(No Model.) 3 Sheets—Sheet 1.

# J. M. BURTON & C. C. CREWSON.

## STOCK CAR.

No. 405,870. Patented June 25, 1889.

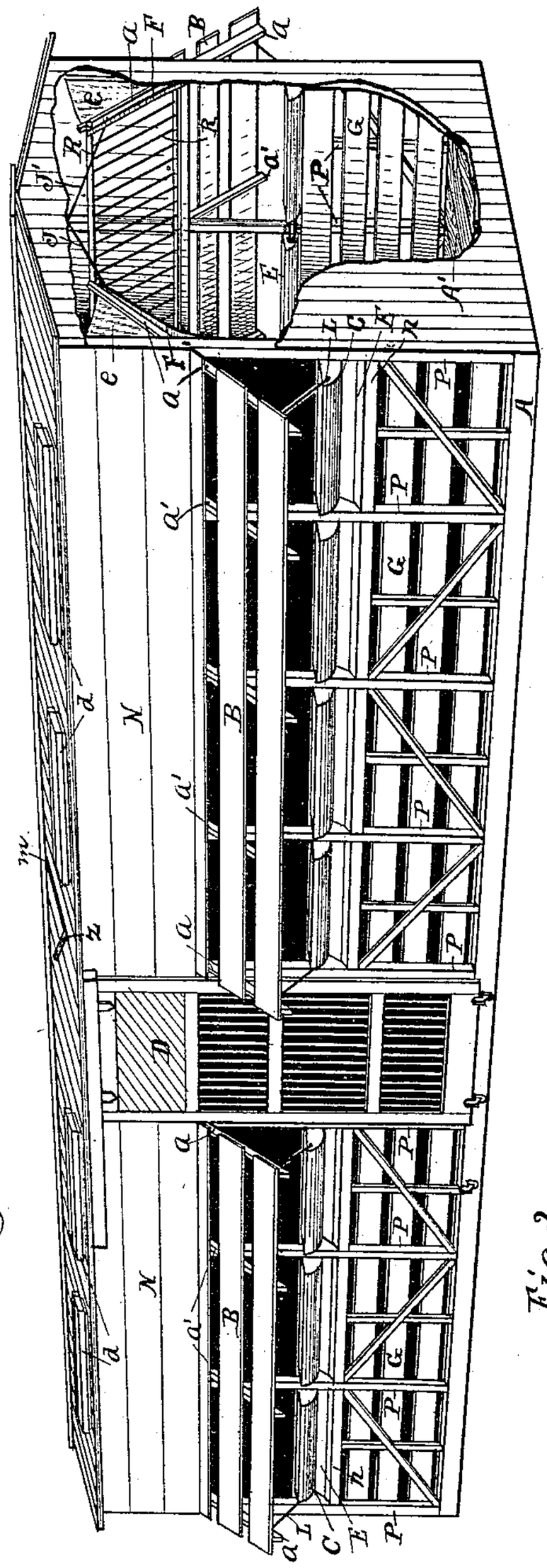

Fig. 1.

