

(No Model.)

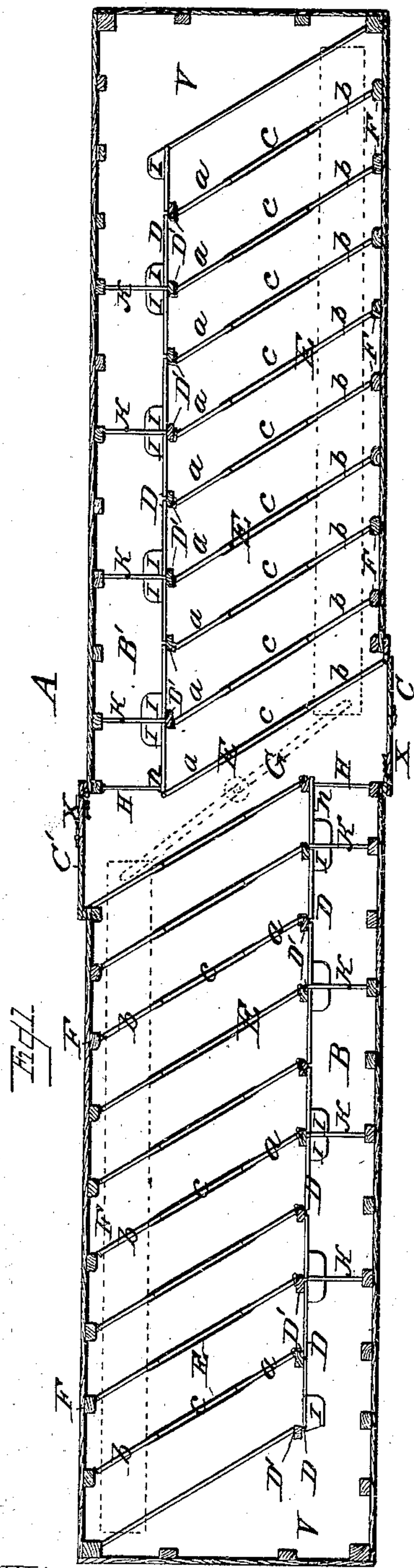
3 Sheets—Sheet 1.

C. A. DAVIS.

RAILWAY CAR.

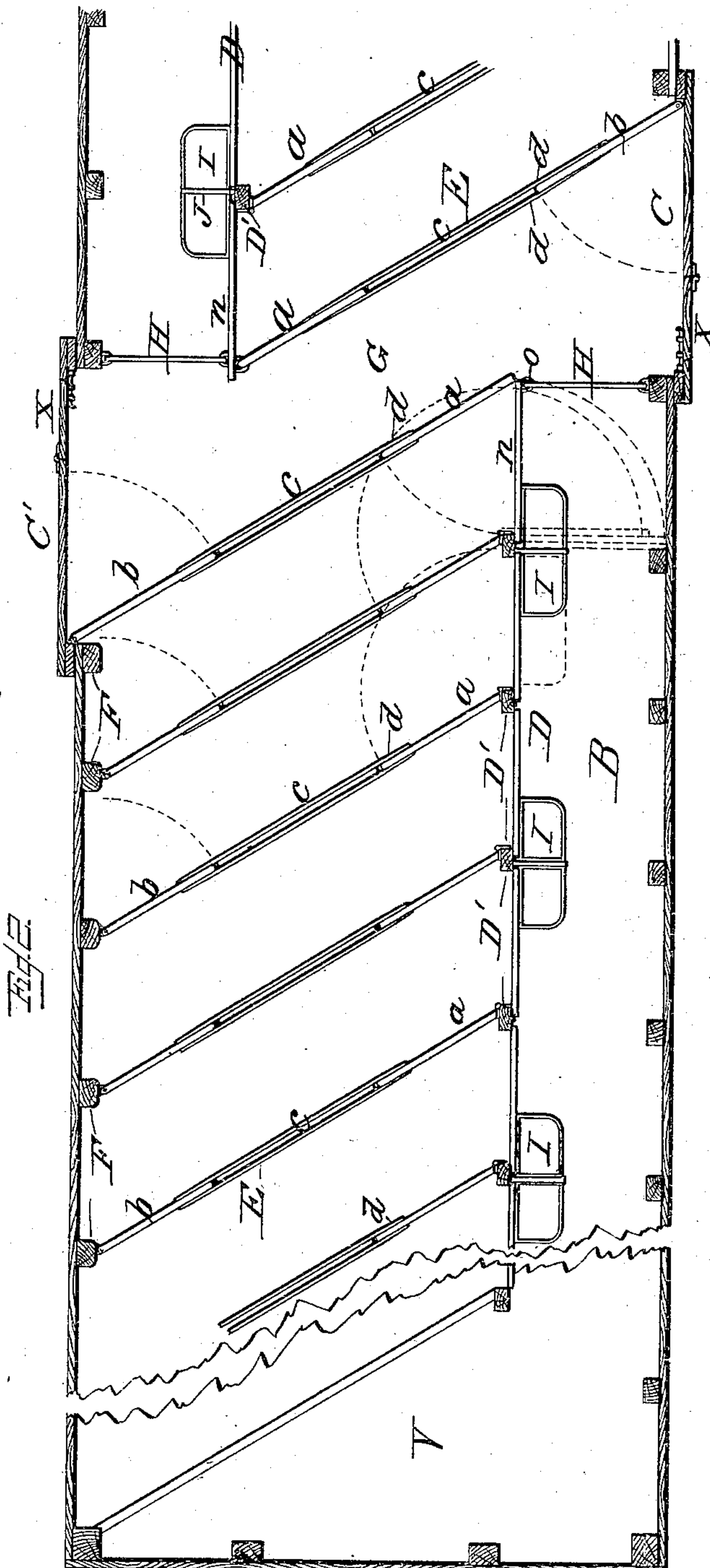
No. 371,928.

