

G. THOMPSON.
SECTIONAL DOOR FOR CARS.
APPLICATION FILED DEC. 7, 1912.

1,062,057.

Patented May 20, 1913.

2 SHEETS—SHEET 1.

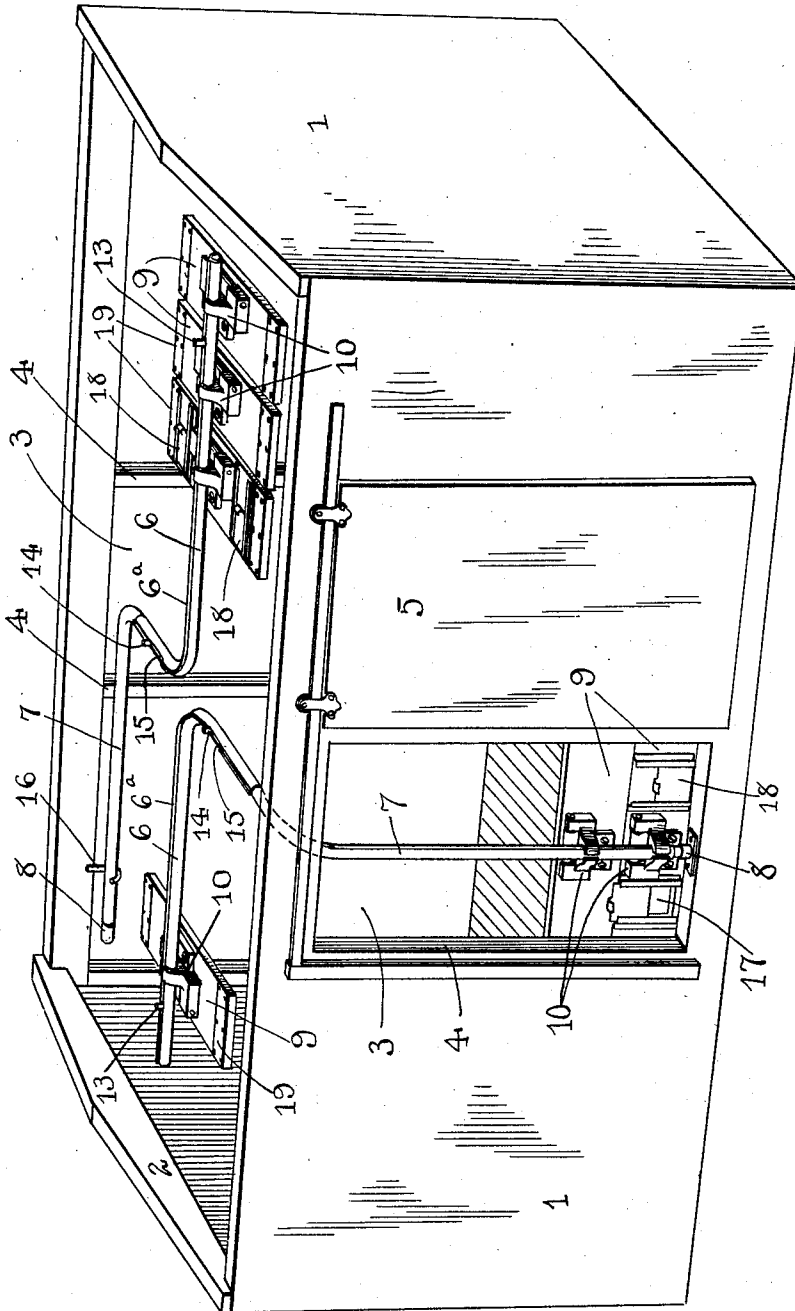


Fig. 1.