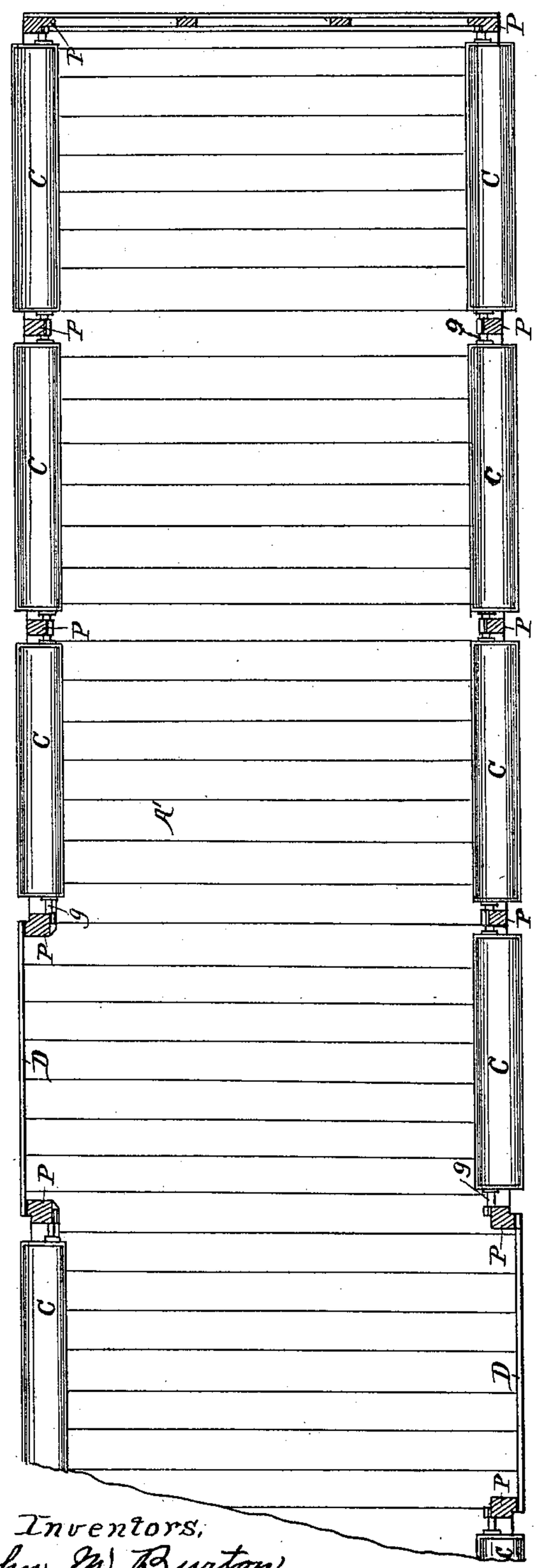

Fig. 2.

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(No Model.) 3 Sheets—Sheet 2.

# J. M. BURTON & C. C. CREWSON.

## STOCK CAR.

No. 405,870. Patented June 25, 1889.

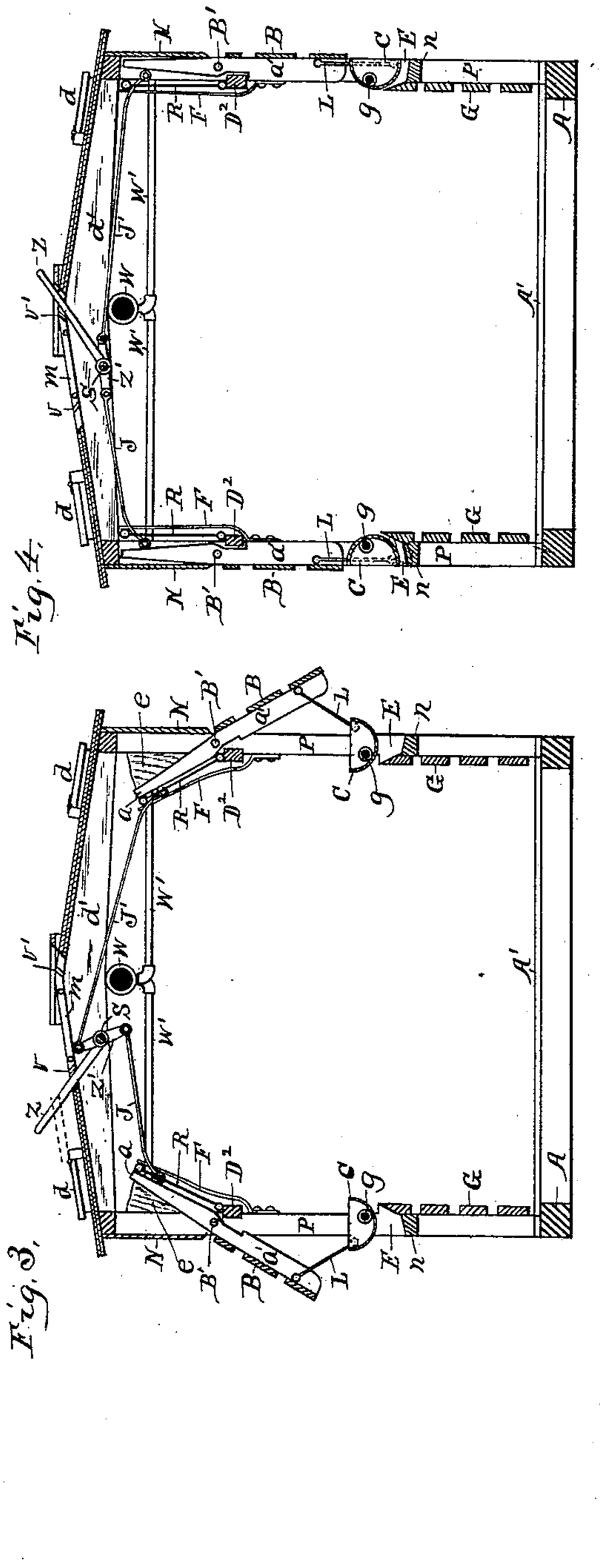

Fig. 4.



