

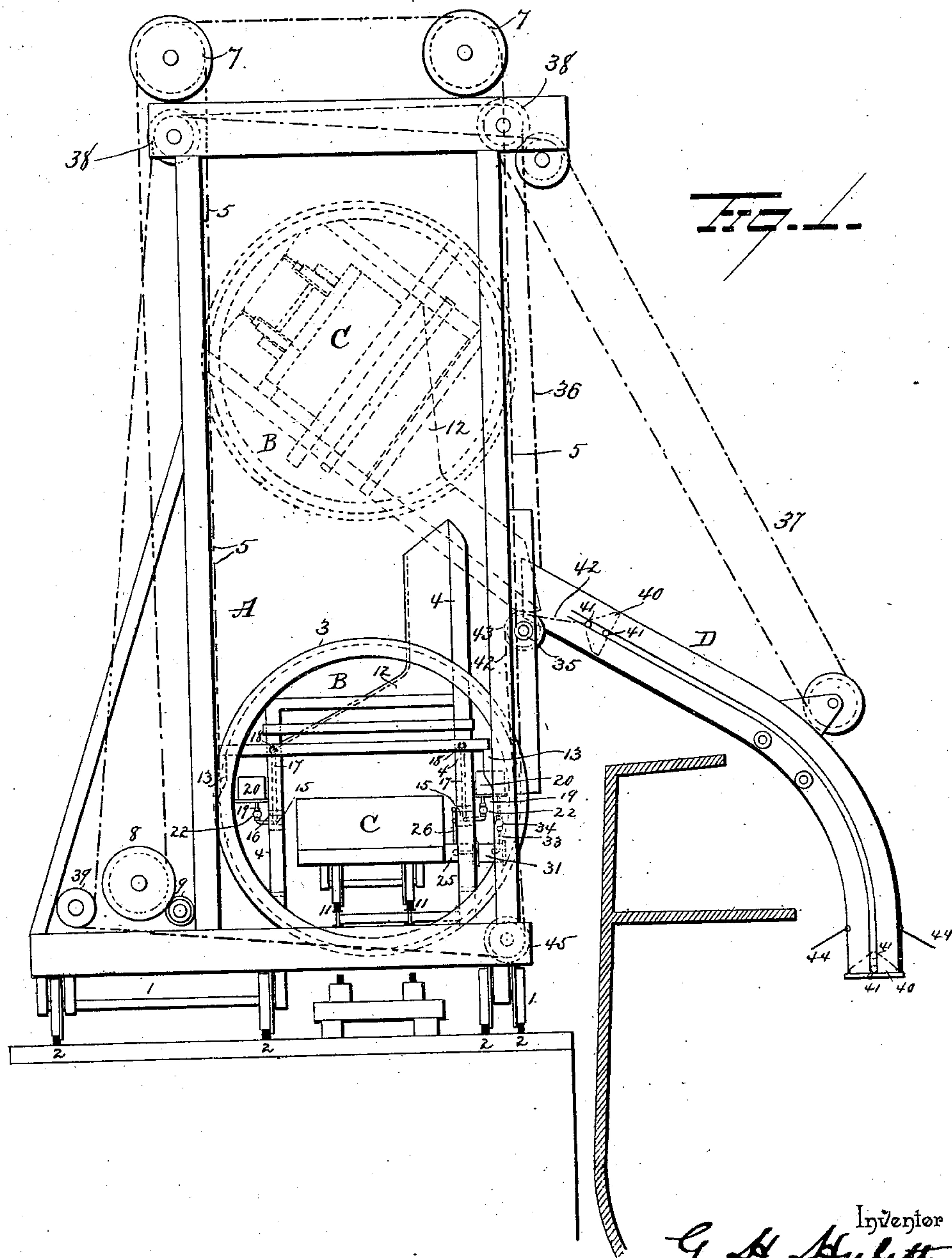
(No Model.)

3 Sheets—Sheet 1.

G. H. HULETT.
CAR DUMPING MACHINE.

No. 568,851.

Patented Oct. 6, 1896.



