



No. 676,104.

Patented June 11, 1901.

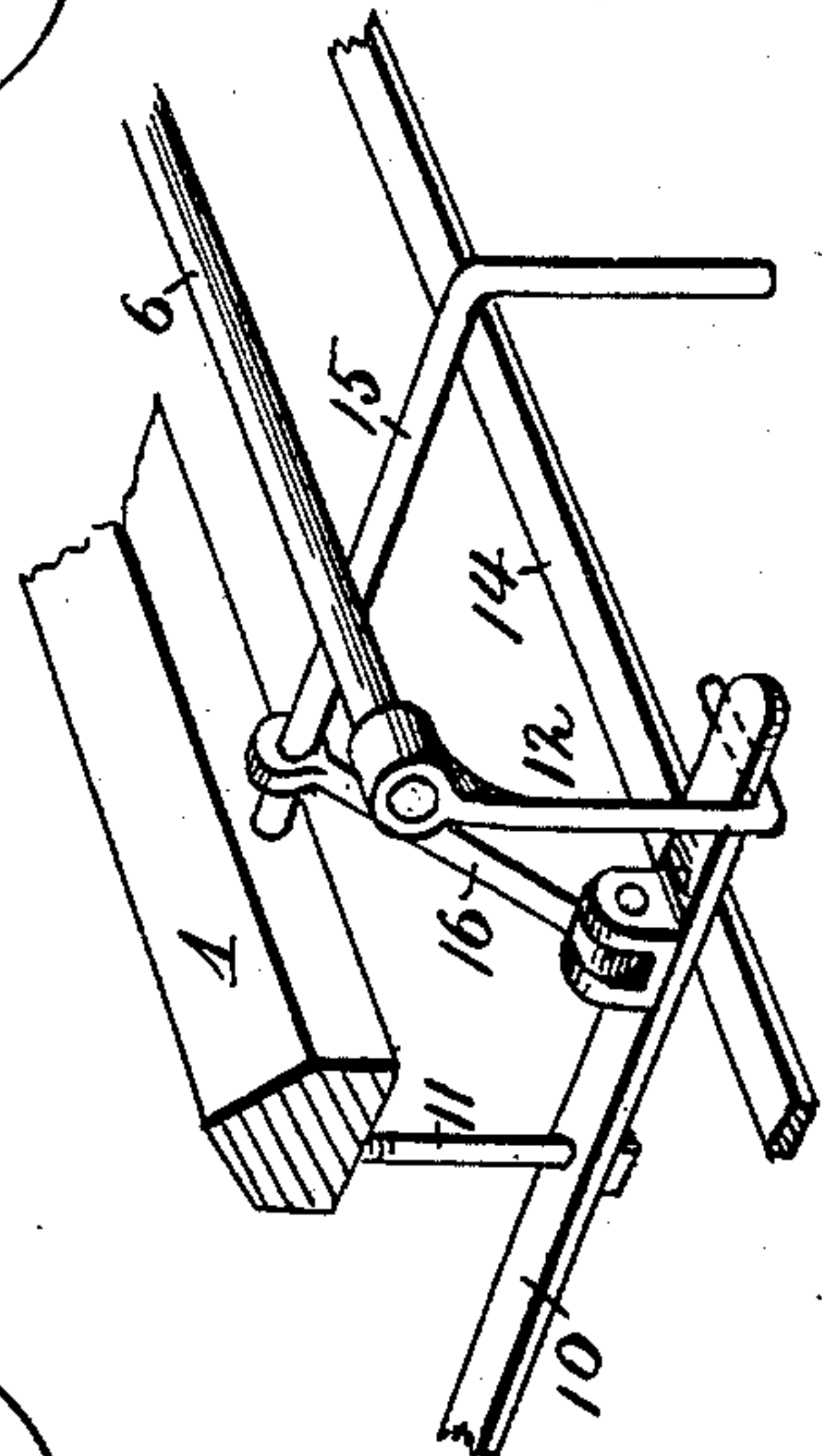
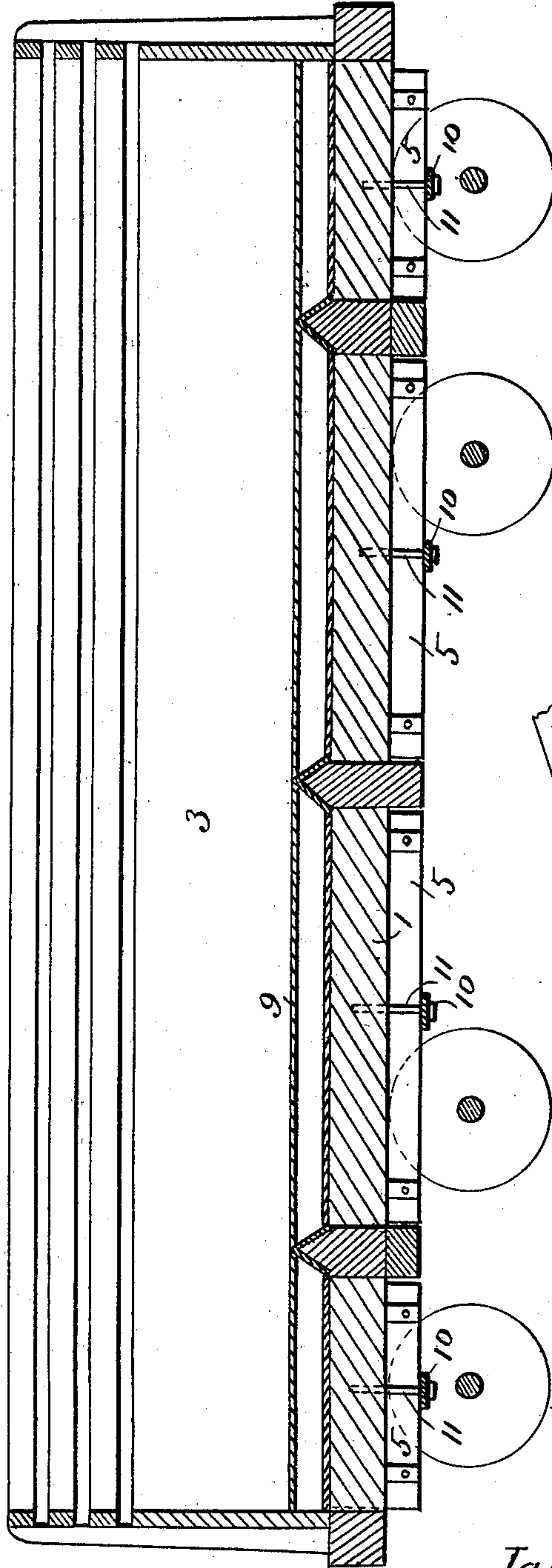
J. J. SOUDER.  
DUMPING CAR.

