March 21, 1944. J. S. SWANN 2,344,524

DOOR STOP

Filed Dec. 26, 1941 3 Sheets-Sheet 1

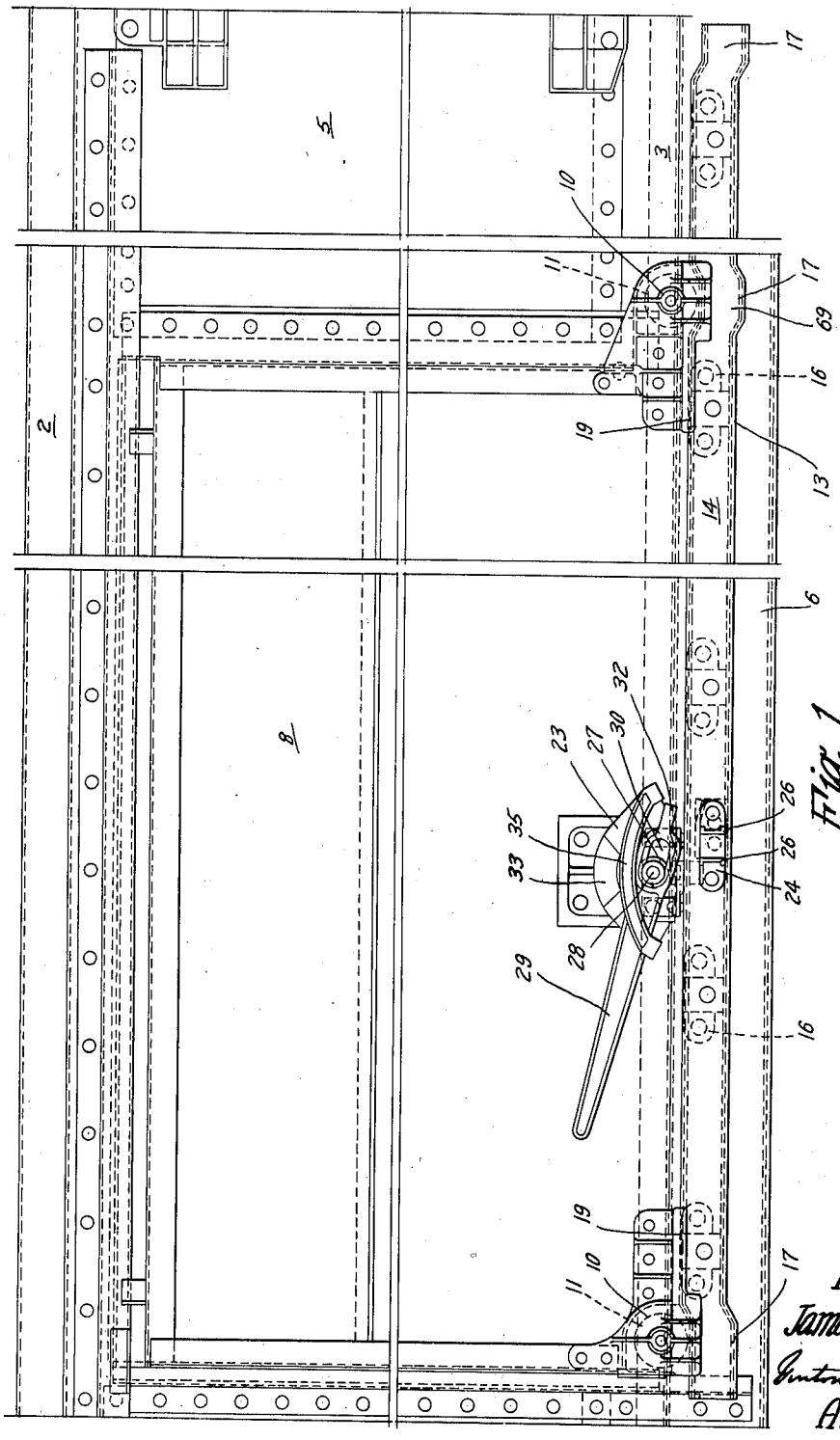


Fig. 1

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DOOR STOP

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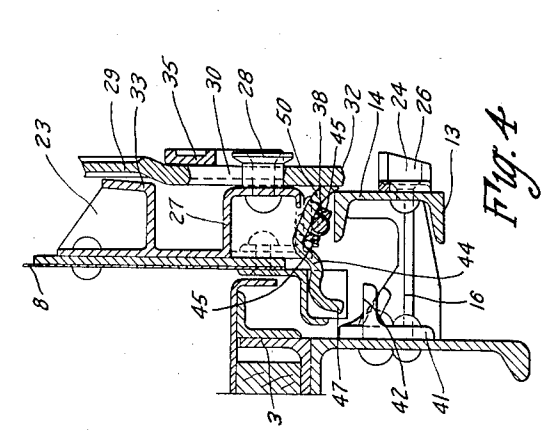


