

J. E. TESSEYMAN.

CAR.

APPLICATION FILED NOV. 25, 1907.

932,728.

Patented Aug. 31, 1909.

4 SHEETS—SHEET 1.

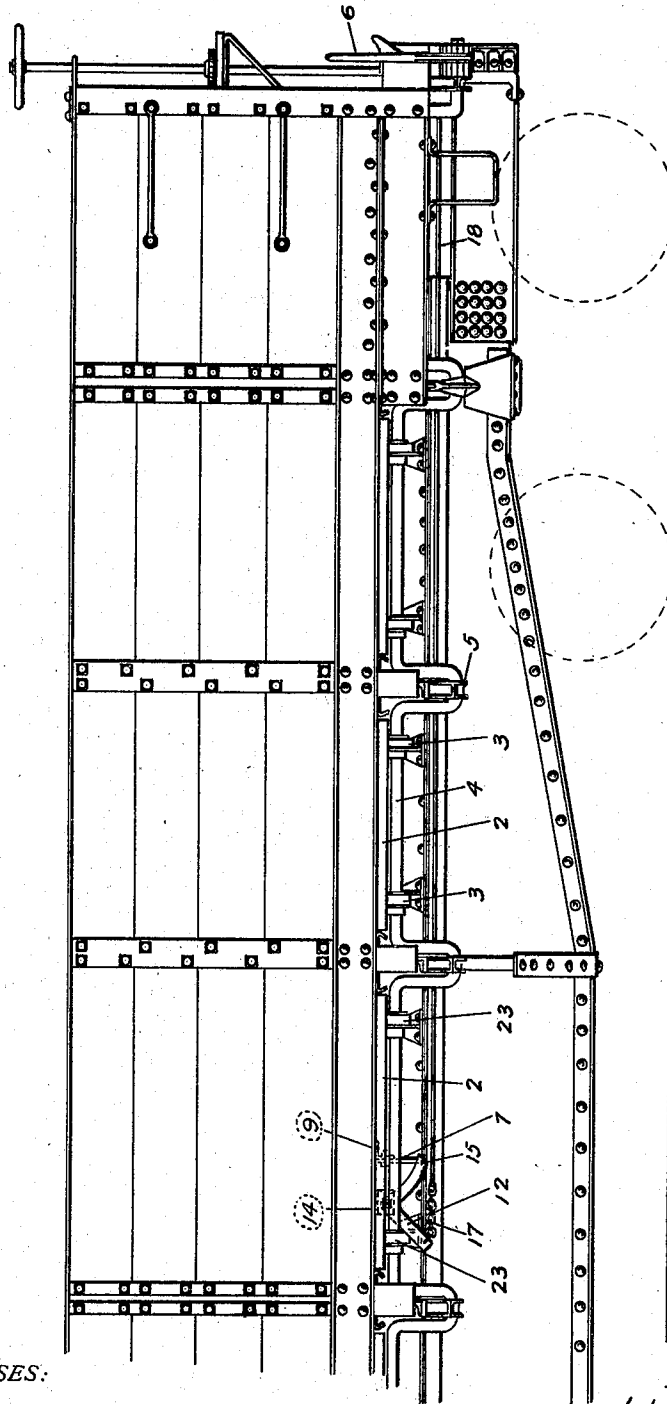


Fig 1

WITNESSES:

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John E. Tesseyman.

BY

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4 SHEETS—SHEET 2.

