(No Model.)

C. A. DAVIS.

RAILWAY CAR.

No. 383,712. Patented May 29, 1888.

Fig. 1.

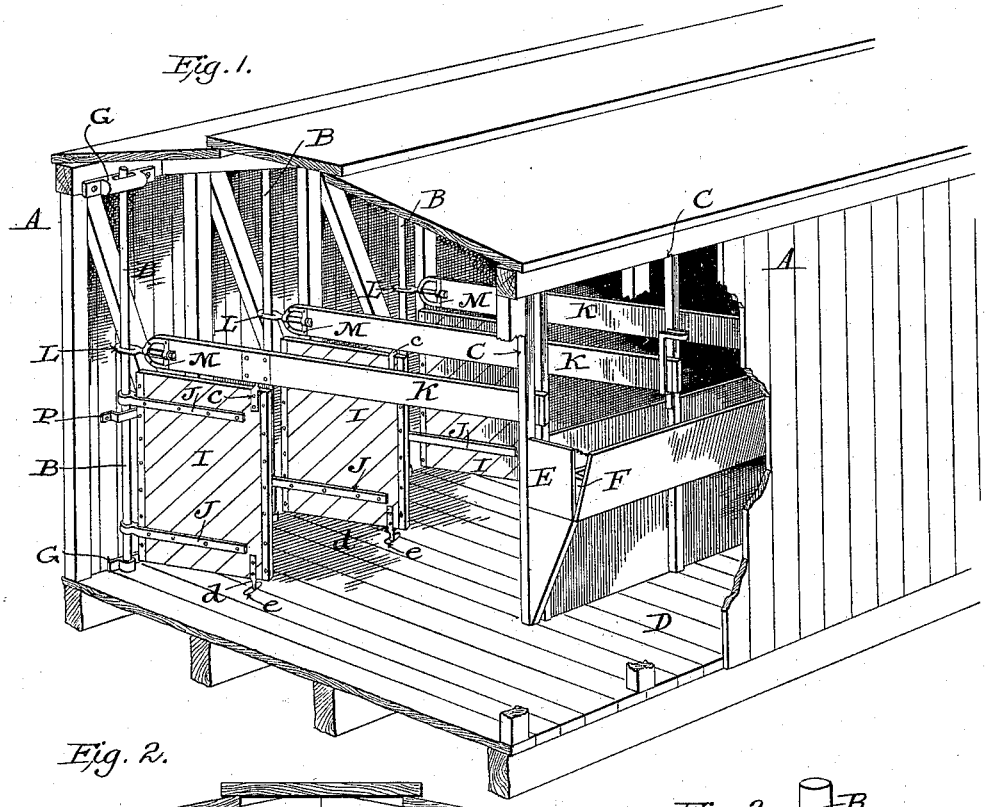


Fig. 2.

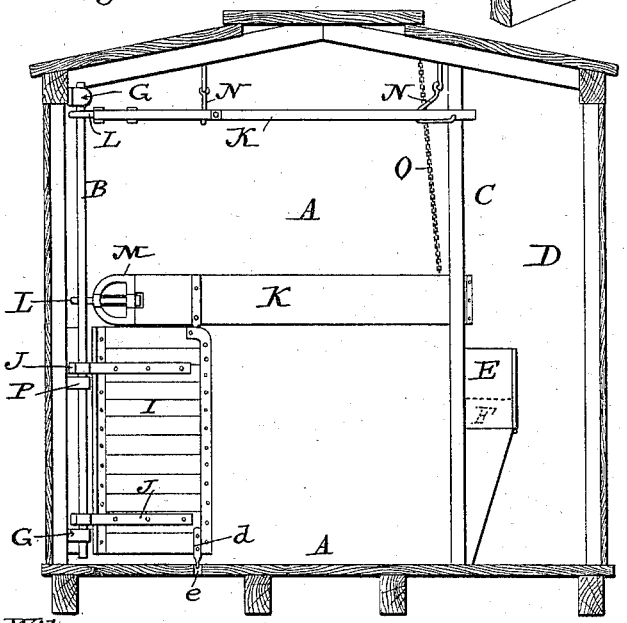


Fig. 3.

