

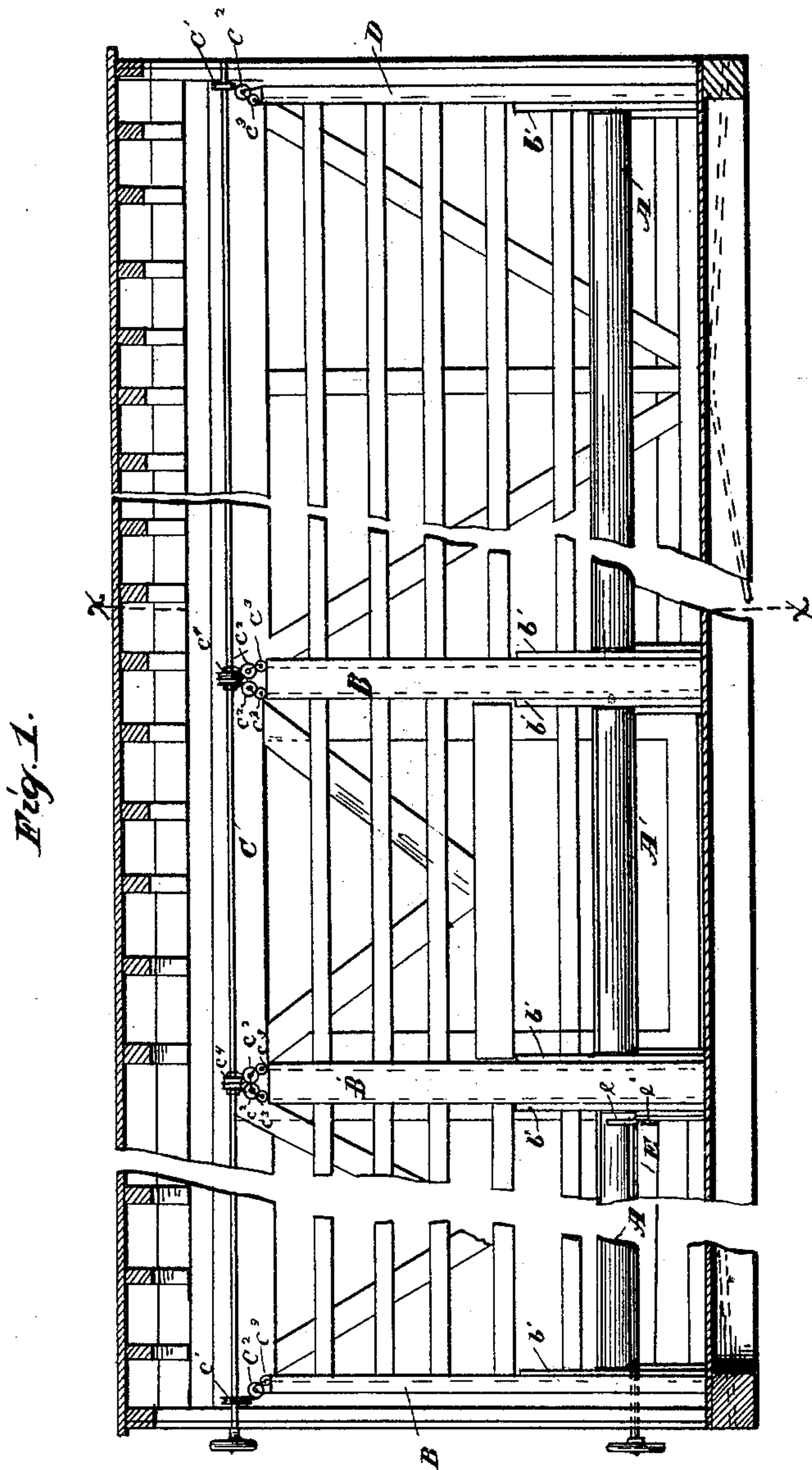
(No Model.)

3 Sheets—Sheet. 1.

W. G. AVERY.
STOCK CAR.

No. 415,404.

