No. 676,278. Patented June 11, 1901.

A. ROESGEN.

DUMPING CAR.

Application filed Nov. 26, 1898.

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

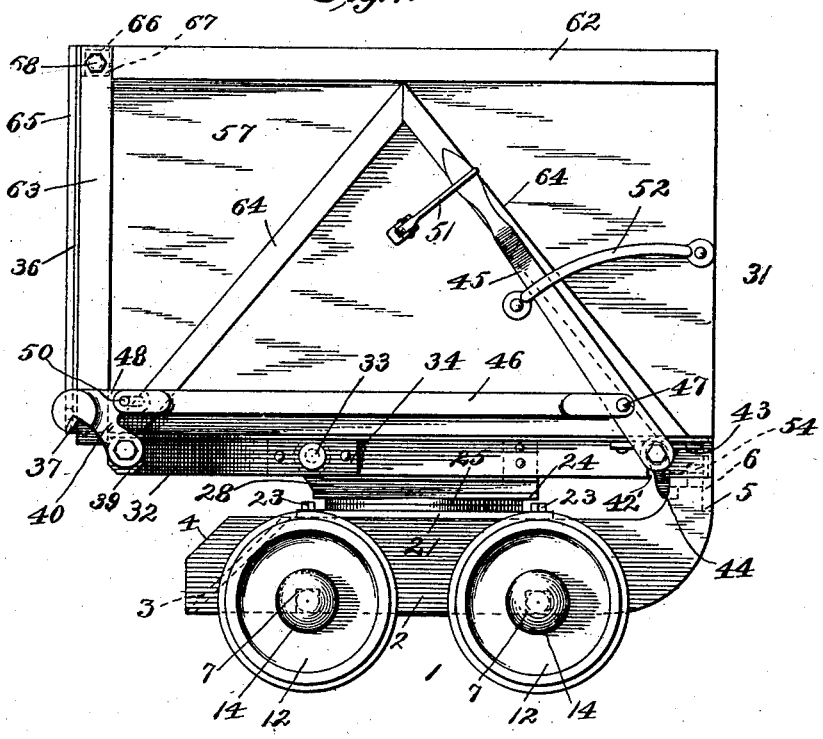
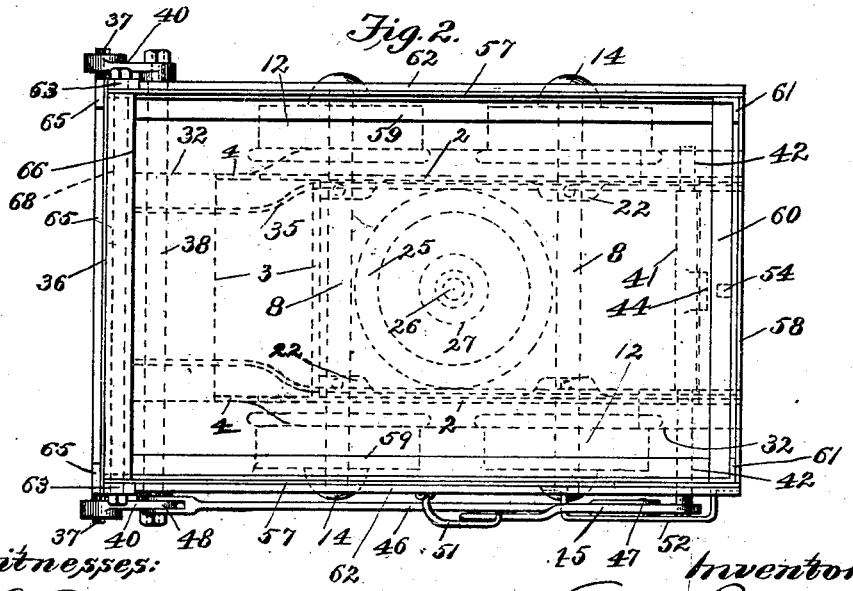


Fig. 2.



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No. 676,278. Patented June 11, 1901.

A. ROESGEN.

DUMPING CAR.

(Application filed Nov. 26, 1898.)

(No Model.) 3 Sheets—Sheet 2.

Fig. 3.

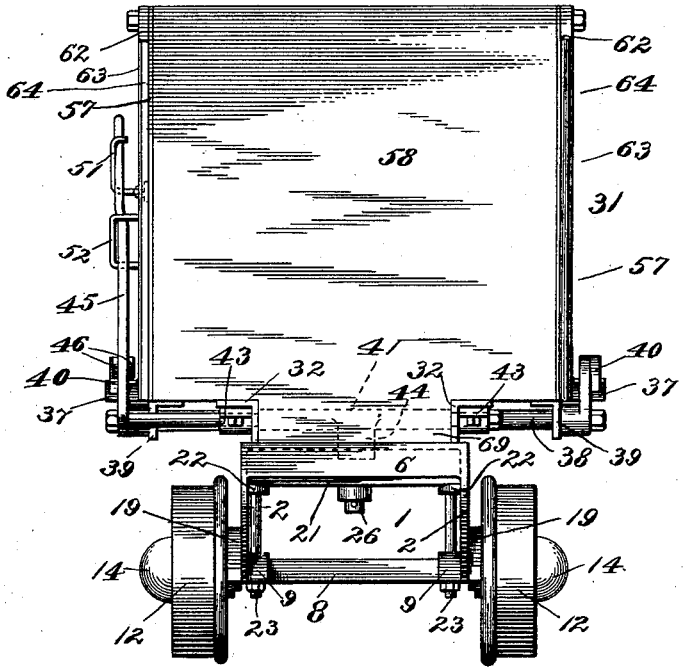
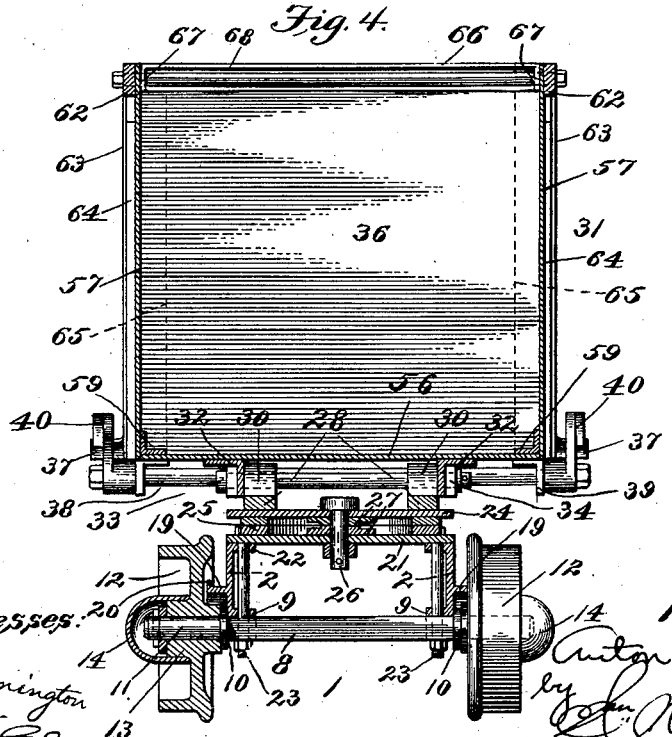