Fig. 4

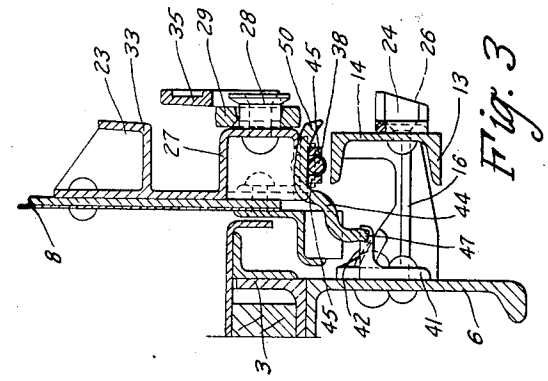


Fig. 3

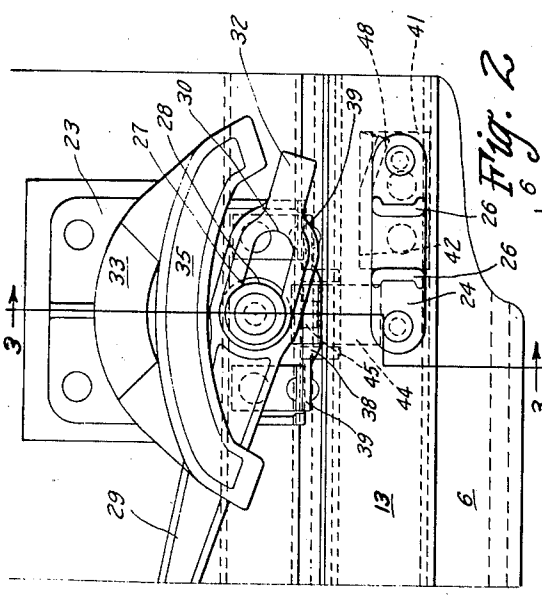


Fig. 2

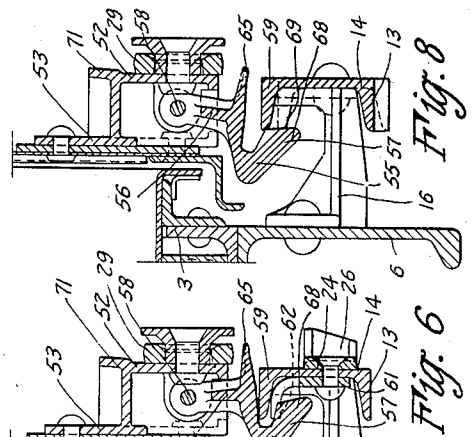


Fig. 8

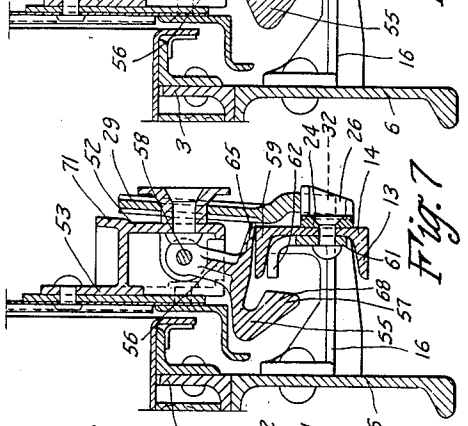


Fig. 6

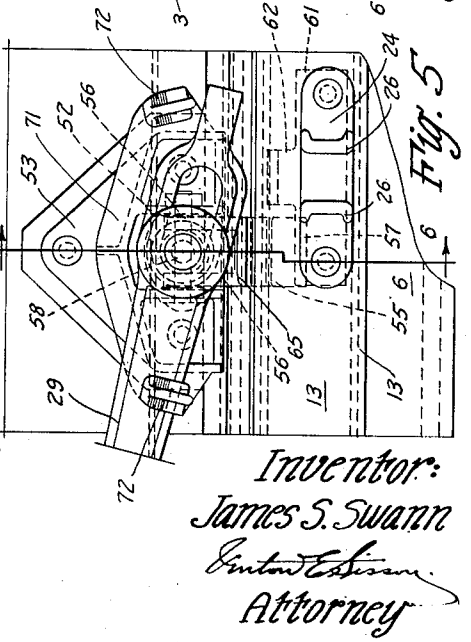


Fig. 7

Fig. 5

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DOOR STOP

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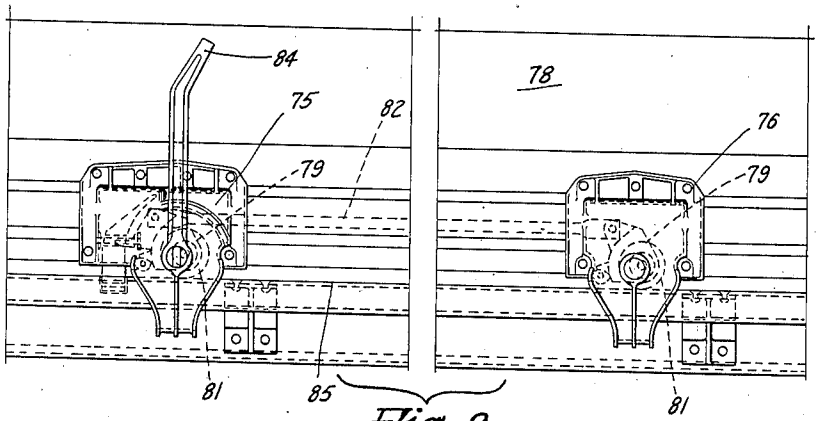


