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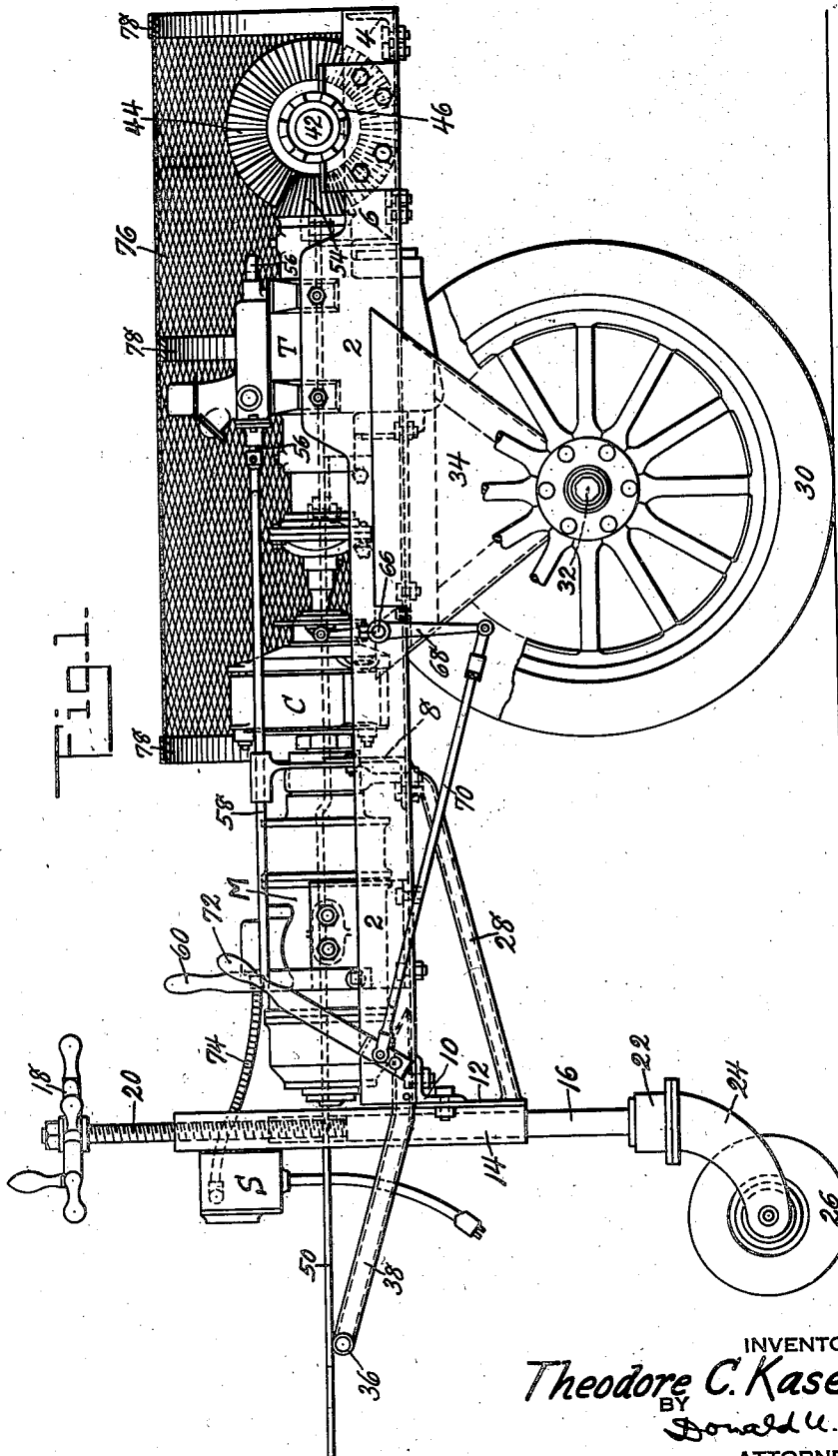
T. C. KASEBERG

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OPERATING MACHINE FOR DUMPING DOORS