Patented Nov. 19, 1889.



Witnesses
Wm. M. Monroe
J. A. Osborne.

Inventor
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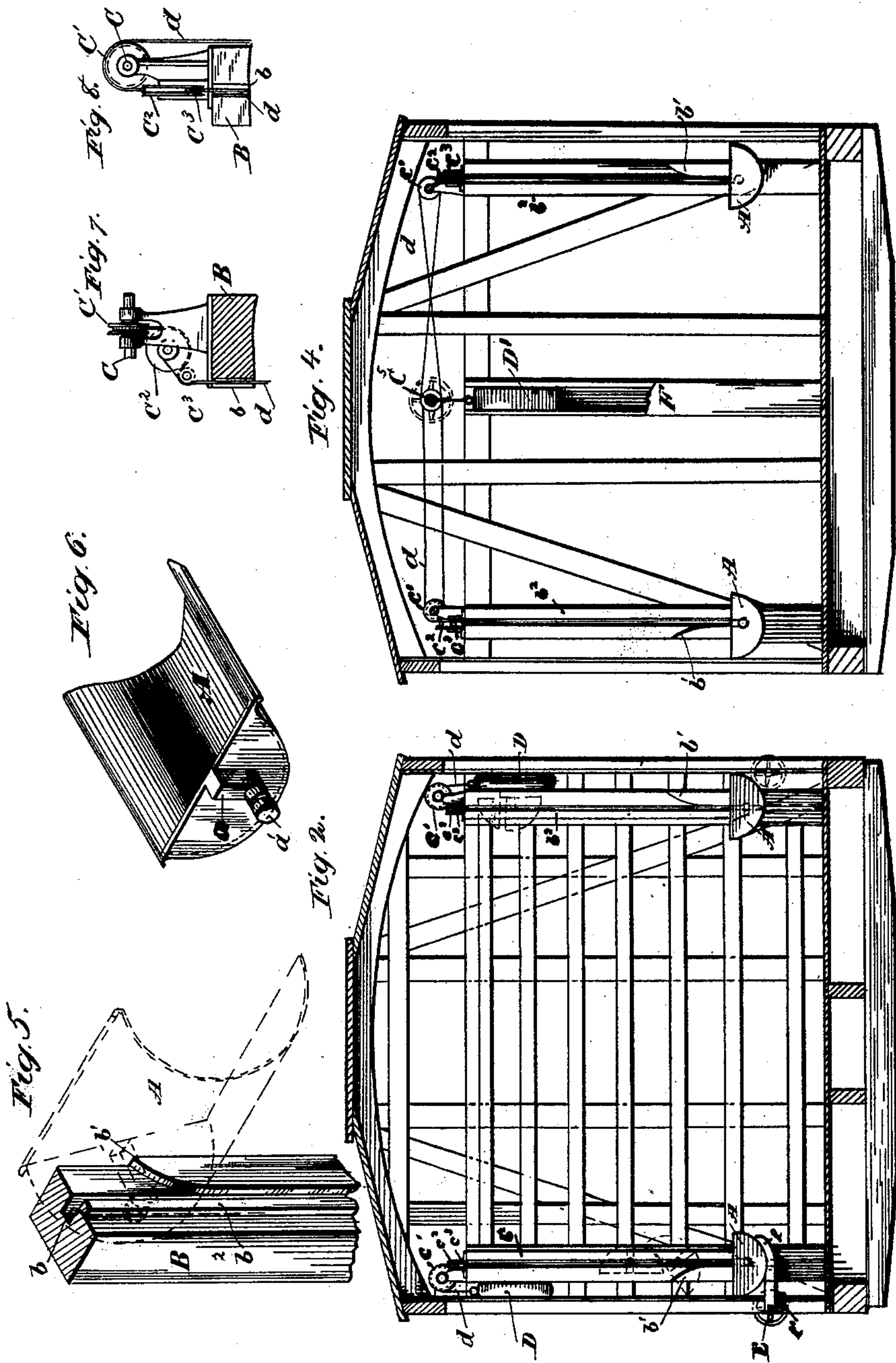
