(No Model.) 3 Sheets—Sheet 1.

J. M. BURTON

STOCK CAR.

No. 492,344. Patented Feb. 21, 1893.

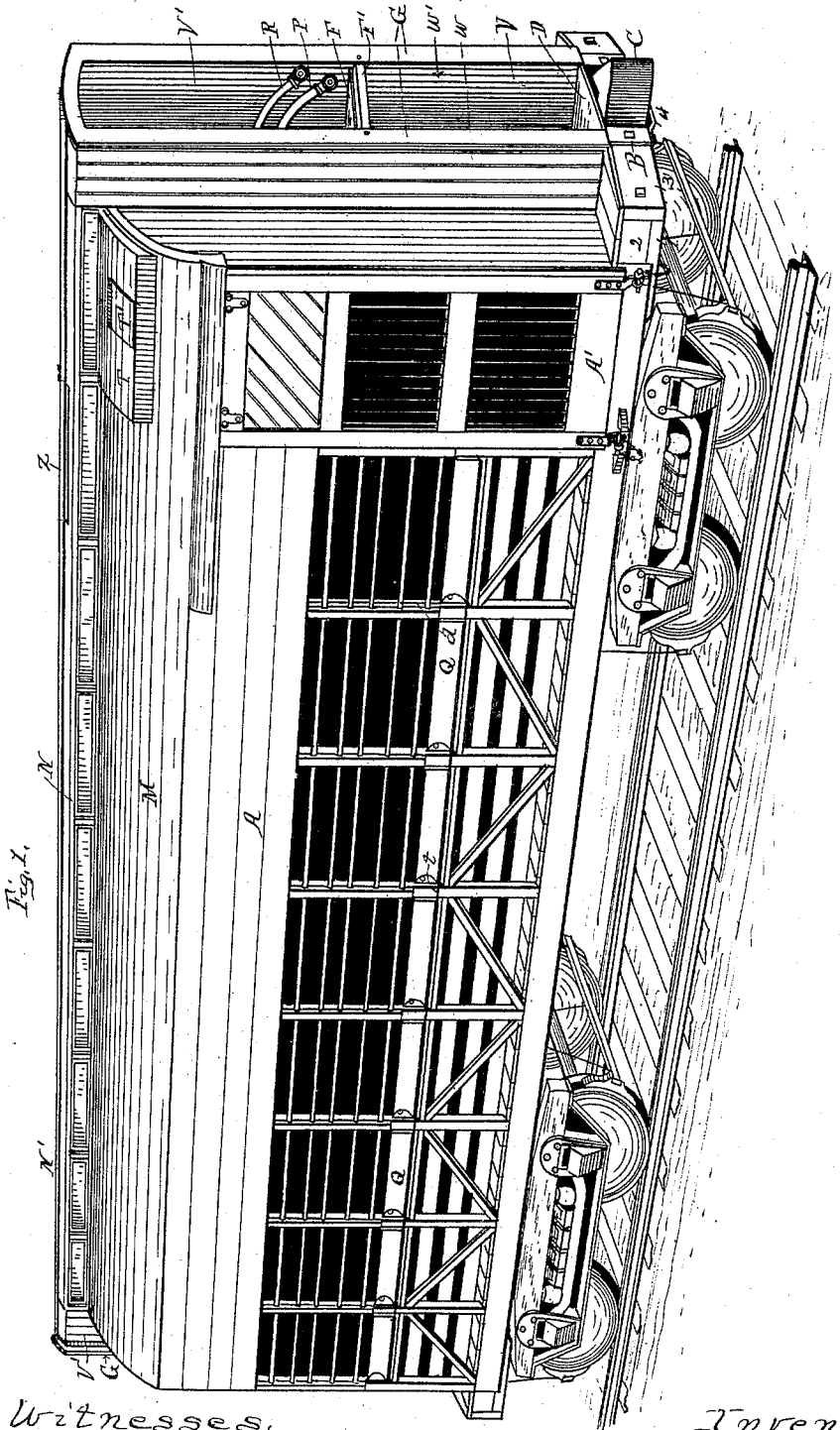

Fig. 1.

