

F. SEABERG.

DUMP CAR.

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915,800.

Patented Mar. 23, 1909.

Fig. 1

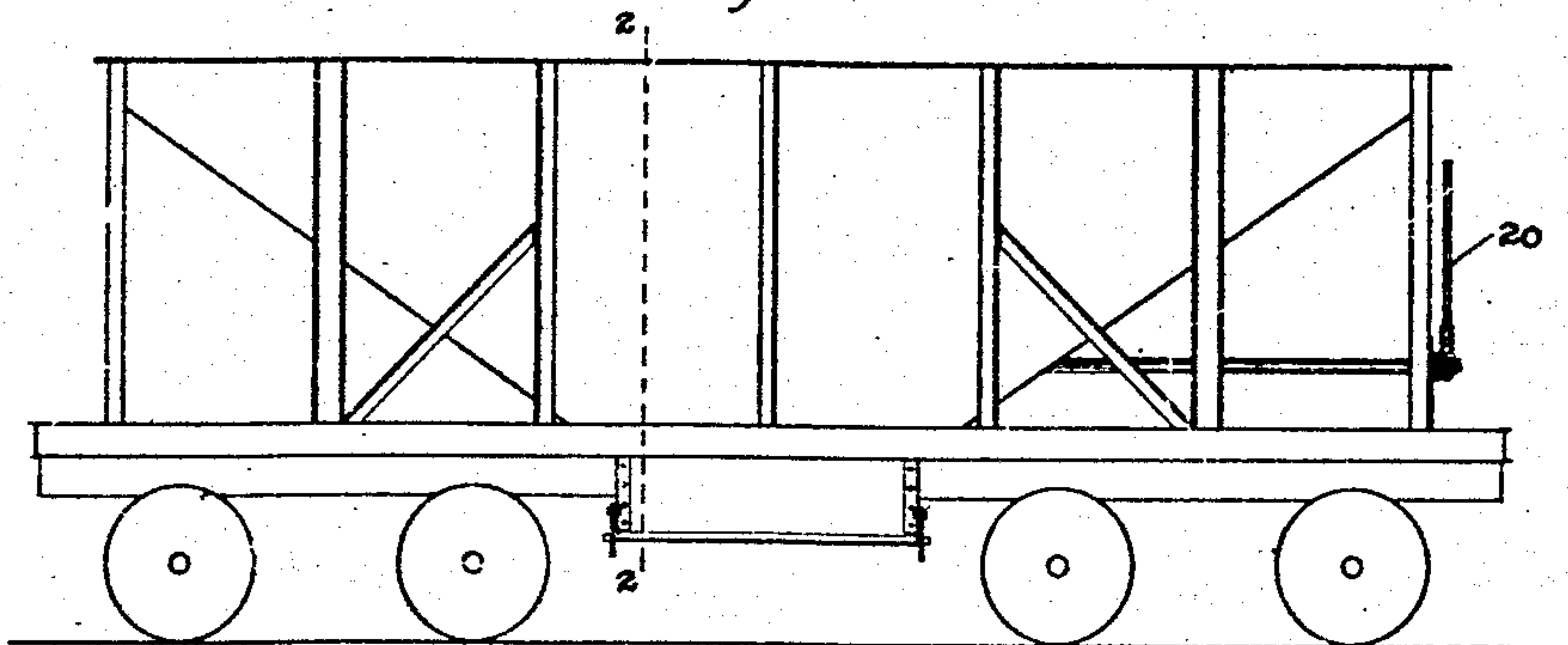