Witnesses
E. J. Nottingham
G. F. Downing

Inventor
G. H. Hulett
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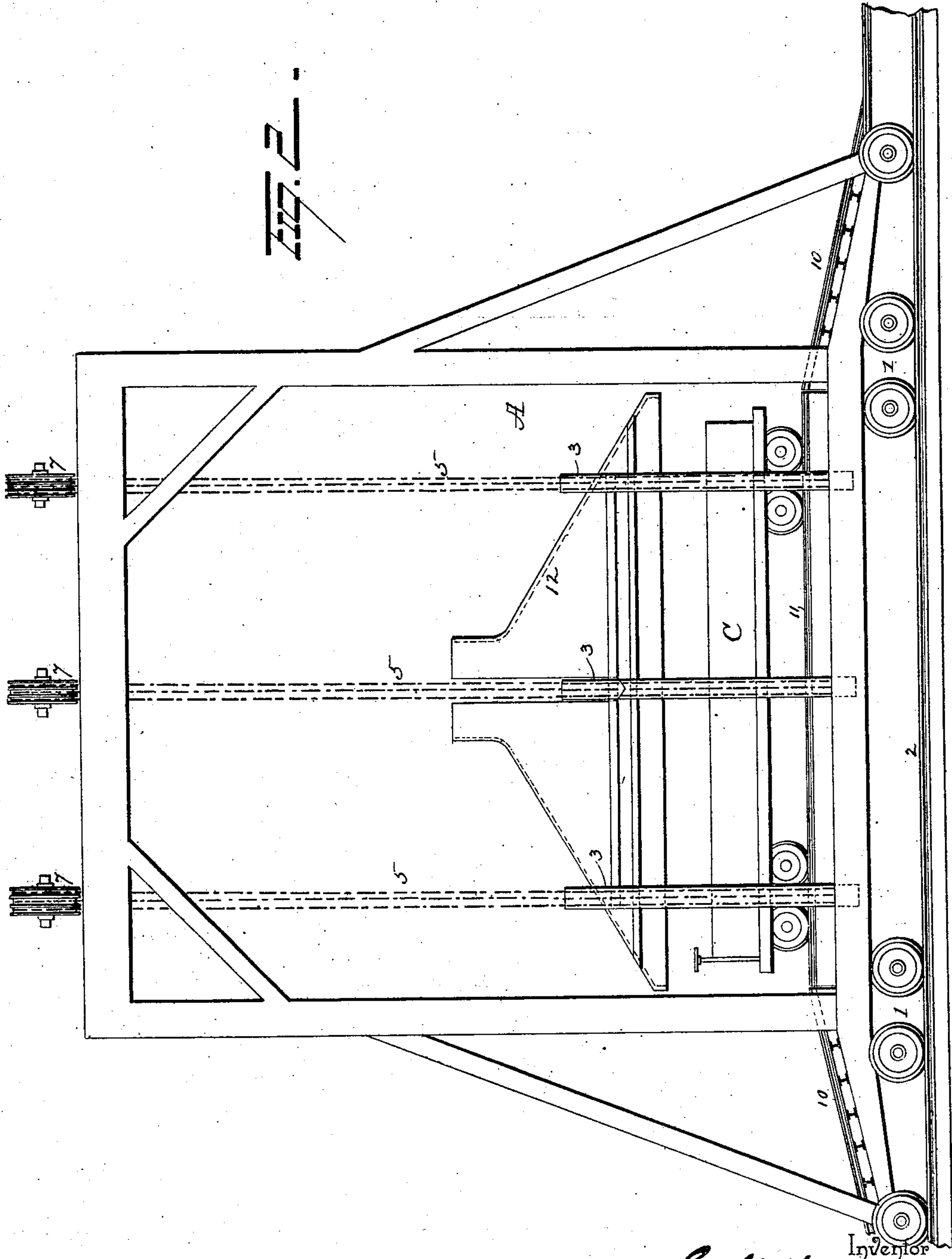