Fig. 4.



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DUMPING CAR.

(Application filed Nov. 26, 1898.)

(No Model.) 3 Sheets—Sheet 3.

Fig. 5.

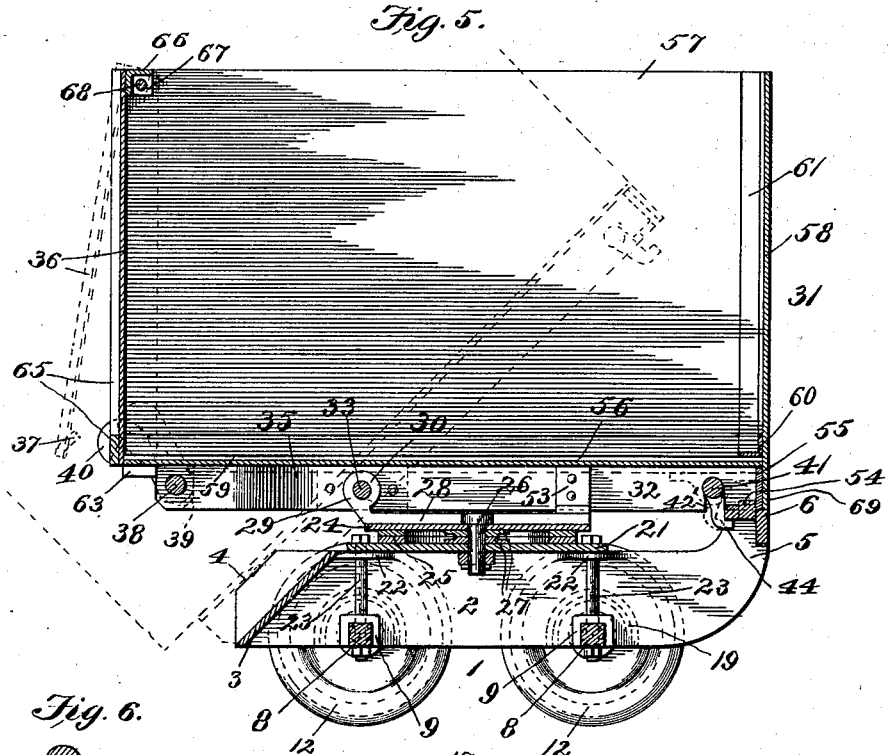


Fig. 6.

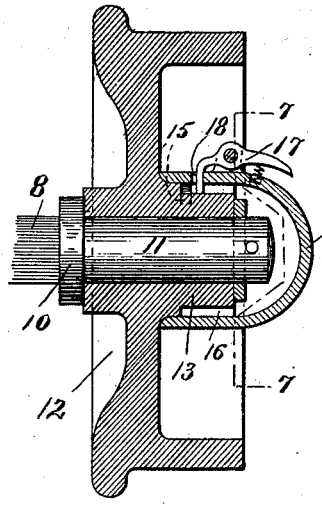


Fig. 7.

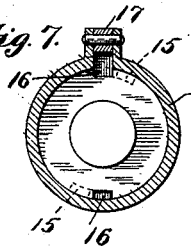


Fig. 8.

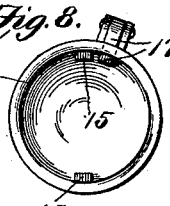


Fig. 9.

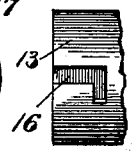


Fig. 10.

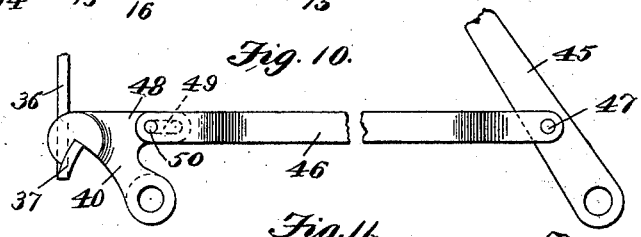


Fig. 11.

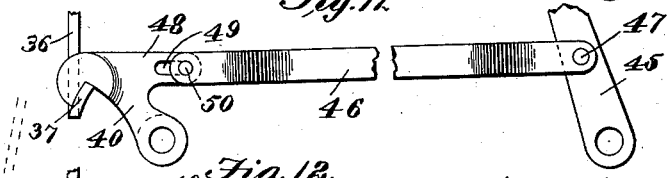
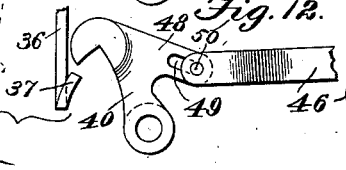


Fig. 12.



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UNITED STATES PATENT OFFICE.

ANTON ROESGEN, OF LEADVILLE, COLORADO.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 676,278, dated June 11, 1901.

Application filed November 26, 1898. Serial No. 697,568. (No model.)

To all whom it may concern:

Be it known that I, ANTON ROESGEN, a citizen of the United States, residing at Leadville, in the county of Lake and State of Colorado, 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 dumping-cars, and more particularly pertains to cars of this character which are designed for use in and around mines for the transportation of mineral products.

The main and primary object of the present invention is to provide a dumping-car which is entirely constructed of steel or equivalent material, whereby the life of the car is greatly prolonged over that of those ordinarily employed and the car itself adapted for heavier service.