WITNESSES
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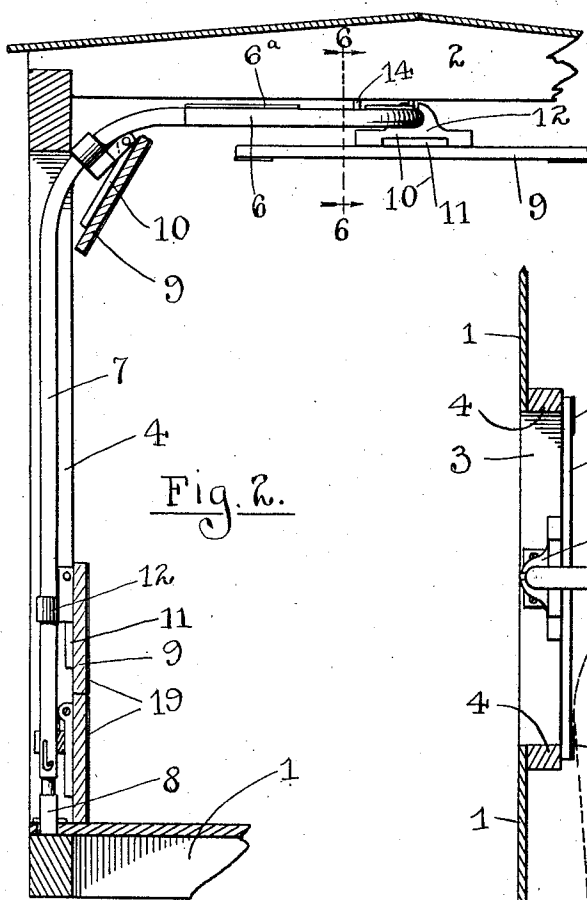


Fig. 2.

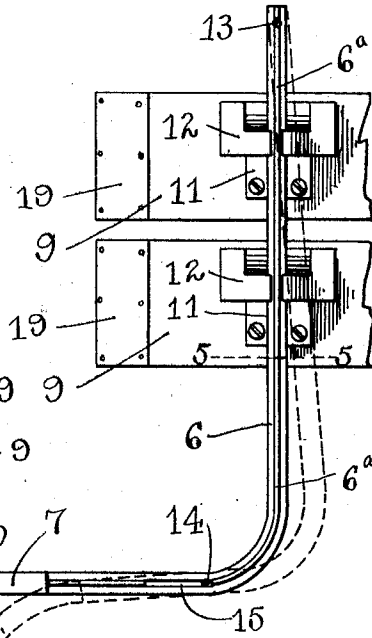


Fig. 3.

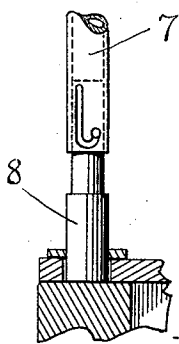


Fig. 4.

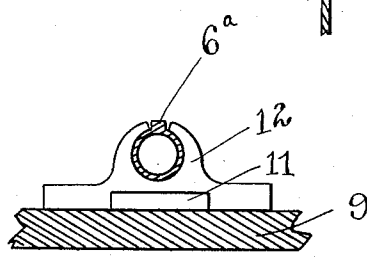


Fig. 5.

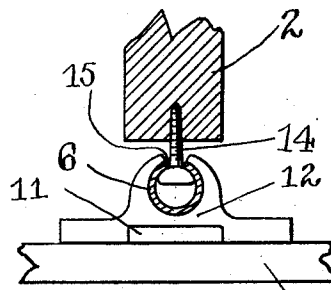


Fig. 6.

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UNITED STATES PATENT OFFICE.

GEORGE THOMPSON, OF GRAND RAPIDS, MICHIGAN.

SECTIONAL DOOR FOR CARS.

1,062,057.

Specification of Letters Patent.

Patented May 20, 1913.

Application filed December 7, 1912. Serial No. 735,401.

To all whom it may concern:

Be it known that I, GEORGE THOMPSON, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Sectional Doors for Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in car doors and more particularly to sectional doors for box cars adapted to contain grain and the like and its object is to provide a device which may be easily attached to any ordinary box car and which may be easily and quickly put into operation; to provide means for suspending the door sections in an out of the way place so that they will not interfere with the use of the car for other purposes; and to provide the device with various new and useful features as hereinafter more fully described and particularly pointed out in the claims.

