

No. 748,299.

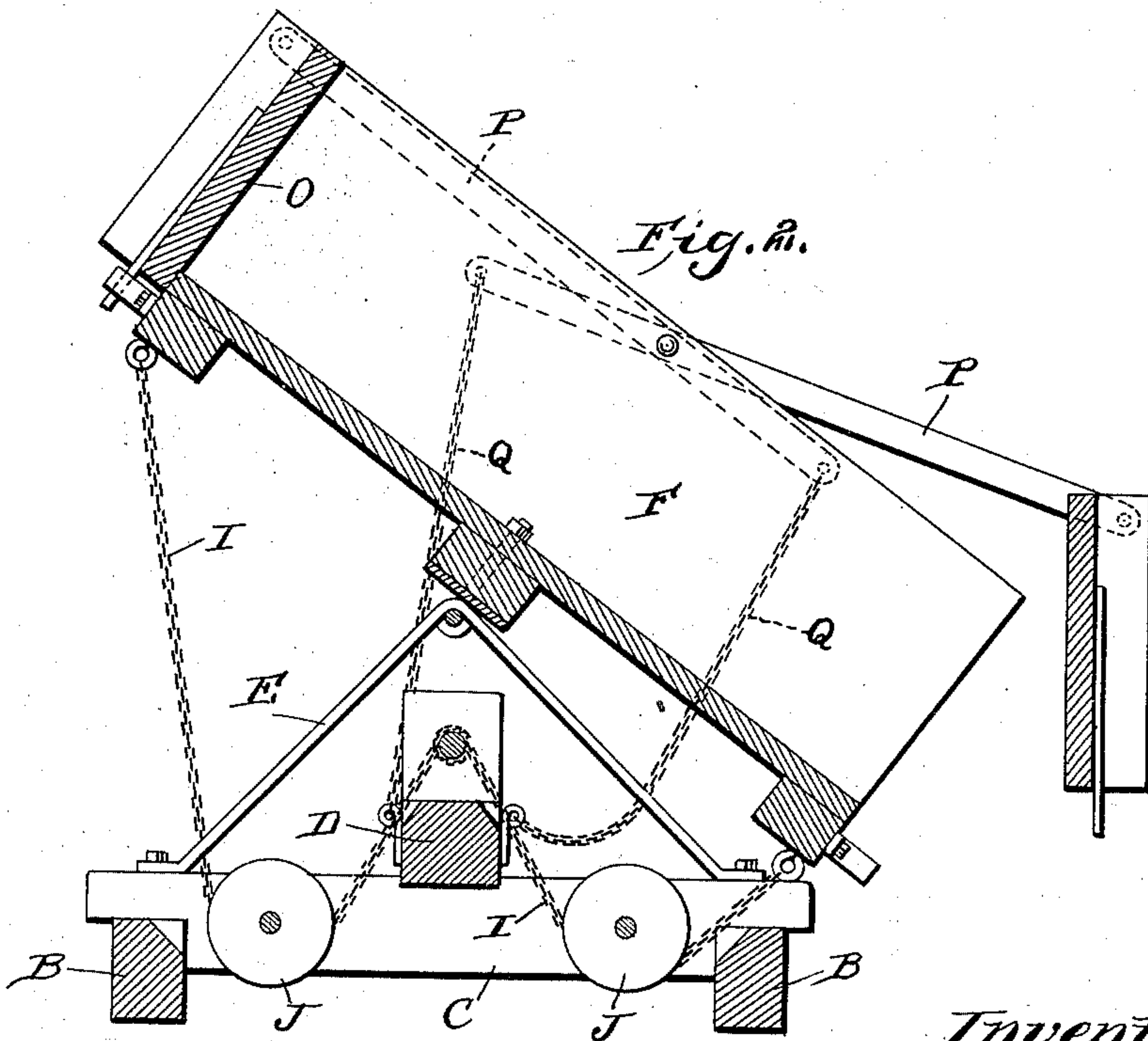