Witnesses.
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(No Model.) 3 Sheets—Sheet 2.

J. M. BURTON.

STOCK CAR.

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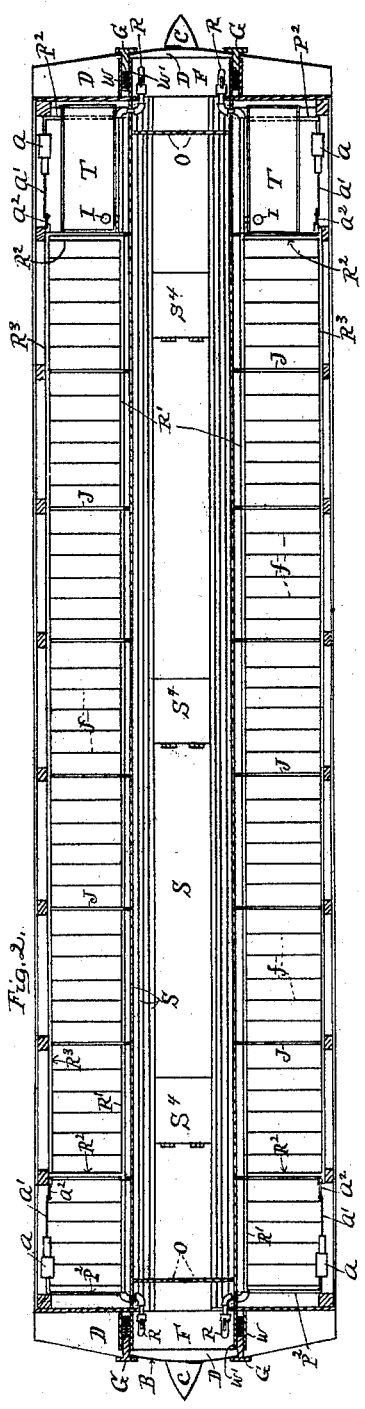

Fig. 2.