Fig. 9

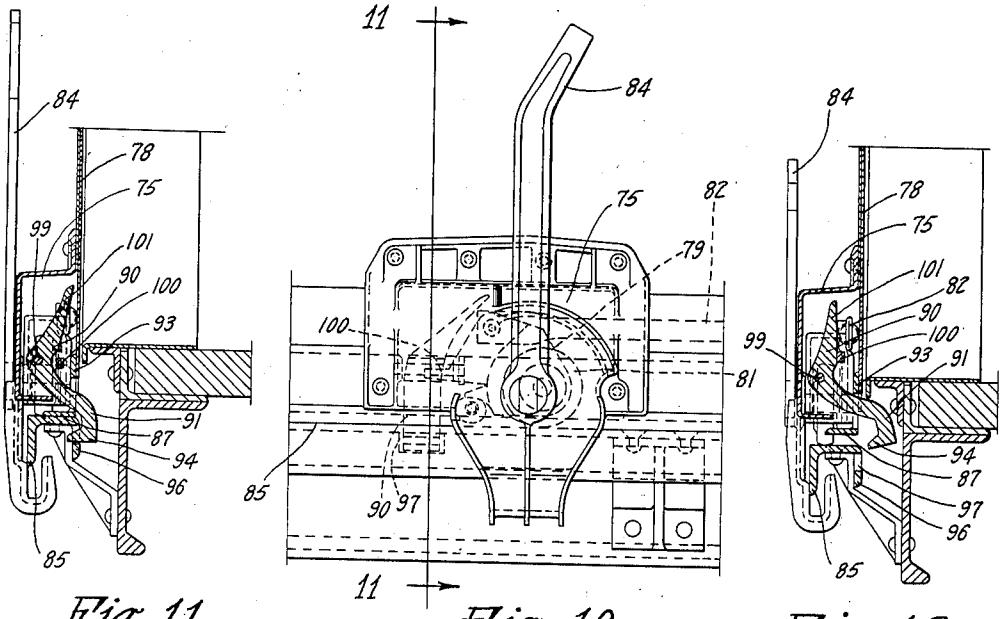


Fig. 11

Fig. 10

Fig. 12

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Patented Mar. 21, 1944

2,344,524

UNITED STATES PATENT OFFICE

2,344,524

DOORSTOP

James S. Swann, Homewood, Ill., assignor, by mesne assignments, to Standard Railway Equipment Manufacturing Company, a corporation of Delaware

Application December 26, 1941, Serial No. 424,431

23 Claims. (Cl. 20—22)

The invention relates to side doors for railway cars and specifically to stops or retarding means for controlling the movements of such doors, which doors are commonly arranged to slide in planes substantially parallel with the side walls of the car. The travel of such doors is approximately equal to the width of the door opening so that the doors may be moved into alignment with the opening or entirely out of alignment with such opening. The invention relates particularly to the type of side door fixtures manufactured and sold by my assignee, and disclosed and claimed in Gilpin Patent No. 1,902,772 of March 21, 1933.

Such a side door is commonly arranged with rollers revolubly mounted upon the door and preferably enclosed in housings so that a small part of each roller extends below its respective housing. A horizontally extending track is secured to a side wall of the car, preferably adjacent the lower edge of the door opening, and is provided with depressions. The depressions are somewhat deeper than the distance by which the rollers extend below the roller housings so that when the door is moved to a position wherein the rollers are above the depressions, contact between the rollers and the track is relieved and the door is supported by parts of the roller housings or other non-rotative parts of the door resting upon the track or other fixed part or parts of the car. The friction between the non-rotative parts of the door and parts fixedly secured to the car is sufficient to prevent easy moving of the door. The depressions in the track are positioned so that this frictional resistance to moving is effective when the door is in the full open and full closed positions and so that the rollers roll upon the track when the door is in any position between the full open and full closed.

Railroad regulations require that before a car is moved, the door thereof should be absolutely locked so as to prevent sliding of the door during service movements of the car. This regulation is not universally complied with and railroad operators often rely upon the above mentioned frictional resistance to prevent movement of the door. In recent years a combination of circumstances, such as increased train and switching speeds and heavier loading of cars, has tended to impart more violent impacts to cars during service with the result that the above mentioned frictional resistance as well as other retarding means sometimes used have become inadequate to prevent accidental door movement. Such movements are liable to cause damage to the car and to the door, as well as injudy to an operator who happens to get in the way of such a moving door.

An object of the invention is to provide a stop or retarding means for a sliding door which is operative to prevent accidental movement of the door from the full open and full closed positions thereof or, in other words, to prevent movement which occurs without an intentional act of the operator for moving the door.