Filed June 20, 1939

2 Sheets-Sheet 1



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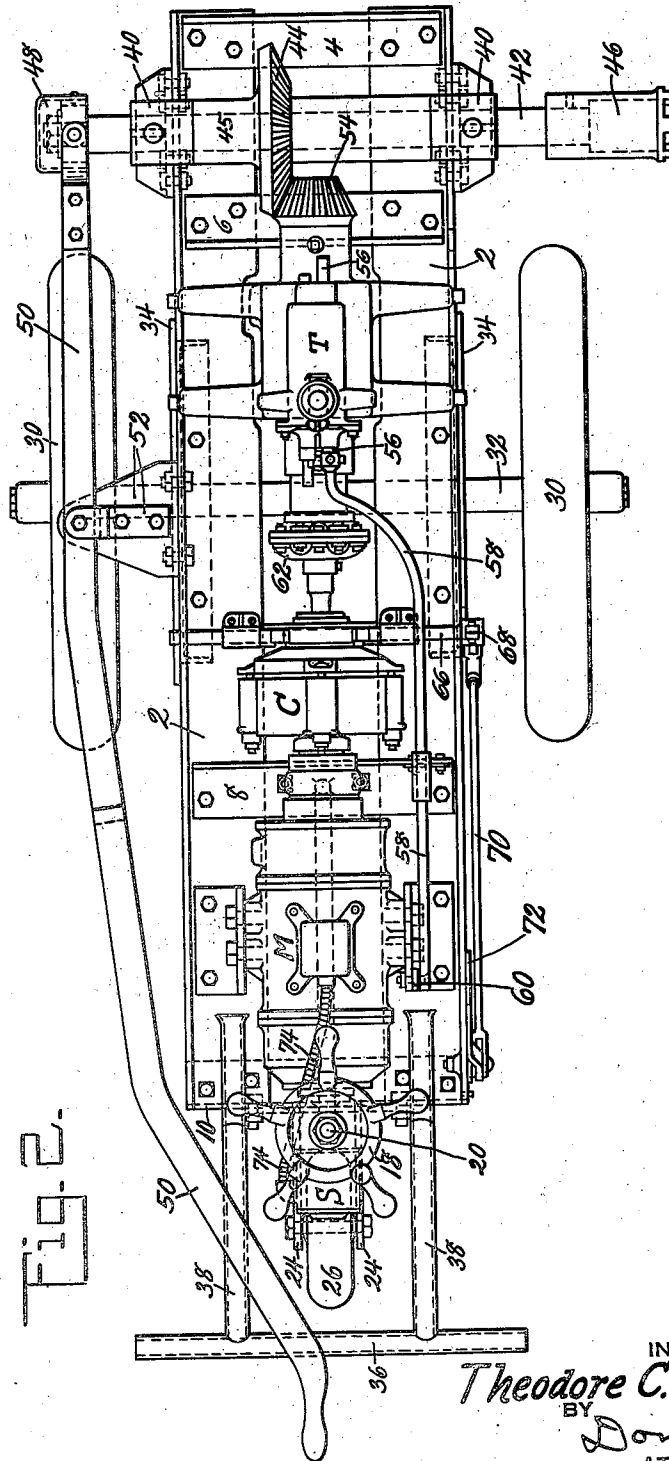
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2 Sheets-Sheet 2



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OPERATING MACHINE FOR DUMPING
DOORS

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Application June 20, 1939, Serial No. 230,041

1 Claim. (Cl. 81—57)

This invention relates to operating mechanisms in general and in particular to such mechanisms as used in connection with dumping cars wherein the doors are controlled by a winding shaft.

In the past all dumping doors on ballast cars, etc., have had to be operated manually, requiring a large number of men for this operation. The manual operation was exceedingly slow causing unnecessary delays and this was particularly objectionable during erection of the cars where a large number of door operations were necessary during final assembly and fitting and also during operation or acceptance of the cars. It is an object, therefore, of the present invention to provide a power driven door operating mechanism for raising and lowering the doors on dump cars.

A further object of the invention is the provision of a portable power driven door operating mechanism for raising and lowering the doors of dump cars or any type of door which is controlled by a winding shaft.

A still further object of the invention is the provision of a power driven door operating mechanism so controlled that the doors may be positively shifted at all times during both the lowering and raising and may be connected or disconnected from the doors at any time.

These and other objects of the invention will be apparent to persons skilled in the art from a study of the following description and accompanying drawings in which:

Figure 1 is a side elevational view of the device with parts broken away to better disclose the construction, and

Fig. 2 is a plan view of the device with the protecting screen removed.

Referring now to the drawings, it will be seen that the device has been constructed to operate dumping doors and is particularly intended for doors of the type shown on Patents 1,551,741 and 1,800,832, although it is to be understood that it is equally applicable to any doors controlled by winding shafts even though arranged differently than disclosed by the above noted patents. In the present instance the door controlling mechanism is mounted on a framework consisting of longitudinal side angles 2 connected together by transverse angles 4, 6, 8 and 10, all of which have one flange directed upwardly excepting member 10 which has its flange directed downwardly. The downwardly directed flange of transverse member 10 is bolted or otherwise secured to a plate 12 to which is welded a tube

14 adapted to slidably receive shaft 16. The positioning of shaft 16 in the tube is controllable by means of an operating hand wheel 18 and screw shaft 20, thereby permitting positive raising and lowering of the shaft within the tube. The lower end of shaft 16 is connected by means of a rotary thrust bearing 22 to a swivel truck 24 carrying a wheel 26, preferably of the pneumatic type. A brace 28 connects transverse angle 8 and plate 12 together, thereby stiffening the connection and preventing any displacement of the tube relative to the frame. The main weight of the device is supported upon wheels 30 mounted upon an axle 32 having supporting relation with the lower ends of triangular plates 34, the upper ends of which are welded or otherwise secured to the longitudinal side pieces 2. Movement of the frame is controlled by means of handle 36 welded or otherwise connected to pipes 33, the inner ends of which are welded or otherwise secured to the side pieces, thus permitting the ready movement of the mechanism.