Patented Oct. 25, 1887.



Witnesses.

Walter S. Dodge
William H. Shipley



Inventor:

Charles A. Davis
by W. Dodge & Sons,
Attys

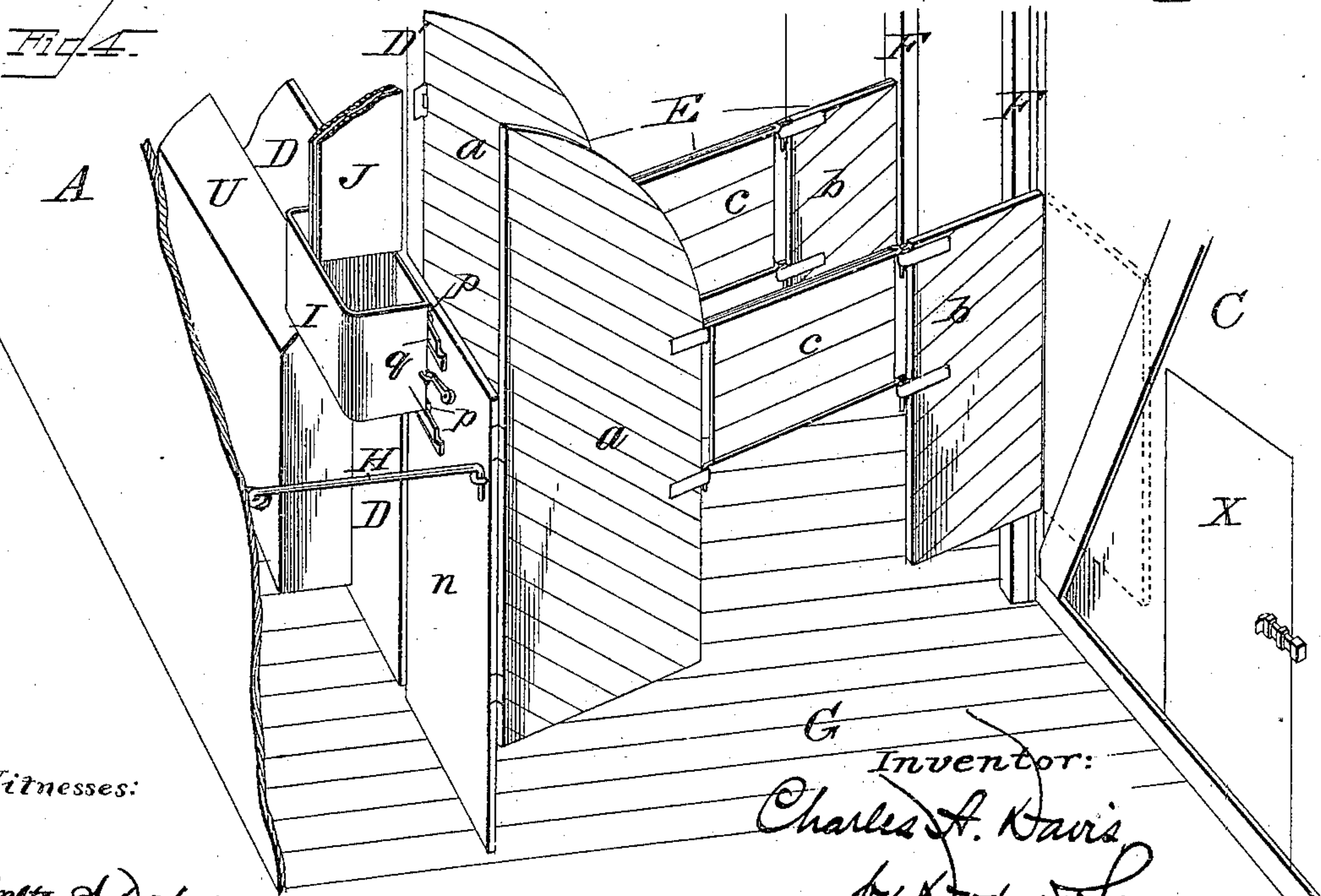