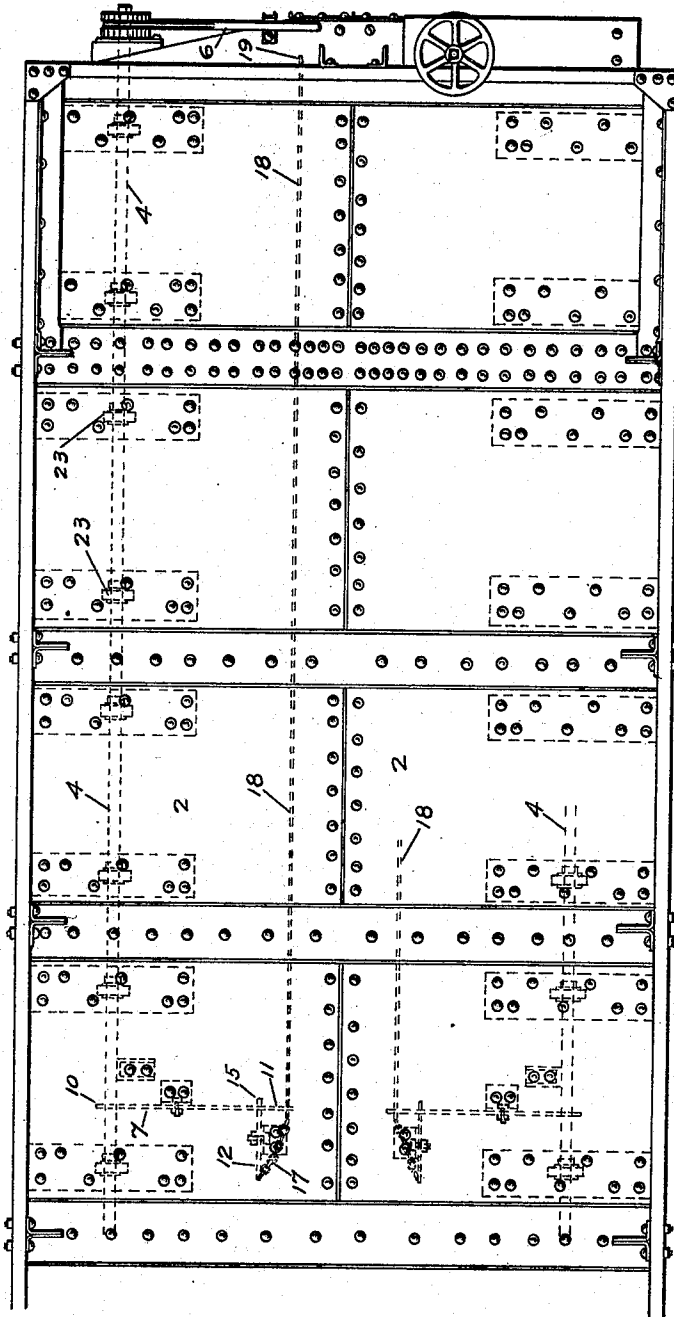


Fig 2

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