

C. R. WHIPPLE.

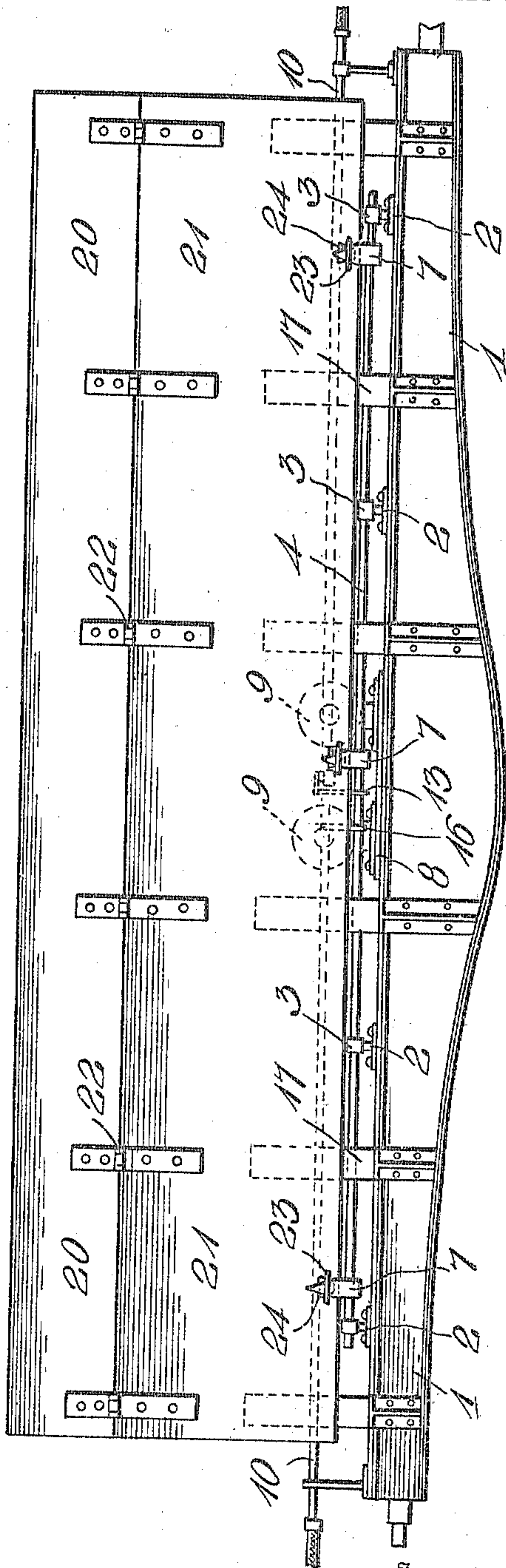
