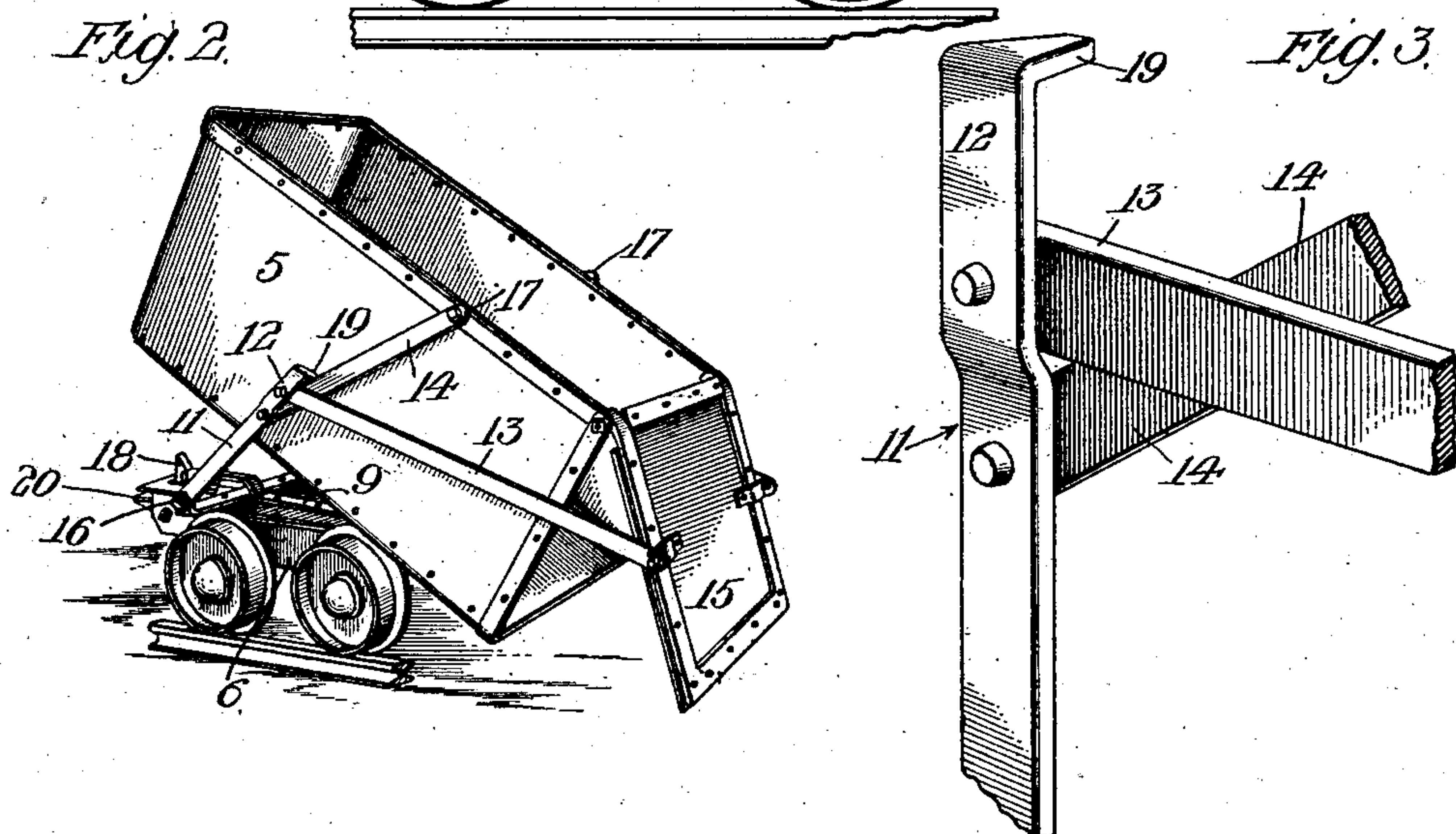