Fig. 2

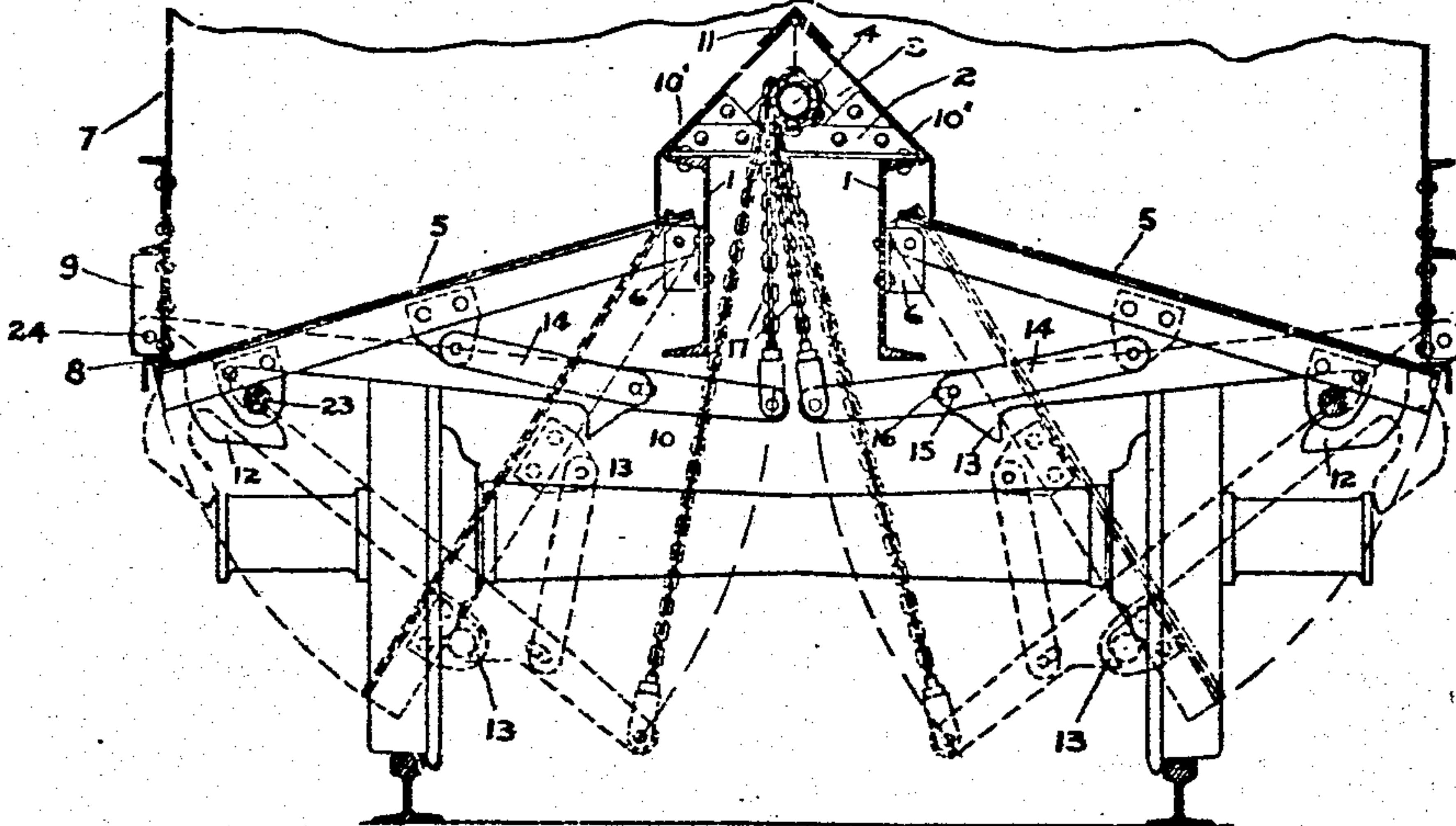


Fig. 3

