

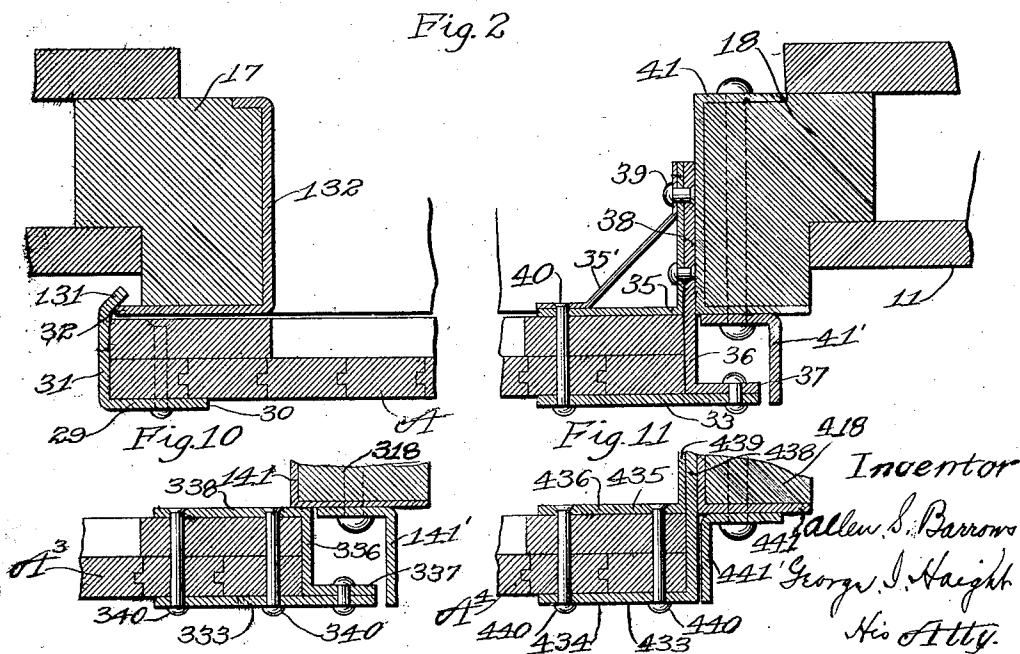
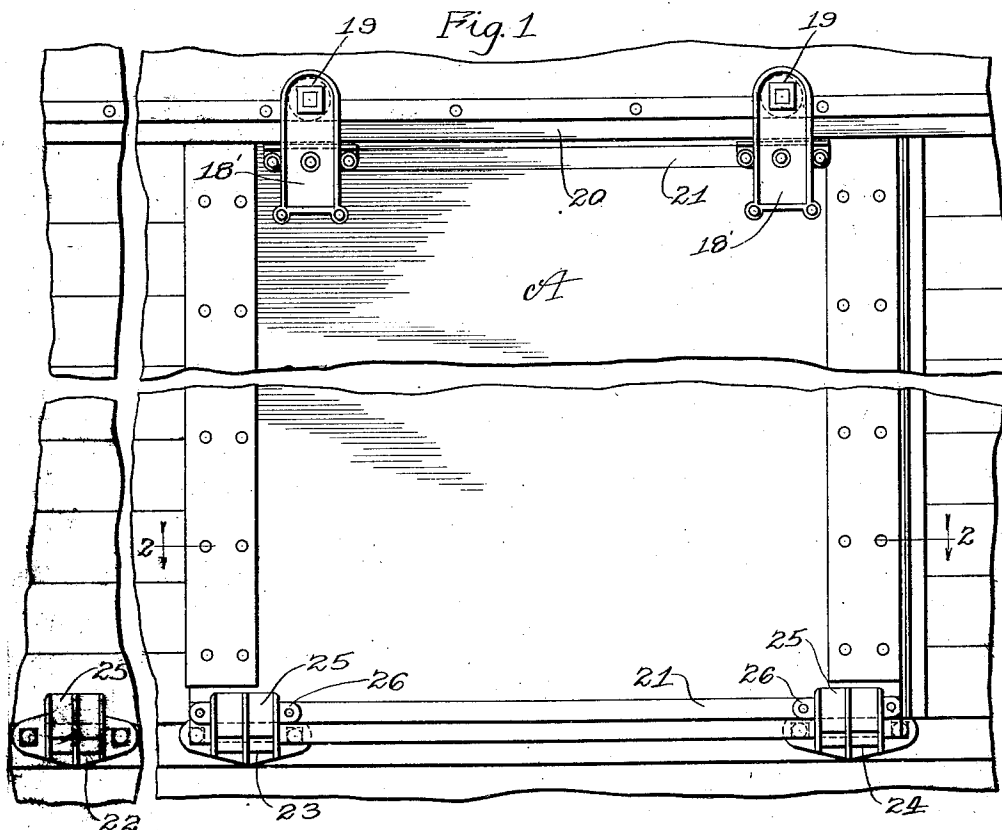
Dec. 29, 1931.