A further object, however, is to provide a car which is so constructed as to be equally as well adapted for dumping sidewise as in a longitudinal direction, and, furthermore, the invention contemplates the provision of novel locking means both for securing the body in engagement with the truck and also maintaining the door in closed relation to the body, which locking means are so arranged relatively to each other as will enable the attendant of the car by the operation of a single lever to disengage the body from the truck for dumping and by the continued operation of such lever to release the door in order that the contents of the body may pass from the latter when the body is properly positioned.

To the accomplishment of these and other objects, which will appear as the nature of the improvements is better understood, the invention consists, substantially, in the novel construction, combination, and arrangement of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of a dumping-car constructed in accordance with the present invention. Fig. 2 is a top plan view thereof. Fig. 3 is an end elevation looking at the forward end of the car. Fig. 4 is a vertical transverse sectional view. Fig. 5 is a longitudinal sectional view, the dotted lines illustrating the position which the body assumes when dumping longitudinally and also showing the position of the door just after its locking means have been released. Fig. 6 is a vertical transverse sectional view of one of the wheels and illustrating the relation of the dust-cap carried thereby. Fig. 7 is also a transverse sectional view on the line 7 7, Fig. 6. Fig. 8 is an end elevation of one of the dust-caps looking at the interior thereof. Fig. 9 is a fragmentary view of the hub of one of the wheels and showing one of the bayonet-grooves by which the dust-cap is locked thereon. Figs. 10, 11, and 12 are detail views illustrating the different positions assumed by the parts of the locking means when the car-body is engaged with the truck and the door is closed and also when releasing the body and opening the door.

Referring to the drawings, the numeral 1 designates the car-truck, which comprises a substantially rectangular frame formed, preferably, of steel and cast in a single piece, and said frame consists of two longitudinally-extending parallel side pieces 2, which are connected at their rear ends by an inclined transverse web 3, the latter extending across the entire width of the truck at said ends. It will be observed, however, that the upper corners of said rear ends are cut at an angle, as at 4, the purpose of which will hereinafter appear, and said web 3 lies in parallel relation to the angular corners 4, but in a plane somewhat in advance thereof. It will also be noted that the forward ends of the side pieces 2 are curved upwardly, as at 5, and said ends are connected by a transverse saddle-piece 6, which is preferably in the form of angle-iron in cross-section and lies in a plane above the upper edges of the side pieces 2. This enables the car-body and its depending parts to freely swing on the truck when said body is rotated on its pivot, as will more fully hereinafter appear.

Formed in the lower edges of the side pieces 2 is a series of square notches 7, the notches of each side piece being opposite the notches of the other, and arranged in said notches is a series of transversely-extending axles 8, which are also square in cross-section, so as to fit said notches. The side pieces 2, how-

ever, are also provided at the notches 7 with inwardly-projecting hoods 9, adapted to embrace the axles 8 and form bearings therefor, and said axles are provided with annular collars 10, which lie at the outside of the side pieces 2 and prevent contact of the wheels with the truck-frame. The ends of the axles 8 are circular in cross-section, so as to form spindles 11, and mounted upon said spindles are wheels 12. Each of the latter carries upon its hub 13 a removable dust-cap 14, which is designed to shield the spindle and prevent accumulation of dirt and foreign matter thereon, and said dust-caps are each provided with diametrically opposite inwardly-extending lugs 15, adapted to enter and engage bayonet-grooves 16, formed in the peripheral faces of the hubs 13. The grooves 16 are also diametrically opposite, but reversely arranged, and it will thus be seen that when the caps 14 are placed upon the hubs 13 and given a partial rotation thereon the lugs 15 interlock with said grooves and prevent movement of said caps longitudinally of the hubs. Means must be provided, however, for also preventing rotation of the caps 14 upon the hubs 13, and for this purpose a spring-pressed pawl 17 is employed, one of said pawls being pivoted on the exterior of each of the caps and having its nose projecting through an aperture 18 and lying within the longitudinal portion of one of the grooves 16. It is thus apparent that the nose of the pawl 17 renders the cap 14 incapable of rotation, and hence the cap is securely held in position; but to remove the caps 14 it is only necessary to apply sufficient pressure to the pawls 17 as will withdraw the noses thereof from the grooves 16, and by giving a partial rotation to said caps the lugs 15 are brought into the longitudinal portions of said grooves and the caps taken off in an obvious manner.

While the construction and operation of the dust-caps 14 have been specifically described, the same are not claimed herein, as these caps form the subject-matter of a divisional application filed September 21, 1899, Serial No. 731,178.

The numeral 19 designates a series of wheel-guards, which are integral with the side pieces 2 of the truck-frame and project from the outer faces thereof, and said guards are arranged adjacent to the notches 7 and overhang the inner ends of the hubs of the wheels 12 and their journals. This is for the purpose of protecting the journals from sand, water, and other extraneous matter, and each of said guards is also provided with a flange 20, by which any of such substances which may collect thereon is prevented passing over the free end of the same and onto the hubs and journals.

A covering-plate 21 is mounted upon the top of the truck-frame and extends thereover above the axles 8, and formed integral with the upper edges of the side pieces 2 are horizontally-disposed inwardly-extending lips 22, the latter being directly above said axles. Bolts 23 or their equivalent pass through the covering-plate 21, lips 22, hoods 9, and axles 8, and it will thus be seen that said covering-plate and the axles are rigidly held to the truck-frame, and by reason of the axles 8 being square in cross-section and fitting in the notches 7, which are also square, it is also apparent that said axles are prevented turning and always remain in fixed relation to the truck-frame.

Arranged above the covering-plate 21 and spaced therefrom is a base-plate 24, which plate forms through intermediate connections a support for the car-body, and interposed between the plates 21 and 24 is a pair of bearing-rings 25, adapted to slide upon each other, and thereby facilitate turning of the car-body upon the truck when such is desired. A king-bolt 26 passes through the central portions of the plates 21 and 24 for pivoting the same together, and each of said plates is provided with a reinforcement 27 at the point through which said bolt passes in order to increase the wearing-surface for the latter and also provide a firm turning-point for the car-body.

A plurality of flat hinge-bars 28 is carried by the base-plate 24, which bars extend longitudinally of the truck, and each of said bars has at its rear end an upwardly-inclined shank 29, which terminates in an eye 30.