Fig. 3.

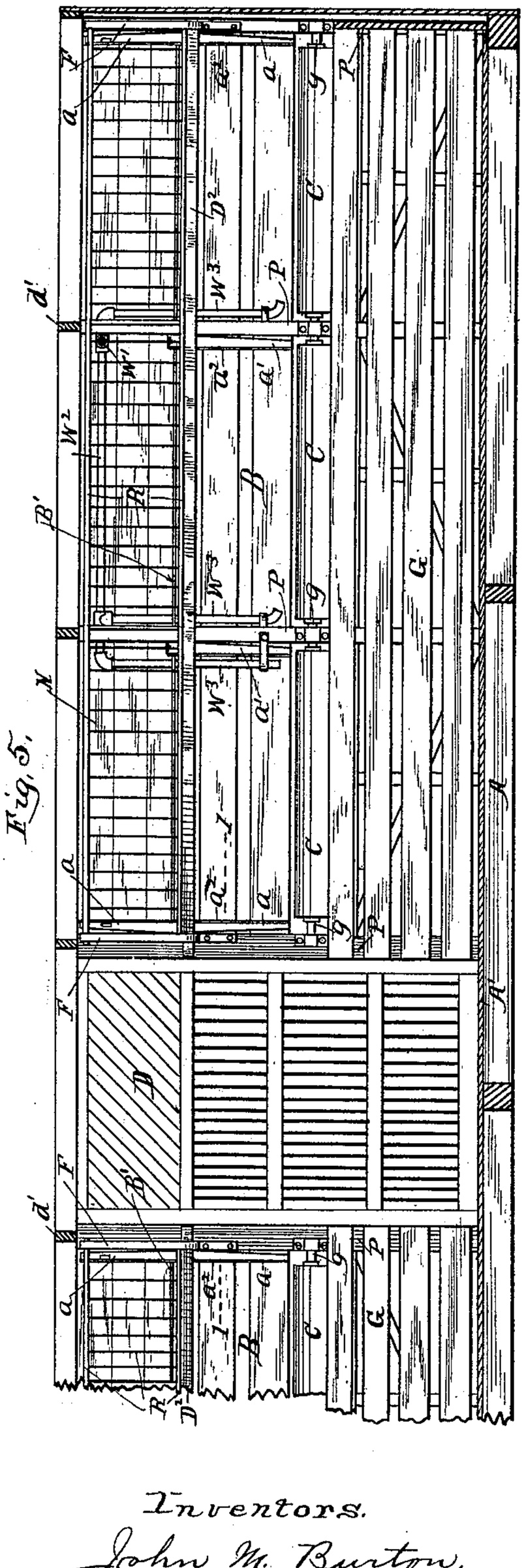

Fig. 5.

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(No Model.) 3 Sheets—Sheet 3.

# J. M. BURTON & C. C. CREWSON.

## STOCK CAR.

No. 405,870. Patented June 25, 1889.

Fig. 7.

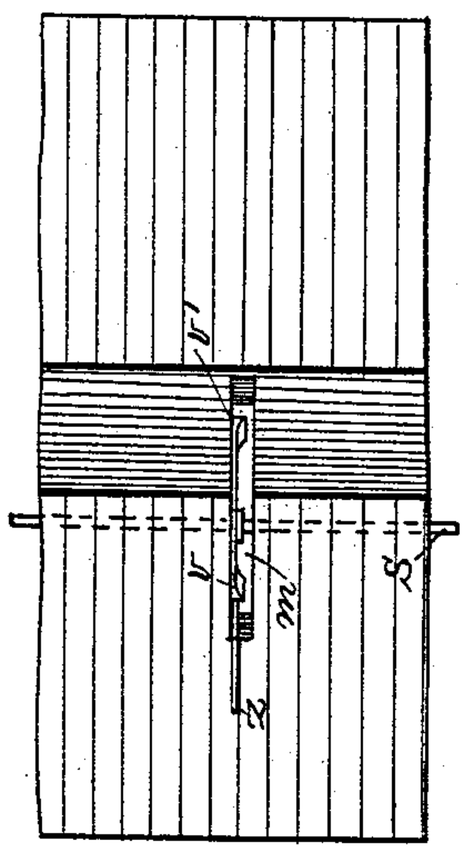



Fig. 8.

