

No. 882,129.

M. H. TREADWELL.
DUMPING CAR.

PATENTED MAR. 17, 1908.

APPLICATION FILED FEB. 20, 1907.

2 SHEETS—SHEET 1.

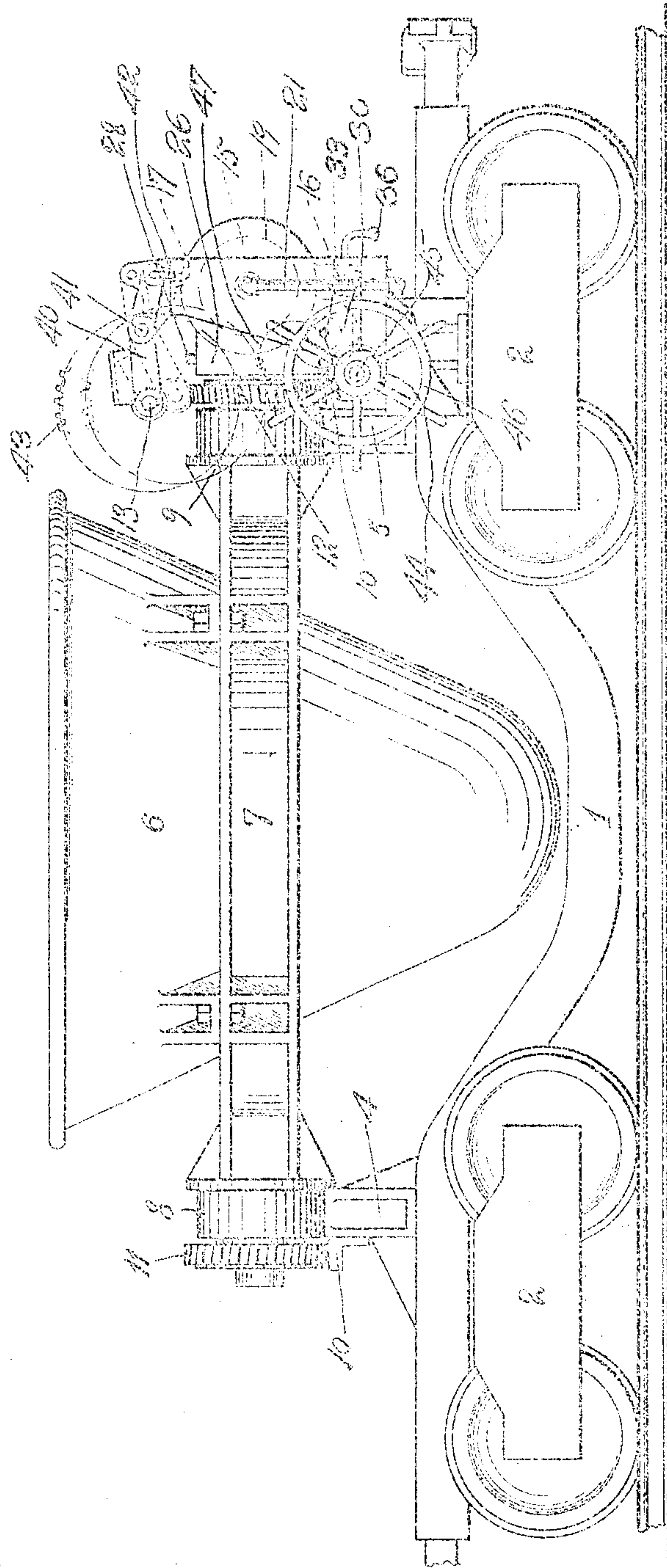


FIG. 1

Witnesses:
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Inventor
Thomson H. Treadwell
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Edwards, Lacy & Worcester

