(No Model.) 2 Sheets—Sheet 1.

G. E. TRUAX.

ORE CAR.

No. 601,203. Patented Mar. 22, 1898.

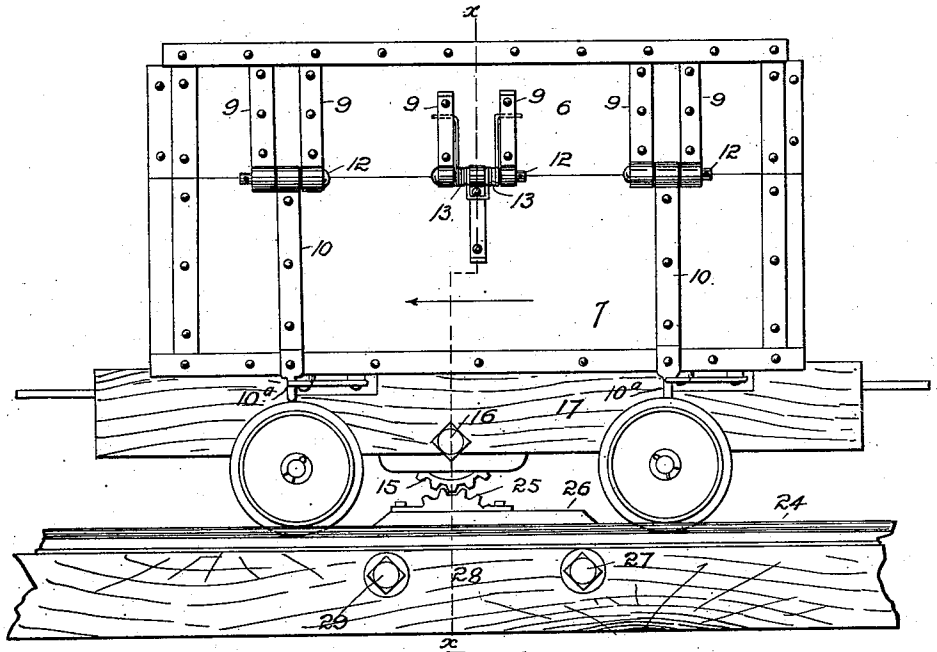


FIG. 1.

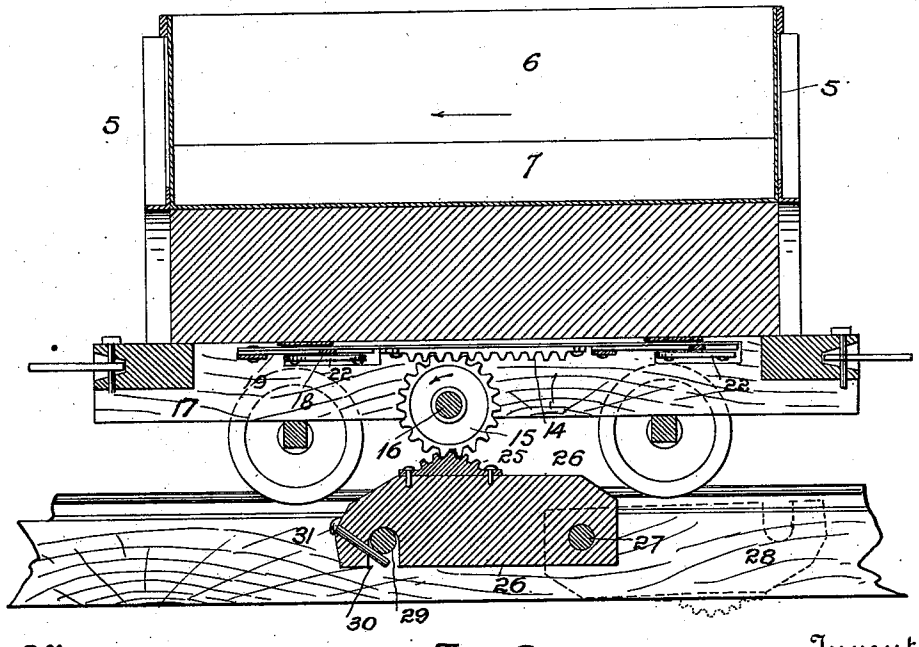


FIG. 2.

Witnesses
Edith Wentworth

Inventor
G. E. Truax
By his Attorney
A. J. O'Brien

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

G. E. TRUAX.

ORE CAR.