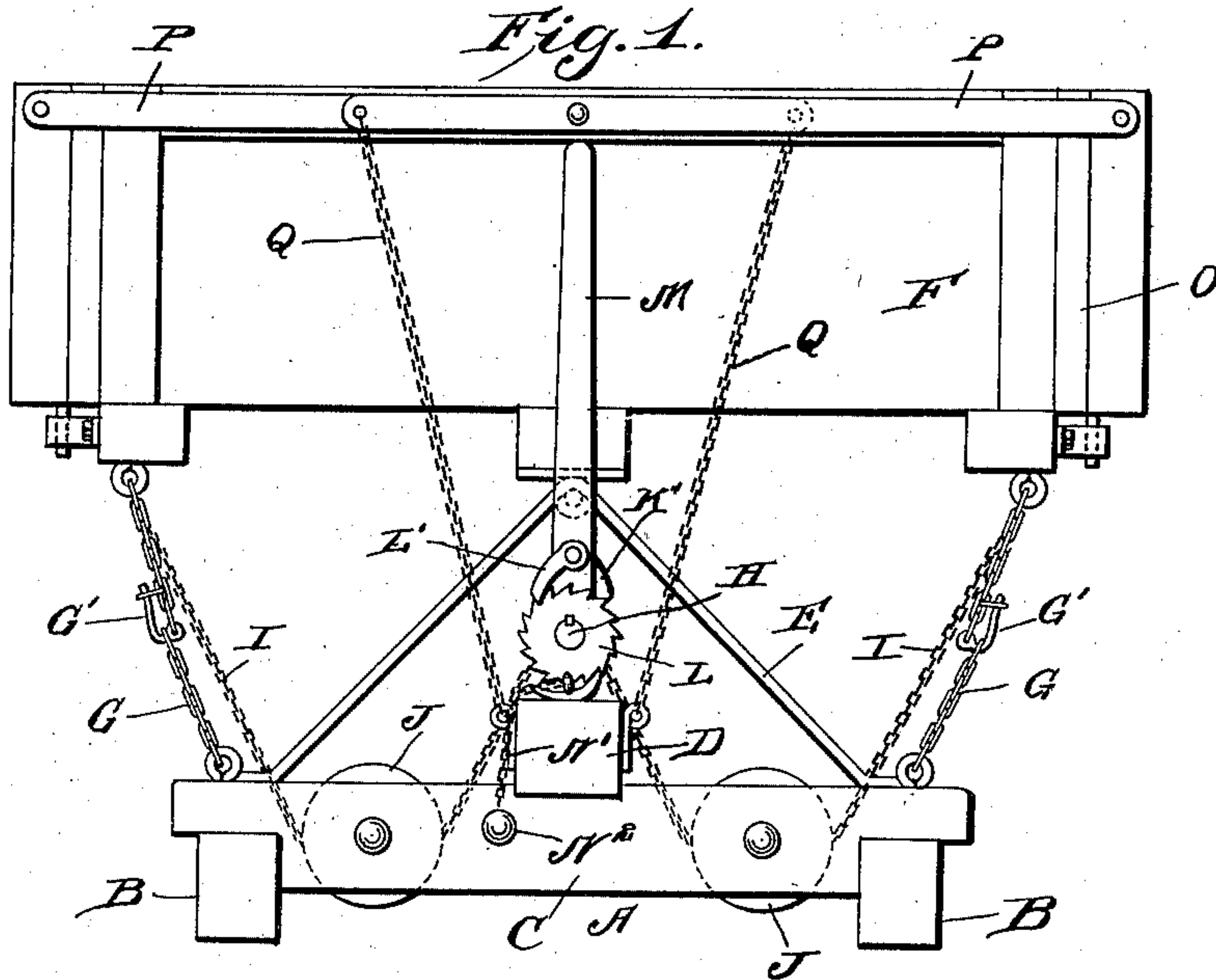
PATENTED DEC. 29, 1903.

