No. 854,564. PATENTED MAY 21, 1907.

R. G. BULLARD.

DOOR HANGER FOR CAR DOORS.

APPLICATION FILED MAR. 31, 1906.

2 SHEETS—SHEET 1.

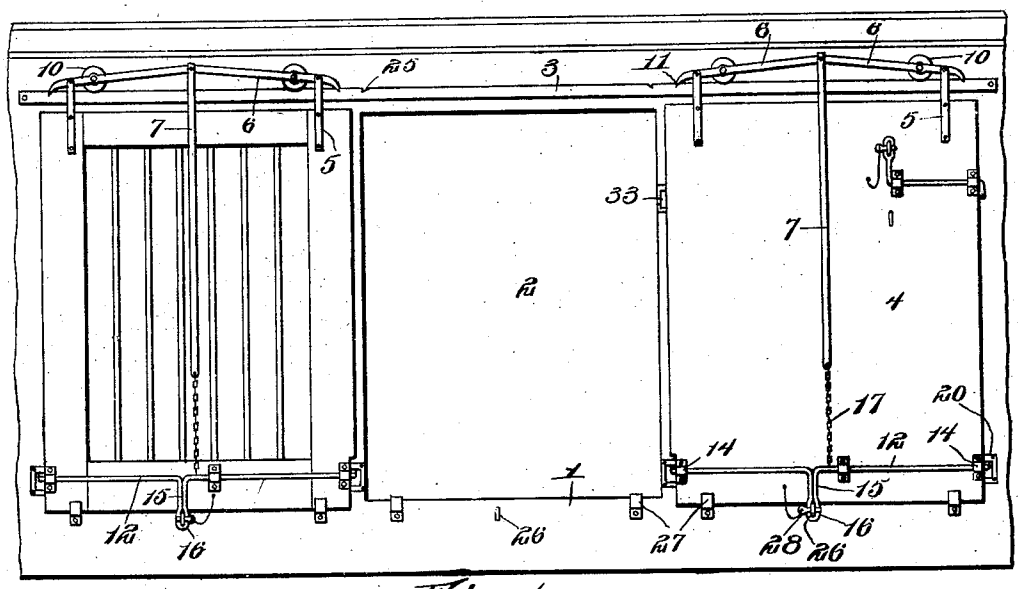

Fig. 1.

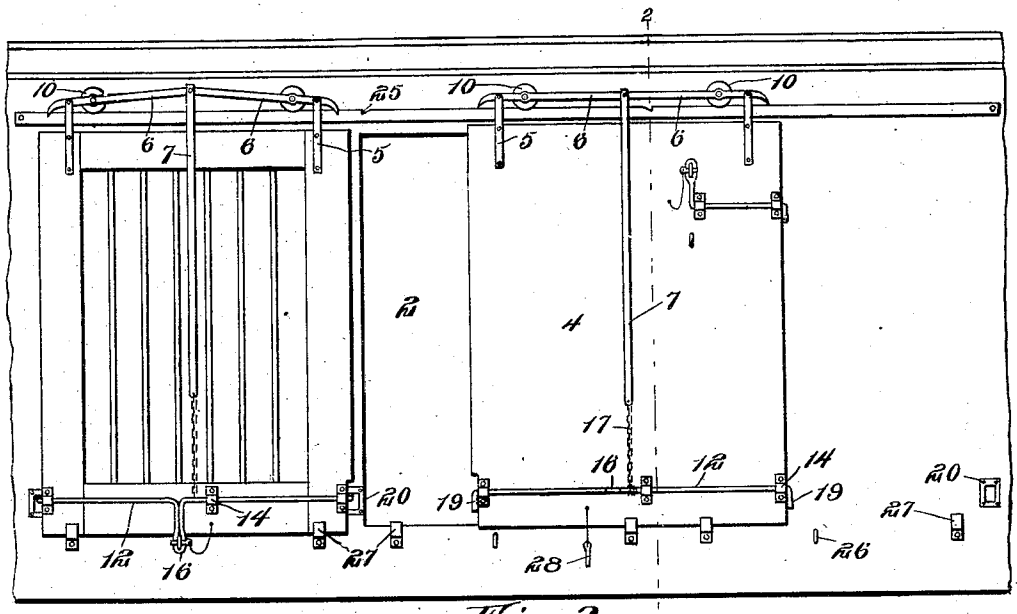

Fig. 2.