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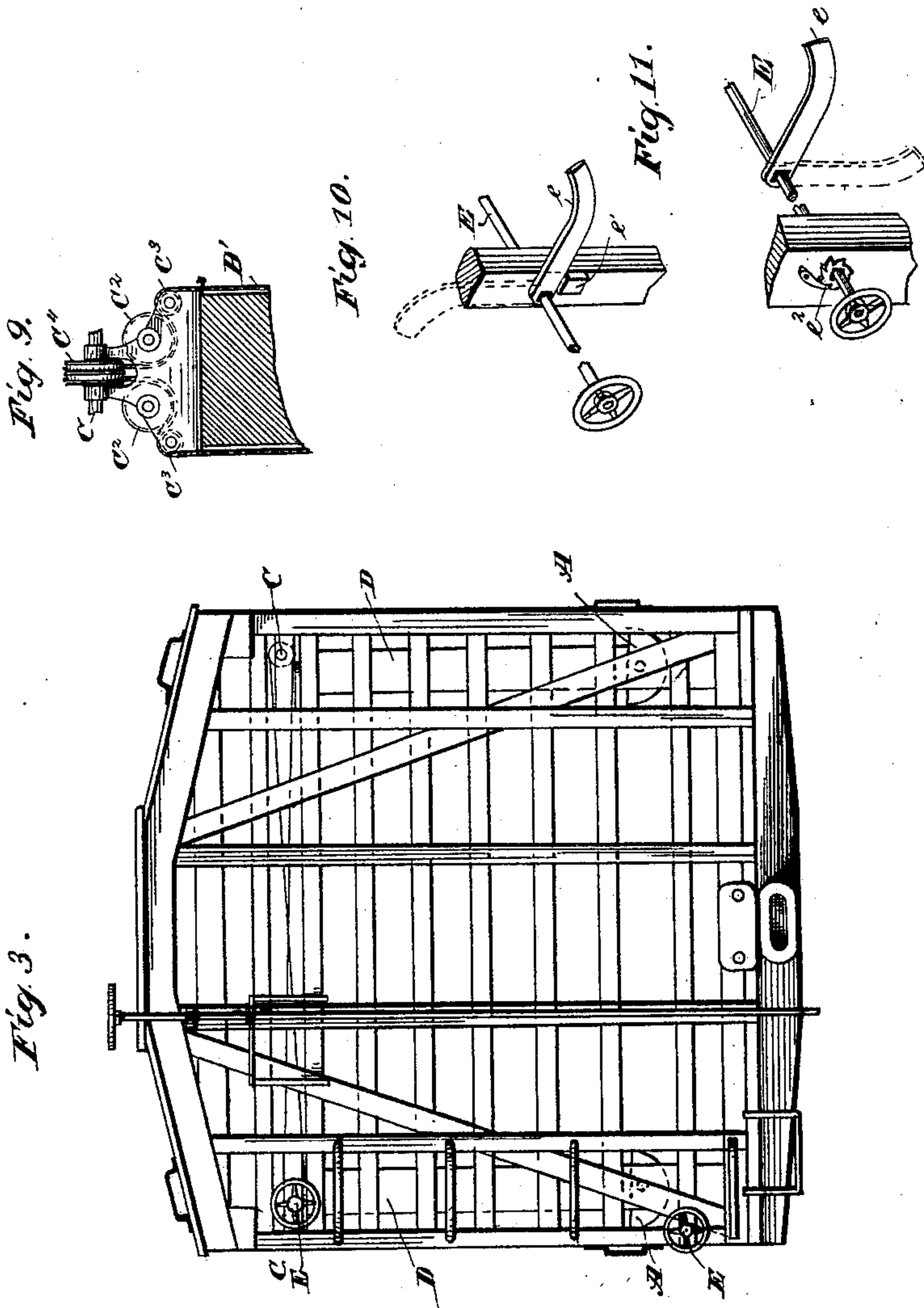
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UNITED STATES PATENT OFFICE.