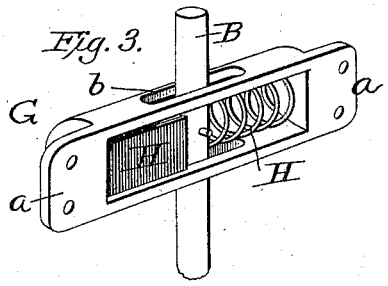
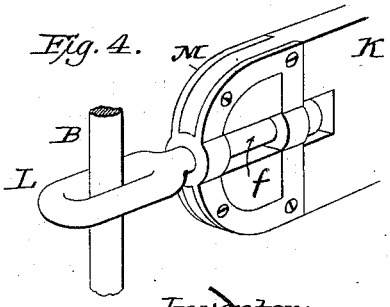


Fig. 4.



Witnesses:
James F. McKamey.
Horace A. Dodge.

Inventor:
Charles A. Davis,
by Dodger Sons,
his Attys.

UNITED STATES PATENT OFFICE.

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

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 383,712, dated May 29, 1888.

Application filed February 21, 1888. Serial No. 264,740. (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 railway-cars for the transportation of live stock—more particularly horses—and is designed as an improvement upon the cars for which Letters Patent were granted to me dated and numbered, respectively, October 25, 1887, No. 371,928, and January 3, 1888, No. 375,989.

The improvements relate to the partitions by which the car is divided into separate stalls or compartments, and are designed to simplify the construction and facilitate the handling of said partitions, and to give to them an elasticity which will materially add to their efficiency and lessen the danger of breakage or injury.

In its general plan and arrangement the car may, and preferably will be, similar to those described in my prior patents above mentioned, though it is to be understood that I do not restrict my claims upon the partition and its attendant parts to any particular plan or kind of car, proposing to use it in any and all places where it may be found serviceable or desirable.

Referring to the accompanying drawings, Figure 1 is a perspective view of a portion of a car, looking from one end toward the middle, showing partitions constructed in accordance with my present invention as they appear when the animals are in their stalls; Fig. 2, a cross-section of a car, showing one of the partitions folded out of the way and another in position; Fig. 3, a perspective view of a yielding support provided for the hinge-rod; Fig. 4, a perspective view of the swivel with which one end of the main partition-plank is furnished.

In constructing cars of this class it is desirable to avoid, as far as possible, complication of its movable parts, to insure due strength thereof, and to provide for a certain amount of elasticity or play of the stall-partitions in order to relieve them of severe shock or sudden strain, and for the purposes also of relieving the animals of such shock and compensating in a measure for variations in size of different animals. These results I attain very satisfactorily by the construction which I will now explain.

A indicates the body of a car, of ordinary construction for such use, provided at one end with a series of vertical rods, B, of cylindrical form, arranged at suitable distances apart, close to the side wall of the car, and extending from a point at or near the floor of the car to a point at or near the roof or ceiling thereof, as shown in Figs. 1 and 2.

At a suitable distance from the opposite side of the car, usually from two to two and one-half feet for horse-cars, I arrange a series of vertical posts or standards, C, which may be of wood or metal, and which are arranged in pairs, with a space of from one to two inches, more or less, between them, there being one pair of such posts or standards for each vertical rod B. By placing these posts C at a suitable distance away from the side wall of the car an aisle or alley, D, is formed, enabling the attendant to pass readily past the stalls from end to end of the series, and affording space for a manger, E, along the fronts of said stalls, as explained in my former patents.

In the manger I propose to place, in front of each stall, a box, F, for feed or water, and for economy of space I prefer to hinge the manger front, (which may be in one continuous length or in sections,) so that it may fold up away from the middle of the aisle. The vertical rods B are sustained at their upper and lower ends by supporting blocks, brackets, or staples G, and may be held rigidly against side play in said supports or arranged to move a limited distance laterally in either or both of said supports.

In practice I prefer to make the lower end stationary and to provide for a limited lateral play of the upper end. To provide for such lateral play, I employ, preferably, a guide block or casting, G, of the form shown in Fig. 3, consisting of a hollow or box-like casting, provided with perforated ears *a* for attachment to the wall or timbers of the car, and having a slot or slots, *b*, through which the end of the rod passes and in which it plays, or merely a hole for the rod, if side play is not desired. If the lower end of the rod be held rigidly in position, the elasticity of the rod will permit its upper end to move the length of the guide

slot or slots, and will serve to hold its upper end normally in a medial position; but if the lower end be not thus rigidly held I prefer to place at each side of the rod, within the block or casting G, a spring, H, of metal, rubber, or other substance, which shall serve to hold the rod normally at the mid-length of the slot. This block or casting G, with or without springs, may be used at either end or at both ends of the rod, as deemed expedient.