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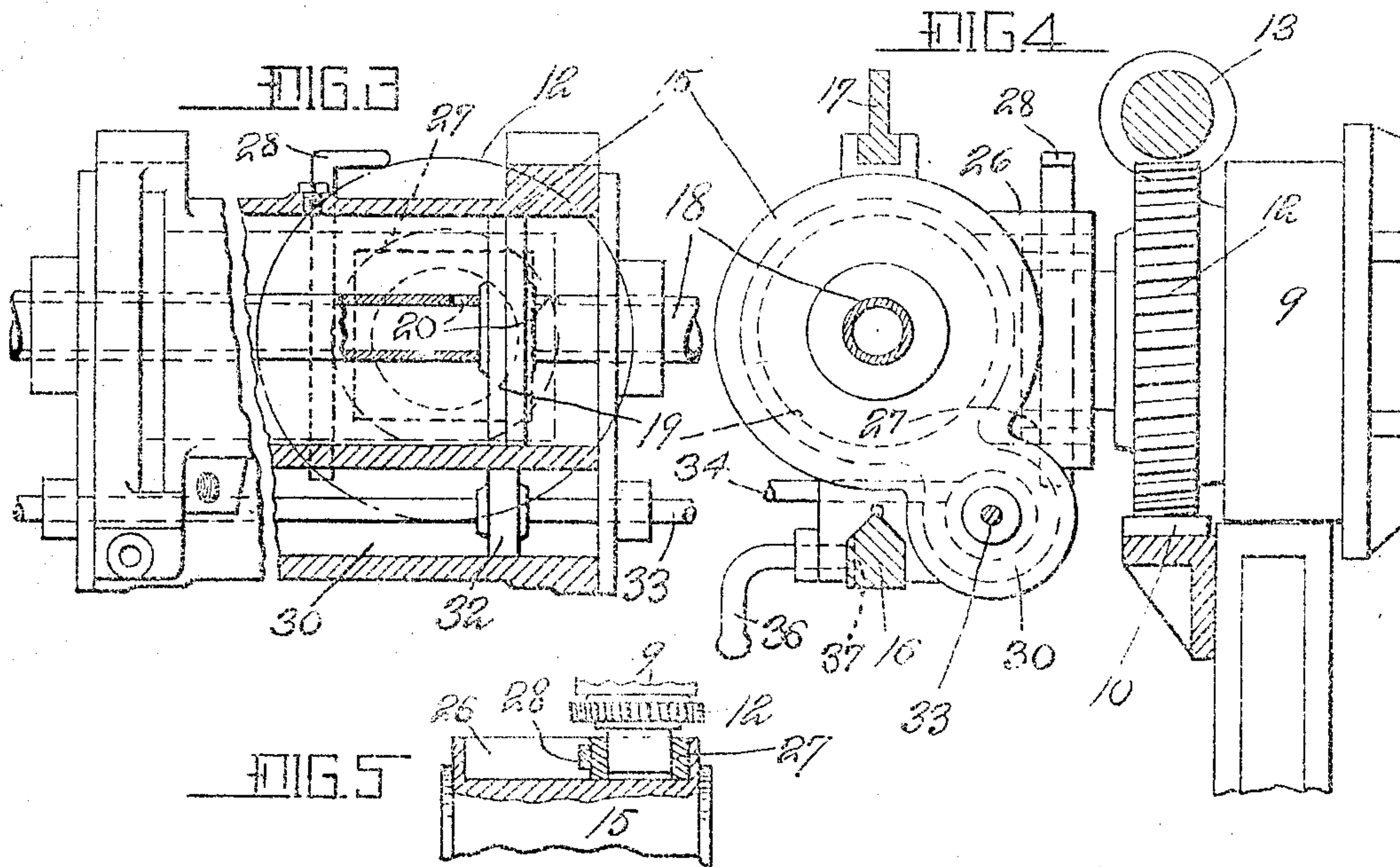
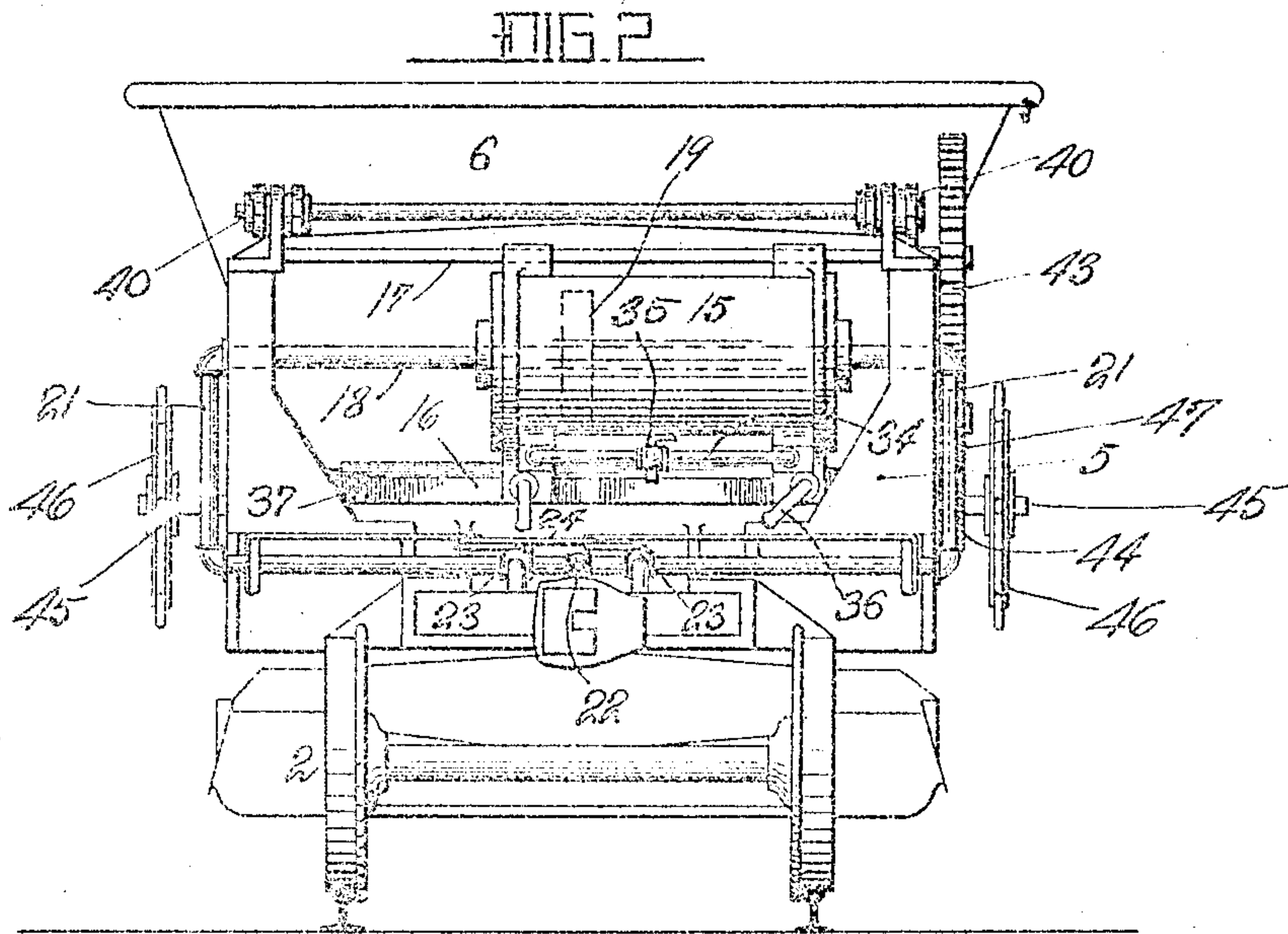
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2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