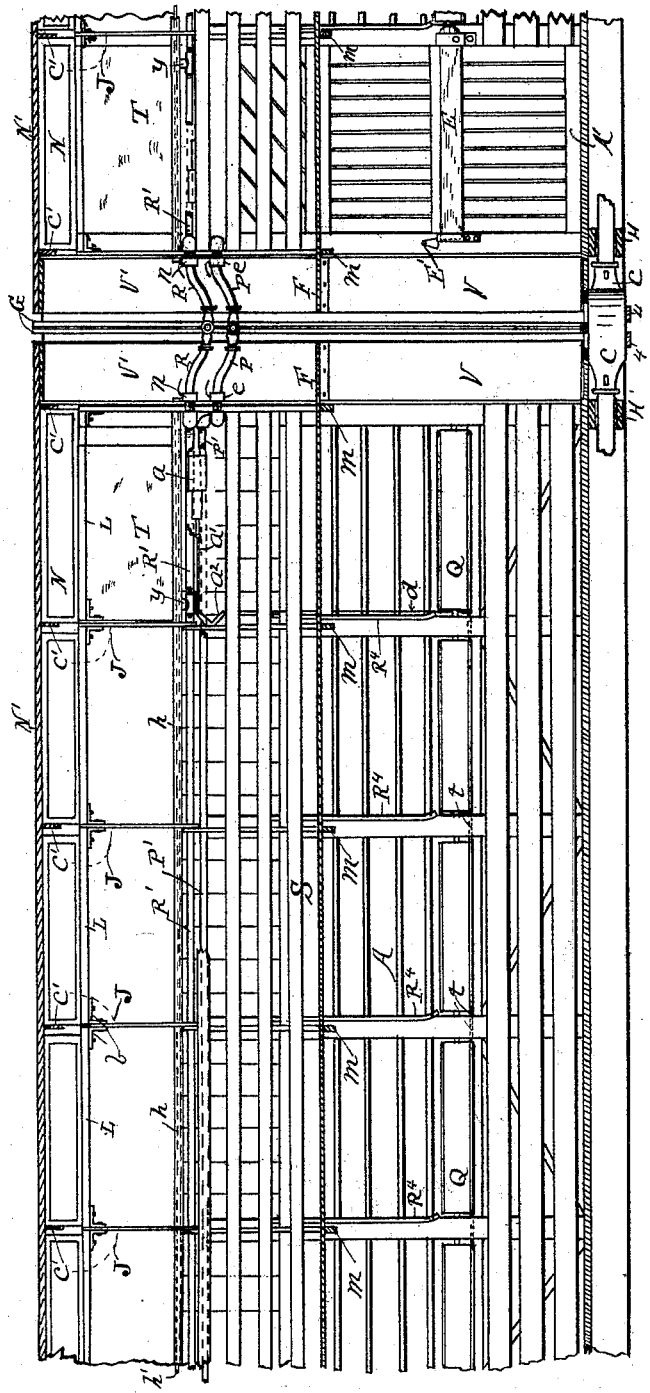

Fig. 3.

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(No Model.)

3 Sheets—Sheet 3.

J. M. BURTON.

STOCK CAR.

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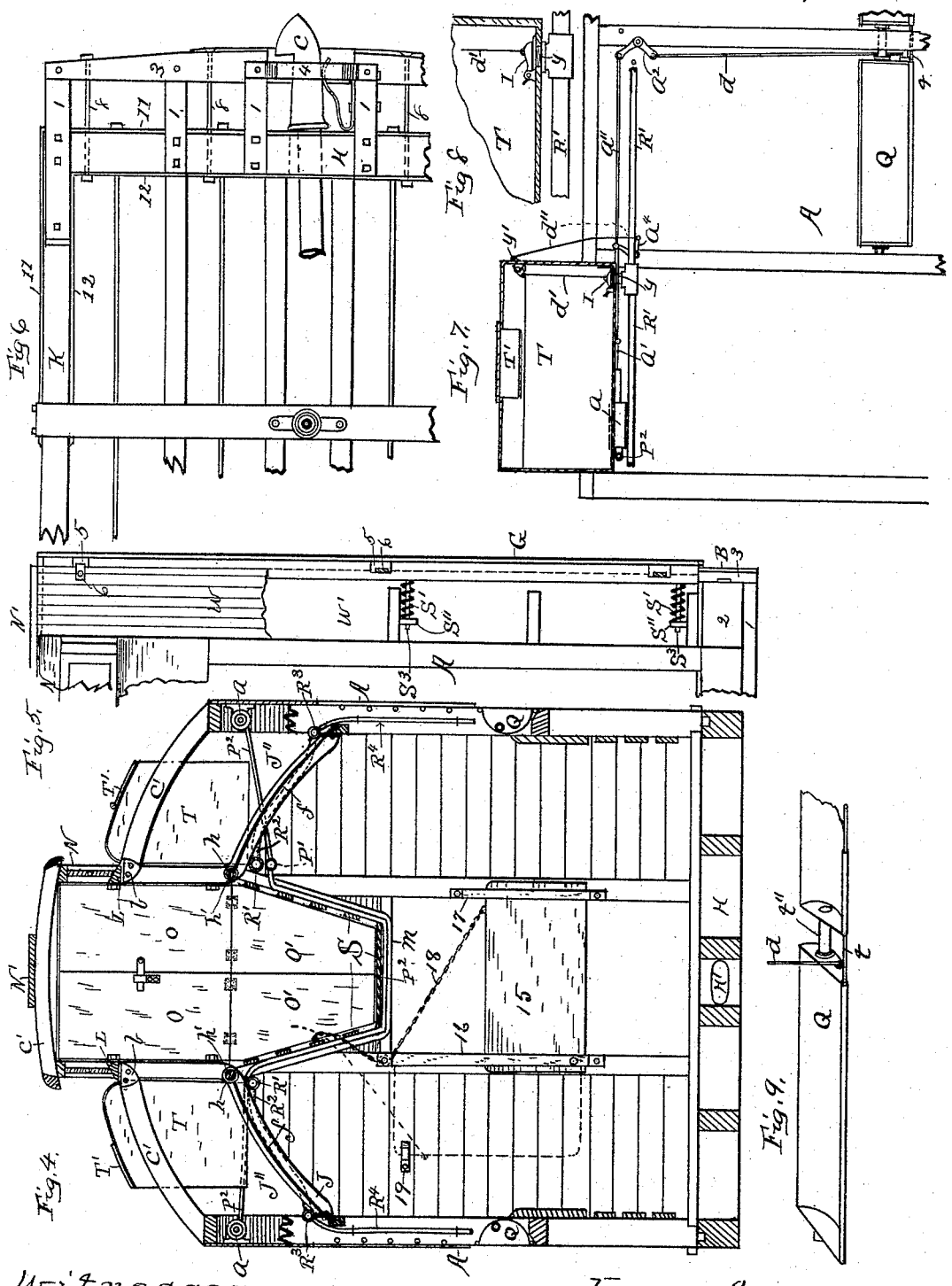