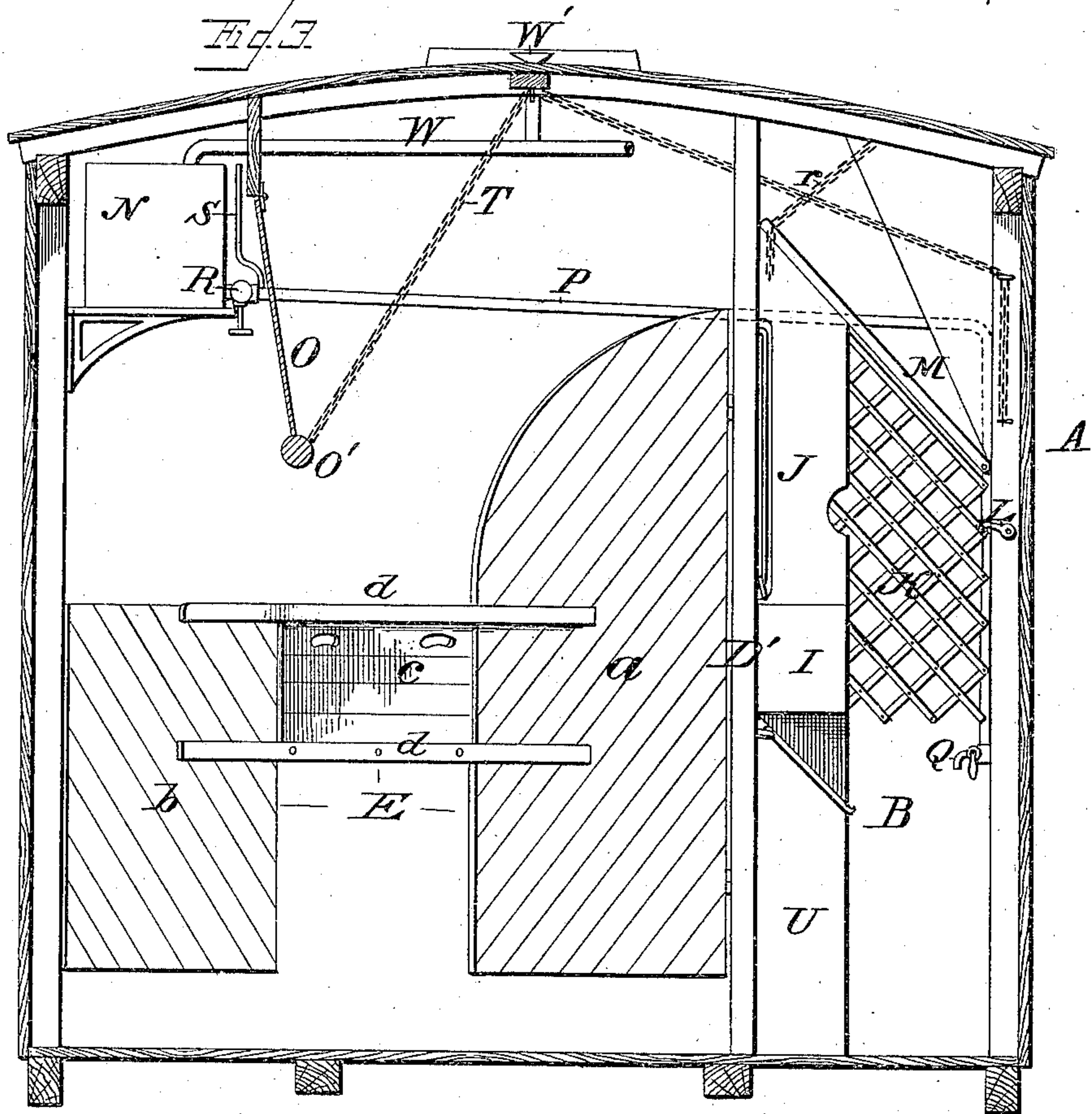
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Inventor:

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by Dodge & Sons,
his Attys.

