A. BECKER.

DUMPING CAR.

APPLICATION FILED APR. 29, 1908.

951,933. Patented Mar. 15, 1910.

2 SHEETS—SHEET 1.

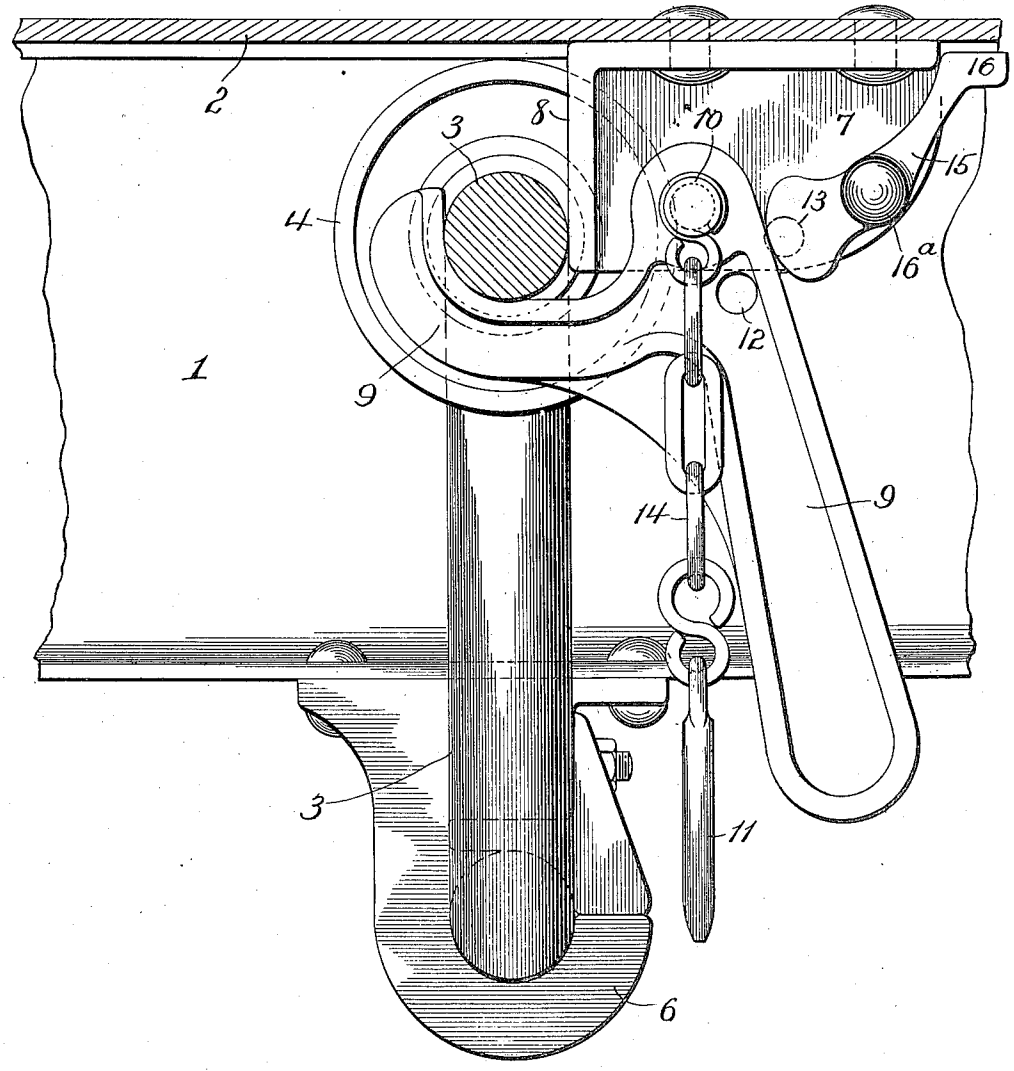

FIG. 1.

WITNESSES

E. D. Nottingham

G. F. Downing

INVENTOR

A. Becker

By R. A. Seymour

Attorney

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2 SHEETS—SHEET 2.