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN M. BURTON, OF WICHITA, KANSAS.

STOCK-CAR.

SPECIFICATION forming part of Letters Patent No. 492,344, dated February 21, 1893.

Application filed January 26, 1891. Serial No. 379,075. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. BURTON, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Stock-Cars, of which the following is a specification, reference being had therein to the accompanying drawings and the letters and figures of reference thereon, forming a part of this specification, in which—

Figure 1 is a perspective elevation of the car. Fig. 2 a horizontal-longitudinal-section of the same immediately below the car plates. Fig. 3, a central vertical-longitudinal section of a portion of two cars, of the same, represented as coupled together. Fig. 4, a vertical cross-section of the car looking toward one end showing the interior end plan thereof. Fig. 5, is a side plan of the extreme end portion of a car, having a portion of the outer vestibule wall broken away, to show the vestibule frame springs. Fig. 6, is a bottom plan of one corner portion of the car. Fig. 7, is a detailed sectional elevation showing the water receiver valve and trough operating mechanism of the car. Fig. 8, is an enlarged detail of a portion of the same, and Fig. 9, is a detail perspective of a section of the connected water troughs.

This invention relates to certain improvements in railway stock cars, and is of the class provided with a system of watering troughs, pipes and receivers, and with feeding racks, and, also, provided with a vestibule attachment whereby a train of the cars, when properly coupled together, are open to communication throughout the train, in such manner that, stock may pass from car to car through the vestibules, and also so that, persons in attendance with the stock may likewise pass from car to car, within the cars, when loading and attending the stock, or when unloading the stock, and consists essentially in providing the car with a continuous run way within the car above the space occupied by the stock, in providing a vestibule having an upper and lower deck so as to provide for the passage, from car to car, of both animals and persons, in separate ways; in equipping the car so that a quantity of hay may be carried within the car above and out of reach of the animals, but accessible by the attendants so that it may at the will of the attendants be conveyed throughout the train and distributed throughout the feeding racks, to supply the stock therewith, from the run-way of the cars; and also in providing the car with a system of watering pipes, receivers and troughs, and a system of air pipes and air cylinders arranged connecting the watering troughs and a valve or valves of the water system in such manner that by means of air pressure, the watering troughs throughout a train may be simultaneously turned into and out of position for use, and the valves operated to permit water to flow into the troughs, through the agency of the air cylinders, by means of the operation of an air pump of a locomotive engine, which is connected with the air pipes of the train, and operated in like manner as is common in the use of air brakes commonly used on all trains, which improvements are fully set forth, and explained in the following specification and claims.

The object of my invention is to provide cars for the transportation of stock wherein the animals are watered and fed aboard the car during transit, and so constructed as to allow one or more attendants to have access to any part of a car or train, and the animals therein, that they may have close observation of all the animals aboard, and render immediate assistance to any animal which by chance should get down during transportation, and to provide such means as will occupy the shortest time possible in watering, feeding and caring for the stock. It is the intention, in this invention that a number of these cars, sufficient to make up a complete train, with a locomotive, shall be used together, and not be intermingled with other cars.

Referring to the drawings A represents the car sides and consists of the usual side posts and plates arranged on the usual sills, and provided with slatted and closed sheathing in the usual manner, and the floor and lower frame work of the car is of the usual construction.

C′ represents metal carlings which are of the form as shown in Fig. 4 and provided for the support of a roof, a deck N and ventilating sash along the sides of said deck in the

manner common in passenger coaches, and N′ is a door inlaid along upon the deck N.

