

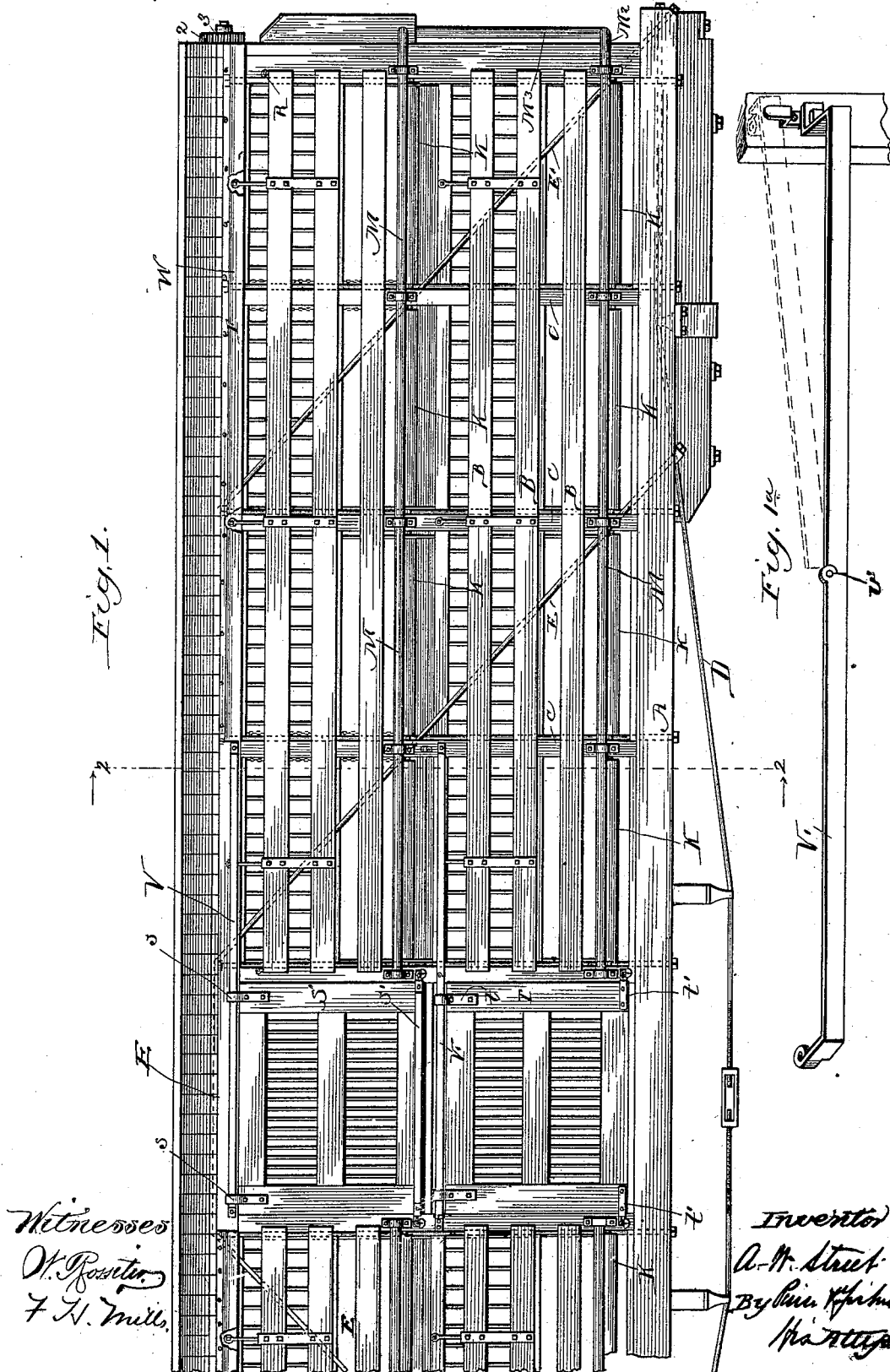
(No Model.)