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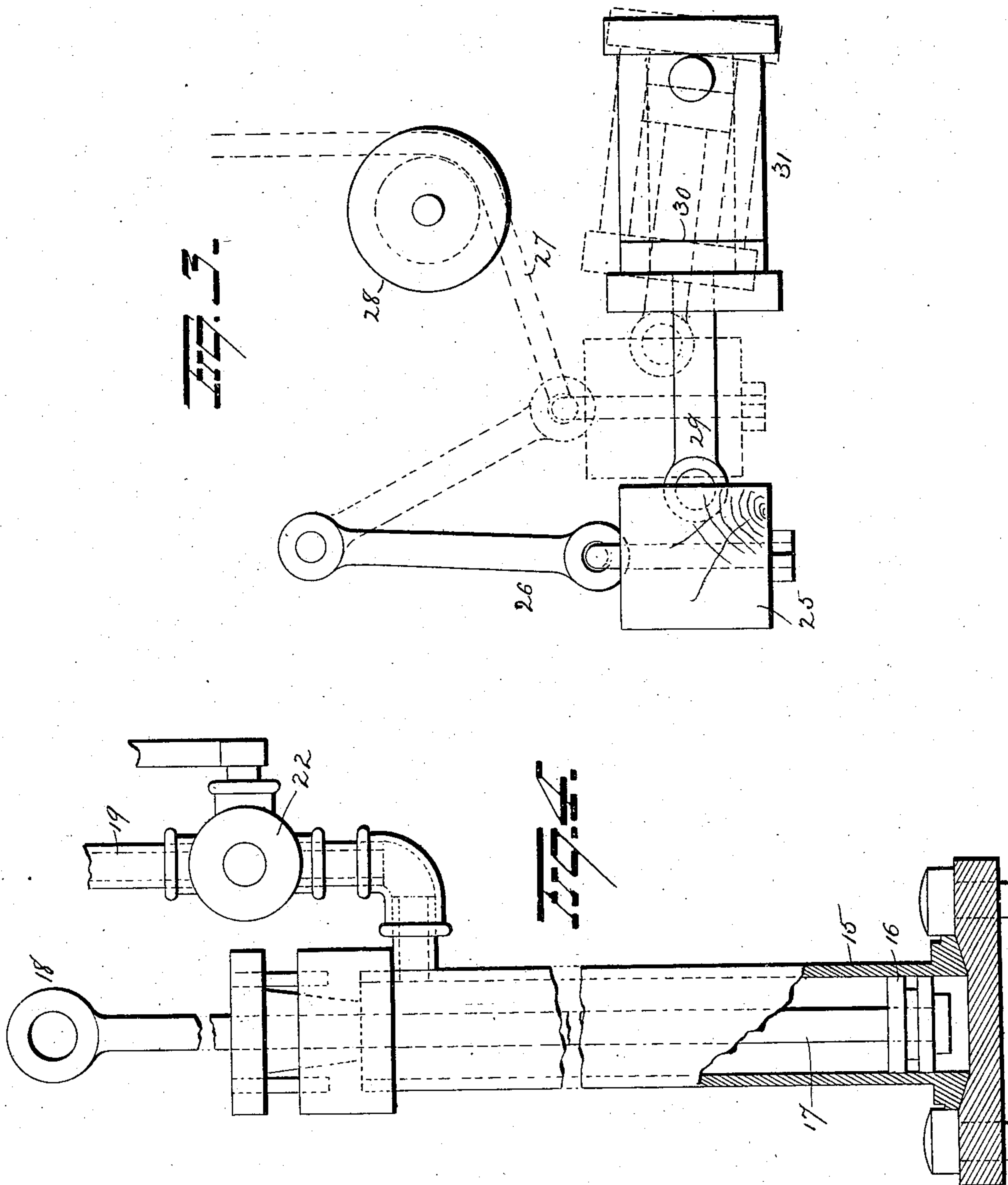
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UNITED STATES PATENT OFFICE.