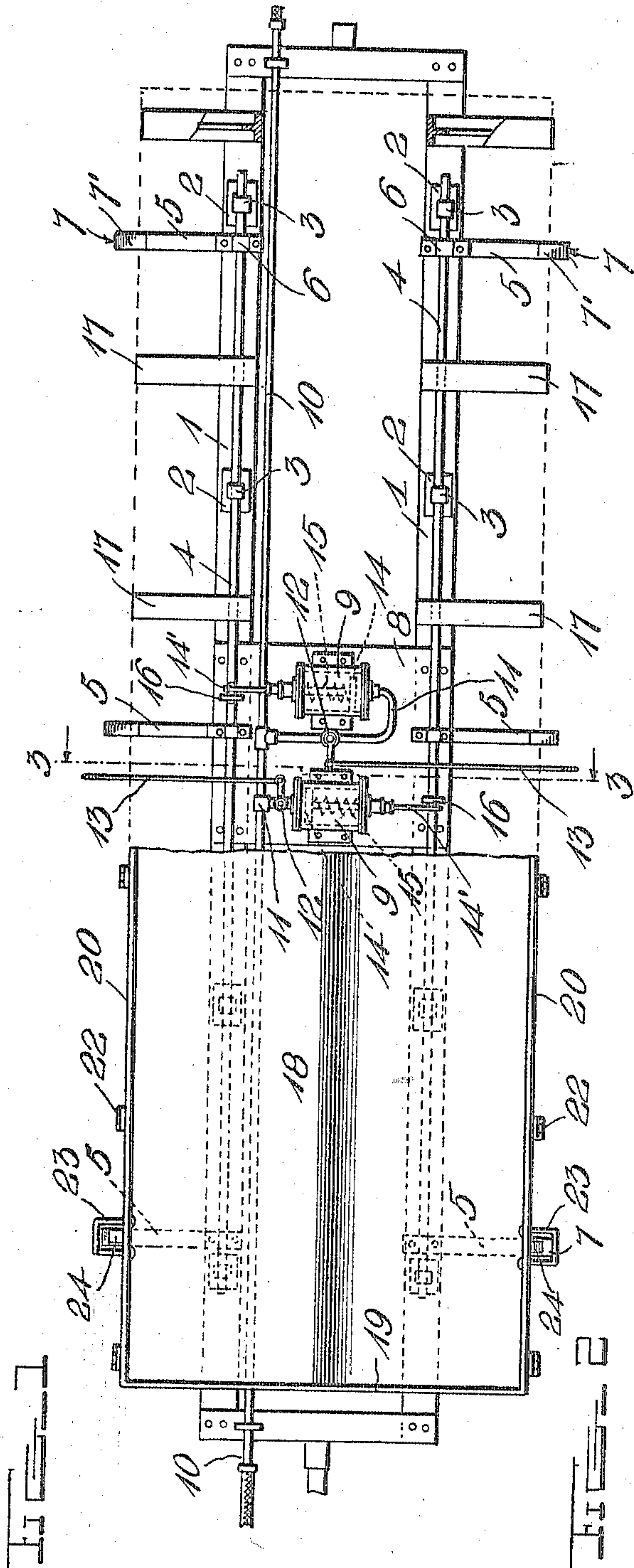
DUMPING CAR.