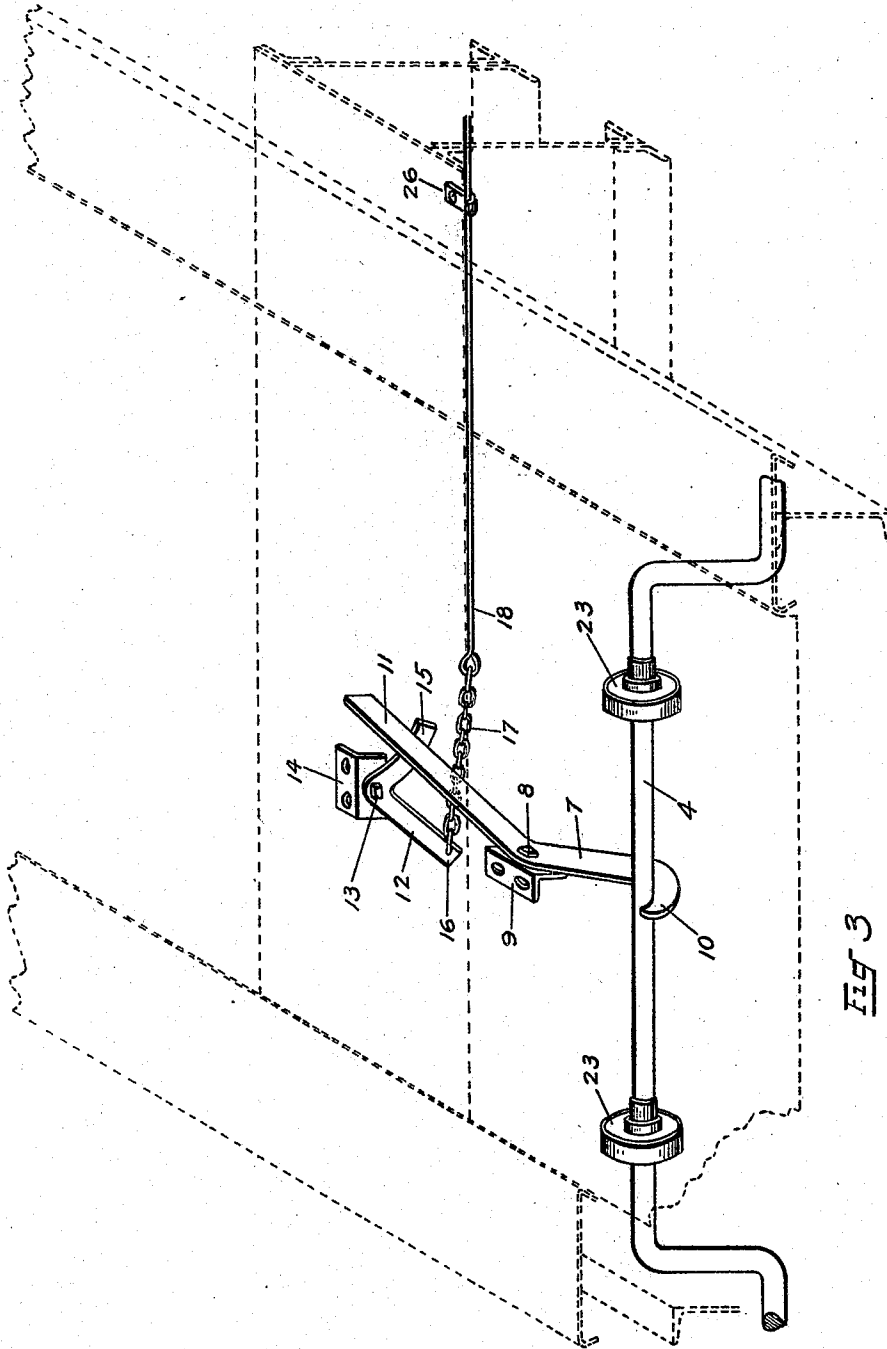
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