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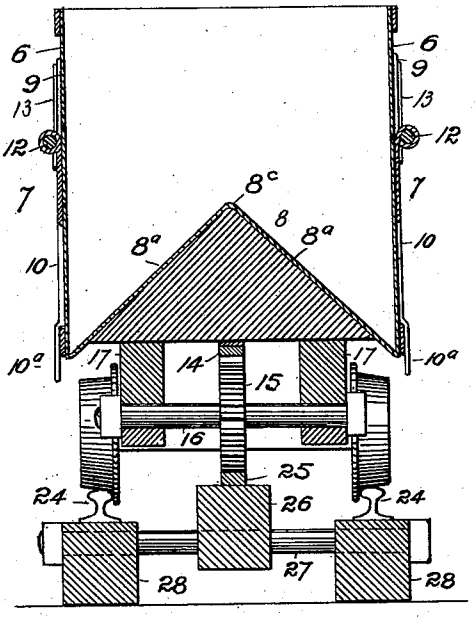


FIG. 3

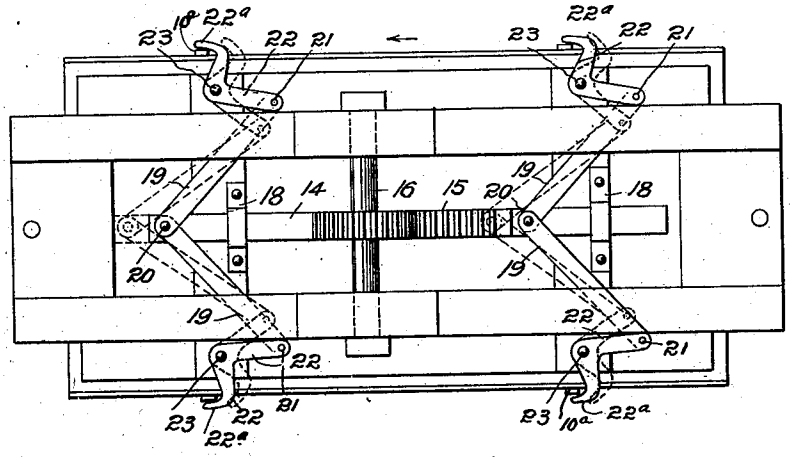


FIG. 4

Witnesses
D. J. Mancetino
Edith Hemsworth.

Inventor
G. E. Truax
By his Attorney
A. J. O'Brien

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE E. TRUAX, OF DENVER, COLORADO.

ORE-CAR.

SPECIFICATION forming part of Letters Patent No. 601,203, dated March 22, 1898.

Application filed April 17, 1897. Serial No. 632,694. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. TRUAX, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Ore-Cars; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in ore-cars; and it consists of the features, arrangements, and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a side elevation of my improved car. Fig. 2 is a vertical longitudinal section taken through the center of the same. Fig. 3 is a cross-section taken on the line $x\,x$, Fig. 1. Fig. 4 is an underneath view of the car, the wheels being removed.

Similar reference characters indicating corresponding parts in these views, let the numeral 5 designate the ends and 6 the upper portions of the sides of the car. To the parts 6 of the car sides are hinged the side parts 7, forming doors which are adapted to open for the purpose of discharging the contents of the car, whose bottom 8 is downwardly inclined, as shown at 8^a, from a central apex 8^c, the said bottom being triangular in cross-section. The discharge of the car's contents is automatic when the side doors are unlocked. These side doors may be hinged to the stationary side parts in any suitable manner. As shown in the drawings, each hinge is composed of two metal straps 9, attached to the parts 6, and a central strap attached to the doors 7. Two of the straps attached to each door 7 extend downwardly and project a short distance below the bottom of the car. They are designated by the numeral 10 and the projecting extremities by the reference character 10^a. The hinge-straps are connected by suitable pins 12. Three hinges are shown on each side of the car. Two springs 13 are coiled around the hinge-pin of each center hinge and so connected with the parts 6 and 7 that they have a tendency to maintain the doors 7 in the closed position.

To the lower surface of the car-bottom is removably attached the cog-rack 14, which is engaged by a gear 15, mounted on a shaft 16, whose extremities are supported by beams 17, secured to the car-bottom. The rack 14 is supported by guide-straps 18, made fast to the bottom of the car, said rack being adapted to move longitudinally in either direction as its engaging gear is actuated. To the rack 14 are pivotally attached the inner extremities of two pairs of links 19. The links 19 of each pair are connected with the rack-bar at a common point 20. The outer extremity of each link is connected at 21 with one arm of a bell-crank lever 22, which is fulcrumed on the car, as shown at 23. One arm of each lever is hook-shaped, as shown at 22^a. The hooked extremities of these levers are adapted to engage the lower projecting extremities 10^a of the straps 10.

Between the track-rails 24 is located a short rack 25, mounted on a suitable supporting-block 26. This rack 25 is adapted to engage the gear 15 and turn the latter as the car is passing over that portion of the track where the rack is located. The block 26 is pivoted at one extremity on a shaft 27, supported by beams 28, upon which the track-rails are mounted. This block is further supported by a shaft 29, adapted to engage a slot 30, formed in the bottom of the block near its opposite extremity, which is locked securely in place by a pin 31, inserted in a hole intersecting the slot. This pin passes below the shaft 29 and engages it in such a manner that the block is securely held in place until the pin is removed.

When it is not necessary to employ the rack 25, the locking-pin 31 is removed and the block 26 turned over to occupy the position shown in dotted lines in Fig. 2. When the block is in this position, the car may pass freely over the track without bringing the gear in contact with the rack 25. The function of the rack 25 is to actuate the gear 15 sufficiently to unlock and lock the side doors of the car through the instrumentality of the

movable rack 14, the links 19, and the levers 22.