The numeral 31 designates the car-body, which, like the truck, is preferably made of steel, and said body has riveted or otherwise suitably secured to its bottom a plurality of longitudinally-extending angle-irons 32, which are adapted to brace and stiffen said bottom and also prevent the latter sagging. As will be noted, the angle-irons 32 are spaced a sufficient distance apart to permit the eyes 30 of the hinge-bars 28 fitting therebetween, and passing through the vertical flanges of said angle-irons 32 and the eyes 30 is a transverse hinge-bolt 33 or its equivalent, upon which the body 31 is adapted to rock when dumping, reinforcements 34 being riveted or otherwise suitably attached to the vertical flanges of the angle-irons at the point where said bolt 33 passes therethrough, so as to strengthen said flanges at said point and also thicken the wearing-surface for the bolt 33. Each of the angle-irons 32, adjacent to the point through which the bolt 33 passes, is provided with an inwardly-extending offset 35, which offsets position the rear ends of said angle-irons in a different longitudinal plane from their forward ends, and by this means the space between said rear ends is decreased, so that when the body is dumped in a longitudinal direction and assumes an inclined position similar to that shown in dotted lines in Fig. 5 the vertical flanges of the angle-irons 32 lie between the rear ends of the side pieces 2 of the truck-frame and rest upon the inclined web 3, and the horizontal flanges of said irons likewise rest upon the inclined corners 4 of said side pieces 2, thereby form-

ing a firm support for the car-body while the same is in the inclined position referred to.

A door 36 is hingedly connected at its upper edge to the upper edges of the sides of the body 31, at the rear end of the latter, and said door is provided at its sides with outwardly-projecting upwardly-inclined lugs 37. Extending transversely of the body 31, beneath the bottom thereof and in advance of the lugs 37, is a rock-shaft 38, which shaft passes through the rear ends of the angle-irons 32, and the ends of said shaft are secured to said body by means of depending inverted-L-shaped brackets 39, which in turn are suitably attached to the bottom of the body 31. The ends of the shaft 38 project beyond the sides of the car-body and their extremities are reduced, and fixedly connected to each of said reduced ends is a locking-hook 40, said hooks being adapted to engage the lugs 37, as clearly shown in Fig. 1, and thereby retain the door 36 in closed position. A locking-shaft 41 also extends transversely of the body 31, at the forward end thereof and beneath its bottom, and said shaft has its ends reduced, as at 42, and arranged in notches 42', formed in the vertical flanges of the angle-irons 32. By reason of this construction it will be seen that the shaft 41 is incapable of any lateral movement with respect to the body 31, and in order that the ends of said shaft may be securely held in position the same are disposed in bearings 43, which are riveted or otherwise suitably connected to the car-body. A locking-hook 44 depends from the shaft 41, which hook may be either integral with said shaft or separate therefrom, but rigidly connected thereto, and said hook is adapted to engage the under side of the saddle-piece 6. Thus it is obvious that so long as the hook 44 is in engagement with the saddle-piece 6 the body 31 cannot be dumped; but immediately upon its release therefrom by rocking the shaft 41 said body is free to be rotated upon its pivot or rocked upon the bolt 33 and emptied of its contents, and for accomplishing the rocking of the shaft 41 the latter has one of its ends projecting beyond the adjacent side of the car-body, and secured to said projecting end is an operating-lever 45, which extends upwardly and along the side of the body 31. By arranging the lever 45 at the side of the car the same is easily operated and much more advantageous than at the end, inasmuch as elevator cages and shafts are narrow longitudinally of the car, while there is ample space at the sides, and by positioning the operating-lever at the side the cars may be made of greater length, which is highly desirable. Moreover, by arranging the saddle-piece 6 in an elevated plane the locking-hook 44, which engages the same, is also in such position as not to interfere with the turning of the body on its pivot, the hook 44 swinging clear of all parts of the truck when the body is turned.

The lever 45 is designed for operating the rock-shaft 38 as well as the locking-shaft 41, and to this end a connecting-rod 46 extends from said lever 45 to the locking-hook 40 at the same side of the car. The rod 46 has its forward end bifurcated and pivotally secured to the lever 45, as at 47, while its rear end is also bifurcated and embraces an elongated extension 48, carried by the hook 40, which extension is provided with an elongated slot 49, and passing through said slot is a pin 50, which connects the rod 46 with the hook 40. A hook 51 or other suitable fastening device is also carried by the car-body, and said hook is adapted to be engaged with the lever 45 for rigidly holding the same, a guard 52 being provided for said lever 45, so as to limit its lateral movement.

By referring to Figs. 1 and 5 it will be observed that in the normal position of the body 31 or that in which the same extends longitudinally of the truck the forward ends of the angle-irons 32 rest upon the saddle-piece 6, and thereby maintain said body in horizontal position. It is essential, however, that this horizontality of the body 31 should also be maintained when the same is swung around, so as to dump sidewise, it being obvious that in so swinging the body 31 the angle-irons move off the saddle-piece 6, and for attaining this end a supporting-iron 53 is riveted or otherwise suitably secured to the vertical flange of each of the angle-irons 32 and rests upon the adjacent hinge-bar 28. Thus it is apparent that the irons 53 will prevent the forward end of the body 31 dropping down when the same moves away from the saddle-piece 6, and hence the body 31 always remains in horizontal relation to the truck irrespective of its position thereon.

For preventing lateral movement of the body 31 upon the saddle-piece 6 the latter is provided with an upwardly-projecting stud 54, which stud enters an opening formed in a transverse angle-iron 55, disposed between the forward ends of the angle-irons 32 and reversely arranged with respect thereto, and by this construction it is evident that the forward end of said body must be slightly elevated, so as to free the stud 54 from engagement with the iron 55 before any lateral movement of said end can be obtained.

As before stated, the body 31 is preferably made of steel, and said body comprises a bottom plate 56, side plates 57, and an end plate 58, the latter being arranged at the forward end of the body, while the door 36 is located at the rear end thereof and closes the same. Longitudinal stays 59 are arranged at the junction of the side plates 57 with the bottom plate 56 and at the interior of the body 31, to which stays said bottom and side plates are suitably fastened, and located adjacent to the end plate 58 is a transverse stay 60, vertically-disposed stays 61 being also arranged at the junction of the side plates 57 with the end plate 58. The side and end plates are suit-

ably fastened to the vertical stays 61, and said end plate is also fastened to the transverse stay 60, and by reason of the stays 59, 60, and 61 it will be seen that the plates of the body are firmly held together and remain in fixed relation to each other. The stays 59, 60, and 61 are preferably in the form of angle-irons, as clearly shown.