I indicates a swinging partition section provided with hinge straps or irons J, which encircle the rod B, there being one such section carried by each rod. This section I is furnished at its upper end, near its front edge, with a pin, *c*, and at its lower end, near its front edge, with a pin, *d*, as shown in Figs. 1 and 2, their purpose being to hold the section I against side play or to limit such play. The pin *d* at the lower end enters a socket or a slot, *e*, in the floor of the car, and the pin *c* at the upper end enters a socket in a main partition board or section, K, which extends from rod B to and between a pair of the posts or standards C, said board or section being sustained at one end by attachment to the rod B and extending above and in line with section I, upon which its rear end rests, as shown.

The board K should be of strong tough wood—as, for instance, oak or hickory—and of such width and thickness as to give due strength with advisably a considerable degree of elasticity under the side pressure or strain to which the partitions will be subjected in practical use. One end of partition-board K is furnished with a metal loop or eye-piece, L, having an elongated opening to receive the rod B and to permit the raising or lowering of either end of the board independently of the other. This eye-piece may be rigidly affixed to the board, or be formed with a cylindrical shank or stem, *f*, and said stem be swiveled in a suitable metallic plate or block, M, bolted or otherwise secured to the board K. The adoption of one or the other of these modes of attachment will depend upon or will determine the manner of stowing away the board when not in use, said board being in either case raised to the top of the car, and there sustained by suitable hooks or hangers, N, or equivalent means, and held either in a vertical or a horizontal plane, as the swivel or the rigid connection may permit or require.

As the height of the car is limited, I prefer to employ the swivel-connection.

The descent of the rear end of the board K is limited by the rear section, I, upon which it rests, and its forward end may rest upon the manger or be suspended from the roof of the car by a chain, rope, or band, O, which is advisably used in any event, to prevent the end of the board falling below its normal level, even when withdrawn from between the posts or standards C C.

To prevent undue lateral movement of the rods B by reason of their own elasticity, I provide for each, at a point just below the upper hinge-strap of its partition-section I, a metallic strap or staple, P, the ends of which are secured to the wall or timbers of the car and the body of which passes in front or outside of the rod, as shown in Fig. 1.

The parts being thus constructed and arranged, the manipulation of the partitions is as follows, it being of course understood that they are set in position one after another as the horses are successively placed in the spaces allotted to them, and that the same explanation applies to all: When ready for use, the car is open and unobstructed from end to end, except as to the posts C C and the mangers, the partition-sections I being at such time folded or swung back against the side of the car and the partition-boards K raised to the top of the car and placed upon the hooks or hangers. A horse is now led into the car, carried to one end, and haltered or tied. The section I of the partition which is to separate said horse from the next is then swung outward until its lower pin, *d*, drops into the hole or notch *e* in the floor. The partition-board K is then lifted off or released from the hangers N and lowered, its rear end being dropped farther than its forward end in order that the latter may be passed between the posts C C, provided to receive and sustain it. The end is then inserted between the posts, and, finally, the board K is lowered to a horizontal position, its rear end resting upon the rear section I, with which it is connected by the pin *c* of said section entering the socket in the board K, and its forward end resting upon the manger or being sustained by the chain or band, as the case may be, and being held against upward movement by any suitable form of catch or fastening.

The socket made in board K to receive pin *c* will of course be bushed with metal, or otherwise suitably protected against wear, it being preferred to apply a piece of plate-iron, Q, to the lower edge and sides of said board, extending the same somewhat each way from the socket and bolting or riveting through the board and plate from side to side to guard against any weakening of the board by the socket. The arrangement may obviously be reversed, the pin being carried by the board and the socket being formed in section I of the partition, as in Fig. 2, and this latter plan is perhaps preferable. One partition after another is thus made up until all are completed and the car is ready for travel. The boards K being free at one end, as to longitudinal movement, it will be seen that they may yield laterally to whatever extent allowed by the elasticity of the board K or the rod B, or to the extent permitted by the guide-blocks G, the rear sections I moving in unison with the upper boards or sections K. This elasticity and freedom of limited movement causes the partitions to take up gradually the pressure or force brought against them by the movements of the animals and in the sudden stopping and starting of the car, and greatly lessens

the danger of breakage thereof and reduces the liability of injury to the horses. It also automatically provides for slight difference in size of the animals.