3 Sheets—Sheet 1.

A. W. STREET.
STOCK CAR.

No. 421,087.

Patented Feb. 11, 1890.



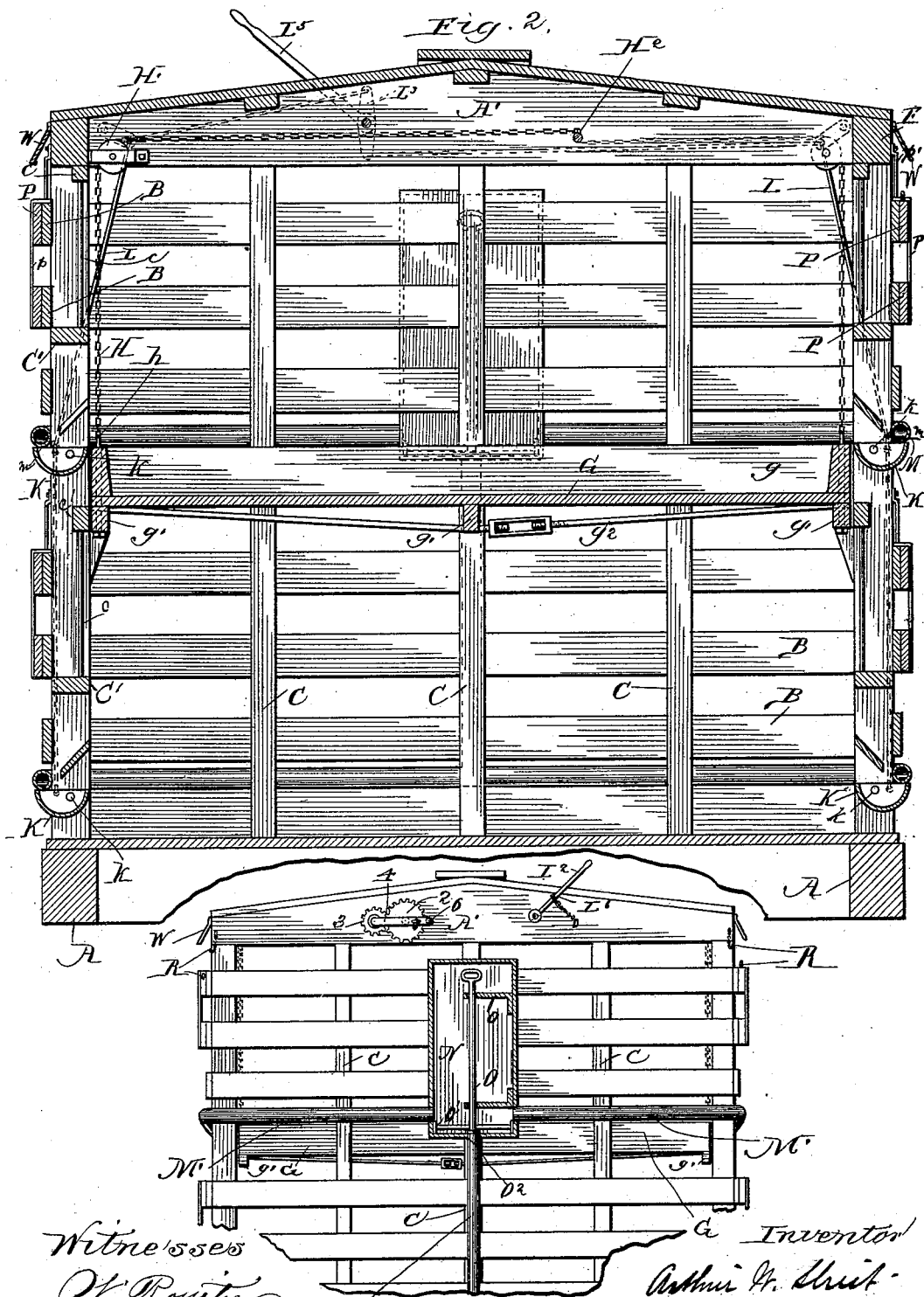
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Witnesses
W. B. Foster,
J. A. Mills.