APPLICATION FILED MAY 5, 1909.

951,669.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.



Witnesses

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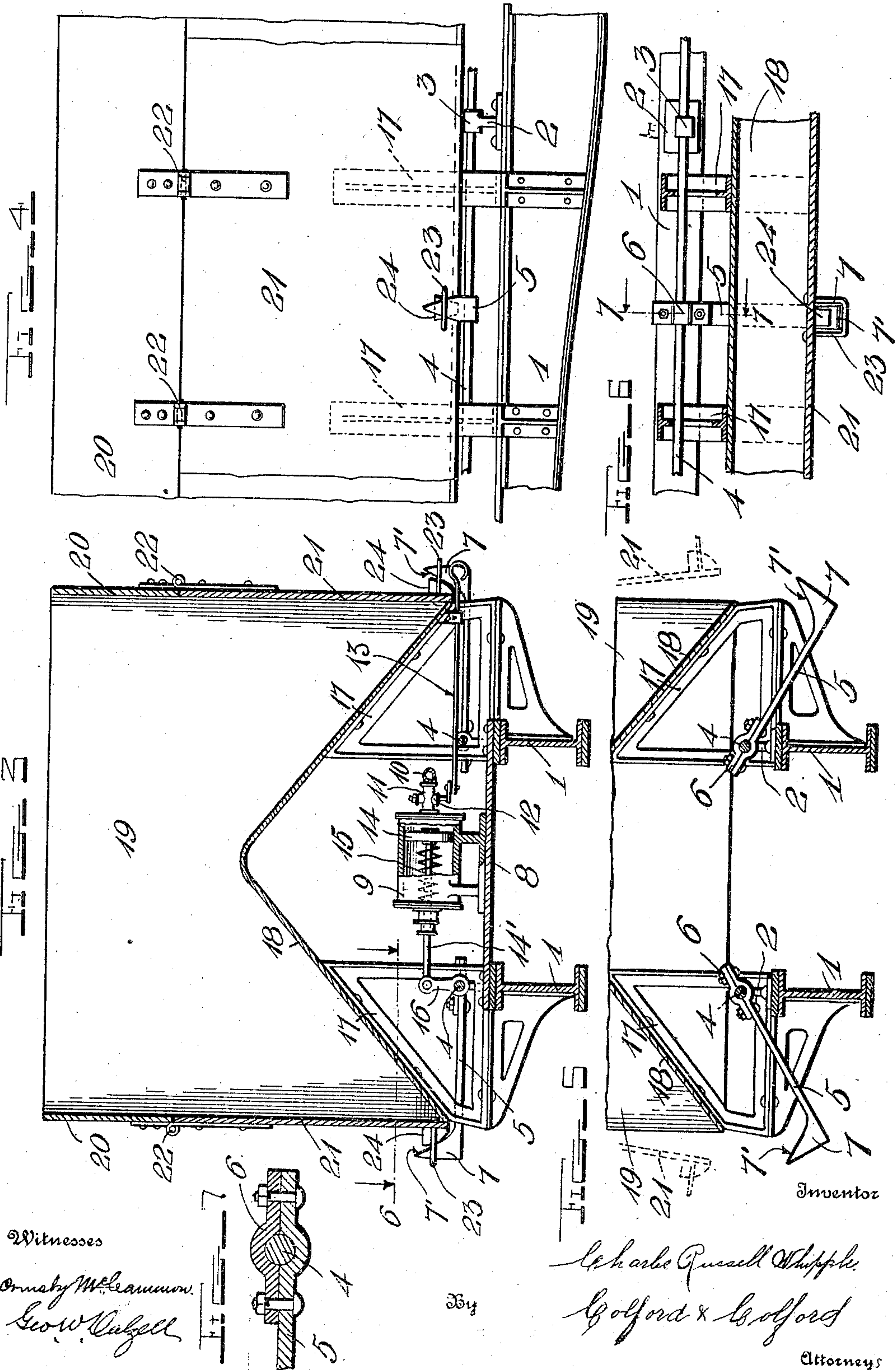
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UNITED STATES PATENT OFFICE.

CHARLES RUSSELL WHIPPLE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF ONE-THIRD TO JAMES F. MORRIS AND ONE-THIRD TO JOSEPH H. BRADLEY, BOTH OF WASHINGTON, DISTRICT OF COLUMBIA.

DUMPING-CAR.

951,669.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed May 5, 1909. Serial No. 494,148.

To all whom it may concern:

Be it known that I, CHARLES RUSSELL WHIPPLE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Dumping-Cars, of which the following is a specification.

This invention relates to improvements in side dumping cars, and the object in view is the enabling of simultaneous or independent dumping of one or more of the cars composing a train while providing efficient retaining means for the side doors previous to dumping.

With this and further objects in view as will in part become obvious and in part be set forth, the invention comprises certain novel constructions, combinations and arrangements of parts as will be hereinafter disclosed and claimed.

In the accompanying drawings:—Figure 1 is a plan view of a car embodying the features of the present invention, a portion of the car body being broken away to disclose the sub-structure. Fig. 2 is a side view thereof. Fig. 3 is a transverse vertical section taken on the plane indicated by line 3—3 of Fig. 1. Fig. 4 is a fragmentary side elevation on an enlarged scale. Fig. 5 is a transverse section through a fragment of the car showing the clamps in open position. Fig. 6 is a horizontal section taken on the plane indicated by line 6—6 of Fig. 3. Fig. 7 is a detail fragmentary view of the rock shaft gripping device for one of the clamps.