(Application filed Oct. 17, 1900.)

(No Model.)

2 Sheets—Sheet 2.

*Fig. 2.*



*Fig. 3.*

Witnesses  
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# UNITED STATES PATENT OFFICE.

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## DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 676,104, dated June 11, 1901.

Application filed October 17, 1900. Serial No. 33,371. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB J. SOUDER, a citizen of the United States, residing at Washington, in the District of Columbia, 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.

This invention relates to improvements in railway dumping-cars, and is more particularly designed as an improvement in that form of car shown and described in my pending application, filed August 24, 1900, Serial No. 27,948.

The dumping railway-car which constitutes the subject of the application above referred to operates with entire satisfaction when the car has been supplied with the smaller grades of coal or of coke; but in some instances it has been found that when very coarse grades of these fuels have been supplied to the car the weight and the friction of these rough-surfaced materials as they have rested in direct contact with the winding-shafts of the car have somewhat restricted and diminished the facility of their operation; and a leading object of this invention is to provide means for avoiding the delay and annoyance which have resulted from the direct contact of a portion of the contents of the car with the winding-shafts which operate the hopper-doors of the car, while another object is the provision of a means for retaining the hopper-doors in position when they have been closed.

With these objects in view the invention consists in various novel parts or combinations of parts in a railway dumping-car, as will appear from the following description thereof and from the specific and distinct claims of novelty which succeed such detailed description.

In the accompanying drawings, which constitute a part of this specific description, Figure 1 represents a perspective plan view, partly in transverse vertical section, of a dumping railway-car which is provided with my improved shielding and guiding appliances and with my improved retaining mechanism for preventing inadvertent or premature discharge of the contents of the car. Fig. 2 is a longitudinal central vertical section of the car

represented in Fig. 1, and Fig. 3 is a perspective view showing details of the hopper-retaining mechanism.

Referring to the drawings, the numeral 1 designates the longitudinal central sill, and 2 the longitudinal side sills, of the car-body, surmounting which side sills are the sides 3, while extending from end to end of the bed-frame of the car and arranged at regular intervals is a series of transverse sills (not shown) for bracing the side sills 2 against the center sill 1. This construction, however, is the same as in the pending application hereinbefore referred to, and further description is therefore unnecessary.

By means of the longitudinal sill 1 and the transverse sills the entire body of the car is divided into a series of dumping-spaces, and hingedly connected to the longitudinal sill 1, at each side thereof, is a series of downwardly-opening inner doors 4, which cooperate with a series of downwardly-opening outer doors 5, hingedly connected to the inner sides of the side sills 2. The doors 4 and 5 when closed form longitudinal hoppers at the sides of the longitudinal sill 1, and extending throughout the length of the car in vertical alinement with the center of each of said hoppers is a longitudinal winding-shaft 6. At suitable intervals throughout the length of the shafts 6 the same are each provided with lifting-chains 7, the latter being suitably connected at their lower ends to the doors 4 and 5, and it is therefore obvious that when the shafts 6 are rotated in one direction the chains 7 will be wound thereon and the doors thereby closed, while with a reverse rotation of said shafts the chains 7 will become unwound and the doors 4 and 5 thereby permitted to gravitate in order to be opened. For effecting the rotation of the shafts 6 a transversely-extending counter-shaft 8 is employed, which shaft operates the shafts 6 through suitable bevel-gearing, (not shown,) and the operation of the shafts 6 for opening and closing of the doors 4 and 5 simultaneously is thereby effected. The construction of the doors 4 and 5, the shaft 6, the chains 7, the counter-shaft 8, and its gearing with the shaft 6 is the same as shown in the pending application referred to; but in the operation of the car it has been found, as already stated, that the contents of the body when it is desired to dump