MUNSON H. TREADWELL, OF NEW YORK, N. Y.

DUMPING-CAR.

No. 882,129.

Specification of Letters Patent. Patented March 17, 1908.

Application filed February 20, 1907. Serial No. 358,346.

To all whom it may concern:

Be it known that I, MUNSON H. TREADWELL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Dumping-Cars, of which the following is a full, clear, and exact specification.

This invention relates to dumping cars, and more particularly has reference to cars wherein the body is mounted to be moved laterally and simultaneously turned in order to discharge the contents.

The object of this invention is particularly to provide an improved actuating mechanism, whereby the car body can be moved and tipped, either by power or manual connections.

Further objects of the invention are to provide means for controlling and cushioning the movement of the car body; to provide improved locking mechanism for the car when not being tipped; together with various improvements in the arrangement and construction of the parts, all of which will more fully appear in connection with the description of the accompanying drawings, wherein

Figure 1 is a side elevation of a car embodying the invention; Fig. 2 is an end elevation; Fig. 3 a detail of the actuating and controlling cylinders, and Fig. 4 is a detail side elevation of one end of the car body support and the actuating connections. Fig. 5 is a detail view.

1 represents an underframe mounted on railway trucks 2, and provided with the usual coupling equipments used on cars of this type. At each end of the underframe are supporting pedestals 4, 5, raised somewhat above the top of the frame, and these pedestals have their upper faces formed as transverse tracks, on which the car body is supported in such manner as to permit the body to move laterally, and simultaneously tilt, in either direction.

6 represents a car body, herein shown as a slag or cinder ladle, carried by a frame 7, provided at each end with trunnions 8, 9, which rest on the respective pedestals 4, 5. Each pedestal has a rack 10, and meshing therein are gears 11, 12, having inclined or skew teeth.

The power mechanism for operating the car body comprises a reciprocatory cylinder 15, mounted on the pedestal 5 and reciprocating between horizontal guides 16, 17. 18

is a stationary hollow piston rod, having a piston 19, and at each side of the piston 19 are inlet ports 20 through which fluid pressure, as air or steam, will be admitted to reciprocate the cylinder. Each end of the hollow rod 18 is connected by pipes 21, 21, with supply pipes 22, 22, controlled by three way cocks 23, 23, so that when one side of the cylinder is opened to the pressure, the other side will be opened to the exhaust. The cocks 23 are connected by a link 24, which extends on each side to the side of the car, to permit convenient operation. In order to move and turn the car body, the latter, through the end of the movable frame 7, is connected to move to and fro with the cylinder 15. To this end, the inner side of the cylinder 15 carries a hollow box 26, and projecting into this box from the adjacent end of frame 7 turns, as in a trunnion. It will thus be seen that if the block 27 is locked to the cylinder, whenever the cylinder moves, the gears 12 and 11 will roll on the racks 10, thus moving the car body bodily in a lateral direction and at the same time turning it, the end of frame 7 turning in block 27.

28 is a key passing through slots in the upper and lower faces of box 26 for holding the block 27 at either end of the box 26. Inasmuch as it is desirable to dump the car body on both sides of the car frame, means is provided for moving the cylinder independently of the car body, by first withdrawing the key from one side of the block, and reinserting it on the other side after moving the cylinder and thereby holding the block at the other end of box 26. In this connection it should be understood that the stationary piston 19 is at about the middle of the car frame, and that the cylinder 15 and the car body when connected move in the same direction. Thus, if the car is to dump on the left, the cylinder will move to the left from its extreme right hand position, the block 27 being at the left end of box 26, and the cylinder and car body will both move to the right in returning. If now it be desired to dump on the right, by withdrawing the key 28, the cylinder can move independently of the body until the block 27 strikes the right end of box 26, whereupon by inserting the key to hold the block, and admitting fluid pressure on the right side of piston 19, the car will dump to the right. Preferably, there will be a single key and slots in the box leaving a

space on either side equal to the width of the block 27.

In dumping cars of this type, it has been found difficult, especially when the mass is once started, to control its movement by graduating the power applied, and an object of this invention is to apply a fluid checking device independent of the power devices, whereby the movement can be graduated as desired, and cushioned to any desired extent at the ends.

30 represents a fluid checking cylinder preferably cast integrally with the power cylinder 15, and moving therewith, and containing a stationary piston 32 mounted on a rod 33 carried by the pedestal frame.

34 is a by-pass carried by cylinder 30 and connecting the opposite sides of cylinder 30, and 35 is a controlling cock therein. The cylinder 30 will preferably be filled with a fluid, such as oil, and by adjusting the cock 35, the velocity of flow, and thus the momentum of the moving car body can be readily controlled independently of the power controlling valves. If the cock 35 be shut, the car body will be locked at any point against movement, and by nearly closing it, the momentum can be checked without straining any of the parts. When the car is not being dumped, it is prepared to lock the body by means of screws 36 carried by the ends of the cylinder casting and engaging one or the other of notches 37 in the ends of the lower cylinder guide 16, according to which side the cylinder is on. As long as the cylinder is locked the car body cannot move.