GEORGE H. HULETT, OF CLEVELAND, OHIO.

CAR-DUMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 568,851, dated October 6, 1896.

Application filed October 23, 1895. Serial No. 566,612. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. HULETT, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Car-Dumping Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in car-dumping machines, and more particularly to an improvement in that variety of machines in which a loaded car is elevated to a suitable point and then turned over sidewise to allow its contents to descend by gravity into a chute, whence it is discharged into the vessel or other receptacle adapted to receive it; and it consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in end elevation. Fig. 2 is a view in side elevation, and Figs. 3 and 4 are enlarged details.

A represents the main framework or superstructure of the machine, and 1 1 the trucks upon which it is mounted and which travel on the tracks 2 2 in shifting the machine from one point to another along the dock.

B is a cylinder composed of several rings 3 3, as shown in Fig. 2, which rings are connected together in any suitable manner. Within the cylinder also are upright posts 4 4, a portion of which on one side of the cylinder, at the center, project beyond the cylinder. This cylinder is suspended in several slings formed of cables 5-5, attached outside of cylinder B and passing over sheaves 7 7 at the top of the main frame A and thence to some convenient winding-drums, as at 8, where their ends are attached, and these drums are driven by means of suitable gearing, as at 9, for the purpose, and this gearing is driven and controlled by the engine. (Not shown.)

C indicates the car. It is run into the cylinder over either of the inclines 10 10 onto the tracks 11 in the cylinder.

A combined roof and hopper 12 is provided,

as shown in Figs. 1 and 2, to cover the car and serve as a funnel and receive the discharged coal as the car is dumped. This hopper normally rests upon brackets 13 13 on the main frame A, and one edge rests upon the centrally-located and extended posts 4 4.

In the operation of the apparatus the car is run into the cylinder, the gearing 9 is set in motion and drums 8 rotated, and the cylinder is elevated to the position shown in dotted lines in the upper portion of Fig. 1. The cylinder may be turned over, merely lifting it high enough to clear the bottom support, then reversing one drum and revolving it axially; or it may be raised and turned at the same time by raising it far enough to clear the bottom support, then holding one drum and revolving the other; or, again, it may be raised to any desired height and then turned over by reversing one drum. The chute is fixed at a height necessary to clear the gunwale of boats at different heights. Then the cylinder is raised high enough so that the concentrating-chute on the cylinder itself will engage with the chute before mentioned when the coal is lowered to flow out as the cylinder is turned up. The cables are made fast at one end to the cylinder. In the act of elevating the cylinder, with its load, when the upper edge of the car reaches the base of the hopper 12 the latter is lifted off of the brackets upon which it rested and is in position to be clamped against top of the car. The clamping may be effected in any approved manner. A very convenient means consists in the hydraulic cylinders 15 15, the pistons 16 16 of which are connected by the piston-rods 17 17 to the base of the hopper, as at 18 18. Pipes 19 19 lead from the water-tanks 20 20 into these cylinders 15 15 at a point between the pistons 16 16 and the upper heads of the cylinder, and the flow of water is controlled by the valves 22 22 in these pipes. Now, to continue with a description of the operation, as the main cylinder with its load is raised the hydraulic cylinders therein are also raised. Their pistons 16 16, being connected with the hopper by means of the rods 17 17, remain stationary until the car reaches the hopper, when of course all parts move together. The valves 22 22 are now opened and the water is per-

mitted to flow into the cylinders 15 15 until the space between the pistons and the upper ends of the cylinders is filled with water. The valves are then shut and the water is locked in and the parts are securely clamped together.

Additional means may be employed for blocking one side of the car, as is shown in enlarged detail in Fig. 3. This consists in block 25, suspended from a part of the main cylinder or cylinder-frame by means of links 26, which sustains the main weight thereof, and a cable 27, attached to the hopper and passed around sheave 28, which draws the block over laterally to one side, as indicated in dotted lines, when the parts are in the position shown in the lower part of Fig. 1. This block 25 is also connected with the outer end of a piston-rod 29, extending from piston 30 of the pivotally-supported hydraulic cylinder 31. This cylinder is supplied with water from the tank 20 by means of a pipe 33, and the water is held under control by means of a valve 34. It will be seen that as the parts are elevated, as previously alluded to, the hopper remains stationary until the car is raised high enough to strike it. As the distance between the parts decreases, slack is formed in cable 27 and block 25 drops down alongside the car, as indicated in full lines. To lock the block against the side of the car so that it is given a solid lateral support, the valve 34 in pipe 33 is opened to let water into the cylinder back of the piston 30. The valve is then turned and the water is locked in and the block is held rigidly in position against the side of the car, which becomes the lowermost side when the main cylinder is rocked over into the position shown in the upper part of Fig. 1. It is evident that a similar block and hydraulic mechanism or equivalent appliance might be placed on the other side, and it may also be mentioned in this connection that with very slight variation the car might be dumped the other way.