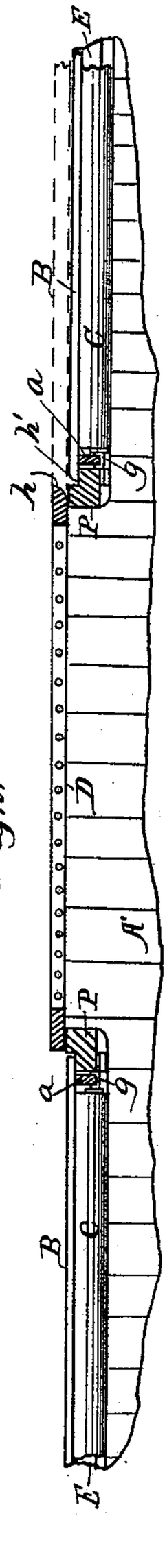



Fig. 10.

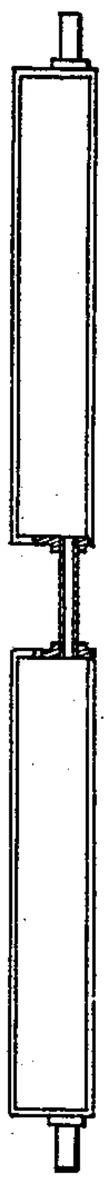


Fig. 12.

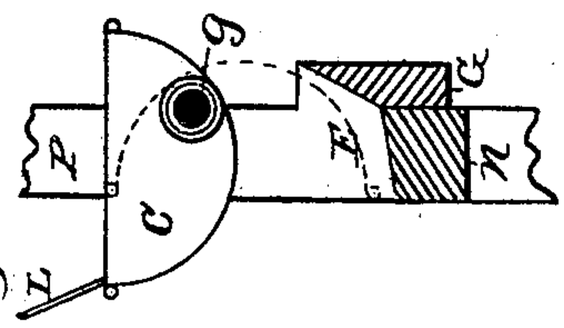



Fig. 11.

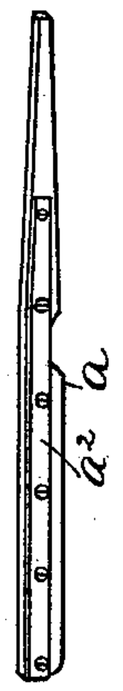



Fig. 6.

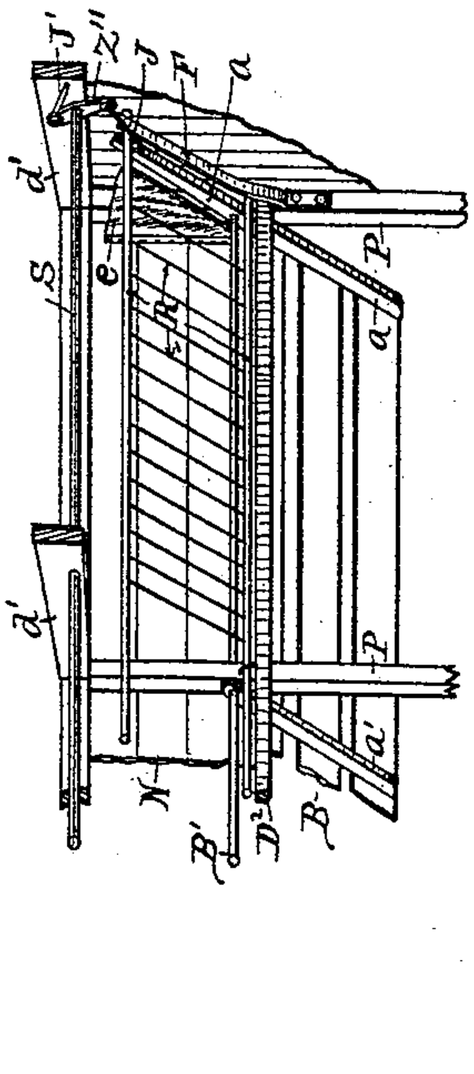
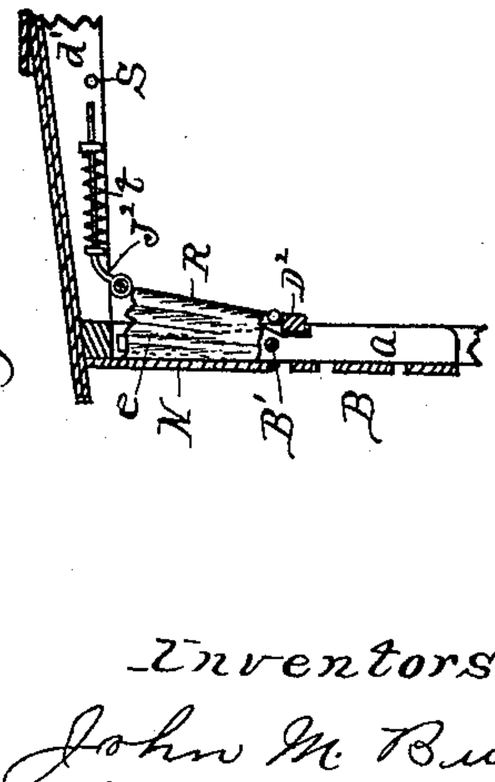