WILLIAM G. AVERY, OF CLEVELAND, OHIO.

STOCK-CAR.

SPECIFICATION forming part of Letters Patent No. 415,404, dated November 19, 1889.

Application filed June 10, 1889. Serial No. 313,794. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. AVERY, a resident of Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Stock-Cars; and I do hereby declare the following to be a full, clear, and exact description of my invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to cars used in carrying live stock.

The object of my invention is to provide apparatus, which may be cheaply and conveniently applied to the ordinary stock-cars in common use on railroads, for watering or feeding live stock while in transit and yet not interfere with the free use of such cars in carrying other freight when not used in carrying stock. The means I employ to accomplish this object is fully shown in the drawings and described herein, and the matter constituting my invention is specifically defined in the claims.

In the drawings, Figure 1 is a longitudinal central section of a car provided with my improvements. Fig. 2 is a cross-section of Fig. 1 on line *x x*. Fig. 3 is an exterior end view of the car. Fig. 4 is a cross-section of Fig. 1 on line *x x*, and illustrates a modification of my improvements, as shown in Fig. 2. Fig. 5 is a detail of the slotted guide-post. Fig. 6 is a detail of the end of the trough. Figs. 7, 8, and 9 are details of the arrangement of the pulleys on the top of the guide-post. Fig. 10 is a detail of the arm for supporting the trough midway of its ends. Fig. 11 is a modification of the same.

In the different figures of the drawings like letters refer to like parts.

On the ends of the trough A, I place a tongue *a*, a little off the center to the inside of the car, said tongue extending from the top edge of the end of the trough a little more than half-way to the bottom. From the bottom of said tongue *a* there projects a round stud *a'*. These details are clearly shown in Fig. 6.

On the inside of the car, at its ends, I place guide-posts B. Said guide-posts have a groove or slot *b* extending from a height above the

floor of the car at which it is desired to support the trough when watering or feeding stock to the top of the post, said groove being deep enough to receive said stud *a'*. From the lower end of said groove *b* to a height a little above the top of the trough, to the outside of the car, I place a guiding-rail *b'*, which is beveled at its upper end, as shown. On the opposite side of the groove I place a guiding-rail *b''*, extending to the top of the post. These rails embrace the tongue *a* on the end of the trough, and prevent its tipping when below the top of the rail *b'*. The detail of the grooved guide-post is seen by reference to Fig. 5.

Above the guide-posts B, that are placed at the ends of the car, I place the arrangement of roller and pulleys illustrated by Figs. 7 and 8.

C' is a grooved pulley mounted on a shaft C, which extends through the whole length of the car.

At each side of the car-door I place guide-posts B', which are grooved and provided with bearing-rails on both their sides toward the ends of the car, the same as shown upon the inside of the posts B, placed at the ends of the car. Above the said posts B', I place an arrangement of roller and pulleys. (Illustrated by Fig. 9.) The pulley *C'*, mounted above the posts B' on the shaft C, has a double groove, as shown. The pulley *C'* is placed at right angles to the pulleys *C''* and *C'''*. The small roller or pulley *C'''* is so placed that it will prevent the cord working in the groove *b* from bearing against the edge of the said groove as it changes direction to pass under the pulley *C''*. The pulleys *C'* and *C''* are so placed with reference to each other that the cord as it comes from under the pulley *C''* will pass vertically over the pulley *C'*. The cord *d* (already mentioned in connection with the arrangement of pulleys) is attached at one end to the stud *a'* on the end of the trough A. It passes up through the groove *b*, over the roller *C'''*, under the pulley *C''*, and over the pulley *C'*, and weights D are attached to the other end of the cord. The weights hang in the spaces left between the guide-posts B and B' and the sides of the car. The weights should approximately balance

the troughs. The cord d may be of any suitable material, or it may be a link chain. The position of the weights in the corners of the car is seen by reference to Fig. 2. When the weights are so placed, a shaft C is placed at each side of the car, as shown by Fig. 2. These shafts project beyond the car at one end, and a suitable hand-wheel or a crank is keyed to the end of each shaft to turn the same to elevate or lower the troughs.