In a door of the type hereinabove described in which the door is at times supported upon the track by non-rotative members and retarded from moving by the friction between the track and such members, means are commonly provided for overcoming such friction and starting the door moving upon anti-friction supporting means. An object of the invention is to provide a stop for the door which is automatically released at the initial movement of the door moving means and prior to effective operation of such means for moving the door.

When the door is left partly open it is supported by the anti-friction means and is free to move toward either the opened or closed position upon the slightest provacation. During ordinary service movements of the car or when the car receives a jolt, the door may be moved to either the full opened or full closed position. An object of my invention is to provide a door stop which permits free and unrestricted movement of the door from any intermediate position and which automatically becomes operative to lock the door against further movement when the door reaches either the full opened or full closed position. An advantage of such an arrangement is that the rollers are thereby relieved of the weight of the door.

One well known type of railway car side door embodies anti-friction rollers revolubly mounted in carriages which are eccentrically pivoted to the door so that rotative movement of the carriage either raises or lowers the rollers so as to render the anti-friction door supporting means inoperative or operative as desired. An object is to associate a door stop with such a door so that rotation of the carriage in such a direction as to render the anti-friction means operative automatically releases the retarding means and permits movement of the door.

Other objects and advantages of my invention will be apparent from the following detailed de-

scription by referring to the accompanying drawings:

In the drawings:

Fig. 1 is a partial side elevation of a railway car showing a side door which embodies my invention.

Fig. 2 is an enlarged view of a portion of Fig. 1 showing the door moving means and the door stop.

Fig. 3 is a section on line 3—3 of Fig. 2 showing the door in the full closed position and the door stop in position to prevent movement of the door.

Fig. 4 is a view similar to Fig. 3 showing the door moving means in position preliminary to operation thereof for moving the door and the door stop in released position.

Fig. 5 is a view similar to Fig. 2 showing a modified form of the invention.

Fig. 6 is a section on line 6—6 of Fig. 5 showing the door in full closed position and the door stop in operative position for preventing movement of the door.

Fig. 7 shows the door in full closed position, the door moving means in operative position and the door stop in released position to permit movement of the door.

Fig. 8 is a view showing the door in a position intermediate the full open and full closed positions with the door moving means inoperative and the door stop in released position to permit movement of the door.

Fig. 9 is a partial side elevation of a railway car door showing another modification of my invention.

Fig. 10 is an enlarged view of a portion of Fig. 9.

Fig. 11 is a section on line 11—11 of Fig. 10 showing the door stop in operative position for restraining movement of the door.

Fig. 12 is a view similar to Fig. 11 showing the door stop in released position to permit door movements.

The railway car shown in the drawings embodies the usual side wall comprised of side plate 2, side sill 3, posts extending between the plate 2 and sill 3 and sheathing 5 secured to the plate, sill and posts. A bulb angle side sill reinforcement 6 is attached to the lower part of the side sill 3 adjacent the doorway. The door 8 is arranged to move in a plane parallel with the side wall of the car as will be hereinafter described.

The door 8 is provided with roller housings 10 rigidly mounted upon the door 8 at the lower corners thereof and rollers 11 revolubly mounted within the housings 10. The track 13, which in the arrangement shown is a channel member disposed with its web 14 vertical, is supported in spaced relation to the car side wall by brackets 16 which extend outwardly from the side sill reinforcement 6. The track 13 is formed with depressions 17 positioned to receive the rollers 11 when the door 8 is in the full opened and full closed positions, in which positions the weight of the door is assumed by pads 19 on the housings 10 which rest upon the track 13. The rollers 11 are thus out of operative engagement with the track 13 and the friction between the pads 19 and the track 13 tends to keep the door from moving.

A fulcrum member 23, which in the form shown is a casting; is rigidly mounted upon the door 8 preferably mid-way between the lower corners thereof. A starting bracket 24 comprised of spaced apart outstanding lugs 26 is mounted upon the track 13. The fulcrum member 23 comprises an outwardly projecting boss 27 having a thimble 28 riveted thereto, which thimble forms a pivot center for a handle as will be described. The handle 29 has an elongated hole 30 which receives the thimble 28 and thereby permits the handle to both pivot and slide a limited distance. To operate the door moving means, the operator inserts the lower end 32 of the handle 29 between the lugs 26 of the starting bracket 24 and then pulls upon the upper end of the handle 29 in a substantially horizontal direction. The mechanical advantage thus obtained is adequate to enable the operator to overcome the friction between the pads 19 and the track 13 and move the door 8 until the rollers 11 are moved out of the depressions 17 and into operative engagement with the track 13.

The fulcrum member 23 is preferably provided with an inner guiding part 33 arranged to move the upper end of the handle 29 outwardly when the handle is in a substantially vertical position so as to provide hand clearance between the handle and the door. The fulcrum member 23 is also provided with an outer guiding part 35 arranged to pull the handle 29 inwardly toward the car when in a substantially horizontal position so as to remain within the permissible overall width for cars.