The operation of my improved car will be readily understood and will now be described, assuming that the car is full of ore or other material and that it is desired to discharge or dump its contents at the point where the rack 25 is located. In this case, the operating parts being in the position shown in Fig. 3, the car will be moved in the direction indicated by the arrows in Figs. 1, 2, and 4, and as soon as the gear 15 engages the rack 25 the gear will be turned in the direction indicated by the arrow in Fig. 2. This movement of the gear throws the movable rack 14 forward or in the direction the car is traveling sufficiently to throw the levers 22 to the position shown in dotted lines in Fig. 4 through the instrumentality of the links 19, connecting the movable rack with the levers. When these levers are in the dotted-line position, they are disengaged from the projections 10^a of the side doors. Hence these doors are unlocked and will instantly open automatically under the pressure of the car's contents, which will be discharged at the desired location. As soon as the car is unloaded the side doors will be returned to their original position through the agency of gravity and the springs 13. Then as the car is moved backward or in the opposite direction the gear again engages the rack 25, which causes the gear to move in the opposite direction. Hence the movement of the rack 14, the links 19, and the levers 22 will be reversed and the doors 7 again locked and the car ready for another load.

While I have termed the invention in this specification "an improvement in ore-cars," it must be understood that my improvements may be employed to equal advantage on cars or vehicles of any description where a quick unloading attachment of the class set forth is desirable or necessary.

Having thus described my invention, what I claim is—

1. In a car, the combination of the car-body and one or more hinged doors, of a rack movably attached to the car-bottom, a gear mounted on a suitable support attached to the car-bottom and engaging the movable rack, levers fulcrumed on the car-bottom and adapted to lock the doors in the closed position, a link connecting the movable rack with each locking-lever, and a rack independent of the car and suitably supported beneath the same, whereby it is adapted to engage and actuate the gear.

2. In a car, the combination with the car-body having one or more hinged doors, of a movable device for locking the door or doors in the closed position, a rack movably attached to the car and connected with the locking device, and suitable means independent of the car for actuating the rack to operate said locking device for the purpose of fastening or unfastening the doors.

3. In a car, the combination with the car-body having one or more hinged doors, of a locking-lever adapted to engage a projection on each door, a rack movably attached to the car, a suitable connection between the rack and each lever, whereby the movement of the rack actuates the lever, a gear mounted on the car and engaging the rack, and means independent of the car for actuating the gear.

4. In a car, the combination with the car-body and a hinged door, a bell-crank lever fulcrumed on the car and engaging a projection on the door, a cogged rack movably mounted on the car, a link connecting said rack with one arm of the locking-lever, a gear mounted on the car and engaging said movable rack, and a rack independent of the car and adapted to actuate the gear.

5. In a car, the combination with the car-body and a hinged door, a bell-crank lever fulcrumed on the car and engaging the door, a cogged rack movably mounted on the car, a link connecting said rack with one arm of the locking-lever, a gear mounted on the car and engaging said rack, a block mounted on the track beneath the car, and a rack mounted on said block and adapted to engage the gear.

6. In a car, the combination with a car-body and a hinged door, of a lever fulcrumed on the car and adapted to engage the door, a cogged rack movably mounted on the car, a link connecting said rack with one arm of the lever, a gear mounted on the car and engaging said rack, a reversible block mounted on the track beneath the car and carrying a rack engaging the gear.

7. In a car, the combination with the car-body and a hinged door, of a lever fulcrumed on the car and adapted to lock the door, a cogged rack movably mounted on the car, a link connecting the said rack with one arm of the locking-lever, a gear mounted on the car and engaging said rack, a block independent of the car, and a rack mounted on the top of the block and engaging the gear, the said block being pivoted at one extremity whereby it may be turned over or reversed to allow the car to pass without operating the gear.

8. In a car, the combination with the car-body, of a door hinged to each side of the car and having a projection extending below the bottom of the car, a horizontal bell-crank lever fulcrumed on the car-bottom and engaging each projection on the adjacent door, a cogged rack movably mounted on the car-bottom, a pair of links pivoted to said rack at a common point, their opposite extremities being connected with the levers on opposite sides of the car, a gear mounted on the car and engaging the movable rack, and a rack mounted independently of the car for actuating the gear.

9. The combination with a car whose bottom slopes downwardly from a central apex, the car-body being provided with hinged doors adapted to swing outwardly, of hori-

zontal bell-crank levers fulcrumed on the car and adapted to engage projections on the doors, a rack movably mounted on the car, a link connecting the rack with each lever, a gear mounted on the car and engaging the rack, and a rack independent of the car for actuating the gear.

10. In a car, the combination with the car-body having one or more hinged doors, of a movable device for locking the door or doors in the closed position, a rack movably attached to the car and connected with the locking device, suitable means for actuating the rack to operate said locking device for the purpose of fastening or unfastening the doors, and a suitable spring connected with each door and having a tendency to maintain the door in the closed position.

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

GEORGE E. TRUAX.

Witnesses:

G. J. ROLLANDET,

EDITH HIMSWORTH.