Inventor

R. G. Bullard

Witnesses

Louis R. Heinrichs

D. W. Gould.

By Victor J. Evans

Attorney

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2 SHEETS—SHEET 2.

Fig. 3.

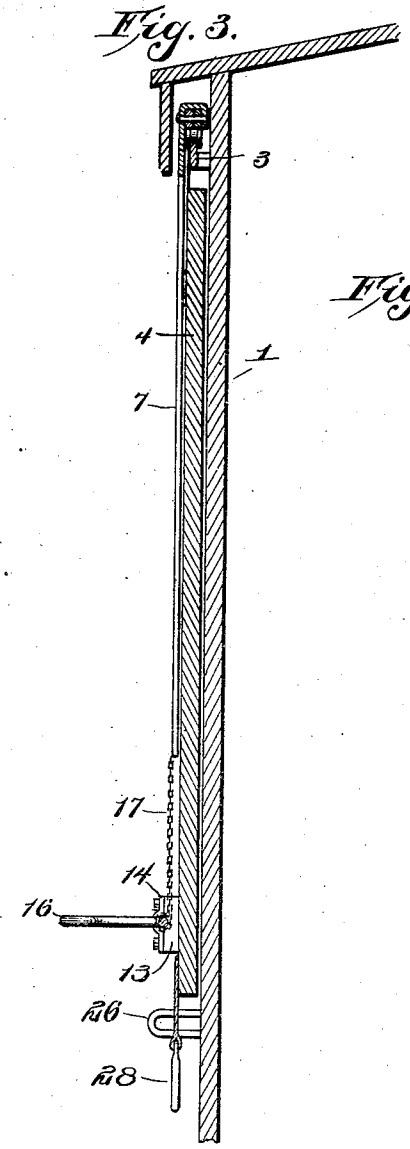


Fig. 4.

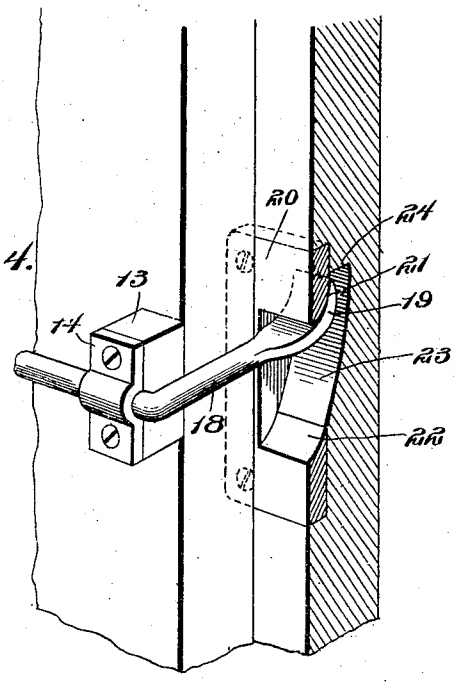
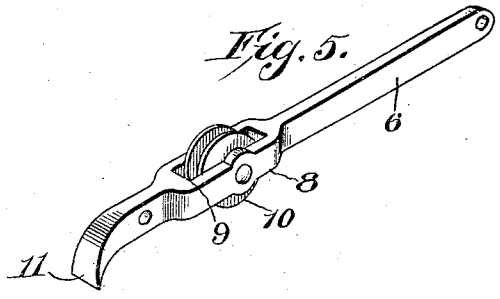


Fig. 5.



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Attorney

UNITED STATES PATENT OFFICE.

ROBERT G. BULLARD, OF BREMEN, GEORGIA.

DOOR-HANGER FOR CAR-DOORS.

No. 854,564. Specification of Letters Patent. Patented May 21, 1907.

Application filed March 31, 1906. Serial No. 309,148.

To all whom it may concern:

Be it known that I, ROBERT G. BULLARD, a citizen of the United States, residing at Bremen, in the county of Haralson and State of Georgia, have invented new and useful Improvements in Door-Hangers for Car-Doors, of which the following is a specification.