In the modification shown in Figures 1 to 4, a horizontally extending rod 38 having flattened ends 39 is secured to the lower part of the fulcrum member 23 so as to extend in the direction of the track 13. Angle members 41 having outstanding substantially horizontal legs 42 are rigidly attached to the side sill reinforcement 6 for purposes to be hereinafter described. The dog 44 is preferably made of a strap formed to the contour shown in Figures 3 and 4 and has spaced apart lugs 45 welded to the under side thereof so as to form a seat in which the rod 38 nests so as to pivotally support the dog 44. The dog 44 is shown in its normal position in Figure 3 with its inner end 47 engageable with the horizontal leg 42 of the angle member 41 so that the dog 44 engages the leg 42 to prevent movement of the door 8. The angle member 41 is preferably positioned adjacent the center of the doorway and has the right hand end 49 of the horizontal leg 42 deflected downwardly so that as the door moves to the closed position; that is, toward the left; the inner end 47 of the dog 44 rides up the inclined part 48 of the leg 42 and drops abruptly off the left hand end of such leg. Movement of the door toward the right, which is toward the opened position, is thereafter prevented. A similar angle member is preferably provided to the right of the doorway and has its left hand end inclined so that the door stop becomes operative upon movement of the door to the full opened position.

In order to operate the door moving means and move the door, the handle 29 is made to slide upon the thimble 28 until the lower end 32 of the handle 29 is inserted between the lugs 26 of the starting bracket 24. The operator then exerts a substantially horizontal force upon the upper end of the handle 29, thereby moving the handle from one side to the other of a vertical line through the pivot center; the rollers 11 are then moved out of the depressions 17 and operatively engage undepressed parts of the track 13. When the handle 29 is in this operative position, a portion thereof engages the outer end 50 of the dog 44, thereby moving such outer end downwardly to the position shown in Fig. 4. As the outer end 50

of the dog 44 moves downwardly, the inner end 47 moves upwardly and clears the angle member 41, thereby releasing the door stop and permitting the door 8 to move freely.

In the modification shown in Figures 5 to 8, the boss 52 of the fulcrum member 53 is hollow and has an opening in the bottom thereof. The dog 55 embodies an upstanding fork comprised of spaced apart prongs 56 extending through said opening into the boss 52 and provided with bearings on their upper ends. The dog 55 is pivotally attached to the fulcrum member 53 by a bolt 58 or pin extending through the sides of the boss 52 and through said bearings. The dog 55 has a part 57 which extends downwardly between the track 13 and the car and normally extends underneath the upper flange 59 of the channel track 13 as shown in Fig. 6. A member 61 is secured flatwise to the inner side of the web 14 of the channel track 13 and is provided with an inwardly projecting lug 62 closely adjacent the underside of the upper flange 59. It is understood that I disclose herein the preferred modification and that the lug 62 may be either welded to the upper flange 59 or attached to the side sill of the car. As shown in Fig. 6, wherein the door is in either the full opened or full closed position, the part 57 of the dog 55 is engageable with the lug 62 so that upon attempted movement of the door 8, the part 57 engages the lug 62 and prevents movement of the door.

In order to move the door 8, the handle 29 is operated as hereinabove described in reference to Figs. 1 to 4. The dog 55 has a second part 65 extending outwardly above the track 13 and in the path of movement of a portion 66 of the handle 29, such portion of the handle being arranged to engage the part 65 of the dog prior to the effective operation of the handle for moving the door. The engagement of the handle 29 with the part 65 moves the dog 55 to the position shown in Figure 7 in which it is evident that the part 57 of the dog 55 is clear of the lug 62 and that horizontal movement of the door 8 is then possible.

After the operator makes use of the door moving means to move the rollers 11 out of the depressions 17, such door moving means is of no further use; the operator then releases his hold on the handle 29 and it assumes the inoperative position shown in Fig. 5. When the door is in any intermediate position, the rollers 11 operatively engage undepressed parts of the track 13, as shown in Fig. 8, and the door 8 is elevated approximately 3/8" above the full closed position shown in Figs. 6 and 7. The dog 55 is provided with a face 68 which rides upon the inner edge of the upper track flange 59 and thereby prevents the part 57 of the dog 55 from engaging the lug 62 and restraining movement of the door. It is evident from Fig. 1 that, as the door 8 moves from full closed to full opened position or vice-versa, the dog must pass the track depression 69 which is adjacent the rear door post. The face 68 of the dog 55 is, therefore, of considerable vertical extent so that it engages the depressed part 69 of the flange.

The fulcrum member 53 disclosed in Fig. 5 is revised somewhat over that disclosed in Fig. 2. The fulcrum member 53 embodies a central guiding portion 71 to guide the upper end of the handle 29 outwardly to provide hand clearance when the handle is in a substantially vertical position and also embodies ears 72 to retain the handle 29 within the clearance lines when such handle is at rest in a substantially horizontal position.