Intermediate the transverse braces 4 and 6 are bearings 40 connected to the side pieces and providing support for shaft 42 rotatable therein and to which is splined gear 44 formed integral with a tubular portion 45. The shaft 42 is slidable along the axis of the gear and is provided on one end with a winding shaft engaging head 46 and at its other end with a thrust bearing 48 to which is connected one end of an operating lever 50, the other end of which is located adjacent the handle 36, while the intermediate portion is carried by pivot structure 52 connected to one of the side pieces. The gear 44 is adapted to mesh with a second gear 54 carried upon a shaft extending outwardly from the transmission T, which may be of conventional automotive design and which is bolted or otherwise secured to the side pieces. This transmission may be used to change the speed of rotation of the gear 44, although in most instances it is sufficient to use only the reversing mechanism. In the present instance the slide 56 is connected by means of a pull shaft 58 to a lever 60 located adjacent the handle 36 and permitting the forward or reverse rotation of the gear 54 and accordingly the head or wrench member 46. The input end of the transmission is connected by means of flexible coupling 62 to one element of clutch C, the other element of which is driven by means of a motor M mounted on the side pieces and upon the transverse tie 8, thus giving a three-point support therefor. The slidable element of the clutch is controlled throughout by lever 64 keyed or other-

wise secured upon shaft 66 journaled in the side pieces and extending upwardly beyond one of the pieces for connection by means of bell crank 68 and rod 70 to clutch control lever 72. Power is supplied to the motor or prime mover through switch S and cable 74. The moving parts of the mechanism are preferably housed by means of screen 76 carried by a framework 78 secured to the side pieces, thereby preventing any contact between an operator and the mechanism. It is, of course, obvious that the motor or prime mover may be of any type other than electric if desired and that the transmission may be purely a reversing mechanism without provision being made for change speed.

In operation the mechanism may be wheeled in position along side the railway car and the head 46 brought into alignment with the winding shaft on the car by raising or lowering the rear end of the mechanism through rotation of hand wheel 18. As soon as the head 46 is in alignment with the car winding shaft the motor may be turned on or if it is already running, then handle 50 is operated to engage the head with the winding shaft, after which the clutch may be engaged. It is, of course, understood that the transmission will have been placed in the proper condition for either forward or reverse rotation prior to engagement of the clutch and in order that the door winding shaft may be properly rotated to raise or lower the door. As soon as the door has reached its desired position clutch C is disengaged, after which head 46 is moved out of engagement with the winding shaft and the mechanism may be moved along the track for operation of the doors on other cars. It will be obvious that the hand wheel 18 may be used each time to align the head 46 with the winding shaft, but the operation may be speeded up by merely raising or lowering the handle 36 manually, thus aligning the shaft and head. In such case, the supporting wheel 26 and its associated

structure would merely act as a support during transport and during periods of idleness. The winding head 46, as shown on the drawings, is intended for engagement with the winding shaft end shown in Patents 1,551,741 and 1,800,832. In case the winding shaft end is of slightly different construction, then a properly designed head may be fastened upon the shaft 42 in place of the head 46 shown by the drawings.

While the mechanism has been described more or less in detail, it is obvious that various modifications, other than those referred to, may be made and all such modifications and any rearrangements of parts are contemplated as will fall within the scope of the appended claim which defines my invention.

What is claimed is:

In a dumping door operating machine adapted to run alongside of railway dump cars having dumping doors controlled by a winding shaft, the combination of a main frame, wheels and axles supporting said frame for movement alongside of and substantially parallel to the car sides, a shaft laterally slidable upon said frame into and out of engagement with the winding shafts of the cars, power driven means carried on the frame and adapted to rotate said shaft and including reversing mechanism whereby said shaft and the car winding shafts may be rotated in either direction to raise or lower the car doors, said main frame and the equipment carried thereby being substantially balanced on two of the wheels and axles with the unbalanced weight being supported on a vertically adjustable third wheel and axle, handles fastened to the frame remote from said shaft whereby the machine may be easily moved and the shaft height quickly changed, and means carried by said shaft and extending to adjacent said handles for shifting said shaft laterally of the machine into engagement with the car carried shafts.

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