A. S. BARROWS

1,838,731

DOOR

Original Filed Jan. 2, 1924 3 Sheets-Sheet 1



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Dec. 29, 1931.

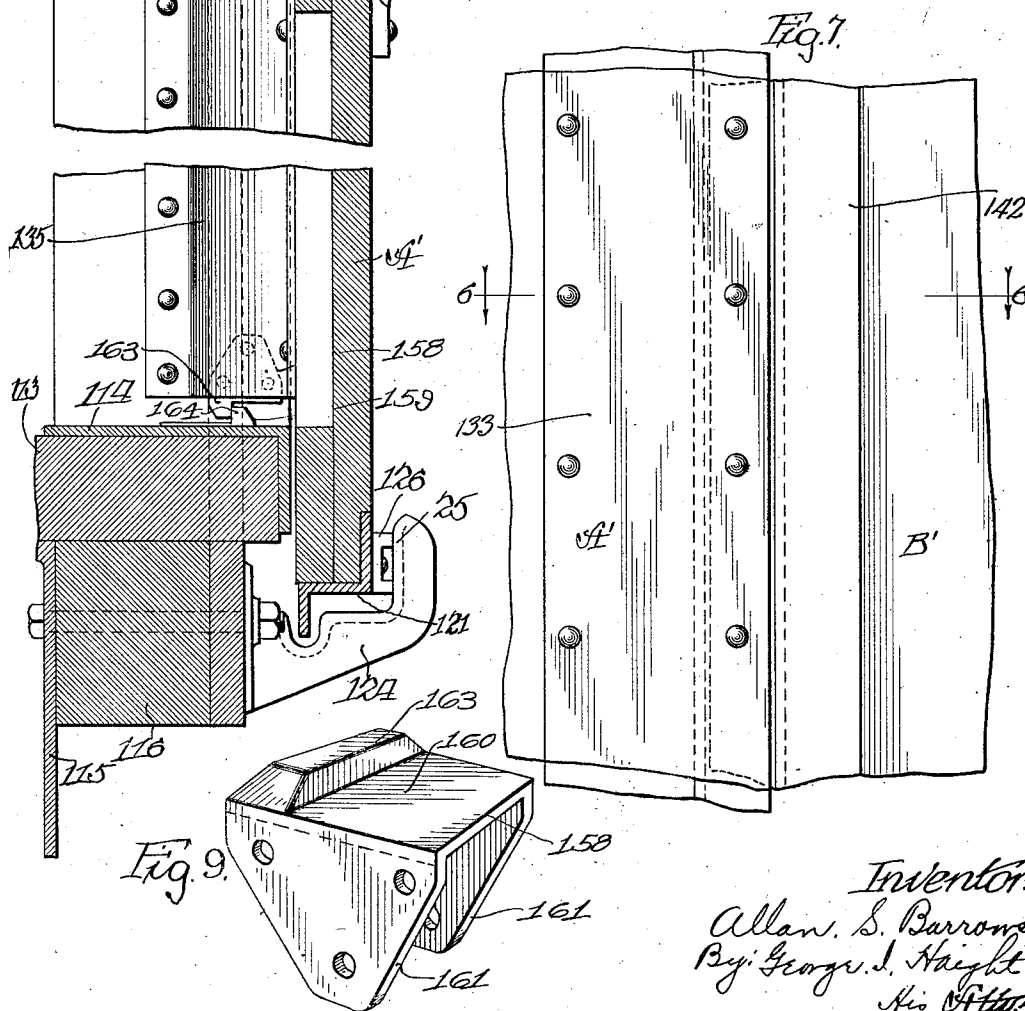
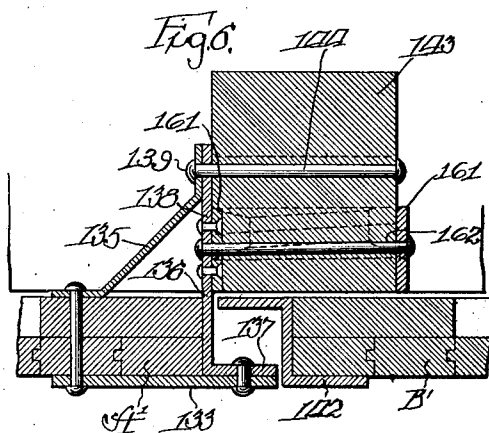
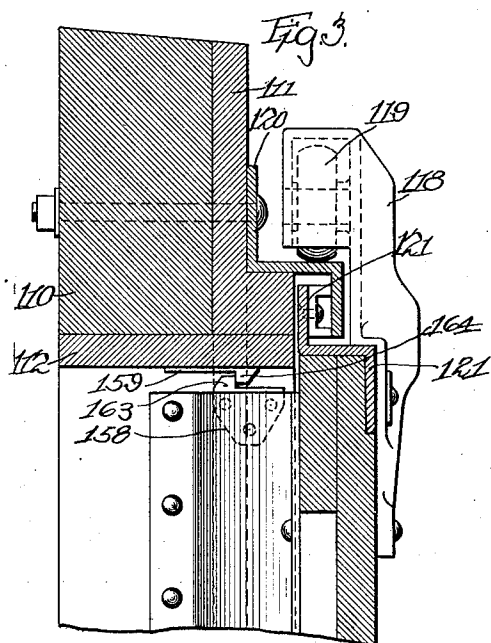
A. S. BARROWS