In the modification shown in Figures 9 to 12, roller housings 75, 76 are rigidly mounted upon the car door 78; a carriage 79 is disposed within each housing and each carriage has a roller 81 revolubly mounted therein. The carriages 79 are pivotally mounted within the housings 75, 76 upon axes eccentric to the axes of the rollers 81. A link 82 extends between the housings 75, 76 and is attached at its opposite ends to the carriages 79 for the purpose of imparting identical rotative movement to the carriages 79. A handle 84 is mounted exterior of the left hand housing 75 and operatively connected to the carriage 79 within such housing. As the handle 84 is rotated in a clockwise direction to a substantially horizontal position, the carriages 79 are similarly rotated and the rollers 81 are lowered with respect to the door 78. Such lowering of the rollers 81 eventually brings the rollers into operative engagement with the track 85 and permits the door 78 to move freely along the track 85 as long as the handle 84 is held in the horizontal position. When the handle 84 is released by the operator, it rotates, due to the weight of the door 78, in a counter-clockwise direction and assumes the position shown in Figures 9 and 10, in which position the rollers 81 are moved upwardly out of engagement with the track 85 and the weight of the door is assumed by the lower frame strip 87 of the door resting upon the track 85. The friction between the lower frame strip 87 and the track 85 restrains movement of the door.

A dog 90 is pivotally mounted within the left hand roller housing 75 upon an axis co-directional with the track 85 and embodies a lower portion 91 which extends inwardly through an opening in the upstanding leg 93 of the lower frame strip 87. Such portion 91 terminates in an outwardly extending part 94. The track 85 is formed of an angle having its inwardly extending horizontal leg formed with a depending flange 96, which flange is provided with spaced apart apertures 97 arranged to receive the outwardly extending part 94 of the dog, preferably when the door 78 is in the full opened and full closed positions. The mass center of the dog 90 is disposed well inwardly from the pivot center 99 thereof and consequently urges the outwardly extending part 94 of the dog against the depending track flange 96, thereby causing such part 94 to enter the apertures 97 in the track flange 96 whenever the dog 90 becomes aligned with such apertures, as in the full opened and full closed positions of the door. The carriage 79 which is within the left-hand roller housing 75 is provided with an arm 100 which extends toward the left; the dog 90 is provided with an upstanding tail 101 having a contour which curves toward the right so as to follow the arm 100 upon rotation of the carriage 79. When it is desired to move the door 78, the handle 84, and therefore the carriage 79, are rotated in a clockwise direction so as to bring the rollers 81 into operative engagement with the track 85. Such rotation of the carriage 79 moves the arm 100 upwardly, causing it to engage the tail 101 of the dog 90 and to move such tail outwardly, and thereby moving the lower outwardly extending part 94 of the dog 90 inwardly and out of engagement with the apertures 97 in the track 85. The door stop is thus released and the door may be freely moved along the track.

The accompanying drawings illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and de-

scribed, as it is obvious that various modifications thereof, within the scope of the claims, will occur to persons skilled in the art.

I claim:

1. A door stop for a door mounted for movement along a substantially horizontal track carried by a railway car having door moving means including a lever movably carried by said door and adapted to engage a lug rigidly carried by said car, said door stop comprising a member rigidly carried by said car and a dog pivotally mounted upon said door comprising a first part normally engageable with said member to restrain movement of the door along said track, and a second part normally in the path of operative movement of said lever and arranged to be moved thereby to a position wherein said first part is clear of said member substantially simultaneously with movement of the door by said door moving means.

2. A door stop for a door mounted for movement along a substantially horizontal track carried by a railway car having door moving means including a lever movably carried by said door and engageable with a lug mounted upon the car, said door stop comprising a member rigidly carried by said car and a dog mounted upon said door for pivotal movement about an axis substantially parallel with the direction of movement of the door, said dog comprising a first part normally engageable with said member to restrain movement of the door and a second part engageable by said lever to move said first part clear of said member as said lever engages said lug to actuate the door moving means.

3. A door stop for a railway car door having rollers revolubly mounted upon the lower edge thereof and arranged to roll upon a horizontally extending track having depressions therein adapted to receive said rollers in predetermined positions of said door, said door also having a lever pivoted thereto and adapted to move said rollers out of said depressions, said door stop comprising a dog pivotally mounted upon said door, said dog including a first part normally engageable with a restraining member rigidly carried by the car to restrain movement of the door along the track and a second part normally in the path of movement of said lever as the lever moves the rollers out of said depressions so that said first part, actuated by the engagement of said lever with said second part, is moved clear of said restraining member to permit movement of the door.

4. A door stop for a railway car door having rollers revolubly mounted upon the lower edge thereof and arranged to roll upon a horizontally extending track having depressions therein adapted to receive said rollers in predetermined positions of said door, said door also having a lever pivoted thereto and adapted to engage a lug carried by the track to move said rollers out of said depressions, said door stop comprising a dog mounted upon said door for pivotal movement about an axis substantially parallel with said track, said dog including a first part normally engageable with a restraining member forming a part of said track to restrain movement of the door along the track, and a second part normally in the path of movement of said lever as the lever moves the rollers out of said depressions so that said first part, actuated by the engagement of said lever with said second part, is moved clear of said restraining member to permit movement of the door.