The invention relates to an improvement in door hangers for car-doors and similar structures.

The main object of the present invention is the production of means whereby a door mounted for lateral movement upon the usual track may be adjusted for movable engagement with the track when desired to move the door and disengaged therefrom and locked in position when movement is not desired.

The invention will first be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a view in elevation illustrating my invention, the door being shown disengaged from movable engagement with the track and locked in open position, Fig. 2 is a similar view, the door being shown arranged for movable engagement with the track, Fig. 3 is an enlarged section on line 3—3 of Fig. 2, Fig. 4 is an enlarged perspective illustrating the locking means for the lower end of the door, Fig. 5 is a perspective view of one of the levers.

Referring to the drawings 1 represents a car structure provided with the usual door opening 2, above which is supported longitudinally of the car side a single rail track 3, which is preferably coextensive in length with the length of the side and supported in any desired manner to provide a free upper edge.

The door 4 is slightly greater in width and length than the similar dimensions of the opening 2, so that in closed position said door fits against the outer surface of the car side, as clearly shown in Fig. 3. Hanger straps 5 are secured on the outer side of the door near the side edges, said straps projecting above the upper edge of the door and terminating in a plane above that of the track 3. Levers 6 are pivotally secured to the upper end of each of the hanger straps, projecting inwardly from said pivotal point toward the longitudinal center of the door and being pivotally connected at their inner ends to a vertically arranged operating rod 7. Between said rod and the pivotal or fulcrum points each of the levers 6 is somewhat thickened, as at 8, and formed in said thickened portion is a longitudinally arranged opening 9 providing for the reception of a roller 10 rotatively supported by a pin seated in the side walls of the opening. The roller 10 is preferably grooved circumferentially to provide the usual side flanges for engagement with the track. Beyond the pivotal or fulcrum points the ends of the levers 6 are turned downwardly and pointed as at 11, for a purpose hereinafter described.

A locking rod 12 is mounted transversely of the door near the lower end thereof, being supported on blocks 13 secured to the surface of the door and rotatively held in position by bearing plates 14 overlying the rod and secured to said blocks. Intermediate its ends the rod 12 is provided with an operating handle 15, the outer end of which is of hasp formation, as at 16, designed for co-operation with suitable staples to be later noted. To the rod adjacent the handle is secured one end of a flexible connector 17, as a chain, the opposite end of which is secured to the lower end of the operating rod 7, the connection between said chain and locking rod being such that when the handle of said rod is in the lower position the chain will permit the full limit of upward movement of the rod 7, the operative position of the handle shown in Fig. 3 serving to wind the chain about the locking rod and draw the operating rod 7 to its limit of downward movement. The ends of the rod beyond the side edges of the door are laterally bent to provide latch rods 18, the ends of which are slightly widened and curved from the normal plane of said rods to provide latch ends or latches 19. Keepers are provided in the side of the car for the reception of the latches, said keepers comprising a plate 20 secured in appropriate position to the car side and formed with a central opening, the upper edge of which is undercut to provide a rounded shoulder 21, the lower edge being reversely formed to provide a rounded shoulder 22. The material of the car side is cut away coincidently with the opening in the keeper plate to provide a locking recess, the bottom wall 23 of which curves coincidently with the curvature of shoulders 22 toward the upper end of the keeper plate, terminating above the shoulder 19 in the form of a wall 24 extending at right angles to the lower surface of the keeper plate, so that

a space is provided between the keeper plate and the lower wall 23 of the recess for the reception of the latch 19 of the latch rod, the curvature of the shoulder 21 of the keeper plate in connection with the curvature of the latch proper serving to provide a slight wedging action as the parts are brought into co-operation. The latch rods 18 project from the locking rods at approximately right angles to the plane of projection of the handle 15, so that when the handle is in lowered position, as shown in Fig. 1, the latches 19 will be in engagement with the keepers, and when the handle is in operative position, as shown in Fig. 3, the latches will be disengaged from the keepers.