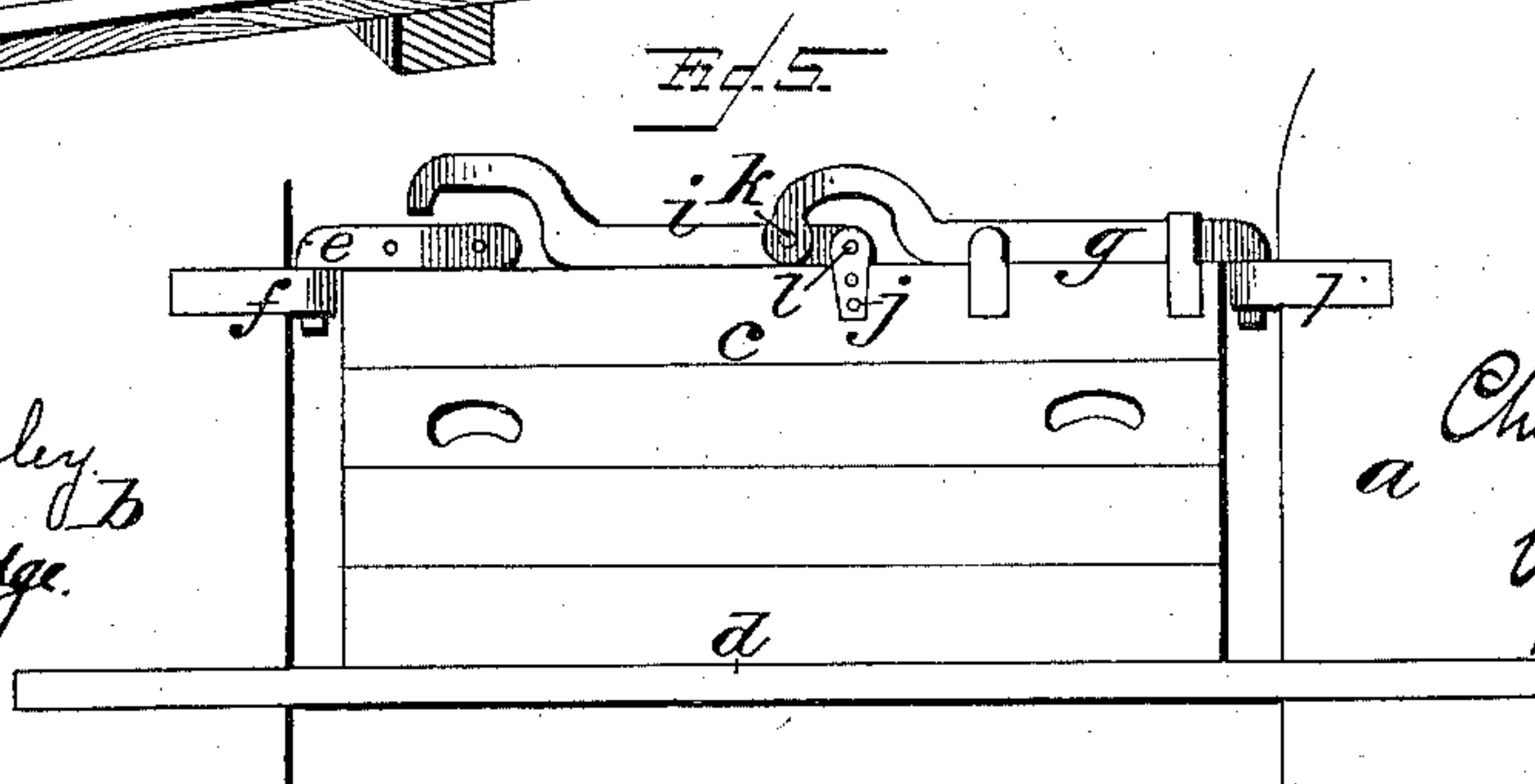
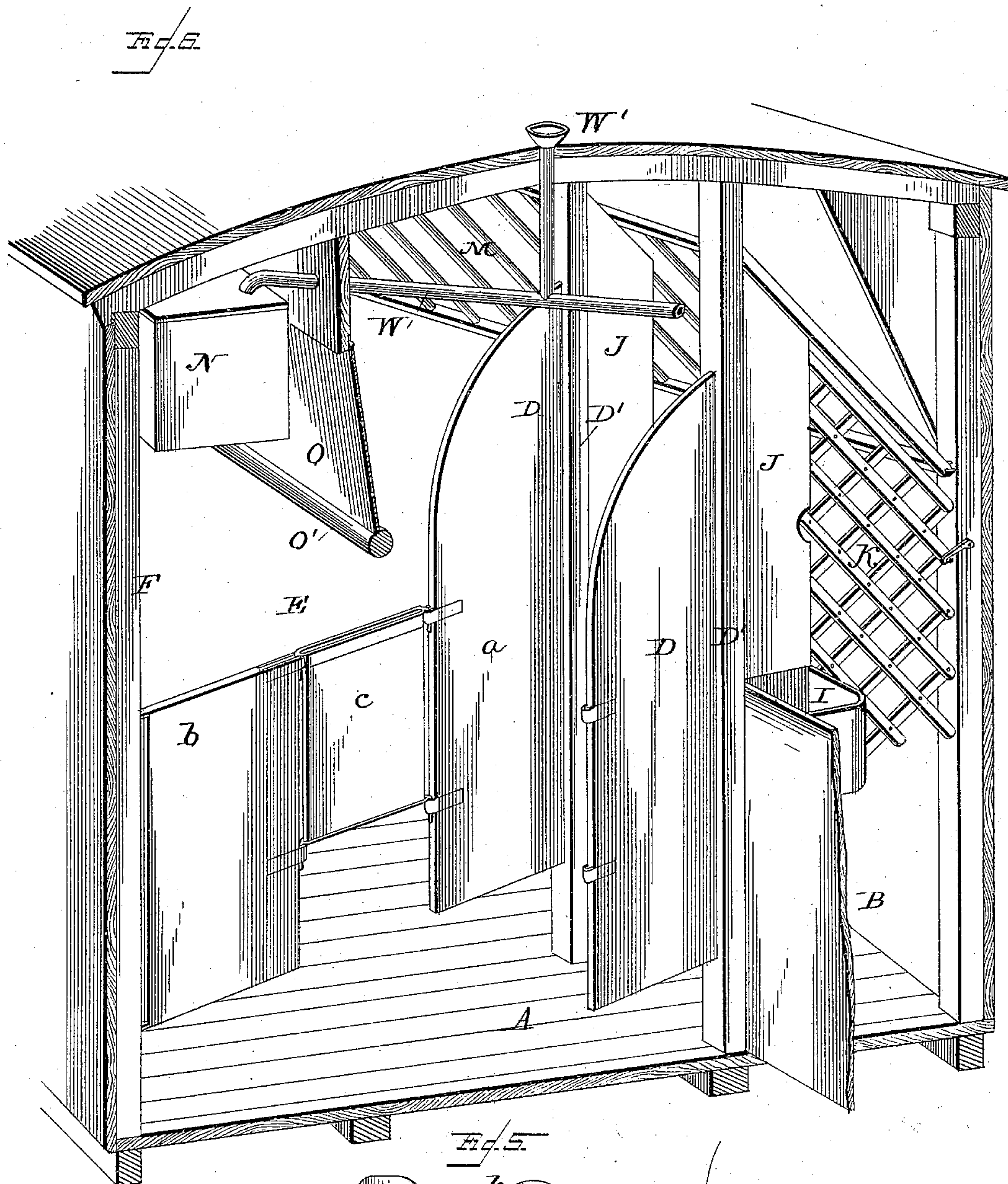
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3 Sheets—Sheet 3.