5. A door stop for a railway car door which is restrictively movable upwardly and downwardly and freely movable horizontally when up and restrained from horizontal movement when down, and means to move said door to its upward position, said door stop comprising a dog movably carried by said door and having a first part normally engaging a member rigidly carried by said car when the door is in its downward position to prevent upward movement of the door and a second part actuated by said means during operative movement thereof to move said first part out of engagement with said member.

6. A door stop for a railway car door, said car carrying a track for supporting said door for restricted upward and downward movement, said door being freely movable horizontally when up and restrained from horizontal movement when down, and means to move said door to its upward position, said door stop comprising a dog movably carried by said door and having a first part normally engaging a portion of said track when the door is in its downward position to prevent upward movement of the door, and a second part actuated by said means during operative movement thereof to move said first part out of engagement with said track.

7. A door stop for a railway car door which is restrictively movable upwardly and downwardly, and freely movable horizontally when up and restrained from horizontal movement when down, and means to move said door to its upward position, said door stop including a lever pivotally carried by said door, a dog pivotally carried by said door and having a first part normally engaging a member rigidly carried by said car when the door is in its downward position to prevent upward movement of the door, and a second part engageable by said lever during operative movement thereof to move said first part out of engagement with said member.

8. A structure as defined in claim 1 wherein said dog is provided with a vertical face engageable with said track to retain said first part of the dog clear of said restraining member during the movement of the door along the track independently of the lever.

9. A structure as defined in claim 3, wherein said dog is provided with a vertical face engageable with said track to retain said first part of the dog clear of said restraining member during the movement of the door along the track independently of the lever, said face having sufficient vertical depth to maintain said clearance when the dog passes the depressions in the track.

10. A door stop for a railway car having a door track, a door provided with rollers engageable with said track, and a lever pivotally mounted upon the door eccentrically from one of said rollers, whereby rotation of said lever in one direction engages the rollers with said track and a rotation of said lever in the opposite direction disengages said rollers from said track; said door stop comprising a dog pivotally mounted upon the door and positioned to engage a member on the car body when the rollers are disengaged from the track to stop movement of the door along said track, and means associated with said lever to move the dog out of engagement with said member when the lever is rotated to engage the rollers with the track to allow movement of the door along said track.

11. Means to prevent the accidental upward

movement of a railway car door supported by rollers upon a horizontal track provided with depressions arranged to receive the rollers and thereby lower the door and having a lever to impart horizontal movement to the door, said means comprising a dog pivotally mounted upon the door to swing under a member mounted upon the car to prevent upward movement of the door, said a dog being released from said member by said lever as said lever moves the door.

12. Means to prevent the accidental upward movement of a railway car door arranged to assume a lower position at any position of the door relative to the car and having a lever to impart horizontal movement to the door, said means comprising a dog pivotally mounted upon the door to swing under a member mounted upon the car to prevent upward movement of the door, said dog being released from said member by said lever as said lever moves the door.

13. Means to prevent the accidental upward movement of a railway car door arranged to assume a lower position at any position of the door relative to the car and having a lever to impart upward movement to the door, said means comprising a dog pivotally mounted upon the door to swing under a member mounted upon the car to prevent upward movement of the door, said dog being released from said member by said lever as said lever moves the door.

14. A door stop, for a railway car door, said car carrying a track for supporting said door for restricted upward and downward movement, and said door being freely movable longitudinally of said track when up and restrained from such longitudinal movement when down, said door stop comprising a dog pivotally carried by said door and normally operatively associated with said track when the door is in its downward position for the purpose of further restraining longitudinal movement of the door along said track, means to move said dog out of operative association with said track, and means to prevent the above mentioned operative association of said track and said dog when the door is in its upward position.

15. A door stop, for a railway car door, having rollers revolubly mounted upon the lower edge thereof and arranged to roll upon a horizontally extending track having depressions therein adapted to receive said rollers in predetermined positions of the door, said door also having a handle pivoted thereto and adapted to move said rollers out of said depressions, said door stop comprising a dog movably carried by said door and including a first part normally in operative association with said track when the rollers are in the depressions for the purpose of restraining movement of the door longitudinally of said track, said dog including a face slidably engaging said track when the rollers engage undepressed portions of the track to prevent said operative association, and a second part normally disposed in the path of movement of said handle as the handle is moved to move said door to thereby move said dog so that said first part can move out of operative association with said track as the handle is moved.

16. A door stop, for a railway car door, having rollers revolubly mounted upon the lower edge thereof and arranged to roll upon a horizontally extending track having depressions therein adapted to receive said rollers in predetermined positions of the door, said door also having a handle pivoted thereto and adapted to move said rollers out of said depressions, said door stop comprising a dog pivotally mounted upon said door and including a first part normally in operative association with said track when the rollers are in the depressions for the purpose of restraining movement of the door, said dog including a face slidably engaging said track when the rollers engage undepressed portions of the track to prevent said operative association, said face being at least as deep as said depressions to provide uninterrupted engagement with said track, and a second part normally disposed in the path of movement of said handle as the handle is moved to certain positions, to thereby move said dog so that said first part can move out of operative association with said track as the handle is moved.