Fig. 9.

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# UNITED STATES PATENT OFFICE.

JOHN M. BURTON AND CHARLES C. CREWSON, OF WICHITA, KANSAS.

## STOCK-CAR.

SPECIFICATION forming part of Letters Patent No. 405,870, dated June 25, 1889.

Application filed October 29, 1888. Serial No. 289,487. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN M. BURTON and CHARLES C. CREWSON, citizens of the United States of America, 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 view of the car having its pivotal side sections open, also having an end portion broken away to show the interior of the car. Fig. 2 is a horizontal sectional view of a portion of the car on a line immediately above the watering-troughs, looking down. Fig. 3 is a cross-sectional elevation of the car near its center, showing its pivoted side sections open, the watering-troughs turned up, and the hay-racks unfolded. Fig. 4 is a similar elevation showing the pivoted side sections closed, the watering-troughs turned down, and the hay-racks folded. Fig. 5 is an inside elevation of a portion of one side of the car. Fig. 6 is a detailed perspective view of a portion of the interior mechanism of the car to more clearly show the pivoted side section and folding hay-rack. Fig. 7 is a top plan view of a section of the car-roof, showing the slot in which a lever is operated, and catches for holding the lever at either end of the slot. Fig. 8 is a horizontal sectional view of one of the car-doors and a portion of the car-side at either side of the door on line 1 of Fig. 5, looking down. Fig. 9 is a detailed sectional view of a portion of the car, showing the folding hay-rack and its connected parts. Fig. 10 is a plan view of a pair of the watering-troughs of the car, showing their tubular connected bearing in section. Fig. 11 is a perspective view of one of the arms of the pivoted side sections; and Fig. 12 is a detailed cross-sectional view of a portion of the car-side, showing the end of one trough, and also showing the water-shed below said trough.

Referring to the drawings, A represents the sills of the car, and A′ the car-floor. The remaining frame-work of the car consists of the side posts P, the ordinary end inclosure, and the ordinary plate and carlings covered with roofing in the usual manner. The side posts P are arranged opposite at either side of the car and divide the car in sections and door-spaces.

D and D represent ordinary car-doors, hung at the sides of the car in the usual manner and arranged obliquely from each other, so their jam-posts will be opposite and their space opposite a watering-trough and hay-rack. (See Fig. 2.) The lower parts of the car-sides are slatted a suitable distance above the floor, excepting at the door-sections, by means of strips G, secured to the inner part of posts P, as shown. The upper ones of said strips G are beveled outward, (see Figs. 1, 3, 4, and 12,) and at the base of said bevels between posts P are arranged a series of girts *n*, (see also said figures,) and said girts, together with said beveled strips, form a water-shed E below the watering-troughs. A short distance above said water-shed, at each section about the car, except at the doors and between the posts P, are arranged a series of watering-troughs C in four separate connected sections, a connected section at either side of each door D. The connections of said troughs are tubular to permit the passage of water from one trough to another, and also form bearings, by means of which the troughs are pivotally secured in position by being properly boxed to the inner side of posts P, as shown. It is intended that said troughs shall be at a suitable height above the car-floor for stock to conveniently drink from them. The outer upper parts of the car-sides, about one-fourth the distance down from the roof, except at the doors, are inclosed by close sheathing N, secured to posts P, and slightly below said sheathing, secured to the inner sides of posts P, are arranged girts $D^2$, extending to either end of the car from either side the doors D.