It will be seen that by arranging the rods B to turn in the blocks G the necessity for using cylindrical rods would be removed; but I prefer them because of their cheapness, strength, and general suitability. Tubular rods may be used to advantage, combining greater strength with lightness. The placing of the guide straps or staples P below instead of above the upper hinge strap of section I leaves said section free to be lifted to a considerable height from the floor, as is necessary in order to clear the accumulation of manure in unloading or in cleaning out the car after an extended trip, and at the same time the necessary support is afforded. The rear section I will ordinarily extend about one-third across the stall-space, but may be wider or narrower, as found expedient.

It is not absolutely essential that the rear section be hinged; but it is desirable that it be so.

The partition-boards K may extend a greater or less distance beyond the posts C C, and their ends may be cut off at an angle, if necessary, to facilitate their removal from between the posts.

I am aware that a jointed partition designed to yield laterally is old, and I make no claim thereto; but I am not aware that a continuous partition has ever been provided with a yielding end support, and thereby adapted to move laterally without the aid of joints.

My construction is simple, cheap, durable, and efficient.

It is of course apparent that instead of two posts C a single post with a side bar or guide may be used, and this I deem as falling within my invention and the equivalent of the two posts.

Having thus described my invention, what I claim is—

1. In a car, a partition consisting of a rear section extending from the rear wall of the stall-space partially across said space and adapted to fold against said rear wall, and an independently-removable continuous section above and in line with said rear section, adapted to be raised vertically to the upper part of the car.

2. In a car, the combination of a partition and a laterally-yielding support for the end of said partition, whereby it is adapted to yield laterally.

3. In a car, a partition consisting of a hinged rear section extending partially across the stall-space, and an upper section extending entirely across said space, the two sections being provided with connecting devices, substantially as described and shown, whereby they may be connected and caused to act in unison in resisting side pressure or independently stowed away.

4. In combination with hinged partition-section I and partition board or section K, a pin extending from one into a socket in the other and serving to connect the two while in use, but to permit their ready separation.

5. In a car, the combination of a rear partition-section hinged to swing horizontally against a wall of the car, a partition board or section immediately above and in line with the rear section, extending entirely across the space to be partitioned and free to be raised and lowered at both ends, a fixed support to which one end of the partition-board or upper section is attached, and posts or supports between which the opposite end of said board is passed.

6. In a car, the combination of a vertical rod at one side and posts or supports at the opposite side of the space to be partitioned, a rear partition-section hinged to said rod and arranged to swing laterally, and a partition board or section above and in line with the rear section, provided at one end with an eye to encircle the rod and having its other end extended between and sustained by two of the posts or supports.

7. In a car, the combination of a vertical rod at one side of the space to be partitioned, posts or supports at the opposite side thereof, and a partition-board provided at one end with a swivel-eye encircling the rod, whereby the board is rendered capable of being raised and lowered and turned about its longitudinal axis from a vertical to a horizontal plane, substantially as and for the purpose set forth.

8. In combination with rod B and posts C C, partition-board K, provided with a swivel-eye to encircle the rod, and a hanger or support in the upper part of the car to receive and support the partition-board.

9. In a car, the combination of a partition and an upright rod or support therefor capable of movement transversely to the length of the stall.

10. In a car, the combination of a partition, an upright or support therefor capable of movement transversely to the length of the partition, a guide or guides to limit said movement, and springs bearing against the movable support and serving to restore it to its normal position.

11. In a car, the combination of vertical rod B, posts C C, partition-section I, hinged to swing about said rod, and partition-board K, having an eye or loop to encircle the rod and extending between the posts C C.

12. In combination with rod B and with a partition supported thereby, a guide, P, to hold the rod in position and limit its lateral movement.

13. In combination with a vertical rod, B, and a partition hinged thereto, slotted support G, for said rod, provided with springs H, substantially as described and shown.

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

CHARLES A. DAVIS.

Witnesses:
ANDREW PARKER,
WILLIAM W. DODGE.