C. A. DAVIS.
RAILWAY CAR.

No. 371,928.

Patented Oct. 25, 1887.



Witnesses

Arthur Ashley
Matter S. Dodge

Inventor:

Charles A. Davis,
by Rodger Lous,
his Atty

UNITED STATES PATENT OFFICE.

CHARLES A. DAVIS, OF WASHINGTON, DISTRICT OF COLUMBIA.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 371,928, dated October 25, 1887.

Application filed August 30, 1887. Serial No. 248,298. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. DAVIS, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Railway-Cars, of which the following is a specification.

My invention relates to a railway-car especially designed for the transportation of horses; and it consists in a novel construction and arrangement of partitions, whereby I am enabled to carry a large number of horses in a given space conveniently and safely, to provide for readily feeding and watering them, to carry a sufficient quantity of feed for a long journey, and in other respects to lessen the difficulties of transportation and the dangers incident thereto.

In the accompanying drawings, Figure 1 is a horizontal section of a car, showing the arrangement of stalls, doors, &c.; Fig. 2, an enlarged view of a portion of the same, designed to show more clearly the manner of hinging the partitions which separate the stalls; Fig. 3, a transverse vertical section; Fig. 4, a perspective view showing the arrangement of the partition next to the aisle or alley-way at the mid-length of the car; Fig. 5, a sectional perspective view, and Fig. 6 a detail view, of the connecting-section of the partitions.

A indicates the body of the car, which may be made of ordinary dimensions, but which I prefer to make fifty feet in length, in order to carry eighteen horses in each car, that length enabling me to accommodate said number without crowding or inconvenience.

B indicates an aisle or alley extending along one side of the car from the door C of that side to one end, and B' indicates a similar aisle or alley extending from the door C' of the other side to the opposite end. These aisles or alleys are separated from the body or interior of the car by partitions D, of such height as will permit the horses to stand comfortably with their necks above them and their heads in the aisles. They are sustained by posts or uprights D', extending from the floor to the roof of the car, and are permanent structures, designed to remain fixed in position.