In Fig. 4 is seen a modification of the adjustment of weights at the ends of the car. The modification is to place a box F at the center of the ends of the car, having the weight D', suspended by the cords d , passing over double-grooved pulleys mounted on a central shaft C⁵, extending through the car, the cord from one side passing over and the cord from the other side passing under and over said mounted pulley. With this arrangement the outer shafts C may be dispensed with and the pulleys C' be made to run in the pulley-blocks placed on top of the guide-posts, the said pulleys C' being placed at the inside instead of at the outside of the pulley C².

The troughs A may be made of any desired lengths; but it is preferable to make them so that one trough covers the distance from the door to the end of the car on each side of the door, and another which will cover the width of the door, as seen by reference to Fig. 1.

From the description already given and the drawings, the operation of my apparatus is apparent. When the trough is at the bottom of the slot b , so that the tongues a on the ends of the trough are engaged by the bearing-rails b' and b^2 , the trough will be held firmly upright, so that it cannot tip to either side. When it is desired to put the troughs out of the way, the hand-wheel on the end of the shaft C is turned and the troughs are elevated to the top of the car. When the troughs reach the top of the rail b' , the tongue a is freed at one side, and the troughs being pivoted eccentrically they will tip outwardly, as represented by the dotted lines in Figs. 5 and 2. A pawl may be mounted on the shaft C on the outside of the car and a ratchet placed to engage the same to prevent the troughs working down from any jars of the car. As the trough is lowered, the tongue a will strike the extension b' of the posts B and B' and turn the trough upright as it falls into place for feeding or watering stock.

Figs. 10 and 11 illustrate means for supporting the long troughs midway of their ends. A shaft E is passed through the stanchions of the car, and arms e are keyed upon said shaft. A block e' may be placed in a proper position on one side of the stanchions to support the arms e at the proper height, in

which case the arm may be turned up out of the way when the trough is elevated, as seen in the dotted lines in Fig. 10; or the arms e may be supported by means of a pawl and ratchet e^2 at the outer end of the car on the shaft E, as seen by reference to Fig. 11, in which case the arms e may fall, as seen by the dotted lines of this figure. A hand-wheel on the ends of said shafts serves to turn the same. It will be observed that the shafts E terminate at the guide-posts B', as they cannot cross the door of the car.

Modifications of the forms shown for elevating the troughs may be adopted without departing from the spirit of my invention—*i. e.*, the pulley C' may be a sprocket-wheel and the cord d may be a link chain to work over the same; or a suitable cord may be used to wind around the shaft C; and, if desired, the troughs may be made to turn in rather than out, as shown. Turning the troughs outwardly is preferable, however, as the contents of the trough are thus emptied to the outside of the car. Again, instead of having the trough supported at its lowest position by the tongues a and stud a' resting at the bottom of the slots b in the guide-posts, blocks may be placed on the side of the post at a proper elevation to engage the trough. This last-stated manner of supporting the trough has the advantage of allowing the slot or groove b to extend down far enough (or even to the car-floor) so that the level of the trough will not be disturbed by dirt collecting in the groove.

What I claim as my invention is—

1. The combination, with a stock-car, of guide-posts having a groove b , a short bearing-rail b' , and a long bearing-rail b^2 , extending to the top of the post and secured thereto, a trough having tongues a and studs a' on its ends, and means for elevating said trough, substantially as shown.

2. The combination, in a stock-car, of a trough having the tongues a and studs a' on its ends, with grooved guide-posts provided with the bearing-rails b' and b^2 , the pulleys C', C², and C³, adjusted above the guide-posts, the weights D, and cords d , all constructed and arranged substantially as described.

3. The combination, in a stock-car, of the shaft E, the arms e , attached to said shaft, and means for securing said arms in a horizontal position, with a trough provided with the tongues a and studs a' on its ends, guide-posts grooved and having the bearing-rails b' and b^2 , and means for elevating and lowering said trough, substantially as described.

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Attest:

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WM. M. MONROE.