(No Model.)

4 Sheets—Sheet 1.

# J. HOWARD.

## STOCK CAR.

No. 257,708. Patented May 9, 1882.

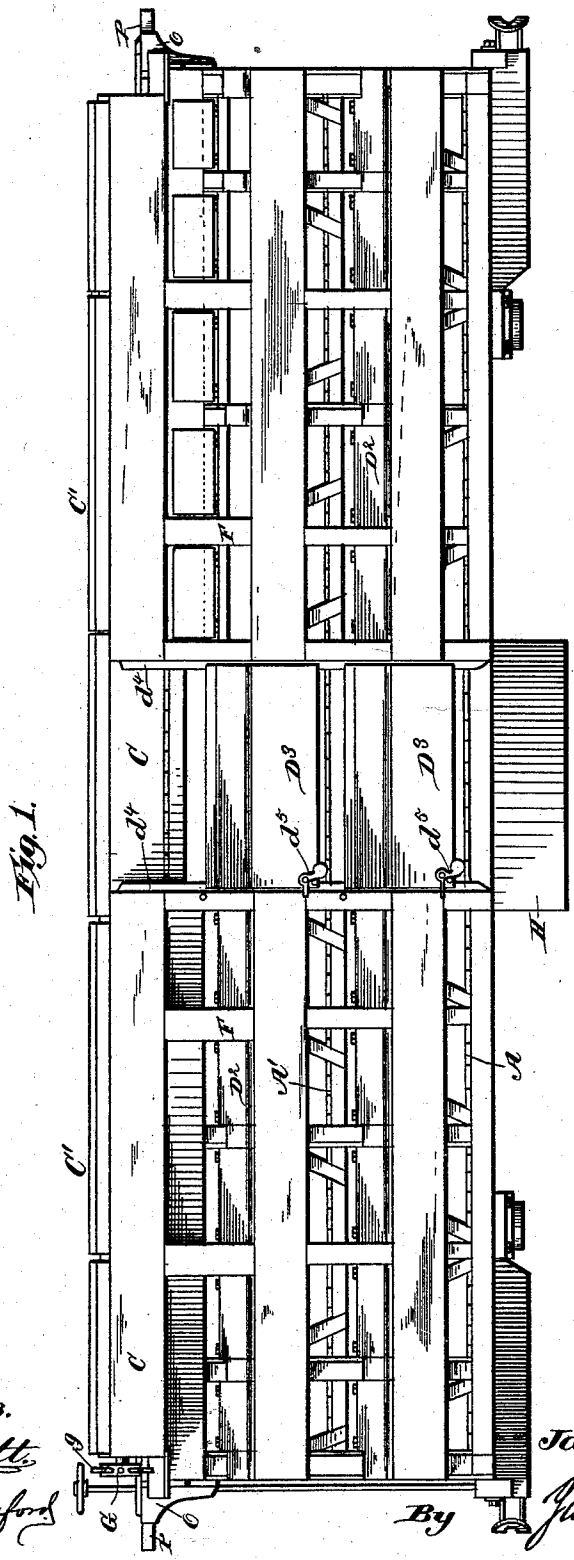


Fig. 1.

Witnesses.
Robt Ewgett.
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N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 4 Sheets—Sheet 2.

# J. HOWARD.

## STOCK CAR.

No. 257,708. Patented May 9, 1882.