The spaces between the watering-troughs C and the lower edge of sheathing N at the car-sides are inclosed by means of pivoted sections B, constructed in four separate sections—one at either side of each door D—and are secured to the posts P of the car by means of rods B′, passing through holes in said posts and corresponding holes in the central part of the end arms *a* and the upper part of the intermediate arms *a′* of said sections, as

shown in Figs. 3, 4, 5, and 6, in such manner that said pivotal bearings will be between girts $D^2$ and the lower edge of sheathing N, to permit the lower part of said sections to swing out, as shown in Figs. 1, 3, and 6. The end arms *a* of said pivoted side sections, at the ends of the car and adjacent to the doors D, extend above rods B′ into the car, nearly meeting the plates on posts P.

S represents a shaft boxed in the carlings *d′* a little to one side from the car center, as shown in Figs. 3 and 4, and is arranged extending the entire length of the car, and has secured thereon at either end a double-crank arm *z″*, as shown in Fig. 6, and near the car center a pair of similar double-crank arms *z′*, as shown in Figs. 3 and 4, which connect with the upper part of arms *a* of the pivoted side sections by means of rods J and J′, in the manner shown in said figures.

To shaft S, at about the center, is secured a hand-lever *z*, which extends up and is arranged through a slot in the car-roof, as shown at *m* in Figs. 1, 3, 4, and 7, and is adapted to be operated in said slot from the top of the car to rock said shaft, and thereby operate the double-crank arms, which will, by means of their connecting-rods, as described, operate the pivoted side sections B to either open or close them, as desired, and as each of said sections is connected with said shaft-cranks they are all operated simultaneously by a single movement of lever *z*. Catches *v* and *v′* are arranged in said slot *m* for holding lever *z* at either end thereof to lock the pivoted side sections in either position they may be adjusted, and it is intended that said lever shall have sufficient lateral springing qualities to adapt it to be forced to one side, so it will pass its catches, and when thrown to either position spring back of the catch, and thus form a spring-lock. The two positions of said parts are shown in Figs. 3 and 4.

R represents hay-racks, which are constructed in four sections corresponding with the watering-troughs and pivoted side sections, and these racks are arranged with their lower parts resting upon and pivoted to the girts $D^2$ inside the car from the upper part of arms *a* of the pivoted sides in such manner that their upper part may be engaged by said arms *a* when the pivoted side sections are opened and unfolded from the car-sides, as shown in Figs. 1, 3, and 6. Either end of said rack-sections is provided with and connected to the car-sides by a canvas, arranged a sufficient distance from the ends to permit the folding back of arms *a*, and for the purpose of preventing hay from projecting at the ends, and may be easily folded when the rack is folded. (See Figs. 1, 3, 6, and 9.)

At either end of each rack-section R, and secured to posts P immediately below girts $D^2$, is a spring-arm F, extending up and arranged yieldingly to bear against the upper part of the rack R, the tendency of which is to hold said racks constantly folded against the car-sides, as shown in Fig. 4. The tension of the springs is, however, overcome by the movement of arm *a* to open the rack, in order that hay may be introduced into said rack through doors *d* in the top of the car. (See Figs. 1 and 3.) Coil-springs, as shown at *t* in Fig. 9, may be used with like effect by being sleeved on rods $J^2$, which connect with the hay-racks and have their free ends arranged through a fixed stop, against which the spring bears, to give yielding pressure against a bearing of each rod $J^2$, as shown in said figure.

By reference to the figures, and especially Fig. 12, it will be observed that the pivotal bearings of troughs C are arranged to one side from the center line of the troughs and in such manner that when the troughs are turned up to receive water they will be centrally between posts P, and also so that when turned down they will lower into the water-sheds E and their faces be parallel and flush with the outer sides of posts P, and by means of their bearings *g* being off center, as described, it becomes possible to lower them when not in use to be partially within the water-sheds E, and thus be protected by said water-sheds, rendering them less liable to be injured by stock in the car, and placing them out of the way when it is desired to use the car for other purposes. Said troughs C are adapted to be automatically turned by means of the pivoted side sections B, which are connected with said troughs at their outer upper parts at the ends of each connected section by means of links L (see Figs. 1, 3, and 4) in such manner as to hold the faces of the troughs level when said pivoted side sections are opened, as shown in Fig. 3, and to hold their faces in a vertical position flush with the outer faces of posts P when said side sections are closed, as shown in Fig. 4.