Fig. 3.

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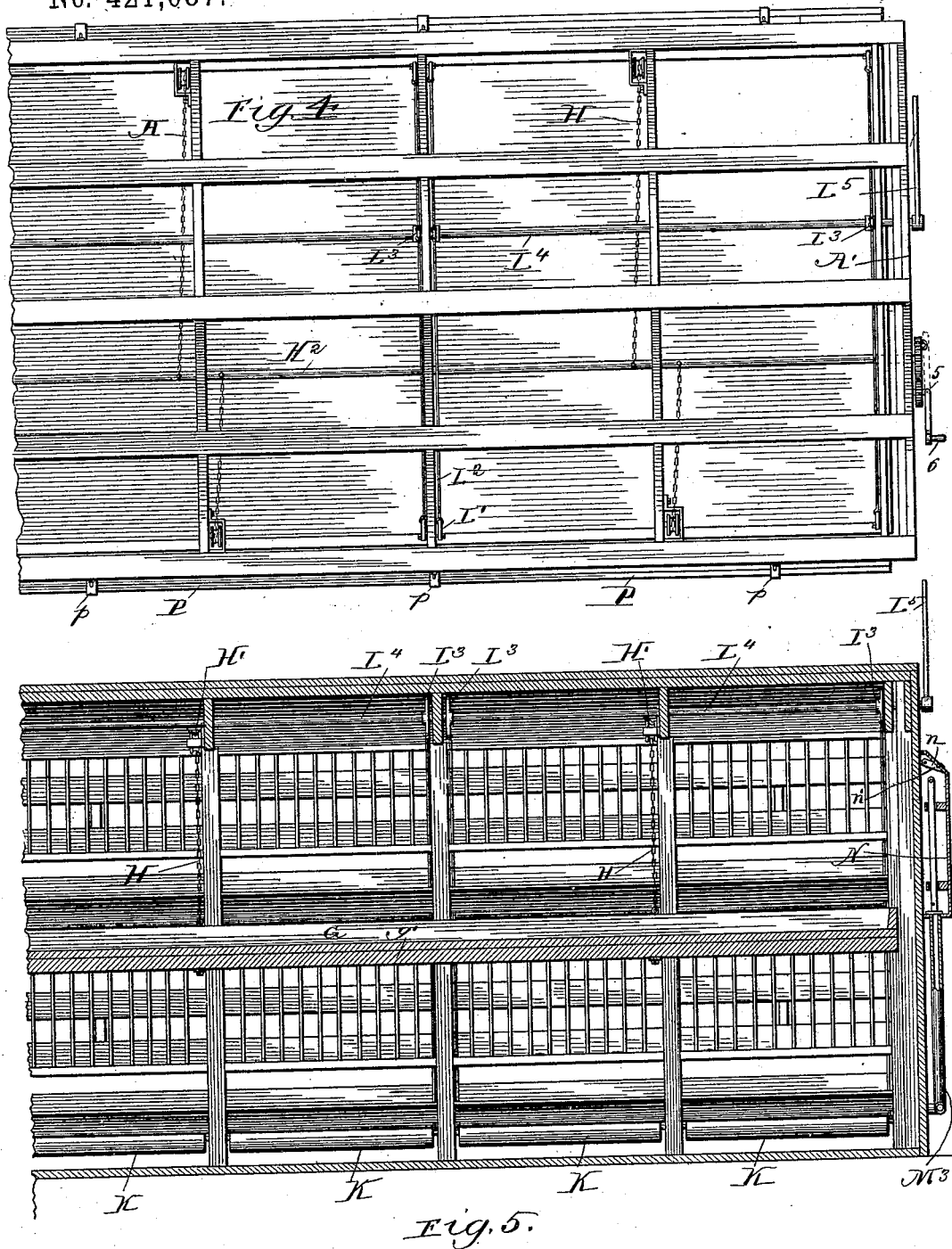
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UNITED STATES PATENT OFFICE.