1,838,731

DOOR

Original Filed Jan. 2, 1924

3 Sheets-Sheet 2



Inventor:
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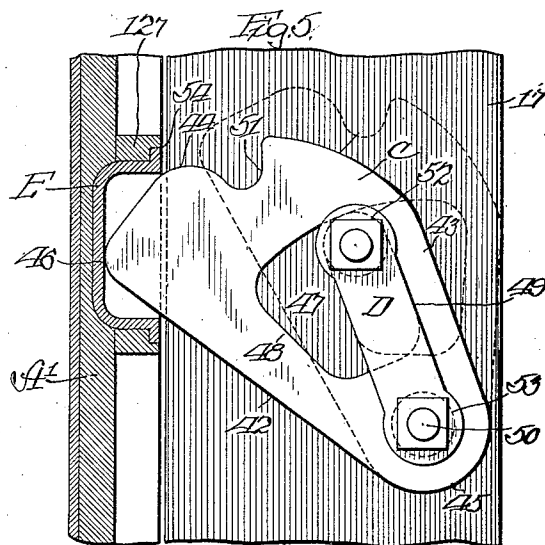
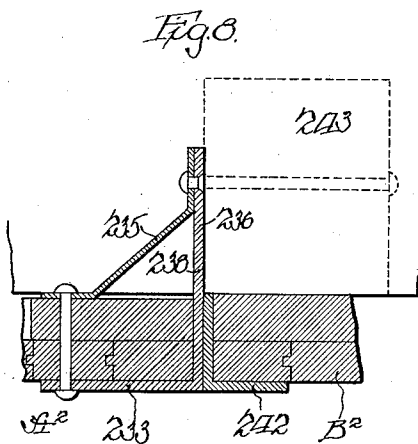
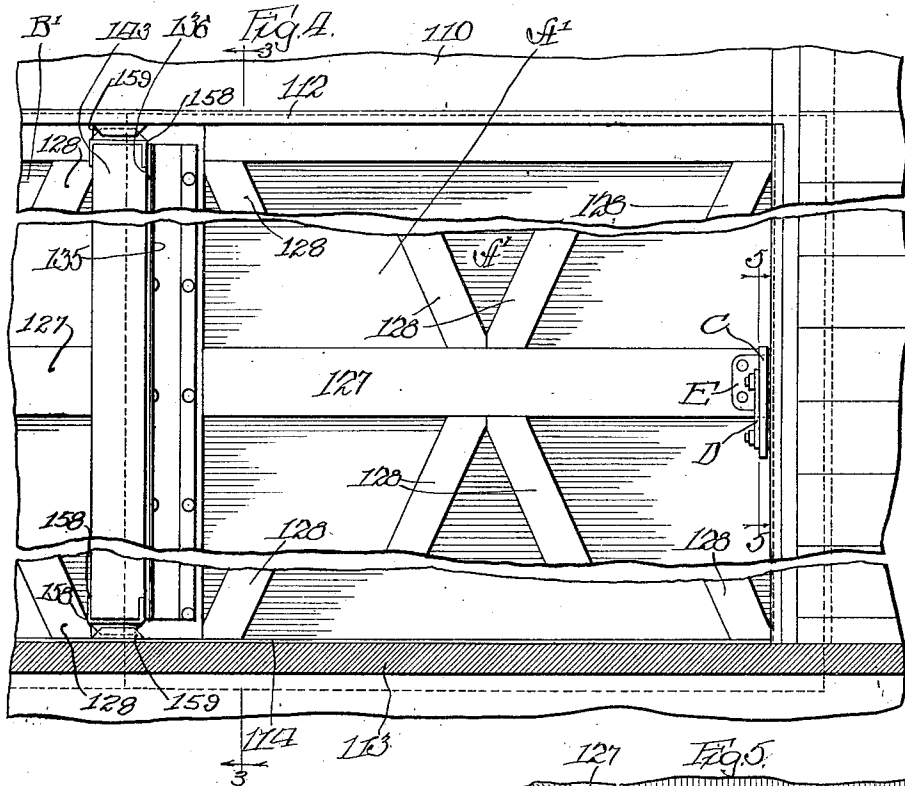
A. S. BARROWS