Water is supplied to the troughs C in the ordinary manner, as shown in Figs. 3, 4, and 5, W being a main supply-pipe arranged lengthwise in the upper part of the car, into which water is introduced from the top of the car.

W′ W′ are small pipes leading from supply-pipe W to side distributing-pipes $W^2$ along the sides of the car, which have branch pipes $W^3$ leading down to the several troughs, so that water may be supplied to each trough at the same time. The purpose of the hollow bearings *g* of the trough is to equalize the water-supply throughout each connected section of troughs.

The rods B′, upon which sections B are pivoted, are continuous through each section, and are secured in such manner as to form ties to assist in binding the car-frame to increase its strength.

For the purpose of preventing arms *a* and *a′* of the pivoted side sections from warping, they are each provided with stiffening-ribs $a^2$ of iron, secured to their sides, as shown in Fig. 11. (See also Fig. 5.) Said ribs may ex-

tend the entire length of said arms, if desired.

When the pivoted side sections B are closed, their inclosing-slats are on the same plane as the sheathing N above them, and at such times the outer sides of the car are presented free from all obstructions, so that the doors D may then be opened in the usual way. (See dotted lines in Fig. 8.)

As an assurance against catching the doors D against the strips of the pivoted side sections B when the doors are opened, the ends of said strips, and also the inner corner of the doors, are rounded, as shown at *h'* and *h* in Fig. 8.

The purpose of the pivoted side sections is that head-space is given for convenience to stock while drinking, and also a movement is produced for turning the watering-troughs and for unfolding and holding unfolded the hay-racks until they can be supplied with hay.

The purpose of the yielding automatic hay-racks is that after they have been supplied with hay the pivoted sides may then be closed, when the hay in the racks will hold them unfolded until it is consumed, when their springs will fold them close to the car-sides, where they are out of the way.

By thus constructing the car it is supplied at each section throughout with a watering-trough and a feeding-rack, so that all the stock in the car may have access to water and feed; also, all conveniences for watering and feeding at stations are provided for. Surplus water may be dumped outward and cast off by the water-sheds, and when the car is not in use for transporting stock, when its parts are folded, as described, it is free from obstructions, both on its exterior and interior, adapting it for any class of freight as conveniently as an ordinary freight-car.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is as follows:

1. The combination, in a stock-car provided with the side posts P and the sheathing N, extending down at the car-sides a distance from the top and forming the outer wall of the hay-receptacle, and the slats G, secured to the inner sides of said posts, extending up a distance from the car-floor, and forming the lower portion of the side walls of the car, of the troughs C, pivotally secured to the inner sides of said posts above said slatting G by means of their connected bearings, adapting them to turn between said posts, the folding racks R, hinged to said posts at their lower part and forming the inner wall of said hay-receptacle, the side sections B, having the arms *a a'*, hinged to the side of said posts at the base of said sheathing, wherein arms *a* are arranged, extending into the car adjacent said racks, the links L, connecting the lower portion of sections B with troughs C, and the mechanism consisting of rods J J', crank-arms *z' z''*, shaft S, and lever *z*, connected with arms *a* of said side sections through the medium of said rods, whereby the said side sections and troughs can be turned and the racks unfolded into position for use, substantially as specified.

2. The combination, in a stock-car provided with the side posts P and the sheathing N, secured to the outer upper part of said posts and forming the outer wall of the hay-receptacle, and the slats G, secured to the lower inner portion of said posts and forming the lower portion of the side walls of the car, of the troughs C, pivotally secured to the inner side of said posts above said slatting by means of their connected bearings adapting them to turn between said posts, sections B, having arms *a a'*, hinged to the side of said posts at the base of said sheathing, which arms *a* are arranged extending into the car within said sheathing, the links L, connecting the lower portion said sections B with said troughs, and the mechanism consisting of rods J J', cranks *z' z''*, shaft S, and lever *z*, connected with arms *a* of said sections through the medium of said rods, whereby the said side sections and troughs can be turned into or out of position for use, substantially as set forth.