In Fig. 1, Z represents a door made as a part of the said run board and deck roof which opens into the car and gives access to and from the car by attendants.

J are interior frame bars, of the form shown in Fig. 4, and are fixed at their upper end to carlings c' at the base of deck N and at their lower end to the inner side of the side posts of the car, and are arranged in pairs, a pair at each carling of the car, and at the junction of their vertical and curved portion they are perforated and have arranged through said perforations a rod h' (see Fig. 3), which rods extend the entire length of the car proper, and sleeved upon these rods h' and between each pair of said frame bars is a tubular bar h which has fixed thereto a series of hay rack bars f which bars have the same relative form as the lower curved portion of bars J, and are arranged at their lower end fixed in holes of a girth of the car side walls, in the usual manner, and thus provide the car with feeding racks along each side throughout, in the upper side portions of the car and thereby provide the car with hay chambers as shown at J″ in Fig. 4. Depending from these frame bars J are a series of yoke frames m, as shown in Fig. 4 and also in Fig. 3, upon the bottom portion of which is laid a floor or run board, and to the sides of which are secured a series of slats extending as high as the junction of the frame bars J which construction forms a continuous run way S throughout the car from which attendants have access to place hay and the like, into the hay chambers J″ between the vertical portion of the frame bars J. At intervals along the floor or run board of this run-way S are doors represented at S^4 in Fig. 2 which may be opened to gain access into the lower portion of a car to see to the stock. In each end portion of this run-way S are a pair of doors as represented in Figs. 2 and 4 at O, O, which, excepting the last and first of a train are secured open, and are for the purpose of closing the end openings of the run-way at the ends of a train, and in order that they may conform to the sides of the run-way when open they are made in parts hinged together horizontally so their lower portions O′, O′, will slightly incline when open.

Each end of the car is provided with an opening, the upper portion thereof being provided with the doors O, O, as described, and the lower portion, as shown in Fig. 4, being provided with a pivoted cross-door 15, similar to a bull bar, held by the keepers 16—17, when down, and by the keepers 16—19 when raised, and is provided with a chain 18 attached, which extends up into the run-way S and is for the purpose of operating the door, by a person in the run-way pulling the chain.

I have provided the car at each end with an extending platform D which is fixed to the end sills H of the car by means of a frame work shown at 1, 2, and 3, the part 3 serving as a cross head and is divided centrally, and is provided with the buffer plate B and with the lower connecting stirrups, 4, as shown and between the two center parts 1, 1, of said frame, and the division of said cross head is arranged the draw-bar C resting at its outer end portion upon the stirrup 4, and with its rear portion extending through a hole H′ in the end sill, and within the sill it is intended to attach the draw-bars in the usual manner.

Referring to Fig. 6 I provide the side sills K and end sills H with the angle plates 11 and 12, for the purpose of more thoroughly strengthening the car foundation frame.

8, represent tie rods arranged as shown for the purpose of tying the platform frame D to the car. Upon these end platforms and attached to the car ends I have provided vestibules consisting of the inner walls W′ and outer walls W forming a chamber between them, and having a roof or covering plate and a center deck floor plate F. And G is a yielding frame of the vestibule consisting of T angle iron provided with recesses 5 through its flange, and arranged with its said flange extending within the chamber between the walls w, w', and retained therein by means of cross-straps, 6, of the said walls crossing within said recesses, 5, and the said flanges are further provided with extending arms S^3, within the said chamber, arranged through holes of fixed blocks S″ within the chamber and have coil springs S′ sleeved on said arms, bearing at one end against the frame flange and at their opposite end against said fixed blocks, the tendency of which is to yieldingly hold the frames G extended from their chambers. By placing the deck floor plates as shown the vestibules are divided into an upper compartment V′ and a lower compartment V, and when two cars are brought together and coupled the frames G register and yieldingly bear against each other, and thus one car to communication with another with closed walls, with contacting parts adapted to yield under the movement of the cars.