the same sometimes interfere with the working of the shafts 6 and 8. To overcome this objection, the shafts 6 and 8 and the longitudinal and transverse sills are each provided with an inverted-V-shaped protector 9, and by reason of the provision of said protectors it is obvious that the shafts 6 and 8 and the longitudinal and transverse sills are protected against contact of the contents of the car, which will be directed to the right and to the left away from the winding-shafts.

To lock the doors 4 and 5 against possible opening, a series of locking-bars 10 is arranged beneath the body of the car at spaced intervals and each pivotally connected to the longitudinal sill 1 through the medium of a perpendicularly-arranged bolt 11, which by its upper extremity is secured to the bottom face of such sill. The ends of the bars 10 when transversely arranged, as in Fig. 1, project beyond the meeting edges of the doors 4 and 5, and thereby underlie the same, and when in this position each of the bars 10 is adapted to engage a pair of transversely-aligned reversely-arranged hangers 12, which depend from the winding-shafts 6 and which are received in coincident notches 13, which are formed in the meeting edges of the doors 4 and 5. For effecting uniform and simultaneous movement of the locking-bars 10 a longitudinally-extending link 14 is connected to said bars throughout the length of the car, so that all of said bars move at once, and in order that said link 14 may be properly moved for shifting the locking-bars into and out of engagement with the hangers 12 a transversely-extending operating-lever 15 is employed. The lever 15 is suitably mounted in or upon the body of one of the transverse sills, and interposed between said lever 15 and one of the locking-bars 10 is a connecting-link 16, the outer end of the lever 15 extending slightly beyond the side of the car, and thus in a position to be readily manipulated by the operator.

The operation of the herein-described mechanism is as follows: When the body of the car is filled, it is obvious that the contents are prevented resting directly upon the shafts 6 and 8 by means of the protectors 9, and said shafts are thus capable of free operation without interference by the contents of the body. Should it be desired to dump the contents, it is simply necessary to operate the lever 15 in such manner that the same disengages the locking-bar 10, to which it is connected through the medium of the link 16, from the hangers 12, and said locking-bar being connected with the other locking-bars throughout the length of the car transmits the motion of the shaft 15 to said bars, with a resultant disengagement of the entire series of bars 10 from their respective hangers. The shafts 6 are thus permitted to rotate in such manner that the chains 7 are unwound and the doors 4 and 5 are permitted to fall to their discharging position. The contents of the body will

now descend and will be evenly distributed throughout the area covered by the car. After the discharge of the contents the doors 4 and 5 may be closed by simply rotating the shafts 6, whereupon the chains 7 wind thereon and the doors 4 and 5 are elevated so that their angular edges meet. After the doors 4 and 5 have been closed the locking-bars 10 are swung into engagement with the hangers 12 through the proper manipulation of the operating-lever 15, when the car is ready to be again loaded.

The invention having been thus described, what is claimed is—

1. In a railway dumping-car, the combination with the bed-frame thereof, of a series of oppositely-placed discharging-doors which are hinged to such bed-frame, which extend from end to end of the bed-frame, and which in closing unite by their free extremities to constitute a hopper-shaped bottom; a winding-shaft which is mounted upon such bed-frame, which extends, in a horizontal plane, from end to end of the bed-frame, and which is operated by interconnecting chains, to close or to release the oppositely-placed meeting doors; and the described A-shaped protector or guard, mounted above the winding-shaft, at a short distance therefrom, and extending from end to end of the winding-shaft, and of the car; as and for the purposes set forth.

2. In a dumping-car, the combination of winding-shafts, mounted upon the bed-frame of the car, and extending from end to end of the same; two series of oppositely-placed discharging-doors which are hinged to the longitudinal sills of the car, and which when closed unite to constitute a hopper-like bottom; chains which are connected to the winding-shafts, and to the free extremities of the oppositely-placed discharging-doors; supporting-bolts which are secured in the body of the central longitudinal sill of the car, and which extend perpendicularly downward therefrom; horizontally-arranged supporting-arms or locking-bars, one of which is centrally pivoted at the head of each of the supporting-bolts; reversely-arranged hangers which are mounted upon and extend downwardly from the winding-shafts; a horizontally-arranged transversely-extending lever which is mounted in the bed-frame of the car; and a link which is connected to the horizontally-arranged lever, and to the pivoted supporting-arm or locking-bar, the several supporting-arms or locking-bars being united for action, by intermediate connections, as specified, whereby the entire series of supporting-arms or locking-bars are simultaneously moved either into or out of their securing position.

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

JACOB J. SOUDER.

Witnesses:

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