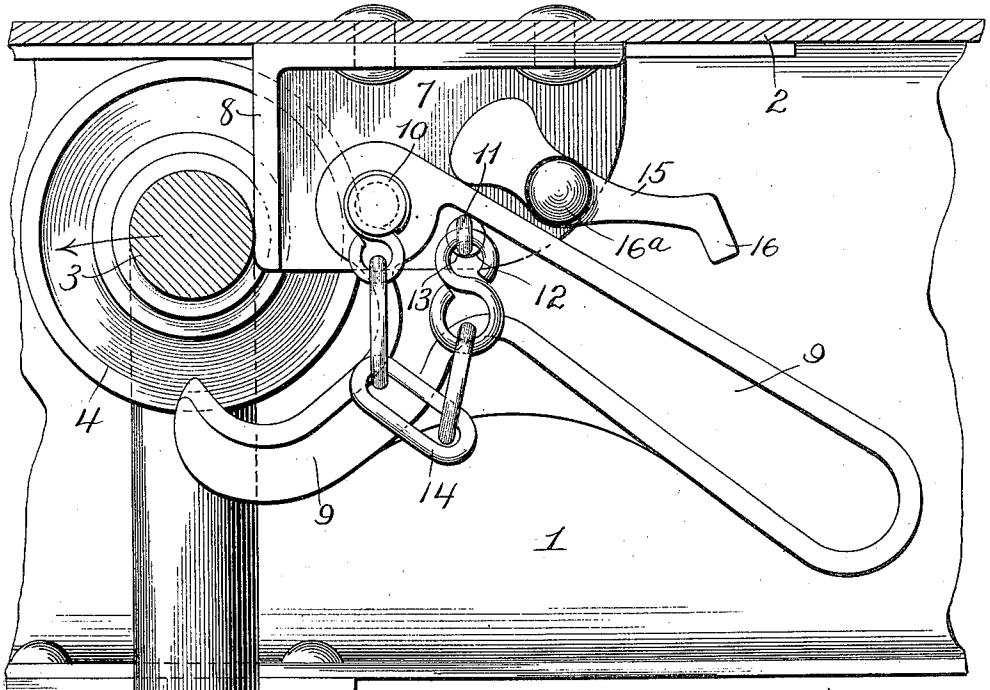

FIG. 2.

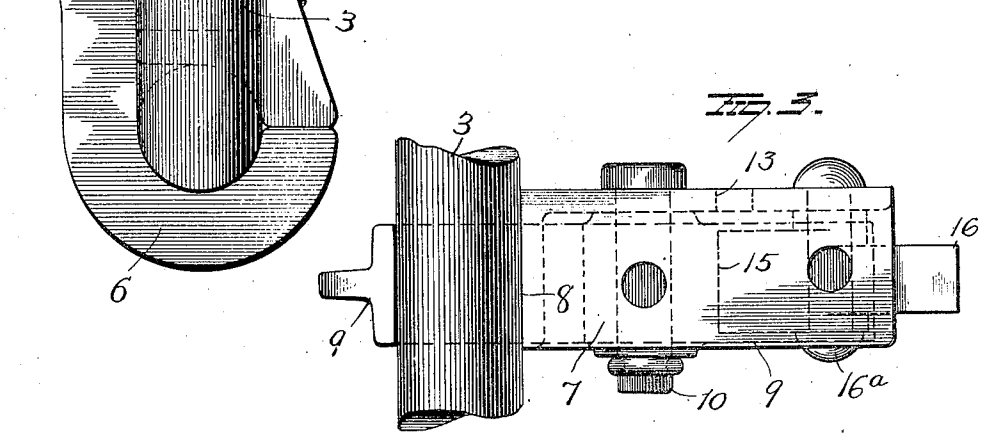

FIG. 3.

WITNESSES

E. D. Nottingham

G. F. Downing.

INVENTOR

A. Becker

By A. G. Seymour

Attorney

UNITED STATES PATENT OFFICE.

ANTON BECKER, OF COLUMBUS, OHIO, ASSIGNOR TO THE RALSTON STEEL CAR COMPANY, OF COLUMBUS, OHIO.

DUMPING-CAR.

951,933. Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed April 29, 1908. Serial No. 429,852.

To all whom it may concern:

Be it known that I, ANTON BECKER, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Dumping-Cars; 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 dumping cars and is designed particularly as an improvement on the construction disclosed in my pending application No. 407,015, filed Dec. 18th, 1907.

In the application referred to I show and describe a lever for locking the crank shaft against an abutment on the underside of a door when the latter is in its closed position, and a pin for holding said lever in its locking and unlocking positions.

The object of the present invention is to provide means for automatically locking the lever in its locking position, and it consists in a gravity latch adapted to automatically move to a position to prevent a return movement of the locking lever as the latter moves to its locking position.

In the accompanying drawings, Figure 1 is a view in side elevation of a portion of the underframe of a car, a drop door and section of the crank shaft showing the latter locked. Fig. 2 is a similar view showing the crank shaft released, and Fig. 3 is a plan view of the abutment locking lever, and gravity lock.

1 represents a cross bar or transom of a car, 2 is a drop door, and 3 a crank shaft carrying rollers 4 which move in contact with the underside of the drop door 2.

The shaft 3 is provided with a crank for each door of the series actuated by the same. In practice two alined crank shafts are employed at each side of the car, each shaft actuating one half the doors on one side. The shafts are supported in bearings, one of which is shown at 6 carried by the cross bearers and bolsters, and each is provided at its outer end with means (not shown) whereby the shafts may be turned for starting the opening movement, for closing the doors and for locking the shafts against rotation. The locking devices for holding the crank shaft from twisting or bending under torsional strains, may be applied to all the drop doors or to only those at the center of the car adjacent to the inner ends of the shafts or the ends farthest removed from the outer ends of the shafts and each comprises a bracket 7 secured by rivets or otherwise to the underside of a door 2 in a position to form an abutment or stop for the crank of the shaft when the crank is in its position for holding the door closed, which position is either vertical or slightly to one side of the vertical. The bracket comprises an integral top plate, end plate 8 and one side plate, as clearly shown in Figs. 1 and 2.