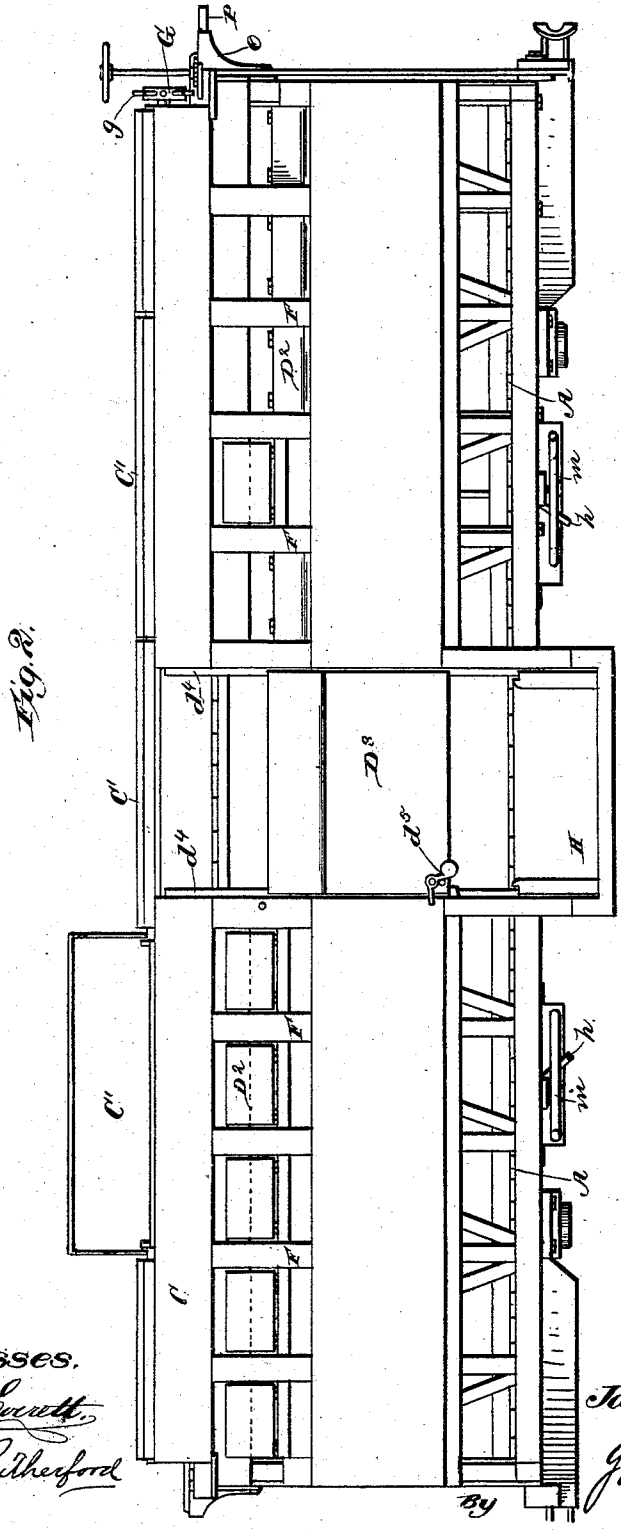


Fig. 2.

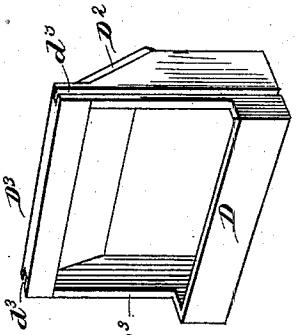


Fig. 3.

Witnesses.
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(No Model.) 4 Sheets—Sheet 3.

# J. HOWARD.

## STOCK CAR.

No. 257,708. Patented May 9, 1882.

Fig. 7.

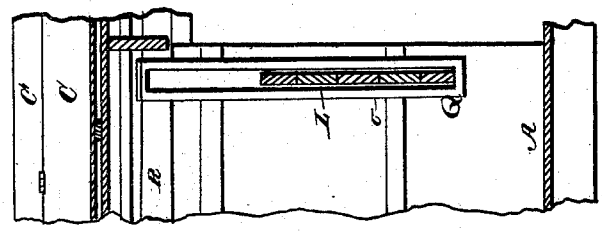


Fig. 6.

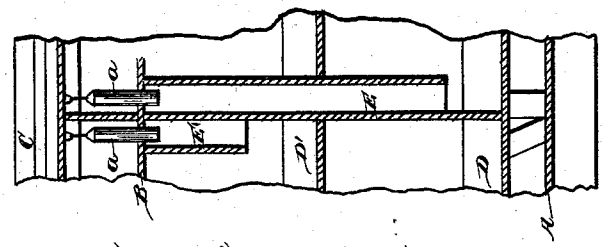


Fig. 5.