3. The combination, in the stock-car described, provided with the side posts P and the sheathing N, secured to the outer upper part of said posts and forming the outer wall of the hay-receptacle, of the racks R, hinged to the upper inner part of said posts at their lower portion and forming the inner wall of the hay-receptacle, the side wall-sections B, having arms *a*, hinged to the side of said posts at the base of the hay-receptacle and extending upward into the said receptacle adjacent said racks, and the mechanism consisting of the rods J J', cranks *z' z''*, shaft S, and lever *z*, connected with arms *a* of said sections through the medium of said rods, whereby the said sections are turned and the said racks are unfolded into position for use, substantially as specified.

4. The combination, in the stock-car described, provided with the side posts P and the sheathing N, secured to the outer upper part of said posts and forming the outer wall of the hay-receptacle, of the folding racks R, hinged at their lower portion to the inner upper part of said posts and forming the inner wall of the hay-receptacle, the spring-arms F, or their equivalent, arranged to bear against said racks to yieldingly hold them folded, the side wall-sections B, having the arms *a*, hinged to the side of said posts at the base of said hay-receptacle and extending upward into said receptacle adjacent said racks, and the mechanism consisting of the rods J J', cranks *z' z''*, shaft S, and lever *z*, connecting said arms *a* by means of said rods, whereby the said wall-sections are turned and the racks unfolded into position for use and the racks automatically folded when hay in the receptacle is consumed or removed, substantially as specified.

5. The combination, in a stock-car provided with hay-receptacles in the upper part of its side walls, of the racks R, hinged at their lower part and forming the inner wall of said receptacle, the spring-arms F, or their equivalent, arranged to bear against said racks to yieldingly hold them folded, and the mechanism consisting of arms *a* of the side wall-sections B, shaft S, boxed longitudinally in the upper part of the car, lever *z*, and cranks *z' z''*, secured on said shaft, and rods J J', connecting said cranks with said arms, whereby said arms are operated to unfold said racks into position for use, substantially as specified.

6. The combination, in a stock-car provided with the side posts P and the sheathing N, secured to the outer upper part of said posts and forming the outer wall of the hay-receptacle, of the folding racks R, hinged at their lower part to the inner upper part of said posts and forming the inner wall of the hay-receptacle, the side wall-sections B, having the arms *a*, hinged to said posts at the base of said receptacle and extending into said receptacle adjacent said racks, the canvas ends or folds *e*, arranged to protect said arms from contact with hay in the receptacle, and the mechanism consisting of shaft S, cranks *z' z''*, and lever *z*, secured thereon, and rods J J', connecting said cranks with said arms, whereby the said sections and arms are turned and said racks unfolded into position for use, substantially as specified.

7. The combination, in a stock-car provided with the side posts P, of the troughs C, arranged between and pivotally secured to the inner side of said posts by means of their connected bearings *g*, the side wall-sections B, having arms *a*, hinged to the side of said posts and extending into the car, links L, connecting the lower portion of said sections with said troughs, and the shaft S, longitudinally arranged in the upper part of the car, the lever *z*, secured on said shaft and arranged extending through a slot in the car-roof, catches *v v'*, for holding said lever, the cranks *z' z''*, secured on said shaft, and the rods J J', connecting said cranks with said arms *a*, whereby the said side wall-sections and troughs are turned into or out of position for use by means of said lever from the car-roof, substantially as specified.

8. The combination, in a stock-car, of the pivoted side sections B, having arms *a a'*, rods B', connecting-rods J J', crank-arms *z' z''*, shaft S, and lever *z*, substantially as and for the purpose set forth.

9. The combination, in a stock-car, of the pivoted side sections B, having arms *a a'*, rods B', pivoting said sections, links L, pivoted watering-troughs C, folding hay-racks R, connecting-rods J J', crank-arms *z' z''*, shaft S, and lever *z*, substantially as and for the purpose set forth.

10. The combination, in a stock-car, of the pivoted side sections B, having arms *a a'*, rods B', pivoting said sections, watering-troughs C, pivotally arranged below said sections, links L, for connecting said sections and troughs, connecting-rods J J', crank-arms *z' z''*, shaft S, and lever *z*, and catches for holding said lever, substantially as and for the purpose specified.

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Witnesses:
EDW. N. BENHAM,
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