J. D. McGRATH.
DUMP CAR.

APPLICATION FILED MAR. 13, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

Louis D. Heinrichs
L. H. Morrison

Inventor
John D. McGrath

By his Atty

W. P. Williams

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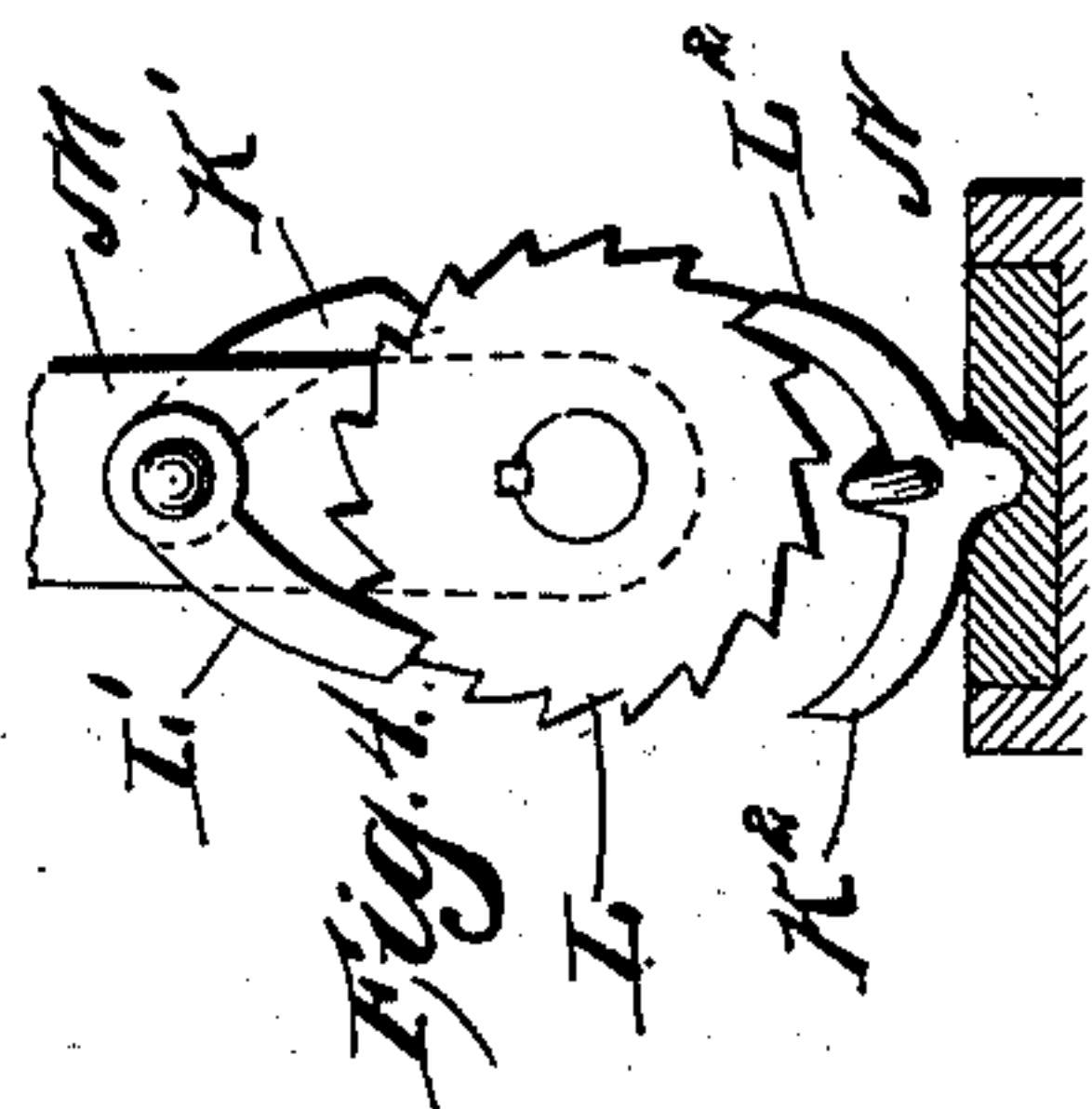
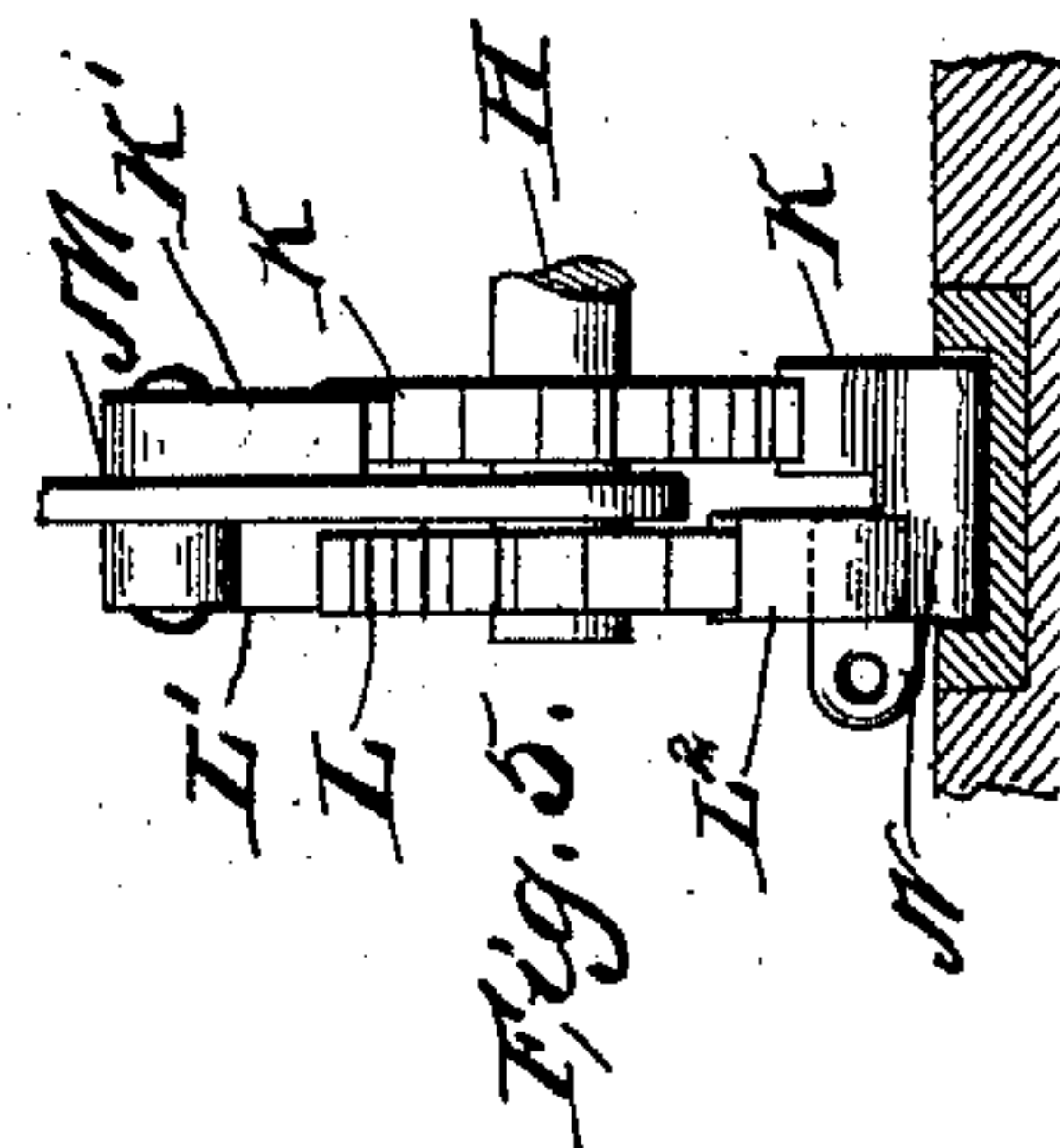
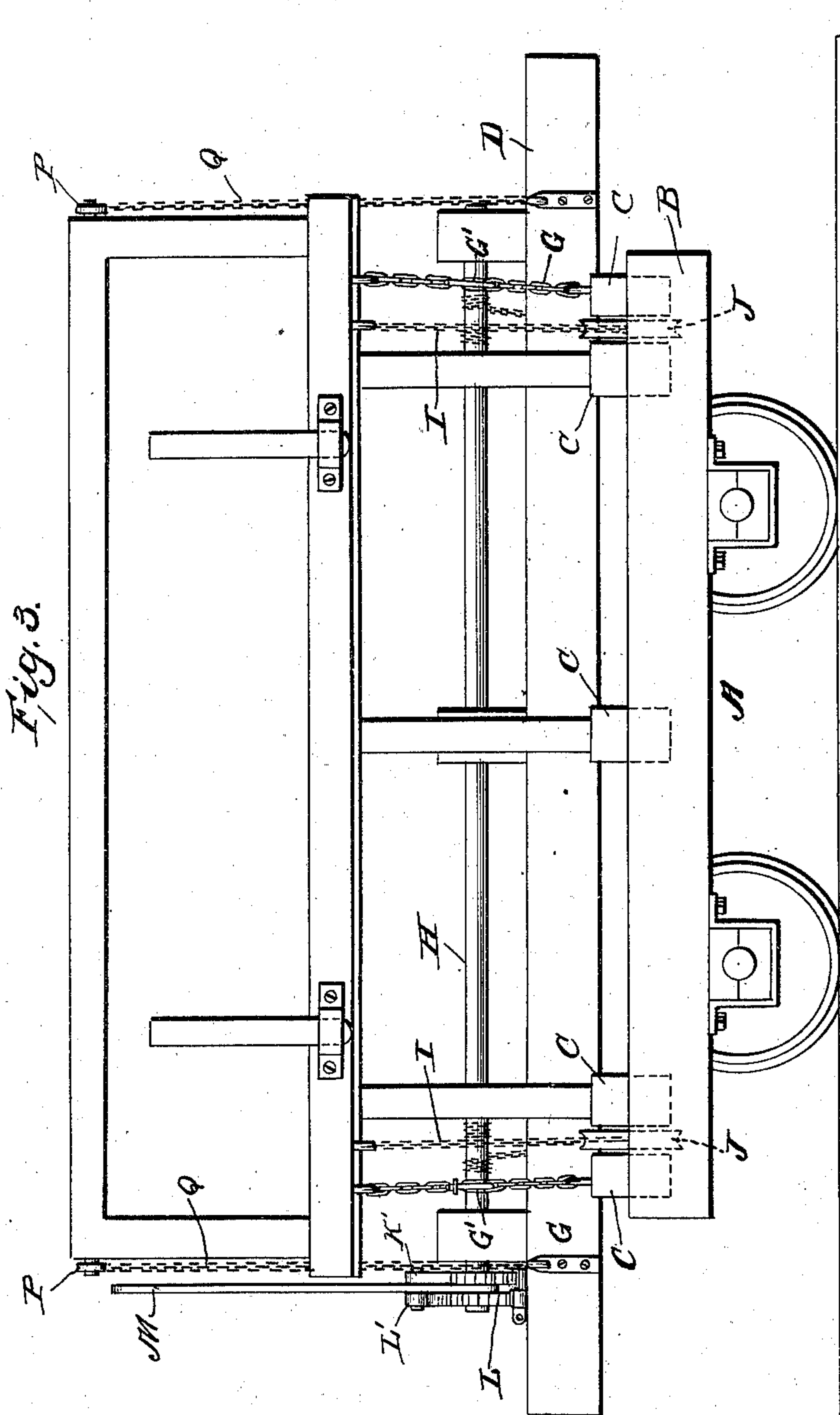
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UNITED STATES PATENT OFFICE.