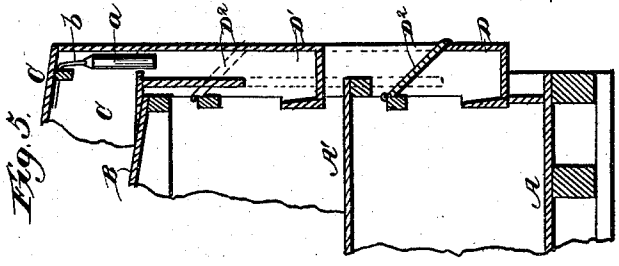
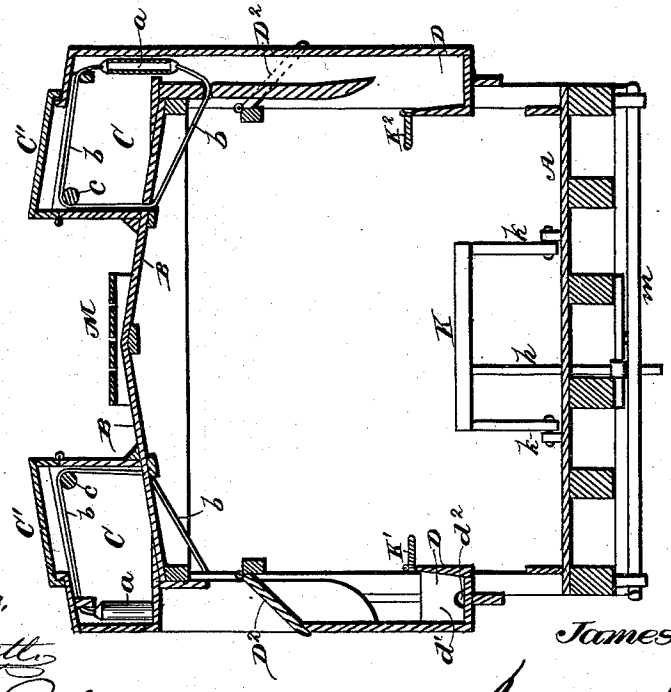


Fig. 4.



Witnesses,
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(No Model.) 4 Sheets—Sheet 4.

# J. HOWARD.

## STOCK CAR.

No. 257,708. Patented May 9, 1882.

Fig. 8.

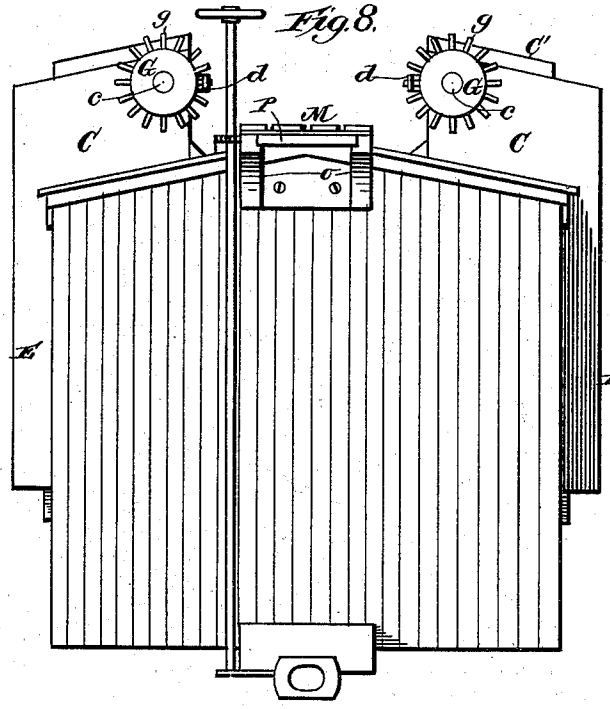



Fig. 12.

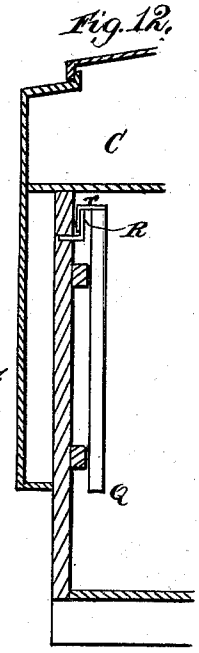



Fig. 9.