The locking lever 9 is pivotally secured to the bracket 7 below the top plate and in rear of the end plate, on pin 10 which latter is carried by the side plate. This lever is in the form of a bell crank, the longer member thereof constituting the handle, and the shorter member a hook, adapted to engage the crank as shown in Figs. 1 and 2, and hold it solidly against the end plate 8 of bracket 7, thus preventing the shaft from bending under any load and protecting it from torsional strains.

The locking lever 9 may be locked in the position shown in Fig. 1 by passing a pin through hole 12 in the lever below the bracket so that the engagement of the pin with the side of the bracket will prevent the lever from moving in a direction to release the locking lever and it may also be held in its unlocking position by passing pin 11 through hole 12 in the lever and through hole 13 in the side wall of the bracket. The pin 11 is loosely suspended from the lever carrying pin 10 by chain 14. The automatic means for locking the lever in its position for clamping the crank shaft against the bracket consists of the latch or lever 15 pivoted intermediate its ends at 16^a to the side wall of the bracket 7. The outer end of the lever 15, or the end nearer the lever 9, is the heavier and is so located with relation to lever 9 that when the latter is in its locking position, it engages the latter at a point below its fulcrum and positively locks said lever against movement, thus dispensing with the necessity of locking the lever in this one position by the pin 11. The lever 15 acts by gravity alone, hence when the handle of lever 9 is grasped and moved so as to carry the hooked end of the lever up against the face of the crank shaft, the heavier end of gravity lever falls and locks

lever 9 against accidental displacement. To turn lever 9 in a direction to release the crank shaft, it is necessary to depress the lighter end 16 of the gravity locking lever, thus freeing lever 9 and permitting it to be turned back by hand. If the parts should stick, the lever 15 may be released from lever 9 by forcing a tool between the lower face of the door 2 and free end of lever 15 and depressing the latter. When lever 9 is moved to unlocking position the heavier end of lever 15 rests thereon, ready to follow up the movements of the lever 9, and thus insure a positive lock against the accidental release of the shaft after lever 9 has been turned to its locking position.

When it is desired to dump the load or drop the doors, the levers are turned to their unlocking positions and secured by the pin 11 thus leaving the shafts free to be turned in a direction to drop the doors. After the doors have been raised to their normal closed positions by the rotation of the shafts, the latter may be again locked by the levers 9 and 15.

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

1. In a dump car, the combination with a hinged door, of a crank shaft, an abutment carried by the door and forming a stop for the crank when the latter is in its closing position, a locking lever for engagement with the shaft, and a gravity locking lever for preventing accidental unlocking movement of the locking lever.

2. In a dump car, the combination with a hinged door, of a shaft for closing the door and for holding it in closed position, a stop on the door against which the shaft rests when in its closing position, a locking lever for engaging and holding the shaft against the stop and a gravity locking lever for preventing accidental unlocking movement of the locking lever.

3. In a dump car, the combination with a hinged door, of a shaft for closing the door and for holding it in closed position, a bracket on the door against which the shaft rests when in its closing position, a locking lever carried by said bracket and adapted to engage and hold the shaft against the bracket, and a gravity locking lever also carried by said bracket and adapted to engage the locking lever and prevent accidental unlocking movement of the latter.

4. In a dump car having bottom drop doors and a crank shaft for operating said doors, a pivoted lever for engaging said crank shaft when in its closed position, and automatic means for engaging said lever to maintain said lever in engagement with said crank shaft.

5. In a dump car having bottom drop doors and a crank shaft for operating said doors, a pivoted lever adapted to engage the crank shaft automatically when the said crank shaft is in its closed position, a dog adapted automatically to engage said lever to hold the same securely in engagement with said crank shaft whereby said crank shaft is securely locked.

6. In a dump car having bottom drop doors and a crank shaft for operating said doors, a pivoted locking lever provided with a hook portion to automatically engage said crank shaft when the latter is in its closed position, a pivoted cam lever having one of its faces adapted automatically to engage said locking lever when the latter is in engagement with said crank shaft, said cam lever being adapted to be manually operated to unlock said locking lever.

7. In a dump car having bottom drop doors and a crank shaft for operating said doors, a pivoted locking lever provided with a hook shaped portion to engage said crank shaft when the latter is in its closed position, a dog adapted automatically to engage said locking lever to hold the same against said crank shaft, said dog being adapted to be operated manually away from said locking lever, said locking lever being then adapted to be swung out of engagement with said crank shaft, and means for holding said locking lever away from engagement with said crank shaft.

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

ANTON BECKER.

Witnesses:
MARIE RYAN,
E. S. RIEVES.