The posts D' are arranged at distances apart equal to the intended width of the stalls, and serve to support the hinged front sections, a, of the partitions E, which separate the stalls,

and in like manner the rear sections, b, of the partitions are hinged to posts or uprights F, which support the sides of the car and are spaced to correspond with the posts D'. In some cases it may be found expedient to brace the posts F with iron or steel, which, being thin, will leave space between them, into which the rear sections, b, of the partitions may swing or fold when thrown back to permit the entrance or exit of horses, and also adding somewhat to the length of the stalls. This, however, is a matter of option.

The partitions E are each composed of three parts, the front sections, a, hinged to posts D', the rear sections, b, hinged to posts F, and an intermediate connecting-section, c, which is made removable, and which serves, when in place, to maintain the front and rear sections, a and b, in line, and to prevent the lateral swaying or bulging of the partitions. With this object in view, the middle section, c, is provided on each face with one or more heavy metal straps or bars, d, which either project beyond the ends of the section and lie against opposite faces of the sections a and b, as indicated in Figs. 1, 2, 3, and 4, or are hooked at their ends to enter eyes made fast to the sections a b, as in Figs. 3 and 4.

If it be desired to provide means for drawing the sections a b c tightly together or straining the partition in the direction of its length, so that it shall have no lateral play, the middle section, c, may be furnished with a hook, e, at one end to engage in an eye, f, of the adjoining section, and with a sliding bar, g, having a hooked end projecting from the opposite end of the middle section and adapted to engage in an eye, h, of the section adjoining that end, the sliding bar being jointed to a hand-lever, i, pivoted at one end to section c and serving to move the bar longitudinally in either direction. This will be readily understood upon referring to Fig. 5, in which the hand-lever i is shown pivoted to a plate or block, j, bolted or otherwise secured to section c of the partition and jointed to the sliding bar g in such manner that by raising the hand-lever and moving it toward the hooked end of bar g said bar will be thrown forward beyond the end of section c, and that by moving the hand-lever in the reverse direction the bar will be drawn back. The pivots k and l of the lever and bar

are so located that when the lever is brought to a horizontal position, as in Figs. 3 and 4, they will fall in line with each other and with the eye *h*, and thereby hold the bar against movement until the hand-lever is manually lifted. The sections *a b c* of the partition being thus constructed and furnished, the sections *a* and *b* are swung into alignment and the intermediate section, *c*, applied and made to connect them, as above explained. If only the flat bars or straps *d* be used, lugs *m* will be applied to the faces of the sections *a* and *b*, to limit the descent of the bars. All edges should be rounded to prevent injury to the horses.

At the mid-length of the car an alley-way or passage, *G*, extends from side to side of the car, dividing it into two sections. This passage-way is bounded by the partitions of the first stall of each section, and consequently extends obliquely across the car, as shown in Figs. 1 and 2; and in order that the car-doors *C* and *C'* may come properly opposite the ends of this passage-way they are arranged, as shown in said figures, in positions out of line with each other transversely of the car, or directly opposite the ends of said passage-way.

This arrangement enables the horses to pass straight into or out of said passage-way through the doors and avoids turning, that would otherwise be necessary, and which is always undesirable.

The partitions immediately adjoining the alley-way *G* are constructed somewhat differently from the others, in order that they may be folded back out of the alley-way *G* and out of the way of doors *C C'*. Their arrangement is clearly shown in Figs. 2 and 4, in which the front *n* of the first stall on each side of passage *G* is shown hinged to its post *D'* on the front side thereof—that is, the side facing the longitudinal aisle or passage *B*—and at a distance from the front corner. The outermost edge of the front *n* is designed to swing from its normal position in line with partition *D* to a position at right angles therewith, or across the aisle *B*, and no post is placed at the outer corner of said stall. The forward section, *a*, of each of said partitions is hinged to and moves with the front *n*, and when said front is swung across aisle *B*, as indicated by dotted lines in Fig. 2, the section *a* folds against it, as also indicated by dotted lines. The rear section, *c*, of each of the stalls adjoining the passage *G* is hung to one or the other of the doors *C C'*, and may either be lifted off its hinges or made to swing against or into the face thereof, so that it may be slid back with the door. By thus arranging these partitions they may be quickly and effectually thrown out of the way to give ample space for turning the horses in entering or leaving the car at either side.