1,838,731

DOOR

Original Filed Jan. 2, 1924

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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DOOR

Application filed January 2, 1924, Serial No. 683,881. Renewed October 21, 1929.

This invention relates to improvements in car doors.

One object of the invention is to provide a car door of the outside sliding type, and more particularly a door for box cars, and wherein great strength against pressure in every direction is obtained.

A further object of the invention is to provide a car door of the double, outside sliding type especially adapted for box cars used in the transportation of automobiles, furniture and other articles of large size.

Another and more specific object of the invention is to provide a door construction, wherein the front edge thereof is so constructed and braced, in combination with inexpensive fixtures used therewith, as to provide unusual strength against lateral thrust.

Other objects and advantages of the invention will more clearly appear from the description and claims hereinafter following.

In the drawings forming a part of this specification, Figure 1 is a side elevational view of a portion of a car showing my improvements in connection therewith, as applied to a single sliding door, parts being broken away in order to better accommodate the figure to the sheet. Figure 2 is an enlarged, broken, horizontal, sectional view corresponding substantially to the section line 2—2 of Figure 1. Figure 3 is an enlarged, vertical, sectional view corresponding substantially to the section line 3—3 of Figure 4. Figure 4 is an interior side elevational view of a portion of a car, showing my improvements in connection with a double sliding door construction, parts being broken away in order to better accommodate the figure to the sheet. Figure 5 is an enlarged detailed, vertical, sectional view corresponding substantially to the line 5—5 of Figure 4. Figure 6 is an enlarged, horizontal, sectional view corresponding substantially to the line 6—6 of Figure 7. Figure 7 is an exterior, side, elevational view of the adjacent ends of the front and rear members of a portion of the double sliding door, shown in Figure 4. Figure 8 is a view similar to Figure 6 illustrating a different embodiment of the invention. Figure 9 is a detailed, perspective

view of a wedge element used in connection with the improved double door construction; and Figures 10 and 11 are horizontal, sectional views illustrating further embodiments of the invention relating to the end construction of the doors.

Referring first to the construction illustrated in Figures 1 and 2, 11 indicates the usual side facing boards of a box car, 17 one of the posts or jambs at the rear edge of the door, and 18 the post at the opposite side of the door opening.

In the arrangement shown in Figures 1 and 2, a single outside door is employed, designated A. The door A is of the top hung type being, preferably, provided with a pair of roller carrying brackets 18'—18'; each bracket having a roller 19 which rides upon a Z-bar track 20, the brackets being so formed that they clear the outermost flange of the track. The door A has its top and bottom edges provided with longitudinally disposed Z-bars 21, the Z-bar at the top of the door coacting with the track 20 so as to prevent the door from moving outwardly with respect to the track.