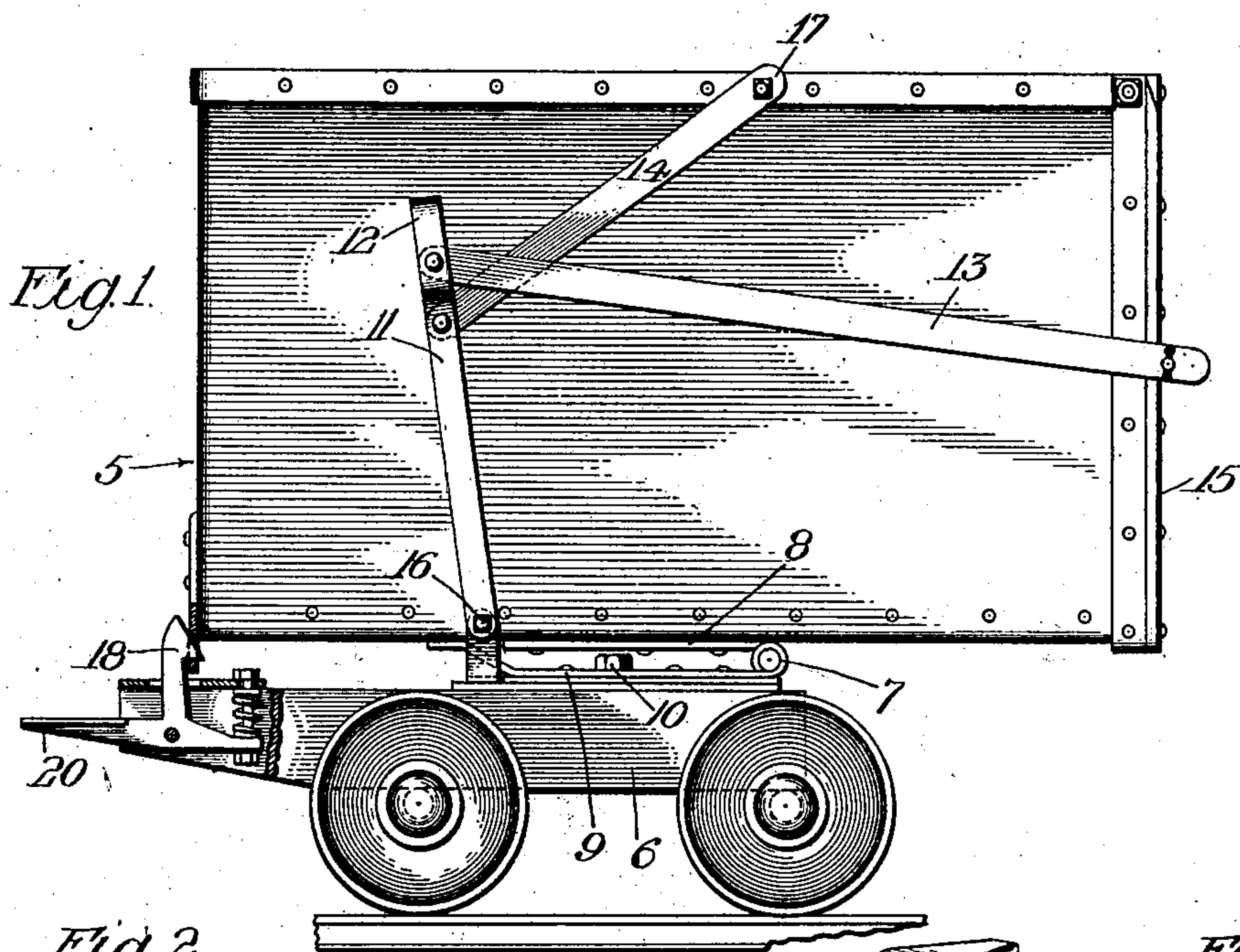