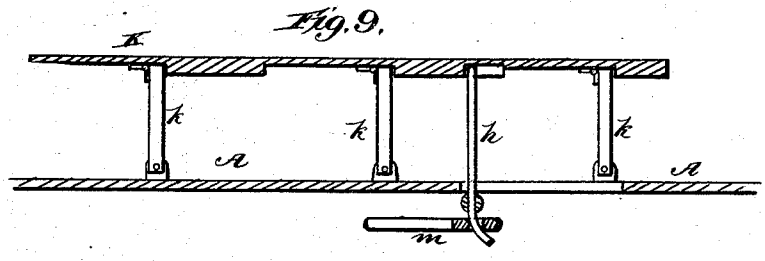



Fig. 10.

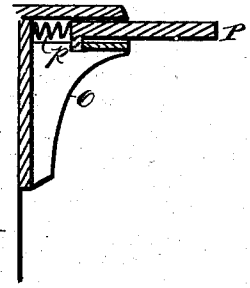
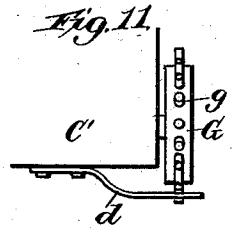



Fig. 11.




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# UNITED STATES PATENT OFFICE.

JAMES HOWARD, OF TORONTO, ONTARIO, CANADA.

## STOCK-CAR.

SPECIFICATION forming part of Letters Patent No. 257,708, dated May 9, 1882.

Application filed December 19, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES HOWARD, a subject of the Queen of Great Britain, residing at Toronto, in the county of York, Dominion of Canada, have invented certain new and useful Improvements in Railway Stock-Cars, of which the following is a specification.

My invention relates to railway stock-cars, the object being to provide certain improvements whereby the feeding and watering of stock are facilitated during transportation.

To this end my invention consists in the combination, with the feed-bins, troughs, and connecting-spouts, of tubes arranged to hang in the upper ends of said spouts, and adapted to be lowered below the level of the contents of said bins for the purpose of permitting the passage of feed in definite quantities to the troughs.

The invention also consists in the combination, with a stock-car, of vertically-sliding doors provided with troughs; also, in the combination, with such cars, of vertically-sliding and flexible partitions adapted to divide the car into compartments; and, further, in certain novel features of construction, as hereinafter more fully set forth.

In the accompanying drawings, which fully illustrate my invention, Figure 1 is a side elevation of a double-decked stock-car embodying my improvements. Fig. 2 is a similar view of a single-decked car. Fig. 3 is a perspective view of my improved sliding door with trough combined. Fig. 4 is a transverse section of a single-decked car, showing the body-rest, bins, troughs, and connections, the sections on opposite sides of the car being in different vertical planes. Fig. 5 is a transverse sectional detail of a double-decked car. Fig. 6 is a partial longitudinal section of a double-decked car, showing feed spouts and connections. Fig. 7 is a sectional detail of one of the flexible partitions. Fig. 8 is an end view of a car. Fig. 9 is a longitudinal section of my improved body-rest. Fig. 10 is a sectional detail of my improved yielding bridge at end of car, and Fig. 11 is a detail view of registering-wheel and spring-catch. Fig. 12 is an end elevation of sliding frame-carrying rail.

Like letters indicate like parts in the several views.

The car may be constructed with a single floor, as shown in Fig. 2, or with a lower deck, A, and upper deck, A′, as shown in Fig. 1, and the upper deck may be arranged in such a manner as to be removable for the purpose of adapting the car for the transportation of either large or small animals.

Above the roof B, and extending the length of the car on each side, are the feed-bins C C, which are subdivided by partitions into separate spaces to contain the food for the respective animals, said spaces being arranged to communicate with the troughs D D′ by spouts E E′, that are arranged at suitable intervals. These troughs may adjoin or be built into the vertical supports or standards F, which form a part of the car-frame.

It will be observed by reference to Fig. 6 that in a double-decked car the long spouts E extend nearly or quite to the lower troughs, while the short spouts E′ extend only to the upper troughs.

The outer walls of the feed-bins, spouts, and troughs may be flush with the sides of the car, or may project beyond the car-body, as shown in Figs. 4 and 8. By this latter construction additional space is gained without increasing the weight of the car.

The openings by which the spouts E E′ communicate with the bins C are governed by tubes *a*, which are suspended by cords or bands *b*, so as to be raised or lowered at will.

It is obvious that, if the upper ends of the tubes *a a* are above the level of the grain or other feed contained in the bins, none can escape through the spouts; but if the tubes are lowered, so that their upper ends will be below the level of the contents of the bins, a free passage to the troughs will be afforded.