Referring to the drawings by numerals, 1, 1 indicate center sills of the built up I-beam trussed construction, as clearly seen in Fig. 2. Bolted or otherwise suitably fixed to each of the beams 1, and rising from the upper cover plate thereof are upstanding journal brackets 2, 2, each terminating at its upper end in a journal bearing or sleeve 3. The brackets 2 are spaced apart at any suitable intervals. Journaled in the bearings 3 above each I-beam 1, is a rock shaft 4 which may be of any desired dimensions, and preferably extends throughout the greater part of the length of the beam. At suitable intervals along the length of each rock shaft 4, clamp bars 5 are attached. Each bar 5 terminates at its inner end in a suitable grip device 6 adapted to afford a

rigid connection with the respective shaft 4. Each grip device 6 may be made up of a semi-circular block bolted to the end of the bar 5, which end is formed with an integral semi-circle, the meeting semi-circles being of a size adapted to snugly receive and grip the respective shaft 4. The outer end of each bar 5 is provided with an upturned hook 7, the inner edge 7' of which is formed on a bevel for the purposes hereinafter stated. Intermediate the length of the beams 1, the same are connected by a cylinder supporting plate 8 upon which is mounted air or other fluid pressure cylinders 9, 9, adapted to be supplied with fluid pressure through train pipe 10. Branch pipes 11, 11, extending from the pipe 10 to the respective cylinders, are provided each with a stop cock or valve 12 engaged by an operating rod 13 extending to the respective side of the car opposite to that controlled by the given cylinder. The piston 14 of each cylinder 9 is pressed by spring 15 for normally maintaining the head of the piston at the inner end of the cylinder, the piston rod 14' extending beyond the cylinder and being pivotally connected with a crank arm 16 fixed to the respective rock shaft 4 so that when pressure is admitted to a given cylinder, the piston will be thrown and the shaft 4 rocked in a direction for swinging the clamp bars 5 downwardly. Obviously, when the pressure is exhausted from the cylinder and the spring 15 is allowed to cause a return movement of the piston, the shaft 4 will be correspondingly given a return movement elevating the clamp bars 5 to their raised position.

Fixed to each I-beam 1, and extending outwardly therefrom are angle brackets 17, 17, which are inclined outwardly and support the inverted V-shaped hopper bottom 18 of the car. The car is of course provided with the usual end plates 19 and side plates 20, the side plates 20 terminating at a suitable distance above the lower edges of the bottom 18, and the intervening space being normally closed by doors 21, 21, hinged as at 22 to the respective side plates 20. Near the lower end of each door 21 the same is provided with as many outwardly extending loops or staples 23 as there are clamping bars 5, the staples 23 being arranged in the same transverse planes of the car with the

corresponding clamp bars 5 and positioned to receive the hooks 7 thereof. Within each staple 23 is arranged a cam block 24 which may be fixed in place in any preferred manner as by being riveted or otherwise suitably secured to the outer face of the door 21. The outer edge of each block 24 is beveled or curved to correspond with the bevel 7' so that as the upper end of the hook 7 enters one of the staples 23 the beveled portion thereof engages the beveled edge of the block 24 and wedges the door 21 inwardly until the clamp bar 5 has risen to its uppermost position, whereat the door 21 will be closed under a clamping pressure which will tend to retain the parts against accidental separation and which will insure against springing of the door outwardly.

The operation will be obvious from the foregoing, and the same may be briefly stated as follows: Assuming a train load to be positioned for being dumped, it is only necessary for the operator to admit pressure to pipe 10, whereupon all of the clamp bars 5 throughout the entire train will be rocked downwardly and the doors 21 thus released. The lateral component of the vertical stress of the load will throw open the doors, and the inverted V-bottom 18 will cause the load to be quickly and completely discharged. After the discharge of the load, the doors 21 are automatically closed, that is swing by gravity to the vertical closed position, and the pressure is exhausted from the operating cylinders 22 for allowing the clamping bars to return to the locked position. If at any time it becomes desirable to dump a load only at one side of the car, the valve 12 of the cylinder controlling the other side will be closed, and thus when pressure is admitted to pipe 10, the bars 5 at one side of the car only will be lowered. Or if found desirable, both valves 12 may be closed on some of the cars, and the corresponding valves on other cars being left open, will enable dumping of some of the cars without dumping those cars having closed valves.