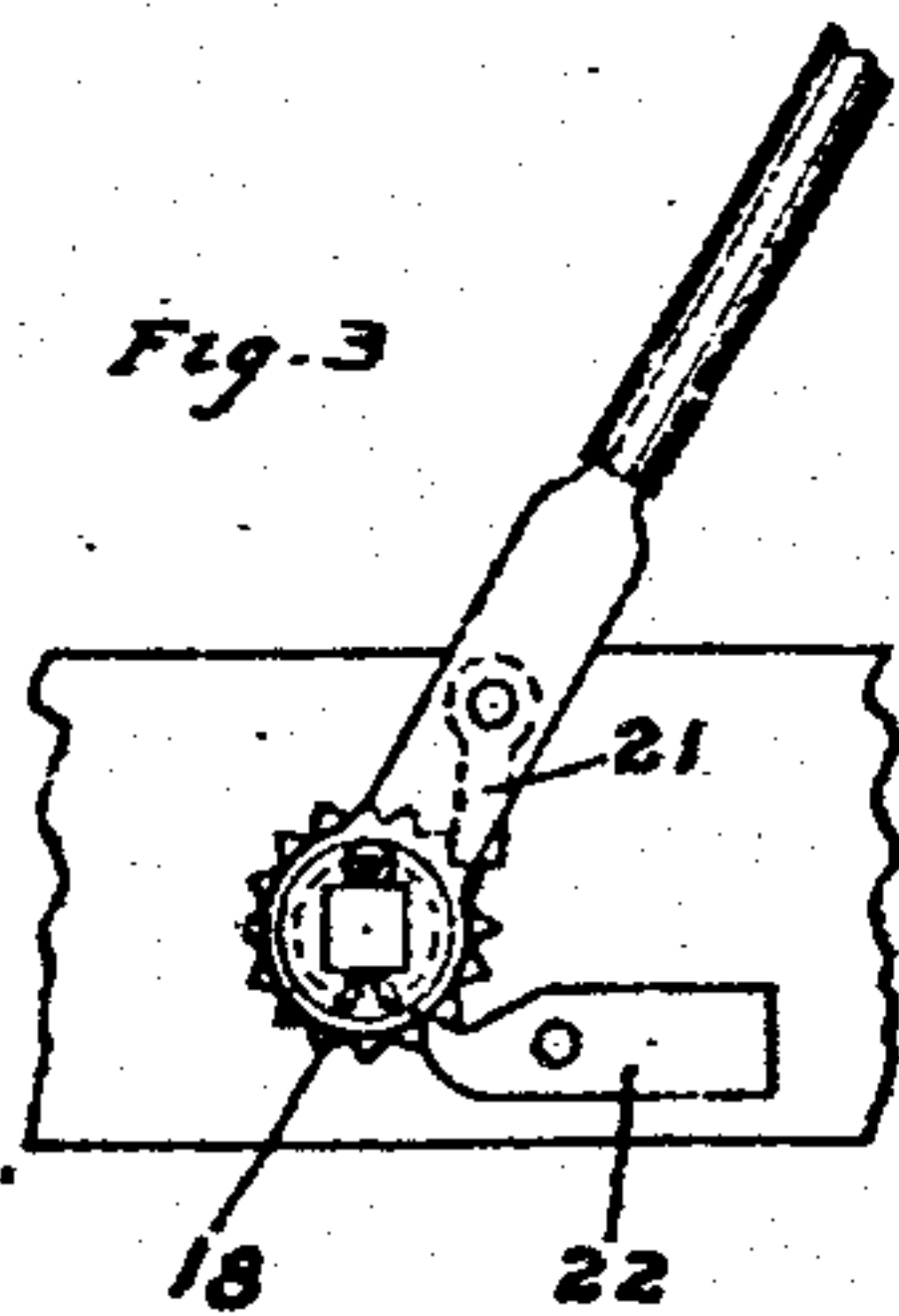
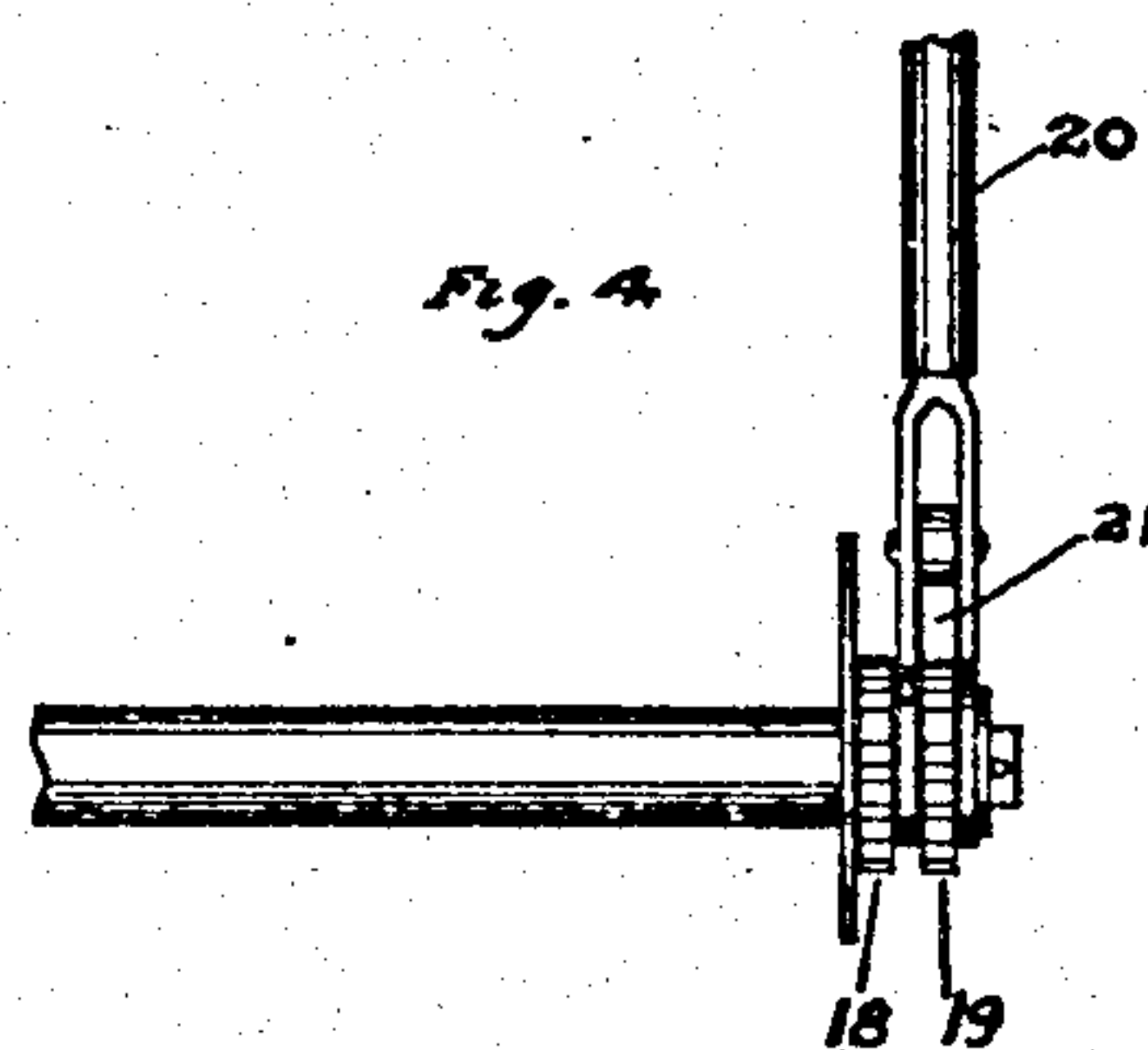