In order to enable the car to be dumped when power is not available, means is provided for turning the gear 12 manually, through worm 13. The latter is mounted in a swinging frame 40 pivoted at its ends on the pedestal 5 at 41, and adapted to be clamped in either position by a screw 42 engaging the pedestal frame. When the frame 40 is swung downwards the worm 13 engages gear 12, and gear 42 on worm shaft 13 meshes with an intermediate gear 43. The intermediate gear 43 meshes with a pinion 44 on a transverse shaft 45 having at each end the hand wheels 46, which can be turned by the operator. It will be seen that the fluid check operates in the same manner as when the power is being used to actuate the car body.

From the foregoing description, the operation of the car will be understood, and it will be seen that by these improvements, a dumping car is provided which can be operated either by power or manually, and which can be readily controlled by means of the fluid check provided. Furthermore, by forming the two cylinders integrally, there is greater strength, as well as no likelihood of the parts getting out of order. The form of the car body may be varied as desired, from the form

herein shown, and the other details of construction may also be changed, without departure from the invention which is not to be limited to the specific form described.

Having thus described my invention, I declare that what I claim as new and desire to secure by Letters Patent, is,—

1. In a dumping car, the combination with a movable car body, and manual means for moving it to discharging position, of means independent of the manual actuating mechanism for controlling the rate of movement of the car body, substantially as described.

2. In a dumping car, the combination with a movable car body, and manual means for moving it to discharging position, of fluid checking means for controlling the movement of the car body and movable therewith, substantially as described.

3. In a dumping car, the combination with a pivoted and bodily movable car body, and a movable power cylinder for moving the car body, of a movable fluid checking cylinder for controlling the entire movement of the car body and moving with the power cylinder.

4. In a dumping car, the combination with a pivoted and bodily movable car body, and a movable power cylinder for moving the car body, of a movable fluid checking cylinder carried thereby for controlling the entire movement of the car body, and means for varying the fluid flow, substantially as described.

5. In a dumping car, the combination with a pivoted and bodily movable car body, and a movable power cylinder for moving the car body, of means for positioning the cylinder to move the car body to opposite sides, and means independent of the power cylinder and moving therewith for uniformly controlling the entire movement of the car body, and means for varying the effect of said controlling means, substantially as described.

6. In a dumping car, the combination with a pivoted and bodily movable car body, and a movable power cylinder for moving the car body, of means for positioning the cylinder to move the car body to opposite sides, and a liquid checking mechanism movable with the cylinder and uniformly controlling the speed thereof independently of the power applied, substantially as described.

7. In a dumping car, the combination with a movable car body, of separate hand and power devices for operating the car body, and means for controlling the speed of the car body throughout its entire movement independently of the power devices, substantially as described.

8. In a dumping car, the combination with a movable car body, of hand means for operating the car body, said hand means

being mounted to be swung out of engagement, substantially as described.

9. In a dumping car, the combination with a car body, and a movable cylinder for dumping it, of a movable dash pot cylinder and stationary piston having a by-pass between opposite sides of the piston, and means for controlling the flow through the by-pass, substantially as described.

10. In a dumping car, the combination with a frame having tracks, of a body mounted to roll and tilt thereon, a gear and rack for moving said body, and separate power and manual means for operating said gear, and means for disconnecting the manual gear, substantially as described.

11. In a dumping car, the combination with a frame having tracks, of a body mounted to roll and tilt thereon, a gear and

rack for moving said body, and separate power and manual means for operating said gear, and checking means movable with the car body and independent of the power, said means being effective throughout the entire movement, substantially as described.

12. In a dumping car, the combination with a movable car body, of a gear and rack for moving the body, and separate means for turning the gear comprising a worm, and a reciprocatory cylinder, and means for disconnecting the worm when the cylinder is used, substantially as described.

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

MUNSON H. TREADWELL.

Witnesses:

JULIAN S. WOOSTER,
GEO. A. HOFFMAN.