ARTHUR W. STREET, OF CHICAGO, ILLINOIS.

STOCK-CAR.

SPECIFICATION forming part of Letters Patent No. 421,087, dated February 11, 1890.

Application filed February 6, 1889. Serial No. 298,820. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR W. STREET, 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 Railway Freight-Cars, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming
10 part of this specification.

My present invention, while applicable in part to the construction of steam railway-cars generally, is more particularly designed as an improvement upon that class of stock-cars especially adapted for the transportation of sheep or hogs, and in which the body of the car is divided transversely about midway its height by a deck or platform that can be raised out of the way when the car is to be
20 used as an ordinary freight-car.

My invention consists in various novel features of construction, which will be hereinafter fully described, and will be particularly defined in the claims at the end of this specification.
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Figure 1 is a view in side elevation of a portion of the body of a stock-car having my invention applied thereto. Fig. 1^a is an enlarged detail view of the hanger-bar for the lower door. Fig. 2 is an enlarged view, in vertical transverse section, on line 2 2 of Fig. 1. Fig. 3 is an end view of the car-body shown in Fig. 1, the delivery-box for water or liquid food being shown in vertical section.
30 Fig. 4 is a plan view, with the roof removed, of the car illustrated in Fig. 1. Fig. 5 is a view in vertical longitudinal section through the car illustrated in Fig. 1.

The body of the car comprises the lower sills A, whereon are sustained the open-work sides of the car, preferably formed by the longitudinal slats B, that are suitably fastened to the vertical posts C.
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Beneath the stringers A, and extending from end to end of the car in a well-known manner, are fixed the truss-rods D, the ends of which are suitably fastened in the cross-sills at the respective ends of the car.
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Through the sills A of the car pass the stay rods or bars E and E', that extend upwardly in oblique direction toward the transverse center of the car and through the

beams F, that run lengthwise of the car adjacent the eaves of the roof. The stay-rods E on the same side of the car are united together at their upper ends, so that these rods better co-operate with the truss-rods D in guarding against the tendency of the car to sag or break at its center.
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The feature of uniting the stay-rods at their upper ends I regard as novel, and it is obvious that this feature of my invention, while of particular advantage in connection with the construction of stock-cars in which heavy weights are to be carried, can also be employed with advantage in the building of other classes of railway-cars.
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I will next describe that part of my invention which relates to the central shifting deck or platform and the means whereby the same can be raised or lowered.
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In the construction of the type of stock-cars in which a shifting deck or platform has been employed great difficulty has been found in the lifting of the deck or platform, by reason of the fact that, in the winter-time especially, the refuse collecting around the edge of the deck or platform would pack against the walls of the car and there freeze, so as to render it difficult or impossible to lift the deck or platform to the upper part of the car.
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One object of my present invention is to avoid all danger of the clogging of the shifting deck or platform, and this I have accomplished by providing the deck or platform with a base-board or guard-board *g*, affixed thereto and extending around the sides and ends thereof. By the employment of this base-board or guard *g* all refuse will be retained upon the platform G, so that the danger of its packing against the walls of the car-body and interfering with the lifting of the deck or platform G is avoided. This deck or platform G is preferably provided with stringers *g'* extending from end to end thereof, and by preference also is braced by the cross-rods *g*², applied in suitable numbers to give the requisite strength to the deck or platform.
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In order to enable the deck or platform G to be readily raised to the upper portion of the car-body, so that the car can be used as an ordinary freight-car for the reception of

furniture or other bulky freight, I have connected to the platform G the lifting-chains H, the lower ends of these chains being shown as fastened to suitable bolts *h*, while the upper ends of the chains pass over the pulleys H', affixed to cross-beams at the top of the car, and are attached to the winding-shaft H², that extends from end to end of the car and is journaled in the cross-beams A' thereof.