In addition to the features above described I have devised an improved chute D. This is supported and adapted to turn at one end on the roller 35, and is suspended by means of cables 36 37, connected, respectively, with its inner and outer ends. These cables pass over sheaves 38 38 and finally to drums 39, upon which they are wound to regulate the inclination and position of the chute. Inside of this chute is located a traveler or valve 40. This traveler or valve is preferably cone-shaped and provided on each side with one or more laterally-projecting ears 41 41, which are guided in a slot or groove in each side of the chute. A cable 42, extending from this traveler or valve, is passed over sheaves 43 and 45 and to a drum in the engine-room, where it is controlled like the other cables. At the lower end of the chute there are but one or two doors 44, one or both of which may be opened, as desired. The traveler is em-

ployed to regulate the size of these openings and cause the coal to flow slowly and in a solid body, whereby breakage is reduced to a minimum.

To briefly recapitulate, the car is first run into the main cylinder, the cylinder is hoisted, and the car locked in place. The cylinder and car are then turned over to discharge the coal, the door in the outer end of the hopper being opened and the traveler or valve in the chute being in its elevated position, as shown. This traveler or valve is then lowered to the proper position to allow the coal to discharge. The position of the chute may be varied and the other parts also are all under the control of the engineer. In this way the material is easily, rapidly, and economically handled and with the least possible breakage.

It is evident that slight variations might be made in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

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

1. In a car-dumping machine, the combination with a main frame, of a main cylinder into which a loaded car is run, and flexible devices in which the cylinder is suspended, of a hopper adapted to be locked over the top of the car and through which the contents of the latter is dumped, substantially as set forth.

2. In a car-dumping machine, the combination with a main cylinder, a car and flexible suspending devices constructed to elevate, lower and turn the cylinder, of a hopper supported on stationary brackets and means for clamping the car between the hopper and a part of the cylinder, substantially as set forth.

3. In a car-dumping machine, the combination with a main frame, a main cylinder, and a car located in the cylinder, of a hopper supported on stationary brackets on the main frame means for raising the car to the hopper, means for jacking the car in place and securing the car and hopper together and means for raising lowering and dumping the car, substantially as set forth.

4. In a car-dumping machine, the combination with a main frame, a main cylinder and cable in the loops of which the cylinder is suspended and by means of which the cylinder is turned axially, of a hopper, a car, means for locking the car and hopper together, a block for locking the car against lateral movement, this block and means for locking it, substantially as set forth.

5. In a car-dumping machine, the combination with a main cylinder, means for suspending and turning the latter, and a car, of a hopper, means for locking the car and hopper together, a block suspended from some part of the cylinder and having connection,

with the hopper whereby its position is automatically controlled, and means for locking this block, substantially as set forth.

5 6. In a car-dumping machine, the combination with a car-dumping mechanism, of an inclining chute movable bodily up and down vertically whereby to discharge at the same angle into the hold of a vessel whether it be high or low, and means for elevating the material to be lowered through the chute to discharge into the upper end of the chute, substantially as set forth.

10 7. In a car-dumping machine, the combination with a dumping mechanism, of a chute, and a traveler or valve therein, substantially as set forth.

15 8. In a car-dumping machine, the combination with a cylinder, of blocking carried by

the cylinder for holding the car to be dumped securely in position, and hydraulic devices also located in the cylinder for holding the blocking in position, substantially as set forth. 20

9. In a car-dumping machine, the combination with a cylinder, of blocking pivotally suspended in the cylinder for holding the car to be dumped securely in position, and self-contained hydraulic devices carried by the cylinder for operating the blocking, substantially as set forth. 25

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 30

GEORGE H. HULETT.

Witnesses:

GUSTAV VON DEN STEINER,
CHAS. F. LANG.