In using an ordinary box car for transporting grain, it is impossible to use the ordinary door which is provided as the grain must be run in either through a spout or carried in by some other means through the door opening and in order to partially close the opening to retain the grain within the car it has been common practice to board up a portion of the opening, nailing the boards to the door frame to hold them in place. When the car was emptied the lower board was first chopped away to allow the grain to run out and away from the upper boards after which they would be knocked loose. In doing this they were generally split and broken to such an extent that it would be impossible to use them a second time. This method was exceedingly wasteful and also disfigured the car and necessitated having a supply of lumber on hand to board up the openings when filling the car.

My invention overcomes these various objections and consists essentially of an upright bar placed in the middle of the doorway and curved inward at its upper end, terminating in an overhead track which is supported from the rafters of the car, and a series of door sections are suspended by hangers from this track, said hangers being adapted to traverse the track and the up-

right members to carry the door sections into position to close the doorway. They are retained in this position both by the upright member and by the pressure of the grain from within, after the car has been loaded, which holds them firmly against the door frame. These door sections when not in use are suspended on the overhead track and the upright members are adapted to be swung upward and suspended from the rafters of the car where they will be out of the way when the car is used for other purposes.

The device is provided with various other new and useful features of constructions and arrangement as will more fully appear by reference to the accompanying drawings in which:

Figure 1 is a perspective view of a box car body with the roof removed, showing the sectional door in operative position. Fig. 2 is a transverse sectional elevation of a portion of the car showing the device in operative position. Fig. 3 is a plan view of the device as shown in Fig. 2. Fig. 4 is a detail of the lower end of the upright member. Fig. 5 is a cross section on the line 5—5 of Fig. 3; and Fig. 6 is a cross section on the line 6—6 of Fig. 2.

Like numbers refer to like parts in all of the figures.

Doorways 3 are centrally located on each side of the car, surrounded by door frames 4 and provided with ordinary doors 5 which are slidable on the exterior of the car.

Overhead tracks 6, preferably tubular in cross section, are suspended from the rafters 2 near the roof of the car and extend longitudinally of the car from the opposite ends toward the center where they curve outward and thence extend transversely of the car in a direct line with the center of the doorway. These tracks terminate a short distance from the sides of the car and the upper curved ends of upright members 7 are rotatably connected thereto. These upright members 7 when in operative position are centrally located within the door frames and their lower ends are provided with extensible foot members 8 which enter recesses in the door sills to hold them in place.

The door sections 9, which are long enough to span the doorway opening and overlap the door frame, and of any convenient height, are attached to hangers 10, which hangers traverse the overhead track 6 and the upright member 7 and suspend the door

sections near the roof of the car when they are not in use to hold them in operative position across the doorway when in use. Each hanger 10 consists of a hinge plate 11 to which the door section is attached and which is pivotally connected to a yoke member 12 which traverses the overhead track 6 and the upright member 7. The yoke jaws partially surround the track and upright member and have their ends spaced apart to enable them to pass the studs on which the track member is suspended. The door sections are enabled to pass the curve in the upper end of the upright member 7 which has a comparatively short radius by virtue of the pivoted connection of the two portions of the hangers 10 as shown in Fig. 2. The upper side of the track 6 is provided with a raised portion 6^a which extends throughout its entire length and lies between the ends of the yoke jaws. This raised portion on the track prevents the rotation of the hangers and keeps the door sections from swinging or tipping to a vertical position when they are hanging from the track.

The overhead track is suspended near one end by a stud 13 which extends downward from one of the rafters of the car and the track is pivoted upon this stud to swing horizontally. The opposite end of the track, which extends to opposite the doorway, is supported by a stud 14 which passes through a slot 15 in the transverse portion of the track. The lower end of the stud 14 is provided with a T head which slides within the track and the stud is adapted to traverse the slot 15. This construction allows the forward end of the track which carries the upright member 7, to be moved inward carrying the upright member out of the door way of the car after the lower end thereof has been released. In order to release the lower end of the upright member 7, the foot 8 may be withdrawn from the recess in the door sill. This foot member is provided with any convenient form of catch to hold it in its extended position within the recess, a bayonet lock being shown as being the most effective and simple style of device. After the upright member has been released and moved inward out of the door frame, its lower end may then be swung upward and suspended close to the roof of the car by means of a hook 16, which projects downward from one of the rafters. This position is shown by broken lines in Fig. 3.