Suitable means of the type disclosed in my co-pending application, Serial No. 611,243, filed January 8, 1923, is preferably provided to prevent the lower edge of the door A from being swung or pushed outwardly, comprising a series of guide brackets 22, 23 and 24, each of which is provided with an upstanding flange 25 having cam surfaces co-operating with wedge brackets 26 secured to the door. The door is preferably provided with two of these wedge brackets 26, one at each end of the lower edge of the door, as clearly shown in Figure 1. When the door is closed, the respective brackets 26 will engage behind the guide bars 24 and hence prevent the corners of the doors from being forced outwardly or sprung out.

The main portion of the door A is preferably of wooden construction and is properly braced on the inner side. An angular strip 29 is secured to the rear portion of the door, one flange 30 thereof extending vertically along the outer face of the door A at the rear edge thereof, secured to the door by

any suitable means, such as rivets or bolts and the other flange 31 overlying the rear edge of the door. The vertical edge portion of the flange 31 is preferably bent to hook shape, as indicated at 131, so as to engage over the projecting edge 32 of a wear plate 132, applied to the exposed faces of the post 17. In this manner a spark and weather seal is obtained for the rear edge of the door A.

At the front edge of the door A, a special construction of great strength is employed. The same comprises a vertically extending metal strip 33, a section 35 of angle bar, a strip 35' and a second section 36 of angle bar, as best shown in Figure 2. The angle bar 36 has an outer relatively narrow flange 37 extending parallel to the side wall of the car, and to which is riveted or otherwise rigidly secured the strip 33. The angle bar 36 has an elongated leg 38 extending transversely of the car and to which one leg of the angle bar 35 is riveted or otherwise rigidly secured, as indicated at 39. The strip 35' is secured to the inner edge of the other leg of the angle iron 35 inwardly of the vertically extending front edge of the door, diverging outwardly from said door and being secured to the edge of the leg of the angle iron 35 that is in turn secured to the angle iron 36. It will be observed that the other leg of the angle bar 35 is secured to the main portion of the door A, at the front end thereof, by suitable means such as rivets or bolts 40, which also serve to secure the strips 33 and 35' to the outer side of the door.

With the construction described, it will be observed that I provide an exceedingly rigid and strong front edge for the door A, the same forming a tubular, substantially triangular, horizontal cross-section with the inner face of the door, including a pair of protecting over-hanging marginal flanges, one extending forwardly and consisting of two plies of metal 33 and 37 and the other extending laterally and consisting of two plies of metal 35 and 38. This construction is especially adapted to resist bending from thrusts exerted transversely outwardly from the interior of the car, to resist bending from thrusts imparted parallel to the side wall of the car, and also to resist bending or thrusts exerted inwardly against the door.

The post 18 has the exposed faces thereof protected by a wear plate 41, secured by bolts or any other suitable means passing through the post and flanges on the wear plate. A vertically disposed angular strip 41' is secured to the outer side of the car at the front edge of the door opening, and adapted to co-act with the double ply edge 33-37 of the door A, to provide a weather or spark seal, the double ply edge being so disposed as to overhang the rear flange of the angle strip when the door is in closed position, as clearly shown in Figure 2. The strip 41' is preferably secured directly to the wear plate 41 and

is held by the same bolts that serve to secure the plate 41.

Referring next to the construction illustrated in Figures 3, 4, 5, 6 and 7, 110 indicates the usual side plate of a box car, 111 the side facing boards, 112 the door lintel, 113 the floor boards, 114 the threshold plate, 115 the car side sill and 116 the supporting block for the extended floor boards. The door opening is provided with posts or jambs at the front and rear ends thereof in all respects similar to the jambs or posts 17 and 18 hereinbefore described. In this connection, it is pointed out that the structure of the car adjacent the door opening in Figures 1 and 2 corresponds in all respects to the construction shown in Figure 3, as hereinbefore described.