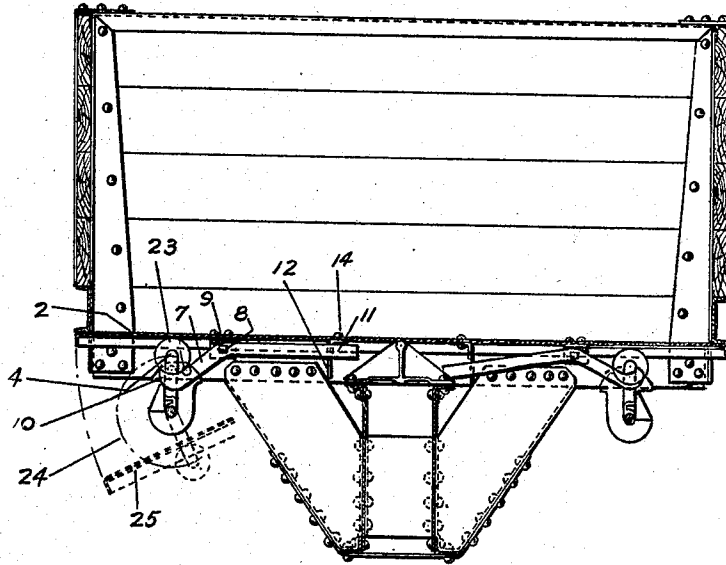


Fig 4

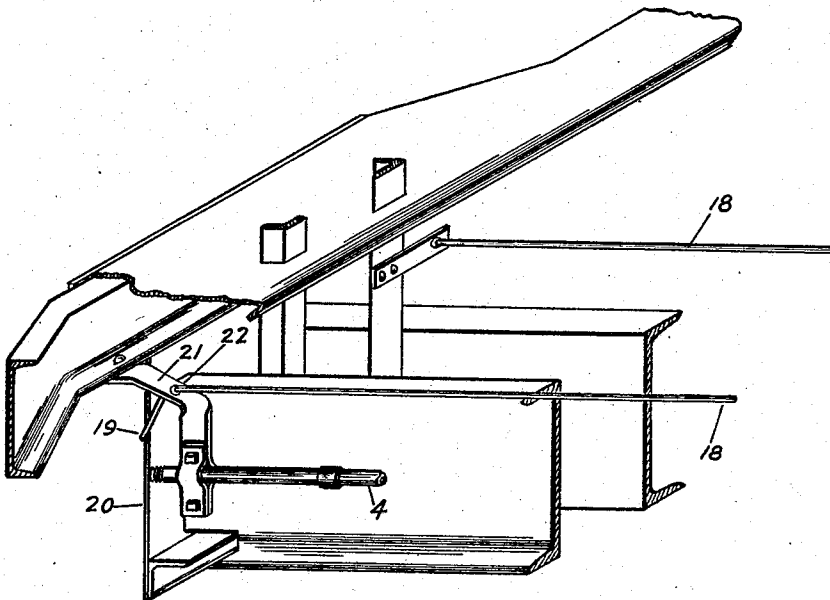


Fig 5

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UNITED STATES PATENT OFFICE.

JOHN E. TESSEYMAN, OF COLUMBUS, OHIO, ASSIGNOR TO THE RALSTON STEEL CAR COMPANY,
OF COLUMBUS, OHIO, A CORPORATION OF OHIO.

CAR.

932,728.

Specification of Letters Patent. Patented Aug. 31, 1909.

Application filed November 25, 1907. Serial No. 403,642.

To all whom it may concern:

Be it known that I, JOHN E. TESSEYMAN, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Cars, of which the following is a specification.

My invention relates to improvements in devices for locking in their closed position the drop doors of a bottom dumping car, such as is shown especially in Reissue Patent No. 12,623, Becker, March 26, 1907, and in Patent No. 861,464, Irwin and Tesseyman, July 30, 1907, and comprises essentially a pivoted lever secured upon the underside of the drop door, and so arranged that at one end it engages the crank shaft; a second lever is provided upon the car door to engage with the locking lever to unlock the same, and when the engagement with said locking lever is broken, the locking lever through gravity will drop into a position to engage the crank shaft and lock the same against outward movement.

It further consists in the provision of means for tripping the locking lever, said means being positioned so that they are readily accessible to the operator without his going under the car.

It further consists in provision for locking said tripping lever in its elevated position, whereby the locking lever is maintained free from engagement with the crank shaft. It will be understood that so long as the locking lever engages the crank shaft, the latter will be maintained in its position beneath the drop door, and said door will thereby be kept closed; but when the locking lever is released from engagement with the crank shaft, the latter may be turned by the ordinary means shown in the patents mentioned, to permit the drop door to fall and assume an open position. When the crank shaft is operated to restore the door to its closed position, the said shaft is in position to be engaged by the locking lever, and thereupon the said locking lever may be permitted to assume its locking position.

In the drawings which are hereto attached and hereby made a part of this specification, Figure 1 is a side view of a portion of a car having my improved locking means attached thereto; Fig. 2 is an upper plan view of a car having my improved locking means at-

tached thereto, said locking means being shown in dotted lines; Fig. 3 is a perspective of my improved locking means engaging the crank shaft, the underframe portions of the car being shown in dotted lines; Fig. 4 is a view of the car in section at the cross bearer, showing my locking device in place; Fig. 5 is a perspective view of the underframe portions of the car at one end thereof, parts being broken away to show the means of locking the pull rod in its outermost position.