At the exterior of the body 31 longitudina- reinforcing-strips 62 are arranged at the upl per edges of the side plates 57, and the latter are also provided at their rear ends with vertical reinforcing-strips 63, while each of said side plates carries a pair of converging braces 64 for strengthening purposes. Furthermore, the door 36 has at its side and lower edges reinforcing-strips 65, the lower one of which has its ends terminating in the lugs 37, and thus it will be seen that said door is effectually braced, and hence able to withstand the hard service to which the same is constantly subjected. The door 36 is also provided at the upper edge of its inner side with a transversely-extending angle-iron 66, the ends of which are formed into heads 67, and passing through the reinforcing-strips 63, the side plates 57, and the heads 67 is a hinge-rod 68 or its equivalent, by which the door 36 is connected to the body 31 and adapted to swing with relation thereto.

A depending flange 69 is carried by the end plate 58, which flange lies between the forward ends of the angle-irons 32, and said flange while presenting a finished appearance to the forward end of the body also provides means to which the iron 55 may be attached and by which said iron is held between the angle-irons 32.

The operation of the herein-described car is as follows: The normal position of the car is clearly illustrated in Figs. 1 and 5, wherein the body 31 of the same appears locked to the truck and the door 36 locked to the body, and when in this position the car may be filled with the mineral products or other matter which it is desired to transport to and dump at a suitable point. After the car has reached the latter place and the attendant wishes to dump the body the hook 51 is released from engagement with the lever 45 and said lever is firmly grasped. Sufficient pressure being now applied to the lever 45 the same is swung forwardly, thereby rocking the shaft 41 in its bearings 43 and imparting to the locking-hook 44 movement in a rearward direction, which movement withdraws said hook from engagement with the under side of the saddle-piece 6, and consequently renders the forward end of the body 31 capable of vertical displacement from said saddle-piece. During the forward movement of the lever 45, however, the connecting-rod 46 also moves forwardly, carrying with it the pin 50, which slides in the elongated slot 49 of the hook 40 without affecting in the least the position of the latter, and it will thus be seen that while the hook 44 has been released from engagement with the saddle-piece 6 by the operation just described the hooks 40 remain in engagement with the lugs 37 and the door 36 also remains closed. By referring to Figs. 10 and 11 the position of the hooks 40, the lever 45, and connecting-rod 46 both before and after the operation mentioned will be clearly seen. Now if it is desired to dump the body 31 in a longitudinal direction the attendant applies further pressure to the lever 45, which swings the latter farther forwardly, and by reason of the pin 50 contacting with the forward end of the slot 49 and the lever 45 continuing to swing forwardly it is obvious that the hook 40 at the same side of the body 31 as the lever 45 will be disengaged from its lug 37, which disengagement causes the shaft 38 to simultaneously rock in its bearings, with a resultant disengagement of the hook 40 at the other side of the body from its lug 37. Thus the door 36 is released and the same swings away from the car-body by reason of the pressure of the contents, after which the body is tilted upon the hinge-bolt 33 to the position shown in dotted lines in Fig. 5, and the contents readily pass therefrom. Fig. 12 illustrates the position of the door 36, the hooks 40, and the connecting-rod 46 after the operation just described and previous to tilting the body. Should it be desired to dump the body 31 sidewise in lieu of longitudinally after the hook 44 has been released from engagement with the saddle-piece 6, it is only necessary to elevate the forward end of said body to such an extent as will disengage the angle-iron 55 from the stud 54, when the body 31 may be swung upon its pivot 26 to the required position, the supporting-irons 53 maintaining the body in horizontal relation to the truck, as before described. During this swinging movement, however, it will be noted that the door 36 remains closed; but to open the same after the body 31 has reached the position mentioned the lever 45 is operated, as when dumping longitudinally, which operation releases the hooks 40 from the lugs 37, and said door is free to swing outwardly. The car-body is then tilted and dumped of its contents. Upon the body becoming emptied the same returns of itself to a horizontal position, the hinge-bolt 33 being so located that a greater portion of said body is in advance thereof than in its rear, and hence the forward end of the body is of greater weight than its rear end, which excess of weight is adapted to return the body, as stated, and holds said body in the horizontal position whether the hook 44 is engaged with the saddle-piece 6 or not. With the return of the body 31 to a horizontal position the door 36 swings against the same and into the vertical relation shown in full lines in Fig. 5, and by swinging the lever 45 rearwardly or in a direction reverse to that employed when releasing the hook 44 and the door 36 said hook 44 and the hooks 40 are adapted to respectively

engage the saddle-piece 6 and the lugs 37, and thereby again lock the body in engagement with the truck and also the door against the body. If, however, the body has been dumped sidewise, it will of course be necessary after the same has returned to its horizontal position to swing the same upon the king-bolt 26 into its normal relation to the truck or longitudinally thereof, after which the stud 54 is caused to again engage the angle-iron 55 and the hooks 44 and 40 also brought into engagement with their respective parts, as previously described. The car is then ready to be filled again and emptied in the manner set forth.

By the use of the angle-irons 32 the bottom plate of the car-body is effectually braced and the hinge-bolt 33 and the shafts 38 and 41 are firmly supported. Moreover, the locking means are less liable to become deranged than if the bearings of the bolt 33 and shafts 38 and 41 were connected directly to a body which is unsupported, and thereby likely to sag, and hence said locking means are always maintained in proper relation to the parts to be engaged by them.

The herein-described car is preferably steel in all its parts; but it is evident that any other suitable material may be substituted therefor, and also that the parts described as "angle-irons" may be channel-irons, and if it is desired the truck may be in sections in lieu of being a single casting. The truck may also be of angle or channel iron, and, furthermore, said truck might be provided at 7 with journals adapted to receive cylindrical axles in lieu of the square ones shown, by which means the axles would be capable of rotation as well as the wheels 12, and thus in the event that said wheels should adhere to the axles stoppage of the car would be prevented. Any other suitable construction of body might also be substituted for that described and shown, and it is also obvious that the improvements might be advantageously applied to dumping-wagons and the like. These, together with various other changes in the form, proportion, and minor details of construction, may be resorted to, and the right is therefore reserved to modify or vary the invention as falls within the spirit and scope thereof.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a dumping-car, a truck, a body mounted thereon, braces carried by said body, a locking-shaft also carried by said body and extending transversely thereof, a depending hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, and means arranged at one side of the body for operating said shaft.