Each car is provided with two water receivers T in one end thereof, one at each side of the run-way S, each having an outer, top door T′ by means of which they may be opened to receive a water supply, and within the car I have provided two water pipes R′ extending the entire length of the car one at each side of the run-way S immediately below the upper portion of the feeding racks, which pipes terminate at each end with a rubber hose section R having a coupling attachment, and with a cock n at the union of each hose, (see Fig. 3.) And at each receiver bottom the pipes R′, are respectively connected with the receivers T as shown at y, so that water may flow from the pipes into the receivers, or therefrom into the pipes, and within each receiver I have provided a clack valve I closing the pipe entrance.

Leading from pipes R′ I have provided

branch pipes R^2 (see Fig. 2. also Fig. 4.) open to communication with other longitudinally arranged pipes R^3 which are arranged along the car side walls in the lower portion of the hay feeding racks, and which pipes R^3 are provided with a system of smaller down pipes R^4 leading to a point above the watering troughs in the usual manner.

Q represents the watering troughs which are arranged in continuous connected sections at the car sides between the side posts thereof, and the side doors A′ being at the car ends permit such arrangement of troughs.

t'' represents the hollow bearings and t the continuous side rod of the troughs Q which parts are common, but adapted in this construction so that water may flow from one trough section to the other and so that all the sections will operate jointly when being turned into or out of position for use.

I have further provided the car with an air pipe P′ extending the entire length of the car, and arranged immediately under one water pipe as shown in Fig. 4, and have provided said pipe with hose sections P and couplings at each end so it may be coupled with other like pipes of adjoining cars, or with that of a locomotive; and have provided interposed cut off cocks e at the hose connections so that the pipe at the end of a train may be closed. And at each upper corner of the car I have provided an air cylinder represented at a, which I have arranged to communicate with the air pipe P through the agency of side lead pipes P^2 in the manner shown, so that air may be forced along pipe P′ and from thence into the cylinders a.

Each cylinder is connected with a bell crank a^2 of the car, through the agency of its piston a', and when the cylinder is located over a door where there is no trough below it, its piston may be extended by the use of a rod as shown at a' Fig. 7, so that the bell crank a^2 may be properly located to operate the troughs when the cylinder piston is operated.

d represents a rod, there being one at each cylinder, which is arranged connecting the said bell crank with the trough crank pin in such manner that, when the bell cranks are operated by the pressure of air in the cylinders, the said troughs will be operated and turned into or out of position for use, and in Fig. 7, I have shown a second bell crank a^4 likewise operated by the cylinder piston, which I have connected with the valve I in the receiver T through the agency of lever y' and the connecting rods d' d'', which, when the troughs Q are turned into position for use, will be operated by the bell crank a^4 and open the valve I and thus permit the water in the receiver to flow therefrom into pipe R′ and from thence along through the branch and distributing pipes to all the trough sections along the car side, and I thus provide such substantial mechanism at each receiver and thereby automatically turn the watering troughs into and out of position for use, and open the receiver-valves to permit the flow of water to the troughs, and also close the said valves as the troughs are turned out of position for use, all by means of the pressure of air acting upon the air cylinders of the car.

By means of the arrangement of the watering pipes of the car being connected as described, and provided with the hose and coupling attachments, said pipes throughout a train may be connected and serve as a connected system throughout the train in such manner that water introduced in either car receivers will flow throughout the entire system and thereby water all the stock aboard the train simultaneously, and at one setting of the train and thereby avoid the usual delay in watering occasioned by having to supply each car separately.

In Fig. 3, I have shown a bull bar E arranged to be turned down across the door way in the usual manner, and I have shown retainers for holding it and above the retainer at the side where the bar turns down I have provided a triangular formed gravity latch E′ so arranged that when the bar is lowered it will engage, at its end, the said latch and cause it to swing out of the path of the bar end, and when the bar has passed it will swing to its normal position and in such position as to be over the bar end sufficiently so that the bar cannot be raised until the latch is swung out of the path, of swinging.

I desire to state further that the car is adapted to be used individually with single shipments of stock, and the water receivers filled and used separately, being operated by an attendant in or upon the car, and the operating of the troughs to turn them into or out of position for use may be done by hand power when operating the valve opening and closing rods, or by means of other well known common leverage mechanism, not necessary to be herein shown.