Referring to the drawings, in which the same numeral indicates the same part throughout, 1 denotes the underframe construction of a car having thereon the drop doors 2, held in their closed position by the engagement therewith of the rollers 3 on crank shaft 4, which is hung in the brackets shown at 5, and rotated by means of a lever 6, in a manner clearly described in the patents above mentioned, and which need not be further described herein. It is apparent that if no locking means is provided for the crank shaft when in its closed position, said shaft is readily rotatable by the operation of the lever 6, and for the purpose of safety and precaution in the operation of the car it has been found desirable to provide means for locking the crank shaft in its closed position, so that said locking means must be released before the crank shaft can be operated and the contents of the car dumped.

I provide locking means and arrange the same upon the under side of the drop door in a manner clearly shown in Fig. 3, in which the lever 7 is pivoted at 8 in the bracket 9 secured to the under side of the drop door, said lever having at one end thereof the hook 10, the other end 11 of said lever being heavier than the portion containing the hook, so that if left free, the end 11 of said lever will drop, thereby throwing the hook portion 10 upwardly. The normal position of said lever therefore is in engagement with the crank shaft 4; to disengage the lever from the crank shaft, thereby releasing the latter, I provide the trip lever 12 in the form of a bell crank, pivoting the same at 13 in the bracket 14 secured upon the under side of the drop door. The trip lever 12 stands preferably at about a right angle with the locking lever 7, so that if said lever 12 be turned on its pivot 13, the arm 15 will engage the locking lever when said arm 15 is moving upwardly, and will

recede from the locking lever when said arm 15 is lowered. It is apparent that the lifting of the arm 15 will tilt the locking lever 7 out of engagement with the crank shaft, while the lowering of the arm 15 of the trip lever will permit the hook 10 of the locking lever 7 to rise and engage the crank shaft. I manipulate said trip lever 12 preferably by securing upon one of its arms at 16, the chain 17; any flexible means substituted for the chain would answer the same purpose. To the chain at a preferred point I attach a rod 18, which rod is positioned beneath the car doors on the underframe construction and extends outwardly beyond the end of the car and has its outer end portion bent as shown at 19, which bent portion will engage the end 20 of the car, when said rod 18 is pulled to its outermost limit. At 21 is shown a bracket having an opening 22 there-through, through which the rod 18 is inserted, and by which said pull rod 18 is supported at its outer end. When the bent portion 19 of the rod 18 is thrown out of engagement with the car end 20, the rod may then be pushed inwardly to slacken the chain or flexible portion 17, thereby permitting the lever 12 to drop.

The operation of the locking device is as follows: the operator, seizing the bent portion 19 pulls upon the rod 18, drawing the same outwardly from the car, thereby rendering the chain 17 taut, and thereby actuating the bell crank lever 12 so as to tip the arm 15 thereof upwardly; when the arm 15 comes into contact with the lever 7, if the upward movement of bell crank lever 12 is continued, the end 11 of said lever 7 will be thrown upwardly, thereby disengaging the hook 10 from the crank shaft 4. When this disengagement has been completed, the bent portion 19 of the rod 18 may be turned into engagement with the end of the car by merely twisting or rotating the rod 18, and the locking lever 7 is thereby held positively out of engagement with the crank shaft 4. The operator may now seize the hand lever 6 and rotate the crank shaft 4 outwardly, to permit the drop door to assume an open position, it being understood that the drop door rests at its outer end entirely upon the rollers 23 on the crank shaft 4, and that as these rollers are carried through an arc of a circle described at 24 by the rotation of the crank shaft, the door will be lowered to its open position shown at 25. The locking lever 7 and the trip lever 12 being mounted upon the under side of the door, will, of course be brought to a lower position by the downward movement of the door; however, during the downward movement of the door, the locking lever is maintained in the position just described, and when the door is again raised by the rotation of the crank shaft in the opposite direction, the locking

lever 7 will be found to be disengaged from the crank shaft 4. In order to lock the crank shaft in its uppermost position, it is necessary for the operator to turn the bent portion 19 of the rod 18 outwardly away from its engagement with the end of the car, and push the rod inwardly, whereby the pull upon the end 16 of the bell crank trip lever will be removed, and the weight of the end 11 of the locking lever 7, bearing down on the arm 15, will move said arm downwardly, thereby permitting the hook portion 10 to move upwardly into engagement with the crank shaft.