2. In a dumping-car, a truck, a body mounted thereon, braces carried by said body, a locking-shaft also carried by said body and extending transversely thereof, a depending hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, and a lever also carried by said shaft and arranged at one side of the body, said lever being adapted to operate said shaft.

3. In a dumping-car, a truck, a body pivotally and hingedly mounted thereon, a locking-shaft carried by said body and extending transversely thereof, a depending hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, and means for operating said shaft.

4. In a dumping-car, a truck, a body mounted thereon and provided with a door, a locking-shaft carried by said body and extending transversely thereof, a depending hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, means for operating said shaft, and means for locking the door in engagement with the body, said shaft-operating means being also adapted to actuate the door-locking means.

5. In a dumping-car, a truck, a body mounted thereon and provided with a door, a locking-shaft carried by said body and extending transversely thereof, a depending hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, means for operating said shaft, a locking-hook suitably connected to the body and adapted to engage the door thereof, and suitable connections between said locking-hook and the locking-shaft-operating means, whereby the latter is also adapted to actuate said locking-hook.

6. In a dumping-car, a truck, a body mounted thereon and provided with a door, braces carried by said body, a locking-shaft also carried by said body and extending transversely thereof, a depending hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, means for operating said shaft, a hook also carried by the body and adapted to engage the door for locking the same in engagement with said body, and suitable connections between said shaft-operating means and the door-locking hook, whereby said shaft-operating means is also adapted to actuate said hook.

7. In a dumping-car, a truck, a body mounted thereon and provided with a door, braces carried by said body, a locking-shaft also carried by said body and extending transversely thereof, a depending hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, a lever for operating said shaft, a hook also carried by the body and adapted to engage the door for locking the same in engagement with said body, and suitable connections between said lever and the door-locking hook, whereby said lever is also adapted to actuate said hook.

8. In a dumping-car, a truck, a body mounted thereon and provided with a door, braces

carried by said body, a locking-shaft also carried by said body and extending transversely thereof, a depending hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, a lever for operating said shaft, a hook also carried by the body and adapted to engage the door for locking the same in engagement with said body, and a connecting-rod between said lever and the door-locking hook, whereby said lever is also adapted to actuate said hook.

9. In a dumping-car, a truck, a body mounted thereon and provided with a door, a hook for locking said body in engagement with the truck, a hook for locking said door in engagement with the body, said door-locking hook being arranged at the side of the body, and a lever for operating the body-locking hook, said lever being also arranged at the side of the body and also adapted to actuate the door-locking hook, but disposed in such relation to the latter as to be capable of limited movement for releasing the body from engagement with the truck without releasing the door from engagement with the body.

10. In a dumping-car, a truck, a body mounted thereon and provided with a door, a locking-shaft carried by said body and extending transversely thereof, a depending hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, a lever for operating said shaft, a hook also carried by the body and adapted to engage the door for locking the same in engagement with said body, and a connecting-rod between the operating-lever and said door-locking hook.

11. In a dumping-car, a truck, a body mounted thereon and provided with a door, a locking-shaft carried by said body, a hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, a lever arranged at one side of the body and adapted to operate said shaft, a hook also carried by the body and also arranged at one side thereof, said hook being adapted to engage the door for locking the same in engagement with said body, and suitable connections between the operating-lever and said door-locking hook.

12. In a dumping-car, a truck, a body mounted thereon and provided with a door, a locking-shaft carried by said body and extending transversely thereof, a depending hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, a hand-lever arranged at one side of the body and adapted to operate said shaft, a hook also carried by the body and also arranged at one side thereof, said hook being adapted to engage the door for locking the same in engagement with said body, and suitable connections between the operating-lever and said door-locking hook.

13. In a dumping-car, a truck, a body mounted thereon and provided with a door, a hook carried by the body and adapted to engage the door for locking the same in engagement with said body, said hook being provided with an extension having an elongated slot, a lever for operating said hook, a connecting-rod between said lever and said hook, and a pin carried by said rod and passing through said slot for connecting the rod with the hook.

14. In a dumping-car, a truck, a body mounted thereon and provided with a door, a hook carried by the body and arranged at one side thereof, said hook being adapted to engage the door for locking the same in engagement with said body, said hook being also provided with an extension having an elongated slot, a lever also arranged at one side of the body and adapted to operate said hook, a connecting-rod between said lever and said hook, and a pin carried by said rod and passing through said slot for connecting the rod with the hook.

15. In a dumping-car, a truck, a body mounted thereon and provided with a door, a locking-shaft carried by said body, a hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, a lever for operating said shaft, a hook also carried by the body and adapted to engage the door for locking the same in engagement with said body, said hook being provided with an extension having an elongated slot, a connecting-rod between said lever and the door-locking hook, and a pin carried by said rod and passing through said slot, whereby said lever, while being also adapted to actuate the door-locking hook, is capable of limited movement for releasing the body from engagement with the truck without releasing the door from engagement with the body.

16. In a dumping-car, a truck, a body mounted thereon and provided with a door, a locking-shaft carried by said body, a hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, a lever for operating said shaft, a rock-shaft also carried by the body, hooks carried by said rock-shaft and adapted to engage the door for locking the same in engagement with said body, and suitable connections between said rock-shaft and said lever, whereby the latter is also adapted to actuate the former.

17. In a dumping-car, a truck, a body mounted thereon and provided with a door having lugs, a locking-shaft carried by said body, a hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, a lever for operating said shaft, a rock-shaft also carried by the body, hooks carried by said rock-shaft and adapted to engage the lugs of the door for locking the latter in engagement with said body, and suitable connections between said rock-shaft and said lever, whereby the latter is also adapted to actuate the former.

18. In a dumping-car, a truck, a body mounted thereon and provided with a door having lugs, a locking-shaft carried by said body, a hook carried by said shaft and adapted to engage the truck for locking the body in engagement therewith, a lever for operating said shaft, a rock-shaft also carried by the body, hooks carried by said rock-shaft and adapted to engage the lugs of the door for locking the latter in engagement with said body, one of said hooks being provided with an extension having an elongated slot, a connecting-rod between said lever and said hook, and a pin carried by said rod and passing through said slot, whereby said lever, while being also adapted to actuate the door-locking hooks, is capable of limited movement for releasing the body from engagement with the truck without releasing the door from engagement with the body.