The cords by which the tubes are suspended may be wound upon the shaft *c*, so as to allow the tubes to descend by gravity when the shaft is permitted to rotate; but, instead of winding the cords on the shaft, it is preferable to simply pass them over the same and attach their opposite ends to the upper and lower ends of the tubes, as shown in Fig. 4, thus allowing the tubes to be raised and lowered with a positive motion.

The shafts *c*, over which the cords or bands pass, are arranged on each side of the car in

the upper and inner corners of the bins, and project beyond the car at one or both ends. Each shaft is provided with a wheel, G, by which it is rotated so as to simultaneously lower and raise all the tubes on either side of the car. This wheel is arranged at the end and outside of the car, so as to be readily operated from the roof by the brakeman or attendant. The wheel is provided with spokes or pins *g*, by which it is turned, and these pins are placed at such predetermined distances apart as will enable the attendant, by a partial rotation of the wheel, to graduate the quantity of feed to be discharged into the troughs.

It is obvious that, the area of the bins and the number and diameter of the tubes *a* being known, as well as the extent of rotation of the shaft *c* necessary to lower said tubes certain distances, the pins on the wheel G may be readily placed so that by moving one or more past a fixed point a definite part of the contents of the bins may be discharged at pleasure.

On the outer side of each bin is a spring loop or catch, *d*, which is adapted to engage with the pins *g* in turn, and thus hold the tubes at any desired point. By turning the wheel so as to bring a certain number of its pins *g* past the spring-loop *d* the tubes *a* on either side of the car will be simultaneously lowered any definite distance, as before described.

When the car is not entirely occupied, and it is desired to supply only a part of the troughs, the tubes over the unoccupied troughs or compartments may be hooked up, so as to remain inoperative.

The feed-bins C are provided with hinged covers C′, by which access may be had. The troughs D and D′ also have inclined covers $D^2$, which open on the outer side of the car, so that said troughs may be filled with water or feed independently of their connection with the bins at the top of the car. The troughs are divided into compartments by means of partitions *d′*, Fig. 4, which are perforated at or near the bottom at $d^2$ for the passage of water without liability of "swashing" from end to end of the troughs or their compartments.

Access to the car is provided by openings on each side, which are closed by means of vertically-sliding doors $D^3$, one being provided for each floor or deck on both sides of the car. This vertically-sliding door, as illustrated in Fig. 3, is designed to act not only as a door, but also as a trough for that portion of the car in which it is placed, the trough D, with its inclined cover $D^2$, being constructed in and forming part of the door. A continuous trough line is thus secured from end to end of the car without interfering with the shipping or unshipping of the stock. The doors $D^3$ are vertically grooved or recessed on each side at $d^3$, said grooves corresponding with vertical tongues or rails $d^4$ $d^4$, which are placed in the doorways for the doors to slide up and down upon. The doors are provided with gravity-latches $d^5$, or other suitable fastenings, by which they are secured when raised. A receptacle, H, for water or coarse food—such as hay—is arranged beneath the car at its center.

In order to prevent the cattle from falling over with fatigue or jolting of the car, and being so exposed to danger of trampling or other injury, adjustable rests K K′ $K^2$ are arranged in the car. The center part of the rest is supported in a horizontal position by means of hinged levers *k k*, which are adapted to fold under rest when the same is lowered to the floor of the car. The body-rest K is raised and lowered by means of a rod, *h*, which engages with a lever, *m*, arranged beneath the car, so that the rest can be operated from either side. One or more of these rests may be arranged longitudinally, covering the center and sides of the car, the top of the center rest being of such width that it will pass between the fore and hind legs of the animals and furnish a suitable support for their bodies. The parts against the sides may be hinged or otherwise secured. Before the stock is driven into the car the rest is lying on the floor, and after the animals have been driven in "heads and points" the center part of the rest is raised by means of the lever *m*, so as to furnish a support to the animal, thus obviating unnecessary fatigue and preventing the cattle from falling or lying down. The sides K′ $K^2$ are then thrown into position for the purpose of preventing too much transverse oscillation. If desirable, these rests may be covered with canvas or padded.