What I claim is,—

1. In a dumping car, the combination with a car structure having a side door, of a rock shaft extending longitudinally of the car, means for sustaining said shaft, a plurality of clamp bars connected to the shaft and adapted to be swung vertically thereby, a hook carried by each clamp bar adapted to extend outside said door when the bar is in its raised position, and means for rocking said shaft for lowering said clamp bars.

2. In a dumping car, the combination with a car body having a hinged side door and an under sill, of a rock shaft having a journaled connection with said sill and extending longitudinally of the car body, a clamp bar fixed to said rock shaft and ex-

tending at right angles thereto, door engaging means carried by said clamp bar and adapted to engage the car door for retaining the same closed, and means for oscillating said rock shaft.

3. In a dumping car, the combination with a car body having vertically swinging side doors and under sills, of upstanding brackets carried by said sills having bearing sleeves, a rock shaft journaled in the bearing sleeves of each respective under sill, clamp bars fixed to each rock shaft and extending outwardly toward the respective contiguous side of the car, door engaging means carried by the outer end of each clamp bar adapted to engage and retain the door in a closed position, and means for oscillating said rock shafts.

4. In a dumping car, the combination with a car body having under sills and vertically swinging side doors, of rock shafts having journaled connections with said sills, cylinders carried by the sills, pistons for said cylinders, means for transmitting movement from the pistons to the respective rock shafts for oscillating the same, a source of pressure supply common to both of said cylinders, means for cutting off the supply of pressure to either of said cylinders, and means controlled by said rock shafts for retaining said doors normally closed.

5. In a dumping car, the combination with a car body having vertically swinging side doors, of retaining clamps for maintaining said doors normally closed, cylinders and pistons for actuating the clamps independently, a source of common supply of pressure for said cylinders, and means for independent control of the pressure to each of the respective cylinders.

6. In a dumping car, the combination with a car body having a vertically swinging side door, of a block secured to the door and having an inwardly beveled outer edge, a retaining clamp for said door having an outwardly beveled inner edge adapted to engage the outer edge of said block and means adapted to engage the clamp for confining the same against lateral movement.

7. In a dumping car, the combination with a car body having a vertically swinging side door, of a block fixed thereto and having an inwardly beveled outer edge, a staple fixed to the door and inclosing the block, and a retaining clamp having an outwardly beveled inner edge adapted at times to engage the outer edge of the block and to lie between the block and staple.

8. In a dumping car, the combination with a car body having a vertically swinging side door, of a clamping bar pivoted beneath the car body, a wedge-shaped hook connected to said bar and adapted to engage said door for maintaining the same closed, and a staple fixed to the door in po-

sition for inclosing the hook when the door is closed.

5 9. In a car, the combination of trussed I-beams, outwardly extending angular brackets varying in depth relative to the depth of the truss of the respective I-beam and fixed to the I-beams and having outwardly and downwardly tapering upper edges, and an inverted V-shaped car bottom
10 mounted upon the upper edges of said brackets.

15 10. In a car, the combination of I-beams, angle brackets mounted upon the upper edges thereof and spaced apart and extending outwardly therefrom and formed with outwardly and downwardly tapering upper edges, and an inverted V-shaped car bottom mounted on the upper edges of said brackets.

20 11. In a dumping car, the combination with a car body having vertically swinging side doors, of means for retaining said doors normally closed, cylinders and pistons therein for actuating the door retaining means, a

common source of supply of pressure for said cylinders, and means accessible at the 25 respective sides of the car for independent control of pressure to each of the respective cylinders.

12. In a car, the combination of longitudinal sills, angle brackets mounted upon 30 the same and spaced apart transversely of the car and formed with outwardly and downwardly inclined edges, an inverted V-shaped car bottom mounted on the upper edges of said brackets, movable doors, and 35 operating mechanism therefor disposed beneath the bottom and between the longitudinal planes of the car occupied by the brackets.

In testimony whereof I affix my signature in presence of two witnesses. 40

CHARLES RUSSELL WHIPPLE.

Witnesses:

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