These lifting-chains H will be distributed at suitable points and in suitable number; but by preference the chains leading to opposite sides of the deck or platform G will be connected at different points of the winding-rods H, as seen in Fig. 4, so as to permit the chains to be freely wound upon the rod without interference. One end (or, if desired, both ends) of the winding-shaft H² is extended through the end beam A' at the top end of the car, and is provided, preferably, with a gear-wheel 2, with which will engage the pinion 3, that is suitably sustained upon the end beam A', the shaft of this pinion 3 having fixed thereto a winch 4, so that by the turning of the winch and of the pinion 3 the gear-wheel 2 will be revolved and the winding-shaft H² will be turned. By preference this winch 4 will be pivotally connected, as at 5, to the end of the shaft of the gear-wheel 3, and a suitable hole or slot will be formed in the winch to receive the eyebolt 7, projecting from the face of the wheel 2, when it is desired to lock the winding-shaft H² against movement. From this construction it will be seen that by turning the winch 4 the winding-shaft H² will be revolved in such manner that the chains H will be wound thereon and the platform or deck G will be raised to the upper part of the body of the car. It is also apparent that when the deck or platform is thus raised the winch 4 can be turned until the eyebolt 7 enters the perforation in the winch, thereby permitting the seating or locking of the gear-wheel and the winding-shaft against backward movement.

In order to deliver the water or liquid food to the animals within the car, I provide the novel mechanism next to be described.

Between the vertical posts C at the sides of the car-body are journaled the upper and lower sets of troughs K and K', these troughs being pivoted between and to the side posts C by means of suitable pins *k*, that extend through the posts and through the ends of the troughs. It will be observed that the pivot-pins *k*, whereby the troughs K and K' are sustained, pass through the ends of the troughs at the inner side of their vertical centers, so that the normal tendency of the troughs will be to turn downward in such manner as to dump their contents outward and away from the car.

In order to hold the troughs K and K' in proper position to receive and retain the water or liquid food delivered thereto, I connect to each pair of troughs K and K' a shifting-rod L, the upper end of this rod being bent

inwardly and connected to a pivoted link or hanger L', that depends from the top of the car. The number of shifting-rods L and of the pivoted links or hangers L' is shown as corresponding with the pairs of upper and lower troughs K and K', and each of the pivoted links or hangers L' will be connected by a suitable rod or chain L² with its appropriate locking-lever L³, that is fixed upon the tilting shaft L⁴, which extends from end to end of the car, is journaled in the cross-beams A', and is provided, preferably at one end, with a shifting-handle L⁵, by means of which the tilting shaft can be operated. A suitable retaining device—such, for example, as a chain L⁶—will be fixed to the end beam A', in order to hold said shifting-handle in proper position and retain the troughs K and K' in proper place for receiving the water or liquid food. From this construction it will be seen that when the handle L⁵ and the connected parts leading therefrom to the troughs K and K' are in the position shown in Figs. 2 and 3 of the drawings the troughs K and K' will be held in place for retaining the water or liquid food; but when it is desired to dump the water or liquid food it is only necessary to shift the handle L⁵, so as to permit the troughs K and K' to swing downward, thus dumping the waste outward and away from the body of the car.

In order to deliver the water or liquid food to the troughs K and K', I extend along each side of the car and above the troughs a series of delivery-pipes M, these pipes being provided with perforations *m*, opening downwardly and inwardly in order to deliver the water or food directly into the troughs. My purpose in thus employing straight pipes M extending above the troughs K and K' is to permit these pipes to be readily cleaned when desired by the insertion of a brush or cleaning-rod therein and to avoid the necessity of using supplemental pipes leading from said main delivery-pipes M into the troughs. This feature is of great advantage, not merely by reason of the fact that a more ready cleaning of the delivery-pipes M is permitted, but furthermore the necessity of employing short pipes extending from said main delivery-pipes to the troughs and the expense incident thereto are avoided.