19. In a dumping-car, a truck provided with an inclined portion, a body mounted on said truck, said inclined portion extending across the entire width of the truck and forming a support for said body when the latter is positioned for dumping, and braces carried by said body and adapted to coact with said inclined portion to support the body.

20. In a dumping-car, a truck provided with an inclined portion, a body mounted on said truck, said inclined portion extending across the entire width of the truck and forming a support for said body when the latter is positioned for dumping, braces carried by said body and adapted to coact with said inclined portion to support the body, and means for locking the body in engagement with the truck.

21. In a dumping-car, a truck provided with an elevated portion and also an inclined portion, a body mounted on said truck, said inclined portion extending across the entire width of the truck and forming a support for said body when the latter is positioned for dumping, braces carried by said body and adapted to coact with said inclined portion to support the body, and means also carried by said body adapted to engage said elevated portion for locking the body in engagement with the truck.

22. In a dumping-car, a truck comprising a pair of side pieces each of which is provided with a series of axle-receiving bearings and also having one of its ends projecting upwardly, wheel-guards carried by said side pieces and arranged adjacent to said bearings, and a saddle-piece connecting said upwardly-projecting ends, and a body mounted on said truck and normally resting upon said saddle-piece.

23. In a dumping-car, a truck comprising a pair of side pieces each of which is provided with a series of axle-receiving bearings and also having one of its ends projecting upwardly, outwardly-extending wheel-guards carried by said side pieces and arranged adjacent to said bearings, a saddle-piece connecting said upwardly-projecting ends, and an inclined web connecting the other ends of said side pieces, and a body mounted on said truck and normally resting upon said saddle-piece, said inclined web forming a support for said body when the latter is positioned for dumping.

24. In a dumping-car, a truck comprising a pair of side pieces each of which is provided with a series of axle-receiving bearings and also having one of its ends projecting upwardly, outwardly-extending wheel-guards carried by said side pieces and arranged adjacent to said bearings, each of said guards being provided with a flange, a saddle-piece connecting said upwardly-projecting ends of said side pieces, and an inclined web connecting the other ends of said side pieces, and a body mounted on said truck and normally resting upon said saddle-piece, said inclined web forming a support for said body when the latter is positioned for dumping.

25. In a dumping-car, a truck comprising a pair of side pieces each of which is provided with a series of axle-receiving bearings and also having one of its ends projecting upwardly, outwardly-extending wheel-guards carried by said side pieces and arranged adjacent to said bearings, inwardly-projecting hoods also carried by said side pieces and also arranged adjacent to said bearings, axles mounted in the latter, inwardly-extending lips carried by the side pieces and disposed above said hoods, a covering-plate mounted upon said side pieces, bolts passing through said plate, the lips, the hoods and the axles, a saddle-piece connecting the upwardly-projecting ends of the side pieces, and an inclined web connecting the other ends of said side pieces, and a body mounted on said covering-plate and normally resting upon said saddle-piece.

26. In a dumping-car, a truck comprising a pair of side pieces each of which is provided with a series of axle-receiving bearings and also having one of its ends projecting upwardly, outwardly-extending wheel-guards carried by said side pieces and arranged adjacent to said bearings, inwardly-projecting hoods also carried by said side pieces and also arranged adjacent to said bearings, axles mounted in the latter, inwardly-extending lips carried by the side pieces and disposed above said hoods, a covering-plate mounted upon said side pieces, bolts passing through said plate, the lips, the hoods and the axles, a saddle-piece connecting the upwardly-projecting ends of the side pieces, and an inclined web connecting the other ends of said side pieces, a body mounted on said covering-plate and normally resting upon said saddle-piece, and means adapted to engage the truck for locking the body in engagement therewith.

27. In a dumping-car, a truck comprising a pair of side pieces each of which is provided with a series of axle-receiving bearings and

also having one of its ends projecting upwardly, outwardly-extending wheel-guards carried by said side pieces and arranged adjacent to said bearings, inwardly-projecting hoods also carried by said side pieces and also arranged adjacent to said bearings, axles mounted in the latter, inwardly-extending lips carried by the side pieces and disposed above said hoods, a covering-plate mounted upon said side pieces, bolts passing through said plate, the lips, the hoods and the axles, a saddle-piece connecting the upwardly-projecting ends of the side pieces, and an inclined web connecting the other ends of said side pieces, a body mounted on said covering-plate and normally resting upon said saddle-piece, and a hook carried by the body and adapted to engage the truck for locking the body in engagment therewith.

28. In a dumping-car, a truck comprising a pair of side pieces each of which is provided with a series of axle-receiving bearings and also having one of its ends projecting upwardly, outwardly-extending wheel-guards carried by said side pieces and arranged adjacent to said bearings, inwardly-projecting hoods also carried by said side pieces and also arranged adjacent to said bearings, axles mounted in the latter, inwardly-extending lips carried by the side pieces and disposed above said hoods, a covering-plate mounted upon said side pieces, bolts passing through said plate, the lips, the hoods and the axles, a saddle-piece connecting the upwardly-projecting ends of the side pieces, and an inclined web connecting the other ends of said side pieces, a body mounted on said covering-plate and normally resting upon said saddle-piece, a hook carried by the body and adapted to engage the truck for locking the body in engagement therewith, and a lever for operating said hook.

29. In a dumping-car, a truck provided with an elevated portion, a body mounted thereon, and braces secured to and extending throughout the entire length of the bottom of said body for stiffening the same, said braces normally resting upon said elevated portion.

30. In a dumping-car, a truck provided with an elevated portion, a body mounted thereon, and braces secured to the bottom of said body for stiffening the same, said braces normally resting upon said elevated portion.

31. In a dumping-car, a truck provided with an elevated portion, a body mounted thereon, braces secured to the bottom of said body for stiffening the same, said braces normally resting upon said elevated portion, and means carried by said braces adapted to engage said elevated portion for locking the body in engagement with the truck.