It is to be understood that the keeper is to be provided on each side of the door opening 3, whereby to receive the latches when the door is in closed position, and that similar keepers may be provided at other points on the door surface to lock the door in fully or partially open position, as shown in the drawings.

The track 3 is notched on its upper edge, as at 25, the notches being so arranged relative to each other as to receive pointed ends 11 of the respective levers when the door is in closed position, similar notches being provided at other desirable points on the track so as to receive the pointed ends of the levers in fully or partially open position of the door. Staples 26 are secured to the door structure in position to receive the hasp end of the handle 15 in either the closed or partially or fully opened positions of the door. Brackets 27 are secured in appropriate positions to the car structure and comprise plates secured to the car side and having offset lips to embrace the lower edge of the door, the connection between said lips and the plates of the brackets extending at right angles to the surface of the car side and providing rests for the lower edge of the door when the latter is in lowered position.

In operation assuming the door in position shown in Fig. 1 it will be noted that the latches 19 are in engagement with the respective keepers and the handle of the locking rod turned down into lowered position, being held in engagement with the staple 26 through the medium of a locking pin 28. In this position of the parts the operating rod 7 is at its upward limit of movement, so that the free ends 11 of the fulcrum levers 6 are in engagement with the respective notches and the rollers 10 are out of engagement with the track 3, this result being gained through the weight of the door upon the hanger straps 5. The door is thus locked in open position through engagement of said levers with the notches 25 and through the engagement of the latches 19 with their respective keepers. When it is desired to move the door to closed position the handle 15 of the locking rod is released from the staple and the rod rocked in its bearings to disengage the latches 19 from their keepers and at the same time wrap the chain 17 partially about said rod with the effect to draw downward the operating rod 7. This movement of the operating rod will swing the levers upon their pivotal connection with the hanger straps, withdrawing the free ends 11 from the notches 25 and at the same time forcing the rollers 10 carried by said levers into engagement with the track 3. The door is now free to be moved longitudinally of the track into closed position, and when in such position the handle 15 may be turned down into engagement with the staple 26, forcing the latches into engagement with the respective keepers and permitting the upward movement of the operating rod 7 to cause engagement of the lever ends with the notches 25 and disengage the rollers 10 from engagement with the track.

The holding pins 28 are intended, of course, to represent any desired form of fastening for the handle of the locking rod, serving in the present instance to indicate a temporary fastening for any of the usual forms of seal locks. When in position to be moved the door is supported upon the tracks 3 solely through the medium of the rollers 10, so that it may be readily and quickly moved to any desired position, the handle 15 in addition to operating the parts as described serving as a convenient hand hold in shifting the door from one position to the other.

Having thus described the invention what is claimed as new, is:—

1. The combination with a movable door and a track therefor formed with notches, of levers pivotally connected with the door, track wheels carried by said levers, means carried by the door for shifting said levers to cause independent movement of the wheels relative to the tracks, and means carried by the levers to engage the notches in the track when said levers are in a determinate position.

2. The combination with a movable door and a track therefor, of levers pivotally connected to the door, track wheels carried by the levers, an operating rod connected with the levers and adapted to operate the same to cause independent relative movement of said wheels with regard to the track, a locking rod carried by the door, and a flexible connection between said operating rod and locking rod.

3. The combination with a movable door and a track therefor formed with notches, of levers pivotally connected with the door, track wheels mounted on the levers intermediate their ends, means carried by the door and connected to the adjacent ends of the levers for operating the levers to cause a movement of the track wheels relative to the track, the free end of said levers being

formed to engage the notches in the track when the levers are in a position to maintain the track wheels out of engagement with the track.

4. The combination with a structure formed with a door opening, a track supported by the structure above the opening, and a door arranged for movement to close the opening, of levers pivotally connected with the door, track wheels carried by the levers, a locking rod mounted for rocking movement on the door, a connection between said rod and levers, whereby operation of said rod will cause independent movement of the wheels relative to the track, said track being formed to provide an interlocking engagement with the free ends of the levers when said levers are in determinate position, and means carried by the structure to coöperate with the locking rod to secure the door when the levers are in engagement with the track.

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

ROBERT G. BULLARD.

Witnesses:
Z. B. HAMILTON,
P. H. COLE.