In the construction illustrated in Figures 3, 4, 5, 6 and 7, two sliding outside doors are employed in connection with a large door opening, one of which may be termed the main door and designated B', and the other a somewhat narrower door, which may be termed a secondary or auxiliary door, which is indicated by the reference character A'. The doors A' and B' are of the top hung type, each being preferably provided with a pair of roller carrying brackets 118 similar to the brackets 18 hereinbefore described and each having a roller 119 which rides upon the Z-bar track 120, the brackets being so formed that they clear the outermost flanges of the track, and each door having its top and bottom edges provided with longitudinally extending Z-bars 121 of a construction corresponding with the Z-bars 21 hereinbefore described. The Z-bar at the top of the door has the one arm thereof abutting the outer surface of the door, the central section abutting the upper edge of the door and the remaining arm extending upwardly in alignment with the rear surface of the door and inside of the outermost track flange so as to thereby prevent the door from moving outwardly with respect to the track. The Z-bar at the bottom end of each door also has an arm and the intermediate section thereof abutting the outer surface and bottom edge of the door respectively, the remaining arm of the Z-bar being in alignment with the rear surfaces of the door and projecting downwardly therefrom.

The main body portion of the door B' is preferably constructed of wood braced on the inner side by a centrally disposed longitudinally extending member 127 and two pairs of diagonally extending members 128-128. The front end of the door B' which is the end adjacent the door A', when the doors are in closed position, as shown in Figure 6, is provided with a vertically disposed Z-bar 142, applied to the exposed faces of the rear edge, and the outer side thereof, in such a manner that one leg and the intermediate por-

tion about the outer side and rear edge respectively and the other leg projects from the door in a plane parallel to the rear side thereof toward the adjacent edge of the door A'.

5 The bar 142 serves as a protecting wear plate for the door B' and the projecting leg coacts with the front edge of the door A' to provide a weather and spark seal. The opposite or rear end of the door B' is of a construction identical with that of the rear end of the door A, as shown in Figure 2, being provided with a strip similar to the strip 29, cooperating with a wear plate similar to the plate 132 applied to the post at the adjacent end of the door opening.

10 The auxiliary door A' is preferably constructed of wood also, and is braced on the inner side similarly to the door B', being provided with a longitudinally extending member 127 and two pairs of diagonally extending members 128—128. The door A' is otherwise of a construction substantially the same as the door A, with the exception that the front end thereof is provided with a post or block 143 and the angle bar 35 of the door A is replaced by a strip 135. In Figure 4, which shows the entire door A' and Figures 6 and 7 which show the front end portion only of the same, the front edge comprises a vertically extending metal strip 133, a second strip 135 and a section 136 of angle bar having a relatively narrow flange 137 and an elongated leg 138.

15 The elongated leg 138 of the angle bar 136 extends transversely of the car and has one edge of the strip 135 rigidly secured thereto as indicated at 139. It will be observed that the other leg of the strip 135 is secured to the main portion of the door A' at a point inwardly of the front end thereof by any suitable means, such as bolts or rivets, which also serve to secure the strip 133 to the outer side of the door, and that the strip 135 is extended angularly inwardly from the main plane of the door. As best shown in Figure 3, the flange 137 of the section 136 extends for the full length of the door A', but the leg 138 and the strip 135 terminate a short distance above the threshold and below the door lintel.

20 With the construction described, it will be observed that I provide what may be termed a tubular edge at the front edge of the door A', said tubular edge being of substantially triangular horizontal section and provided with a protecting over-hanging marginal flange, consisting of two plies of metal 133 and 137. This construction is especially adapted to resist bending from the thrusts exerted transversely outwardly from the interior of the car, to resist bending from thrusts imparted parallel to the side wall of the car and also to resist bending or thrust exerted inwardly against the door. The projecting arm of the Z-bar 142 on the door B'

is adapted to coact with the double ply edge 133—137 of the door A' to provide a weather or spark seal, the double ply edge being so disposed as to overhang the leg of the Z-bar when the door is in closed position, as clearly shown in Figure 6.

25 The elongated leg 138 of the angle section 136 provides a suitable support for the heavy block 143, which may be bolted to the angle section as indicated at 144, the inner face of the block 143 being in line with the inner face of the post of the door opening at the rear end of the auxiliary door, corresponding to the post 17, shown in Figure 2. Where the auxiliary door A' is not required and when it may be left for a considerable time in its closed position, the door A' may be locked in a closed position and boards nailed to the post at the end of the door opening corresponding to the post 17 and to the block 143 to continue the inner sheathing of the car.