32. In a dumping-car, a truck provided with an elevated portion, a body mounted thereon, braces secured to the bottom of said body for stiffening the same, said braces normally resting upon said elevated portion, a locking-shaft carried by said braces, a hook carried by said shaft and adapted to engage said elevated portion for locking the body in engagement with the truck, and a lever for operating said shaft.

33. In a dumping-car, a truck provided with an elevated portion, a body mounted thereon, and angle-irons secured to and extending throughout the entire length of the bottom of said body for stiffening the same, said angle-irons normally resting upon said elevated portion.

34. In a dumping-car, a truck provided with an inclined portion, a body mounted on said truck, and angle-irons secured to the bottom of said body for stiffening the same, said irons being adapted to rest upon said inclined portion for supporting the body when the latter is positioned for dumping.

35. In a dumping-car, a truck provided with an inclined portion and having each of its sides adjacent to said inclined portion cut at an angle parallel therewith, a body mounted on said truck, and angle-irons secured to the bottom of said body for stiffening the same, the vertical and horizontal flanges of said angle-irons being adapted to respectively rest upon the inclined portion and the angular-cut portions of the sides of the truck when the body is positioned for dumping.

36. In a dumping-car, a truck provided with an inclined portion and having each of its sides adjacent to said inclined portion cut at an angle parallel therewith, a body mounted on said truck, and angle-irons secured to the bottom of said body for stiffening the same, each of said angle-irons being provided with an inwardly-extending offset, whereby the vertical and horizontal flanges of the irons are adapted to respectively rest upon the inclined portion and the angular-cut portions of the sides of the truck when the body is positioned for dumping.

37. In a dumping-car, a truck provided with an elevated portion and an inclined portion and having each of its sides adjacent to said inclined portion cut at an angle parallel therewith, a body mounted on said truck, and angle-irons secured to the bottom of said body for stiffening the same, said angle-irons normally resting upon said elevated portion and each being provided with an inwardly-extending offset, whereby the vertical and horizontal flanges of the irons are adapted to respectively rest upon the inclined portion and the angular-cut portions of the sides of the truck when the body is positioned for dumping.

38. In a dumping-car, a truck provided with an elevated portion and an inclined portion and having each of its sides adjacent to said inclined portion cut at an angle parallel therewith, a body mounted on said truck, angle-irons secured to the bottom of said body for stiffening the same, said angle-irons normally resting upon said elevated portion and each being provided with an inwardly-extending offset, whereby the vertical and horizontal flanges of the irons are adapted to respec-

tively rest upon the inclined portion and the angular-cut portions of the sides of the truck when the body is positioned for dumping, and means for locking the body in engagement with the truck.

39. In a dumping-car, a truck, a base-plate suitably secured thereto, flat hinge-bars mounted upon said base-plate and each provided with an upwardly-projecting shank terminating in an eye, a body arranged above said hinge-bars, angle-irons carried by said body, a hinge-bolt passing through the eyes of said bars and said angle-irons for hingedly connecting the body to the truck, and reinforcements secured to said angle-irons at the point through which said bolt passes.

40. In a dumping-car, a truck provided with an elevated portion, a covering-plate arranged upon said truck, a base-plate arranged above said covering-plate, bearing-rings interposed between the covering and base plates, means for pivotally securing said plates together, hinge-bars mounted upon said base-plate and each provided with an eye, a body arranged above said hinge-bars, angle-irons carried by said body and normally resting upon the elevated portion of the truck, and a hinge-bolt passing through the eyes of said bars and said angle-irons for hingedly connecting the body to the truck.

41. In a dumping-car, a truck provided with an elevated portion and also an inclined portion, a covering-plate arranged upon said truck, a base-plate arranged above said covering-plate, bearing-rings interposed between the covering and base plates, means for pivotally securing said plates together, hinge-bars mounted upon said base-plate and each provided with an eye, a body arranged above said hinge-bars, angle-irons carried by said body and normally resting upon the elevated portion of the truck, but also adapted to rest upon the inclined portion of the latter when the body is positioned for dumping, and a hinge-bolt passing through the eyes of said bars and said angle-irons for hingedly connecting the body to the truck.

42. In a dumping-car, a truck provided with an elevated portion and also an inclined portion, a covering-plate arranged upon said truck, a base-plate arranged above said covering-plate, bearing-rings interposed between the covering and base plates, means for pivotally securing said plates together, hinge-bars mounted upon said base-plate and each provided with an eye, a body arranged above said hinge-bars, angle-irons carried by said body and normally resting upon the elevated portion of the truck, but also adapted to rest upon the inclined portion of the latter when the body is positioned for dumping, a hinge-bolt passing through the eyes of said bars and said angle-irons for hingedly connecting the body to the truck, and means for locking the body in engagement with the truck.

43. In a dumping-car, a truck provided with an elevated portion and also an inclined portion, a covering-plate arranged upon said truck, a base-plate arranged above said covering-plate, bearing-rings interposed between the covering and base plates, means for pivotally securing said plates together, hinge-bars mounted upon said base-plate and each provided with an eye, a body arranged above said hinge-bars, angle-irons carried by said body and normally resting upon the elevated portion of the truck, but also adapted to rest upon the inclined portion of the latter when the body is positioned for dumping, a hinge-bolt passing through the eyes of said bars and said angle-irons for hingedly connecting the body to the truck, and a hook for locking the body in engagement with the truck.

44. In a dumping-car, a truck provided with an elevated portion and also an inclined portion, a covering-plate arranged upon said truck, a base-plate arranged above said covering-plate, bearing-rings interposed between the covering and base plates, means for pivotally securing said plates together, hinge-bars mounted upon said base-plate and each provided with an eye, a body arranged above said hinge-bars, angle-irons carried by said body and normally resting upon the elevated portion of the truck, but also adapted to rest upon the inclined portion of the latter when the body is positioned for dumping, a hinge-bolt passing through the eyes of said bars and said angle-irons for hingedly connecting the body to the truck, a hook for locking the body in engagement with the truck, and means for operating said hook.

45. In a dumping-car, a truck provided with an elevated portion, a body mounted on said truck, angle-irons carried by said body and normally resting upon said elevated portion, and a supporting-iron carried by one of said angle-irons for maintaining the body in horizontal relation to the truck when the angle-irons are moved away from the elevated portion thereof.

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

ANTON ROESGEN.

Witnesses:
KNUD RASMUSSEN,
CONRAD MILLER.