No. 884,091.

PATENTED APR. 7, 1908.

G. C. JOHNSON.
DOOR OPERATING MECHANISM FOR ORE CARS.
APPLICATION FILED MAY 8, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE C. JOHNSON, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO HENRY LANGE, OF LOS ANGELES, CALIFORNIA.

DOOR-OPERATING MECHANISM FOR ORE-CARS.

No. 884,091.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed May 8, 1907. Serial No. 372,475.

To all whom it may concern:

Be it known that I, GEORGE C. JOHNSON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Door-Operating Mechanism for Ore-Cars, of which the following is a specification.

My invention is embodied in the following device for positively opening and closing swinging doors or gates of ore cars or the like and consists of a pair of composite locking levers, one lever on each side of the body of the car and each composite lever being composed of three flat bars of steel or iron, these bars being pivotally secured together, the other ends of these bars being pivoted one to the body of the car, one to the truck thereof and the other one to the swinging door in the front end of the body of the car.

The object of my invention is to provide simple and efficient means whereby the swinging doors on the bodies of ore cars or the like will be positively opened and closed when the car body is tilted.

I accomplish this object by means of the device described herein and illustrated in the accompanying drawings, in which:—

Figure 1.—is a side elevation of an ore car equipped with my improved door opening and closing device, partly broken away and partly in section, the car being in its normal horizontal position and the door closed.

Fig. 2.—is a perspective view of an ore car equipped with my device in its dumping position, the door being open. Fig. 3.—is an enlarged detail in perspective of the operating levers partly broken away.

The body 5 of the car is pivotally secured to the truck 6 by the hinge 7. The upper leaf 8 of the hinge is bolted to the bottom of the body, while the lower leaf 9 of the hinge is swivelly secured to the top of the truck by the pintle bolt 10, the hinge being thus secured affords means by which the body can be swung in any direction horizontally and tilted. A composite operating lever 11 composed of members 12, 13 and 14 provides means whereby upon tilting the body into the position shown in Fig. 2 (its unloading position) the swinging door 15 will be thrown into its open position and when the body of the car is returned to its horizontal position as shown in Fig. 1, it automatically closes the door because of the manner in which the

members of the locking lever are pivotally secured each to the other at their ends, the other ends, one to the body, one to the truck frame and one to the door as follows: The lower end of the truck member 12 is pivotally secured to the truck frame as at 16, the door member 13 being pivotally secured at its rear end to the upper end of the truck member and the front end being pivotally secured to the middle of the door while the lower end of the top or body member 14 is pivoted to the upper end of the truck member 12 below the point where door or front member is pivoted, the upper end of the body member being centrally pivoted as at 17 to the top of the body of the car. This composite locking lever will upon moving the body of the car forwardly cause the rear end of the body to rise and the front end to descend and open the door, depressing the rear end will close the door while the body is moving from its emptying or open position to its horizontal or closed position. On the upper end of the truck member is an in-turned extension 19 which forms an engaging lug to contact with the body member (see Fig. 2.) and limits the tilting movement of the body of the car, and also limits the opening movement of the door and serves to hold the door open. At the rear end of the car is the body engaging dog 18 adapted to detachably hold the body of the car in its horizontal position. This dog is thrown into its released position by depressing the pedal 20.

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

1. A composite lever for operating swinging doors at the end of the body of ore cars or the like, comprising three members, these members being pivotally secured to each other at one of their ends, the other ends of these members being pivoted as follows, one to the body of the truck, one to the body of the car and the other to the swinging door.

2. An operating lever to operate doors of ore cars, comprising three members, a top or body member, a bottom or truck member, a front or door member, these members being pivotally secured each to the other at one of their ends as follows, the door and body members being attached to the truck member, the door member being attached at a point on the truck member above the point where the top member is attached, the other

ends of these members being pivotally attached as follows, the body member being attached to the body of the car, the truck member to the frame of the truck and the
5 door member to the door of the car.

3. An ore car having a swinging door hinged on the top of the front end of the body, a companion pair of locking levers, one on each side of the body of the car, each of
10 said levers being composed of three members pivotally secured each to the other at one of their ends and pivotally secured at their other ends one to the body of the car, one to the frame of the truck and one to the swing-
15 ing door, the door member being attached to the truck member at a point on the truck member above where the body member is attached to the truck member.

4. Means to automatically open and close
20 a door swingingly secured to the front of an ore car or the like, comprising a companion pair of composite operating levers, one on each side of the body of the car, said composite lever having three members, a rear, a

front and a top member, the rear member 25 being pivotally secured at its lower end to the truck of the car, the upper end being pivoted to the rear end of the front member, the front end of the front member being pivoted to the door and the top member being pivoted to the 30 body of the car at its upper end and the lower end being pivoted to the rear member below the point on the rear member where the front member is pivoted thereto.

5. In combination with a car body having 35 a door pivoted thereon, a toggle one end being pivotally connected to the car truck and the other end being pivotally connected to the car body, and a reach bar pivotally connected to the toggle and to the door of the 40 car.

In witness that I claim the foregoing I have hereunto subscribed my name this 22nd day of April, 1907.

GEORGE C. JOHNSON.

Witnesses:

EDMUND A. STRAUSE,
MYRTLE A. JONES.