From the outer ends of the upper set of delivery-pipes M extend the angular pipes M', that connect the pipes M with the delivery-hopper N, and from the outer end of the lower set of delivery-pipes M extend the angular pipes M², that are coupled to the vertical pipe M³, that leads into the bottom of the delivery-hopper N.

Within the hopper N will be placed a suitable controlling-valve comprising a main rod O, suitably sustained, as by the brackets *o*, affixed to the hopper and provided with the valves O', adapted to control the flow of liquid through the pipes M', and provided, also, with a valve O² to control the flow of liquid through

the vertical pipe M^3 , that connects with the lower set of delivery-pipes M . My purpose is thus connecting the upper and lower sets of delivery-pipes M with the hopper N by means of the pipes M' , M^2 , and M^3 , and in employing the valve for controlling the flow of liquid through said pipes, is to enable the liquid to be delivered in proper quantity and manner to either the upper or the lower sets of delivery-pipes M and thence to the troughs K and K' , and it is plain that by this means the lower troughs K' can be first filled, the valve O^2 within the hopper being at such time raised to permit the passage of fluid through the pipes M^3 , and afterward by shifting the rod O to the position shown in Fig. 3 the pipe M^3 can be closed and the pipes M' be opened in order to permit the upper set of troughs K to be filled. Except for some such provision it would obviously be necessary to employ a separate hopper for the upper and lower sets of delivery-pipes.

In order to insure that the hopper N shall be properly closed to prevent the access thereto of dust or dirt, I provide this hopper with a gravity-lid n , that is connected by the pivoted arms n' with the ends of the hopper, and these arms being preferably pivoted both to the lid and to the body of the hopper, it is plain that they will permit the lid to be freely lifted when desired, and yet will insure that the weight of the lid will maintain the closed condition of the hopper at other times.

As this class of stock-cars is frequently to be used for the transportation of sheep, provision is made whereby hay can be delivered to the animals in transit; hence between each two of the side bars C is placed the cross-bar C' , from the inner edges of which rise the rods c , the upper ends of which are held in a suitable cross-rod c' , and in the space thus formed between the vertical rods c and the slats B of the car will be held the hay.

In order to guard against the danger of the hay being set on fire by sparks or cinders from the locomotive, I provide opposite the hay-racks the guard-bars P , that are connected together by means of the straps p , the upper bent perforated ends of these straps p encircling the guide-rods p' , that are affixed to the beams F and to the slats B . From this construction it will be seen that when it is desired to close the spaces between the slats B of the hay-racks and the spaces above these slats it is only necessary to slide upward the guard-bars P , after which the bars can be held in such position by means of suitable catches R , affixed to the ends of the beams F and the bars P . A suitable batten or molding W will be extended beneath the eaves of the car, against which the upper edge of the guard-bars P will abut when these bars have been lifted in order to close the hay-racks to prevent the entrance of sparks or cinders.

Doors S and T are employed to close the doorways formed at the sides of the car. The

door S is provided at its top with the usual hangers s , to slide upon the rails V , affixed to the longitudinal side beams F , and at its bottom the door S is provided with a bar S' , which enables the door to be locked in a well-known manner to the newel-posts of the doorway. The door T is provided at its top with the hangers t , that slide upon the guide-rails V' , and at the bottom of this door T are fixed suitable locking-bars t' , which enable this door to be locked in well-known manner to the newel-posts of the doorway.