JOHN D. McGRATH, OF PHILADELPHIA, PENNSYLVANIA.

DUMP-CAR.

SPECIFICATION forming part of Letters Patent No. 748,299, dated December 29, 1903.

Application filed March 13, 1903. Serial No. 147,582. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. McGRATH, 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 Dump-Cars, of which the following is a specification.

My invention relates to a new and useful improvement in dump-cars, and has for its object to provide a dump-car which may be dumped from either side and mechanism by which the car can be dumped by means of a lever and ratchet from one end of the car. The details and other objects will be set forth in the description.

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 claim.

In order that those skilled in the art to which this invention appertains may understand how to make and use the 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 view of my improved car, showing the same in its normal position; Fig. 2, a cross-section through my improved car, showing the same tilted to one side; Fig. 3, a side elevation of the car; Fig. 4, a detail view of the ratchet mechanism for tilting the car; Fig. 5, an edge view of Fig. 4.

A represents the truck of the car, the side frames of which consist of the side beams B, joined together by the cross-beams C. A beam D is secured on the top of the cross-beams in the center and extends longitudinally of the frame, and to this beam the coupling attachments are secured.

E represents triangular braces secured to the cross-beam C, and extending upward therefrom to the apex of these triangular frames is pivoted the box F along its longitudinal center. Thus by reason of the box being pivoted at the center it is free to tilt to either side, but is normally held horizontal by means of the chains G, attached to each side of the box and connected to the ends of the cross-beams C. Each of these chains are provided with latches G', which may be easily disen-

gaged, so as to separate the chains when it is desired to dump the car.

I am aware that numerous forms of dump-cars have been manufactured and patented; but in all such cars the box is tilted by lifting upward upon one side, the load in the box being so arranged as to equally balance the box when in its normal position, and the box is caused to resume its horizontal or normal position by pushing upward upon one side or tilting downward upon the other; but in heavy cars it requires a great amount of exertion. In my improved car I have provided an apparatus by which the car may be dumped or made to resume its normal position by means of a lever and ratchet and consists of the following arrangement.

