, said rods provided with notches adapted to engage the longitudinal rod and hold the supports in their normal position,
35 and side gates adapted to open automatically upon the tilted side of the box, as and for the purpose specified.

5. In a dump-car, the combination with a truck of a box, triangular frames arising from said truck upon the apex of which the
40 box is adapted to rest along its longitudinal center, a horizontal rod secured to the box at each end and passing underneath and through the crotch of the triangular frames, arched supports arranged upon each side of the car
45 and pivoted at their lower ends to the side rails of the truck-frame, bars connected to said supports and extending inward above the horizontal rod, said bars provided with notches adapted to engage the rod for the
50 purpose of holding the supports in their vertical or normal position, and rods secured to the inner ends of the bars for the purpose of rocking the supports inward toward the center of the car, said gates adapted to normally
55 close each side of the car, levers pivoted in the center at each end of the car, the outer end of said levers pivoted to the side gates near the upper end of said side gates, clips secured to the box and adapted to hold the
60 lower end of the gates closed when the car is in its normal position, and means for automatically holding the gates upon the tilted side of the box in its normal position when the box is tilted, as and for the purpose
65 specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

JOHN A. McMANUS.

Witnesses:

H. B. HALLOCK,
L. W. MORRISON.