To retain and support the fronts *nn* in proper position, I extend a heavy hook or rod, *H*, from the side of the car to the outer corner of each of said fronts and drop its hooked end into an eye or staple, *o*, on the front *n*, thus holding

it securely against movement, yet permitting the attendants to readily enter the aisles *B* by simply lifting the rod or bar. The sections *a* and *b* of the remaining partitions are designed to swing, as indicated by dotted lines, into positions parallel with the partitions *D* and the side walls of the car; but if the sections *a* of the second partition each side of passage *G* remained in such position they would interfere with the clear space secured by folding back the fronts *n* and sections *a* of the first stall each side of said passage. I therefore swing said sections *a* of each of the second partitions from the passage *G* far enough around to lie flat against the previously-folded section *a* of the first partition each side of the passage, as indicated by dotted lines in Fig. 2, thereby securing a large clear space.

The aisles *B B* are designed to permit the passage of attendants in front of the stalls to feed and water the horses or otherwise attend to them, and are also intended to contain troughs for watering or feeding the horses, racks for hay, and bins or boxes for storage of feed.

The troughs *I* are made double and are placed in front of the posts *D'*, projecting equally to either side thereof, with the exception of those for the stall at each end of the car, the troughs of which are single. From the upper side of each trough a double-walled box or guard, *J*, rises sufficiently high to prevent the horses from getting their heads over it, these boxes projecting the same distance from the fronts of the stalls as do the troughs.

K indicates a slatted partition, made on the "lazy-tongs" principle, and thus adapted to fold closely together or to be drawn out, as required. One such partition is hung to each alternate post *D'* and arranged to fold into or to be drawn out of the box or casing *J* thereof, to open or close the aisle *B* between stalls. By this arrangement I am enabled to open the aisle for passage of attendants, or to close it to prevent the horses from biting one another or eating one another's food. The slatted partitions, which will advisably be of metal, will be held in their extended condition by means of hooks *L* or other simple fastenings. They will be folded back, except at night or while feeding.

The partitions *K* of all the stalls, except the first one each side of the passage-way *G*, are made long enough to extend down between and to the bottom of the trough *I* when extended; but those of said first stalls must, when folded, reach only to a point just above the troughs. The reason of this is that the troughs of these stalls are required to slide or move endwise to clear the fronts *n* of said stalls, in order that said fronts may swing across the aisles *B*. To permit such sliding, these troughs are formed with ears *p*, Fig. 4, which hang upon guide-bars *q*, divided at the lines of the hinges on which the fronts *n* swing, and secured, one part to the fixed partition *B* and another to the front *n*. When fronts

are to be swung across the aisles, the troughs overlapping them are slid back clear of them, and after the fronts are restored to position the troughs are moved back.

Directly in front of the troughs I and above them are hay-racks M, the fronts of which are hinged at their lower edges to permit hay to be readily placed within or behind them, after which they may be pressed back and held at any desired angle by chains *r* or other fastenings. In this way I am enabled to compress the hay and to pack it into small compass, thus preventing it from being too freely pulled out by the horses and wasted.

N indicates a water-tank, of which there are two, one for each series of stalls. These tanks extend lengthwise of the car, near the roof and the outer wall thereof, but sufficiently removed therefrom to leave an air-space behind and above each tank.

O indicates an apron or guard, which may be of wood, veneer board, straw-board, sheet metal, or any other light material, suspended from the upper part of the car in front of the water-tank, one in front of each. The guard or apron, or the support from which it is suspended, should reach to the roof of the car, so that the air above the tank shall be confined within the space between the roof, the outer wall of the car, and the apron, and prevented from circulating through the rest of the car. The tanks being over the rear ends of the stalls, the heat and gases arising from the manure and much of the heat given off by the bodies of the animals will ascend to and be confined within the space immediately surrounding the tanks, and thus prevent the water from freezing in cold weather.

From each tank a pipe, P, extends across the end of the car to the aisle B at the opposite side, and thence down to a convenient level, where it terminates in a faucet, Q, which enables the attendant to draw water from the tanks at a convenient point for delivering it to the horses. The water will be carried in buckets to the horses, it having been found that where it is allowed to stand for a considerable time in troughs it becomes more or less foul, and the horses will not drink it. Each pipe P is further furnished, close to the tank with which it connects, with a valve, R, and just in advance of said valve with a vent-pipe, S, extending to the top of the tank. The purpose of these is to enable the attendant to discharge all the water from the pipe to prevent freezing therein, which is done by closing valve R and opening valve Q, the air entering through vent S and allowing the water to run off.

The apron or guard O is provided at its lower edge with a rounded bar or beam, O', which, when the apron is in its normal or lower position, extends across the rumps of the horses and prevents them from kicking. Such a swinging beam or bar has long been applied to horse-stalls in stables for the same purpose, and straps and bands have likewise

been so used for many years; hence no claim is made thereto, except in connection with the apron. The apron and the kicking-bar may be continuous, or in separate lengths or sections, one for each stall, as deemed advisable.