The car is capable of being divided into any suitable number of stalls or compartments by means of cross-rails L. (Shown in Figs. 7 and 12.) These cross-rails are carried in sliding frames Q, and are arranged to slide vertically and horizonally in the frames Q, such frames being supported upon and sliding horizontally upon ways or rails R on the sides of the car, the flanged plate *r*, secured to the frames, resting on the rails R, whereby larger or smaller spaces may be left between the frames and the sets of rails. The lower rails in each sliding frame will in practice be recessed in order to receive the body-rest and maintain it in position. These rails may be raised or lowered to the body-rest from the roof of the car by any suitable means.

On the top of the car, in its central line, is a footway or running-board, M, for the convenience of the train attendants, and at each end of this footway a bracket, O, is secured to the end of the car for the purpose of supporting an adjustable bridge, P, which is held in place by means of a spring, *p*, or other yielding connection, so as to obviate jar should the bridges of adjoining cars come in forcible contact when coupling. By means of this bridge the brakeman or other attendant can pass with safety from car to car.

In the foregoing specification I have specified the construction of only those parts of the car which are embraced in my improvements. These improvements, it will be seen, are of such

nature that they may be readily applied to any ordinary stock-cars now in use, the construction of which in other respects may be of any suitable or approved kind.

With the aid of my improvements stock may be transported with safety and in such a manner that the animals can be fed and watered while the train is in motion with the expenditure of but little time and without danger to the attendants.

It should be observed that by the employment of the sectional food-bin a series of separate receptacles are provided which extend along the top of the car, so that the food for each animal is retained separate from that for the other animals; and, further, by providing a tube for each food-receptacle the animals can all be served alike with an even or uniform quantity of food. The arrangement also provides for the promiscuous loading of the cars, as it is immaterial how the animals are arranged, as each will have its own supply of food taken from a food-receptacle separated from those containing the food for the remaining animals.

What I claim as my invention is—

1. In a stock-car, a vertically-sliding door provided with a trough or receptacle for food and water, and adapted to be secured at any desired elevation, substantially as described.

2. In a stock-car, the combination of the swinging body-rest, the levers pivotally connected at one end to the same and at the other end to the car-floor, a rod attached to the body-rest and projecting downward therefrom, and a lever located beneath the car and connected with said rod for swinging the body-rest, substantially as and for the purpose described.

3. In a stock-car, the combination, with feed-bins arranged at the top of the car and spouts leading therefrom to troughs at the sides of the car, of tubes arranged in the upper ends of said spouts and adapted to be raised above or lowered below the contents of the bins for the purpose of regulating the passage of feed by gravitation to the troughs, substantially as described.

4. In a stock-car, the combination, with a feed-bin and its discharge-spouts, of a shaft arranged in said bin and having on its projecting end a registering-wheel, tubes arranged to hang in the upper ends of the discharge-spouts, and cords or bands connecting said tubes with the shaft, whereby the rotation of said shaft will cause the tubes to be lowered below the level of the contents of the bin, and thereby permit the passage of feed by gravitation through the discharge-spouts, substantially as described.

5. In a stock-car, the combination, with a bin having suitable discharge-spouts, a shaft provided with registering-wheel, having projecting pins and tubes arranged to hang in the upper ends of the spouts and connected with the shaft by cords or bands, of a spring-catch adapted to engage with the pins on the registering-wheel, and thereby prevent the rotation of its attached shaft, substantially as described.

6. In a stock-car, the combination of feed-bins arranged above the roof, troughs arranged at the sides of the car and having tops provided with hinged covers, spouts connecting said bins and troughs, vertically-sliding doors provided with troughs, flexible partitions adapted to divide the car into compartments, and an adjustable body-rest adapted to be raised and lowered, substantially as shown and described.

7. In a stock-car, sliding cross-rails supported in sliding frames carried on the sides of the car, said cross-rails constituting partitions, and also serving to maintain the body-rest in position, as described.

8. In a stock-car, a series of separate food-receptacles arranged along the top of the car, on each side thereof, to contain the food for each animal separate from that for the others, in combination with a series of tubes, *a*, one for each food-receptacle, and means for operating the same, substantially as and for the purposes described.

Toronto, Canada, December 8, 1881.

JAS. HOWARD.

In presence of—
HUGH C. BAINES,
H. PINGLE.