H is a shaft journaled in suitable bearings arising from the beam D and extending longitudinally the length of the car.

I represents chains attached at one end to one side of the car, extending downward around pulleys J, journaled in the truck-frame, and then upward and coiled around the shaft H, to which the other ends of said chains are attached. Upon one end of the shaft H are secured two ratchet-wheels K and L, the teeth of which are arranged opposite one another, and between these two ratchet-wheels is a lever M, pivoted upon the shaft H, and this lever carries two pawls K' and L', pivoted to the lever upon opposite sides, the pawl K' adapted to engage the teeth of the ratchet-wheel K and the pawl L' adapted to engage the ratchet-wheel L. Arranged below the ratchet-wheels and pivoted within the beam D is a double pawl N, having two fingers L² and K², so that when the pawl N is tilted in one direction the finger L² will engage the wheel L, and when tilted in the opposite direction the finger K² will engage the wheel K, and secured to this pawl N is a chain N', to which a weight N² is attached to hold the pawl at one side or the other of the center.

The operation of the device is as follows: When it is desired to dump the car, the latches G' are disengaged in the chain G upon the off side of the car or that side which rises when the car is dumped, and then one of the pawls K' or L', as the case may be, is thrown

around upon its pivot, so that the back of the pawl will raise upon its ratchet-wheel. Then by grasping the lever M. and rocking the same the pawl which is in engagement
 5 with the ratchet-wheel will cause said ratchet-wheel, and thereby the shaft H, to be revolved, which will swing one of the chains I upon the shaft H and unwind the other therefrom, and the pawl N will be so tilted as to pre-
 10 vent retrograde movement when the lever is rocked backward for a new hold upon the ratchet-wheel. Thus the car can be tilted gradually, which will save considerable wear and tear upon the car, and after the box of
 15 the car has been emptied by reversing the pawls the car can be made to resume its normal position in the same manner.

Of course if it is desired the ratchet-wheels could be on both ends of the shaft K, so that
 20 the lever would be at either end of the car. Instead of using two chains upon each side of the car a sprocket-chain could be used and a sprocket-wheel secured upon the shaft H, over which a continuous chain would run
 25 from one side of the car to the other, so that when the shaft H was revolved the chain would be shortened on one side and lengthened on the other.

O represents the side gates of the box of
 30 the car, which are pivoted at each end to levers P, which levers are pivoted intermediate of their two ends in the center of the box upon each end, and the other ends of the levers P are connected to the longitudinal
 35 beam D by means of chains Q, so that when the box F is tilted the side gates O will be automatically removed from the side of the car to allow the contents to empty therefrom, and as the box is caused to resume its nor-
 40 mal position the side gates will automatically close the side of the car.

Of course I do not wish to be limited to the exact construction here shown, as slight
 45 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—

In a dump-car, a truck and truck-frame, a box pivoted along its longitudinal center to
 50 said truck-frame and at a distance above the same, a longitudinal shaft journaled to the truck-frame, pulleys journaled in the truck-frame, flexible connections connected at one end to the side of the box and ex-
 55 tending downward around the pulley, then upward and attached and coiled about the longitudinal shaft, two ratchet-wheels se-
 60 cured upon one end of the longitudinal shaft, the teeth of which are oppositely disposed toward one another, a lever pivoted to the lon-
 65 gitudinal shaft between the two ratchet-wheels, two pawls pivoted upon opposite sides of said lever, one adapted to engage the teeth of one ratchet-wheel and the other the teeth
 70 of the other ratchet-wheel, one or the other of said pawls adapted to be thrown out of action when the lever is operated, a double-
 75 acting pawl arranged below the ratchet-wheels and having fingers adapted to engage one or the other of the ratchet-wheels, ac-
 80 cording to which direction it is tilted, said pawl being for the purpose of preventing retrograde movement of the ratchet-wheels when the lever is rocked, means attached to
 85 said pawl to hold the same in whatever position placed, chains arranged upon each side of the car, one end of each chain being at-
 90 tached to the under side of the side of the car, and the other end of the chain attached to the truck-frame, latches interposed in each
 95 chain, whereby each chain may be separated to allow for the tilting of the box, as and for the purpose specified.

In testimony whereof I have hereunto af-
 90 fixed my signature in the presence of two
 95 subscribing witnesses.

JOHN D. McGRATH.

Witnesses:

MARY E. HAMER,
 L. W. MORRISON.