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

1. A stock car provided with an interior elevated run-way extending from end to end of the car, and with a central deck extending above the roof proper thereof and forming the upper portion of said run-way, said deck being provided with side windows above said roof proper for illuminating said run-way, substantially as set forth.

2. A stock car having feed racks on opposite sides beneath the roof proper, an elevated run-way extending from end to end of the car and depending below said feed racks into the stock chamber and a central deck extending above the roof proper, and forming the upper portion of said run-way, said deck being provided with windows above said roof proper for illuminating said run-way, and said run-way having side openings into said feed racks, and side openings into the stock chamber.

3. A stock car having feed racks on opposite sides beneath the roof, and a central run-way extending longitudinally of the car between said feed racks, said run-way depending below said feed racks into the stock chamber and having side openings directly into said feed racks, and side openings directly into the stock chamber, substantially as set forth.

4. A stock car provided with a series of depending yokes connected with the roof of the car and extending into the stock chamber thereof, said yokes supporting a run-board at their bases, and forming a longitudinal run-way.

5. In the stock car described, the combination with the carlings of the side rack frame bars, fixed at their upper ends to the carlings and at their lower ends to the side walls of the car, the feed rack bars arranged to conform to the lower portion of said frame bars, and supported at their upper ends by means of said frame bars through the agency of longitudinally extended pipes supported by said bars, and at their lower ends by the side walls of the car, and the run-way yokes secured to and depending from said frame bars, substantially as set forth.

6. A stock car having extended fixed platforms at its opposite ends, an elevated interior run-board having fixed end extensions projecting beyond the end sheathings of the car over said platforms, a roof and side walls inclosing and connecting said platforms and run-board extensions, and yielding frames at opposite ends of said car serving as extensions of said side walls and as connections between cars.

7. A stock car having extended fixed platforms at its opposite ends, an elevated interior run-board having fixed end extensions projecting beyond the end sheathings of the car over said platforms, a roof and double side-walls inclosing and connecting said platforms and run-board extensions, yielding frames at opposite ends of said car sliding in the spaces between the double walls and serving as extension of said walls and as connections between cars, and springs for forcing said frames outward.

8. A stock car having an elevated run-way extending longitudinally through the car and projecting beyond the end sheathings thereof, a central deck extending above the roof proper and forming the upper portion of said run-way, said deck being provided with side windows above said roof proper for illuminating said run-way, end platforms, side walls inclosing and connecting said platforms and extended run-way, and yielding frames at opposite ends of the car serving as extensions of said side walls and adapted to serve as connections between cars.

9. In a stock car, the combination of an elevated water tank, a tilting watering trough, a pipe connecting said tank with said trough, a valve for controlling the supply of water through said pipe to said trough, mechanism for tilting said trough, a valve-actuating mechanism connected with said valve and an air cylinder provided with a piston connected with said trough-tilting and valve actuating mechanisms for operating them simultaneously to tilt said trough into position and supply water thereto, or to turn the trough out of position and shut off the water.

10. In a stock car, the combination of an elevated water tank, pivoted watering troughs disposed on opposite sides of the car, pipes connecting said tank with said troughs, valves for controlling the supply of water to said troughs through said pipes, mechanism for tilting said troughs into and out of position, mechanism for operating said valves, air-cylinders provided with pistons connected with the trough-tilting and valve-operating mechanisms, and means for supplying air to said air cylinders.

11. A stock train composed of a locomotive and two or more cars, each car being provided with an elevated water tank, pivoted watering troughs disposed on opposite sides of the car, pipes connecting said tank with said troughs, valves for controlling the flow of water from said tank to said troughs, mechanism for tilting said troughs into and out of position, valve-actuating mechanism connected with said valves, air cylinders provided with pistons connected with said trough-tilting and valve-actuating mechanisms, air pipes for supplying air to said air cylinders, flexible couplings connecting said air pipes between the cars and locomotive, and an air compressing apparatus on the locomotive connected with said air pipes, whereby the troughs throughout the train may be turned into position, and water supplied thereto or water shut off and said troughs tilted out of position by the action of the locomotive engineer.

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