The lower door sections are provided with openings 17 and slidable closure 18 therefor. The object of these openings being to allow the grain next to the door to run off in emptying the car. The ends of the door sections 9 are preferably protected by metallic plates 19 to prevent them being nailed to the door

frame, this being entirely unnecessary as the pressure of the grain will hold them securely in place.

In using this device the upright member 7 is placed in its operative position extending vertically within the door frame and having its foot member extending into the recess in the door sill. The door sections 9 which are suspended upon the overhead track 6 are then moved forward along the track and over the curve of the upright member into operative position across the doorway where they engage the inner sides of the door frame. The grain is then run into the car and completely fills the lower portion thereof, pressing against the door sections and holding them firmly in place. The usual sliding doors 5 on the outside of the car may then be closed as an extra protection. In emptying the car the first operation is to raise the slidable closures 18 from the opening 17 which allows the grain adjacent to the door sections to run out, thus relieving the pressure against them, after which they may be readily raised and moved along the overhead track where they will remain suspended and out of the way. The foot member 8 is then raised from the recess in the door sill and the front end of the track moved inward which removes the upright member from the doorway, after which its lower end may be swung upward and suspended upon the hook 16.

It is obvious that this invention affords a device which may be easily adapted to any ordinary box car and which will be thoroughly effective in its operation. It enables the box car to be used for ordinary purposes if so desired, but at the same time provides a sectional grain door which is available at all times for immediate use.

What I claim is:

1. The combination with a box car of a track extending horizontally near the roof of the car, an upright member movably connected to the track and extending vertically across the doorway, and door sections mounted traversable on the track and upright member.

2. The combination with a box car of a track located near the roof thereof, said track being pivotally supported at one end and movable transversely of the car at its other end, an upright member having its upper end curved to join the track and rotatably attached thereto, said upright member being adapted to extend vertically across the doorway or to be raised to a horizontal position, means for retaining the upright member in either of its positions and door sections traversable on the track and upright member.

3. The combination with a box car of an overhead tubular track suspended from the roof of the car, a tubular upright member

extending vertically across the doorway and curved at its upper end to join the overhead track, hangers having yoke jaws to partially surround the track and upright member and traversably supported thereby, door sections pivotally attached to the hangers and a raised portion extending along the upper surface of the track and positioned between the ends of the yoke jaws.

10 4. The combination with a box car of an overhead track located near the roof of the car and extending longitudinally thereof, a stud projecting from the roof of the car to pivotally support one end of the track, a T-head stud projecting from the roof of the car and extending through a slot in the track to movably support the same, an upright member curved at its upper end to join the movable end of the overhead track and rotatably connected thereto, said upright member being adapted to extend vertically across the doorway or to be raised to horizontal position, an extensible foot on the lower end of the upright member adapted when extended to enter a recess in the door sill, a hook in the roof of the car to support the upright member in horizontal position and door sections traversably mounted on the track and upright member.

30 5. The combination with a box car of an overhead tubular track extending longitudinally of the car and having one end turned

at right angles toward the doorway, a stud projecting from the roof of the car to pivotally support the straight end of the track, 35 a T-head stud projecting from the roof of the car and extending through a slot in the track to support the other end of the same, a tubular upright member curved at its upper end to join the end of the track and rotatably attached thereto, said upright member being adapted to extend vertically across the doorway or to be suspended in horizontal position, an extensible foot on the lower end of the upright member, adapted when extended to enter a recess in the door sill, a hook projecting from the roof of the car to suspend the upright member in horizontal position, hangers having yoke jaws to partially surround the track and upright member and traversably supported thereby, door sections pivotally attached to the hangers and provided with openings, closures for said openings and a raised portion or rib extending along the upper surface of the track and embraced by the ends of the yoke jaws. 40 45 50 55

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE THOMPSON.

Witnesses:

HAROLD O. VAN ANTWERP,
LUTHER V. MOULTON.