As it is desirable, when the car is to be employed for the transportation of ordinary freight—such as furniture or other bulky articles—that the main doorway shall be continuous and unobstructed from top to bottom, I provide the hanger-bar or guide-bar V' of the lower door T with a suitable hinged joint, as shown at v , whereby the portion of this bar that extends across the main doorway can be turned backward and out of the way when the doorway is to be made continuous and unobstructed from top to bottom. Thus it will be seen that when the two doors S and T are to be used independently, as shown in Fig. 1, the hinged end of the hanger-bar V' extends across the doorway, and its free end is held by a suitable latch or staple v' , affixed to the newel-post; but when the main doorway is to be left unobstructed this hinged portion of the hanger-bar V' will be turned backward upon its hinged joint and will be fastened to a suitable staple or similar device upon the vertical post C , to which the rear end of this hanger-bar V' is connected. When the doorway is thus to be used as a single unobstructed doorway, it is desirable that the doors S and T should be connected together in such manner that they will slide and operate as a single doorway, and for this reason the bar S' upon the upper door S is formed as a hanger-bar somewhat similar to the hanger-bar V , so as to permit the hangers t of the lower door T to be hooked over this bar S' , in order that the lower door T shall move with the upper door S as the latter is operated back and forth.

It will be readily understood that the details of construction above set out, both with respect to the hanger-bar V' and the bar S' , may be varied without departing from the spirit of my invention—as, for example, by employing simple loops or staples upon the door S to receive the hangers t of the lower door T , and by otherwise hinging or movably connecting the hanger-bar V' , so that it can be withdrawn or removed when the main doorway is to be left unobstructed.

It will also be understood that many of the details of construction above set out can be varied within wide limits by the skilled mechanic without departing from the spirit or scope of my invention.

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

1. In a railway-car, the combination, with the body of the car, of the stay-rods E, the rods on the same side of the car being united together at their upper ends and extending
5 from bottom to top of the car in oblique direction, substantially as described.

2. In a railway stock-car, the combination, with the body of the car, of a shifting deck provided with a continuous guard-board g
10 extending around both its side and end edges to a distance above the upper surface of the deck, whereby the refuse deposited upon the deck will be retained thereon and will be prevented from clogging against the side and end
15 walls of the car, substantially as described.

3. In a railway stock-car, the combination, with the body of the car, of a shifting deck, suitable lifting-chains connected to said deck, a winding-shaft to which said lifting-chains
20 are connected, said shaft being extended outside of the car, suitable gear-wheels in connection with said winding-shaft, a winch having a pivoted handle for operating said gear-wheels and winding-shaft, and suitable means
25 for fastening said winch to one of the gear-wheels, whereby the movement of said parts is prevented, substantially as described.

4. In a railway stock-car, the combination, with the body of the car having the upper
30 and lower decks, and with the upper and lower sets of feed-troughs, of suitable shifting-rods connected to both said upper and lower sets of troughs, a single dumping rod or shaft extending from end to end of the
35 car, and suitable connections between said shifting-rod and said dumping-shaft, substantially as described.

5. In a railway stock-car, the combination, with the body of the car and suitable feed-
40 troughs, of suitable upper and lower delivery-pipes for said troughs, a delivery-hopper

with which said upper and lower sets of delivery-pipes are connected, and a suitable valve or valves located within said hopper for controlling the flow of liquid through said
45 upper and lower sets of delivery-pipes, substantially as described.

6. In a railway stock-car, the combination, with the body of the car and suitable upper and lower feed-troughs, of upper and lower
50 sets of delivery-pipes for said feed-troughs, a delivery-hopper with the sides of which said upper set of delivery-pipes are connected and with the bottom of which said lower sets of delivery-pipes are connected, and suitable
55 valves for controlling the flow of liquid through said upper and lower sets of delivery-pipes, substantially as described.

7. In a railway stock-car, the combination, with the body of the car and the racks having the slats B extending across the outer
60 sides thereof, of the vertically-movable guard-bars P, suitable tie rods or bars p, connecting said guard-bars, said tie-rods having perforated upper ends, and suitable hanger-rods
65 p', whereon said tie-rods are held in a manner free to move, substantially as described.

8. In a railway stock-car, the combination, with the body of a car, of suitable upper and lower doors S and T, a hanger-bar and hang-
70 ers for sustaining the upper door S, a movable hanger-bar and hangers for sustaining the lower door T, and suitable means whereby said lower door can be connected to and be sustained to move with said upper door when
75 the hanger-bar of said lower door has been removed from across the doorway, substantially as described.

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Witnesses:

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