It is seen that my device can both be locked and unlocked by the operator from the end of the car, and that the operator therefore is not exposed to the danger of reaching or creeping under the car to unlock the crank shaft; and inasmuch as the crank shaft is also manipulated from the end of the car, the operator may, from one position, both release the crank shaft and operate the same. The end 11 of the locking lever 7 is preferably made heavy enough to keep the hook constantly in engagement with the crank shaft, and such engagement will not be broken so long as the car is in its normal position, except by tilting the trip lever 12 to throw the locking lever 7 out of engagement, and when the trip lever is thrown out of contact with the locking lever, said locking lever resumes its locking position. The pull rod 18 may be supported by suitable brackets 26 disposed upon the underframe construction of the car. It is further seen that when the door falls to its lowermost position the position of the trip lever 12 will be lowered also, but inasmuch as the chain portion 17 is connected to the trip lever 12, the flexibility of said chain portion will allow for the change of position of the lever 12 due to the upward and downward movement of the drop door; so that the position of the rod 18 is not disturbed, and no stress is set up therein by the movement of the door.

What I claim is:

1. In a car having a bottom drop door and a crank shaft supporting said door at one of its ends, a locking device for said crank shaft mounted upon said door, a tripping device for unlocking said locking device, and means for operating said tripping device.

2. In a car having a bottom drop door and a crank shaft supporting said door at one of its ends, a locking device for said crank shaft comprising a pivoted lever having one end thereof adapted to engage said crank shaft, and tripping means adapted to throw said lever out of engagement with said crank shaft.

3. In a car having a bottom drop door and a crank shaft supporting said door at

one of its ends, locking means for said crank shaft comprising a pivoted lever having one end thereof adapted to engage said crank shaft, tripping means adapted to
5 move said lever out of engagement with said crank shaft, and means for actuating said tripping means.

4. In a car having a bottom drop door and a crank shaft supporting said door at
10 one of its ends, a locking device for said crank shaft comprising a lever pivotally mounted upon said door and having one of its ends adapted to engage said crank shaft,
15 a tripping lever mounted upon said door adapted to engage the opposite end of said locking lever to lift the same out of engagement with said crank shaft, traction
20 means adapted to actuate said tripping lever to unlock said locking lever, and means for positioning said traction means to maintain said locking lever in unlocked position.

5. In a car having a bottom drop door and a crank shaft supporting said door at
25 one of its ends, a locking lever adapted to engage said crank shaft pivotally mounted upon the under side of said drop door, a trip lever pivotally mounted upon the
30 under side of said drop door adapted to unlock said locking lever from said crank shaft, a pull rod attached to said trip lever adapted to manipulate the same to unlock said locking lever, and a bent end formed

upon said rod for engaging said car when said rod is drawn to its outermost position.

6. In a car having a bottom drop door 35 and a crank shaft supporting said door at one of its ends, a locking lever pivotally mounted upon said door and having one end adapted to engage said crank shaft, a trip
40 lever mounted upon said door and adapted to move said locking lever out of engagement with said crank shaft to release the latter, and means carried on said car for operating said trip lever.

7. In a car having a bottom drop door 45 and a crank shaft supporting said door at one of its ends, a locking lever pivotally mounted upon said door and having one end adapted to engage said crank shaft, a
50 trip lever mounted upon said door and adapted to move said locking lever out of engagement with said crank shaft to release the latter, and means carried on said car for operating said trip lever to unlock
55 said locking lever, said means being adapted to be locked to maintain said locking lever in unlocked position.

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

JOHN E. TESSEYMAN.

Witnesses:

HORACE S. KERR,
GEO. W. RIGHTMIRE.