Fig. 4



Witnesses

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DUMP-CAR.

No. 915,800.

Specification of Letters Patent.

Patented March 23, 1909.

Application filed April 28, 1908. Serial No. 429,592.

To all whom it may concern:

Be it known that I, FREDERICK SEABERG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dump-Cars, of which the following is a specification.

The object of my invention is to provide improved means for operating floor doors of dump cars, and it is especially adapted to that type of cars known as "ore" cars.

In its application, my invention provides simple means for closing the doors, for properly supporting the contents of the car upon the doors when the latter are in closed position, for limiting the opening movement of the doors, and for the purposes which will more clearly appear from the following description and claims.

In the drawings—Figure 1 is a diagrammatic illustration of an ore car showing my invention applied thereto. Fig. 2 is a cross section of the car on the line 2-2 of Fig. 1. Figs. 3 and 4 are detailed views of the means for rotating the operating shaft.

The center sill of the car to which I have shown my invention applied consists of two channel beams 1, 1 spaced apart and connected together at the top by bridges 2 which support the bearings 3 of the operating shaft 4. The drop doors 5 are pivoted to hinge members 6 which are riveted to the webs of the channels about midway between the upper and lower flanges thereof. The steel plates 7, of which the sides of the car are composed, are bent outwardly and downwardly at 8, thus forming a right angular recess which is engaged by the outer edge of the door 5 when in closed position. The lower edge of the side plate is at a lower level than the hinges of the doors, whereby the doors slope downwardly toward the side of the car when in closed position, although it is obvious that my improved operating means may be applied to a door normally occupying a horizontal or other position. Pivoted to the angle plates 9 secured to the car sides are operating levers 10 extending transversely of the car and having their inner free ends adjacent the median line of the car.

The hinges of the doors lie beneath the up-

per flanges of the channels 1 and are protected from the material transported by means of the cover plates 10' which extend downward vertically from the outer edges of the flanges of the channels 1, and upwardly to a point above the operating shaft 4, thus protecting the latter also. Preferably, the ridge formed at the meeting edge of the cover plates 10' is protected by an angle iron, as illustrated at 11.

The levers 10 are provided adjacent their outer pivoted ends with stop hooks 12, and adjacent their inner ends with stops 13. Pivotaly connected at their ends to the levers 10 and doors 5, respectively, are links 14. In the present instance I have shown the link so connected that in the closed position of the door the pivotal connection with the door lies outside of the pivotal connection with the operating lever, but the link may be otherwise arranged without departing from the spirit of my invention. For the purpose of making a proper allowance for imperfections in manufacture, I have shown the pivotal connection between the links 14 and the levers 10 as formed by means of a stud 15 upon the links engaging slots 16 in the levers, the slot giving sufficient play to the parts to compensate for slight imperfections in manufacture. It is obvious, however, that simple pivotal connections may be employed if desired.

Connected to the inner ends of the levers 10 are chains 17 which at their upper ends are secured to the operating shaft 4. At the end of the car, ratchet wheels 18 and 19 are secured to the operating shaft, and an operating lever 20 is pivotally mounted on said shaft and carries a reversible pawl 21, whereby the shaft may be rotated in either direction. A detent 22 is so mounted as to be in operative engagement with the other ratchet wheel. The pawl 22 is normally held in engagement with the ratchet wheel by gravity, but it may be disengaged therefrom for the purpose of permitting the free rotation of the shaft during the opening of the doors. Suitably mounted at the edges of the doors adjacent the operating levers, of which it will be understood there are a pair for each door located at the sides thereof, are studs 23. The

studs 23, the hinges of the door and the fulcrum 24 of the lever 10 are so positioned that when the door is moved to open position the opening movement will be limited by contact of the studs 23 with the stops 13. When the door is closed the studs 23 will overlie the hook stops 12.

It will be obvious by reference to Fig. 2 of the drawings that by rotating the shaft 4 and winding the chains thereon the levers 10 will be elevated and through the links 14 the doors will be closed, and may be locked in closed position by restraining the shaft 4 against reverse rotation. In this position the inner ends of the levers 10 will be held in elevated position by the chains 17 and the weight of the doors and superimposed load will be supported upon the hook stops 12, which are located near the fulcrums of the levers 10 thus relieving the chain 17 and links 14 from undue strain. When it is desired to open the doors, the detent 22 is moved from engagement with the ratchet 18, whereupon the weight of the doors and load causes the doors to drop until the studs 23 come in contact with the stops 13, as illustrated in dotted lines in Fig. 2.