17. A door stop for a railway car door having rollers revolubly mounted upon the lower edge thereof and arranged to roll upon the upper flange of a horizontally extending track comprised of an inwardly facing channel member carried by the car in spaced relation thereto, said upper flange having depressions therein adapted to receive said rollers in predetermined positions of the door, said door also having a handle pivoted thereto and adapted to engage a lug carried by said track to thereby move said rollers out of said depressions into operative engagement with undepressed parts of the track, said door stop comprising a dog pivotally mounted upon said door and including a first part extending downwardly between said car and track and normally projecting within said channel in operative association with said track when the rollers are in the depressions for the purpose of restraining movement of the door, said dog including a face slidably engaging the inner edge of the upper flange of said channel member when the rollers engage undepressed portions of the track to prevent said operative association, and a second part extending outwardly above said track and normally disposed in the path of movement of said handle as the handle is moved to substantially vertical position to thereby move said dog so that said first part can move out of operative association with said track as the handle is moved to engage said lug.

18. A door stop, for a railway car door, having rollers revolubly mounted upon the lower edge thereof and arranged to roll upon a horizontally extending track having depressions therein adapted to receive said rollers in predetermined positions of the door, said door also having a handle pivoted thereto and adapted to move said rollers out of said depressions, said door stop comprising a pivotally mounted dog depending from said door and including a first part normally in operative association with said track when the rollers are in the depressions for the purpose of restraining movement of the door, said dog including a face slidably engaging said track when the rollers engage undepressed portions of the track to prevent said operative association and a second part normally disposed in the path of movement of said handle as the handle is moved to certain positions to thereby move said dog so that said first part can move in a substantially horizontal direction out of operative association with said track as the handle is moved.

19. A door stop, for a railway car door, having rollers revolubly mounted upon the lower edge thereof and arranged to roll upon a horizontally extending track having depressions

therein adapted to receive said rollers in predetermined positions of the door, said door also having a handle pivoted thereto and adapted to engage a lug carried by said track to thereby move said rollers out of said depressions into operative engagement with undepressed parts of the track, said door stop comprising a dog pivotally mounted upon said door, said dog including a first part normally in operative association with said track when the rollers are in the depressions for the purpose of restraining movement of the door, said dog including a face slidably engaging said track when the rollers engage undepressed portions of the track to prevent said operative association, and a second part normally disposed in the path of movement of said handle as the handle is moved to certain positions, to thereby move said dog so that said first part can move out of operative association with said track as the handle engages said lug.

20. A door stop, for a railway car door, having rollers revolubly mounted upon the lower edge thereof and arranged to roll upon a horizontally extending track having depressions therein adapted to receive said rollers in fully opened and closed positions of the door, said door also having a handle pivoted thereto and adapted to engage a lug carried by said track to thereby move said rollers out of said depressions into operative engagement with undepressed parts of the track, said door stop comprising a dog mounted upon said door for pivotal movement about an axis substantially parallel with said track, said dog including a first part normally in operative association with said track when the rollers are in the depressions for the purpose of restraining movement of the door, said dog including a face slidably engaging said track when the rollers engage undepressed portions of the track to prevent said operative association, and a second part normally disposed in the path of movement of said handle as the handle is moved to certain positions, to thereby move said dog so that said first part can move out of operative association with said track as the handle engages said lug.

21. A door stop, for a railway car door, having rollers revolubly mounted upon the lower edge thereof and arranged to roll upon the upper flange of a horizontally extending track comprised of an inwardly facing channel member carried by the car in spaced relation thereto, said upper flange having depressions therein adapted to receive said rollers in predetermined positions of the door, said door also having a handle pivoted thereto and adapted to engage a lug carried by said track to thereby move said rollers out of said depressions into operative engagement with undepressed parts of the track, said door stop comprising a dog mounted upon said door for pivotal movement about an axis substantially parallel with said track, said dog including a first part normally projecting within said channel in operative association with said track when the rollers are in the depressions for the purpose of restraining movement of the door, said dog including a face slidably engaging the inner edge of the upper flange of said channel member when the rollers engage undepressed portions of the track to prevent said operative association, and a second part normally disposed in the path of movement of said handle as the handle is moved to certain positions, to thereby move said dog so that said first part can move out of operative association with said track as the handle engages said lug.

22. Means to prevent horizontal opening movement of a railway car door supported by rollers upon a horizontal track provided with depressions arranged to receive the rollers in a predetermined position of the door and having a lever to impart horizontal opening movement to the door; said means comprising a dog adapted to prevent the door from moving upwardly sufficiently for the rollers to rise out of the depressions and thereby prevent horizontal opening movement of the door, said dog being released by said lever upon the initial movement thereof.

23. Means to prevent horizontal opening movement of a railway car door supported by rollers upon a horizontal track provided with depressions arranged to receive the rollers in a predetermined position of the door, means to impart horizontal opening movement to the door, and means adapted to positively prevent the door from moving upwardly sufficiently for the rollers to rise out of the depressions and thereby prevent horizontal opening movement of the door, said last mentioned means being released by engagement with said means to impart horizontal opening movement to the door upon initial movement thereof.

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