From the bar O' a rope, chain, or band, T, passes over pulleys or through guides to the farther side of the car, and hangs down in aisle B within convenient reach of the attendant. By drawing down upon the rope T the kicking-bar and apron may be raised up out of the way to facilitate the entrance and exit of the horses, the chain or band being made fast upon a hook or cleat at the side of the car.

U indicates a chest or bin extending along the aisle B, beneath the troughs I, to contain grain or other feed.

Owing to the oblique position of the partitions, a triangular space, V, is left at each end of the car, which may be occupied by attendants or used for storage of hay or other matters.

The tanks are connected by a pipe, W, from which rises a funnel, W', through which water may be supplied to both tanks at once. The funnel should be covered with a cap to exclude dust and cinders, except while filling the tanks.

It will be observed that the stalls are so arranged that all the horses stand with their left sides toward the passage G, and this is an important feature, because it is from this side that an attendant naturally approaches a horse, and in a short time the horses become so accustomed to being approached from this side that they become restless and fractious if the attendant go to the other side instead. To attain this result the aisle B should be at the left-hand side of the car looking from the middle toward the end, as shown in the drawings.

In loading the car the sections *c* of all the partitions are removed and the sections *a b* swung toward the middle passage, G, the partitions immediately next to the passage being folded across the aisles B and into the doors O O', (or unhooked from the latter;) then the horse is led into the end stall and retained therein by swinging out the sections *a b* and applying the section *c* of the partition which separates the end stall from the next, and so on throughout both series, the hooks or rods being put up after the last partition is in place.

Under my construction and arrangement I am enabled to lead all the horses into or out of the car at either side thereof, instead of being required to back the last horse in or the first one out, as is necessary with some of the cars now in use. In this way I avoid much of the trouble and danger incident to the use of certain cars heretofore employed.

As the main outer doors of the car cannot be opened while the sections *b* of the partitions are swung out for use, I provide each of said main doors with a supplemental door, X, of sufficient size to permit an attendant to readily enter or leave the car, this smaller door being secured in any convenient manner.

The horses are haltered, and the halters are carried in pairs to alternate posts—that is, to the posts to which the partitions K are applied. These partitions prevent the horses from reaching their heads into the adjoining stall at one side, and the halters are made short enough to prevent their reaching into the adjoining stall at the other side; hence the necessity for partitions K across the aisles B between all the stalls is avoided, and their location at alternate posts is made sufficient.

Having thus described my invention, what I claim is—

1. In a car, a series of partitions, each consisting of a front and a rear hinged section, and an intermediate detachable section serving to connect the front and rear sections, substantially as set forth.

2. In combination with sections *a* and *b* of the partitions E, provided with eyes or staples, intermediate sections, *c*, provided with hooks to enter the eyes, substantially as shown and described.

3. In combination with partition-sections *a* and *b*, provided with eyes *f* and *h*, intermediate section, *c*, provided with a hook to enter eye *f*, and with a sliding bar, *g*, having a hooked end to enter eye *h*, and a lever, *i*, jointed to said sliding bar and pivoted to section *c*, substantially as described and shown, whereby the bar *g* may be moved longitudinally and made to draw the partition-sections firmly together or release them, as required.

4. In a car having a transverse passage-way, as G, a partition at either side of said passage-way consisting of parts *a*, *b*, and *c*, the part *a* being hinged to a stall-front, *n*, which is in turn hinged at its inner edge to a post, *D'*, whereby the partition-section *a* is adapted to fold against the front *n*, and the two to swing away from passage-way G.

5. In a car, the combination of a series of stalls, a water-tank in the upper part of the car over the rear ends of the stalls, and a guard or apron in front of the tank, substantially as shown, and for the purpose set forth.

6. In a car, the combination of a series of stalls, a water-tank in the upper part of the car over the rear ends of the stalls, an air-space between the tank and the side and top of the car, and a guard or apron in front of the tank, substantially as shown, and for the purpose set forth.

7. In a car, the combination of a series of stalls, a water-tank above the rear ends thereof, an apron or guard suspended from the top of the car in front of the tank, and a beam or bar secured to the lower edge of the apron or guard and serving as a kicking-bar, as explained.

8. In combination with folding stall-front *n*, a trough mounted and arranged to move longitudinally upon guides on the front thereof, whereby it may be brought into position for use or moved back to permit the stall-front to swing or fold back.

9. In combination with partitions E and aisle B, troughs I, located in said aisle, and extensible partitions K, adapted to be stretched across the aisle to prevent the horses from reaching the troughs of other stalls.

10. In a car, the combination, with the outer door thereof, of a stall-partition having one of its sections hung or attached to said outer door, substantially as and for the purpose set forth.

In witness whereof I hereunto set my hand in the presence of two witnesses.

CHARLES A. DAVIS.

Witnesses:

WALTER S. DODGE,
ANDREW PARKER.