While I have described one specific embodiment of my invention, all of the details herein referred to do not form an essential part thereof and the invention may be applied in other forms without departing from the spirit thereof.

The studs 23, above mentioned, preferably, consist of the projecting ends of a pipe or shaft extending the full width of the door, and beyond the same at either edge sufficiently to engage the hook stops 12.

I claim:

1. In a dump car, a hinged door, a lever extending transversely of the door and pivoted to the car adjacent the free edge of the door, a link pivotally connected to said door and to said lever, and means for raising the free end of said lever and thereby closing the door.

2. In a dump car, a hinged door, a lever extending transversely of the door and pivoted to the car adjacent the free edge of the door, stops on said lever, a co-acting stop on the door, a link pivotally connected to said door and to said lever, and means for raising the free end of said lever and thereby closing the door.

3. In a dump car, a hinged door, a lever pivoted to a fixed part of the car adjacent the free edge of the door, a link pivoted at its ends to said door and lever respectively, means for raising and lowering the free end of said lever, a stop hook upon said lever adjacent the pivoted end thereof, a stop upon the lever adjacent the free end thereof, and a stud upon the door adapted to engage said stop when the door is open and adapted to

engage said stop hook and to overlie the outer part thereof when the door is closed.

4. In a dump car, a center sill, a door pivoted adjacent the center sill, a lever pivoted to a fixed part of the car adjacent the free edge of the door, a link pivoted at its ends to said door and lever, respectively, a chain connected to the free end of said link, a winding shaft engaged by said chain means for rotating said winding shaft, a hook stop adjacent the pivoted end of said lever, a stop adjacent the free end of said lever, a stud upon said door, the parts being so proportioned that the opening movement of the door is limited by the engagement of said stud with said stop, and that the stud engages said stop hook and overlies the outer portion thereof when the door is closed.

5. In a dump car, a center sill comprising members spaced apart, a drop door hinged to said center sill and extending therefrom to the lower edge of the car side, the lower edge of the car side being at a lower level than the door hinge, a lever pivoted to the car side and extending inwardly to a point beneath the space between the members of the center sill, a shaft extending longitudinally of the car above the inner end of said lever, means for rotating said shaft, a chain secured at its ends to the inner end of said lever and to said shaft, a stop hook upon said lever adjacent its pivoted end, a stop upon said lever adjacent its free end, a link pivoted at its ends to said door and lever, respectively, and a stud upon said door, the parts being so proportioned that the opening movement of the door is limited by engagement of said stud with said stop, and that in the closed position of said door the stud engages said stop hook and overlies the outer part thereof.

6. In a dump car, a center sill comprising two beams spaced apart, said beams having vertical webs and outwardly extending flanges at the upper and lower edges of said webs, hinge members secured to said webs, doors pivoted to said hinge members, journals supported by bridges extending between said beams, cover plates extending downwardly from the outer edges of the upper flanges of said beams to the level of the doors at a point outside their hinges when in closed position and inclined upwardly to a meeting edge above said shaft, operating levers for said doors, links connecting said operating levers to said doors, said levers being pivoted upon the sides of the car and extending inwardly to a point beneath said shaft, chains secured to the inner ends of said levers and to said shaft, and means for operating said shaft.

7. In a dump car, a hinged door, a lever pivoted to a fixed part of the car adjacent the free edge of the door, a link pivoted at

its ends to said door and lever respectively,
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of said lever, a stop hook upon said lever ad-
jacent the pivoted end thereof, and a stud
5 upon the door adapted to engage said stop
hook and to overlie the outer part thereof
when the door is closed.

In testimony whereof, I have subscribed
my name.

FREDERICK SEABERG.

Witnesses:

ANNA L. SAVOIE,

ANNIE C. COURTENAY.