30 Suitable means is preferably provided in order to prevent the front edge of the door A' from being sprung outwardly, said means comprising wedge castings 158 secured to the post 143 and wedge castings 159 secured to the lintel and threshold respectively. One of the wedge castings 158 is shown in detail in Figure 9 and is in the form of a substantially rectangular plate 160 having spaced side flanges 161—161 projecting at right angles therefrom, by which the casting is secured to the post 143, the flanges of the plate straddling the post and being provided with aligned openings adapted to receive securing bolts 162 extending through the post. As shown in Figure 9, each of the flanges 161 is preferably provided with three bolt receiving openings. On the side of the plate 160 opposite to the flanges 161 is provided a wedge projection 163 adapted to cooperate with a similar wedge projection on one of the wedge castings 159. The castings 158 are preferably two in number, one being fixed to the upper end and the other to the lower end of the post 143, and each coacting with one of the wedge castings 159. The wedge castings 159 are of similar construction, each comprising a flat plate provided with a wedge projection 164 similar to the projection 163 of the plate 158 but reversely arranged and coacting therewith to force the door inwardly toward the car wall when the same is moved to closed position.

35 In the double door construction just described, guide brackets 124 and wedge castings 126 similar to the brackets 22, 23 and 24 and wedge castings 26 are provided, the construction and arrangement being the same as that disclosed in the copending application referred to, the rear lower corner of the door A' preferably having secured thereto a double wedge casting so that the same will wedge against the respective guide brackets carried by the car body, and the front lower

corners of each of the doors A' and B', that is, the two meeting corners when the doors are in closed position are illustrated in Figure 7, preferably being provided with a single wedge bracket. The wedge brackets 124 are cut out as shown in Figure 3 to accommodate the downwardly projecting leg of the Z-bar 121 at the lower edge of the door. When the doors A' and B' are closed, the respective wedge castings will engage behind the adjacent guide brackets and hence prevent the corners of the doors from being forced outwardly or open.

The auxiliary door A' is also provided with a gravity controlled latching mechanism to lock the same in closed position.

The latching mechanism comprises, broadly, a pivoted latch C; a retaining member D; and a socket member E fixed to the door.

The latch C, as best shown in Figure 5, is in the form of a flat plate, having upwardly diverging side edges 42 and 43, a convex top edge 44 of a curvature of relatively great radius, and a convex bottom edge 45 of a curvature of relatively short radius. The side edge 42 is of greater length than the side edge 43 thereby providing a toe portion 46 adapted to coact with the socket member E. Upon reference to Figure 5, it will be noted that the toe portion 46 is adapted to engage within the socket member E to hold the door in locked position. The latch C is recessed as indicated at 47 for a purpose hereinafter described, the recess 47 being provided with a pair of diverging side walls 48 and 49. At its lower end, the latch C is provided with a pivot opening concentric with the convex lower edge face 45 of the latch adapted to receive the bolt 50 by which the latch is pivotally mounted. To provide means for withdrawing the latch C from its locking position, the top edge 44 may be notched as indicated at 51.

The retaining member D is in the form of a flat bar. Projecting at right angles from the inner face of the bar, at the opposite ends thereof, are a pair of bosses 52 and 53, the boss 53 being adapted to engage within the pivot opening at the lower end of the latch and receiving the bolt 50. The upper end portion of the retaining member D is fixed to the post 17 by means of a bolt passing through the boss 52.

As clearly shown in Figure 5, the latch C is swingingly mounted on the post 17 by having its lower end pivoted on the retaining member D by means of the boss 53, the boss 52 extending into the opening 47 and the body portion of the retaining member spanning the space between the pivot opening at the lower end of the member C and the opening 47, holding the latch in position against lateral movement away from the post and forming a guide for the same. The boss 52 is adapted to coact with the walls 48 and 49 of

the recess 47 to limit the swinging movement of the latch C, both in an upward and downward direction. In the lowermost position of the latch C, as shown in full lines in Figure 5, the wall 49 is in abutment with the boss 52, holding the toe of the latch in its lowermost position. Upon the latch being raised, the wall 48 will limit the upward movement of the same by engagement with the boss 52, the limit of the upward movement of the latch being indicated by the dotted lines in Figure 5. As will be evident, the boss 52 is fixed, being so positioned with reference to the pivot point of the latch that it will arrest the upward movement of the latch with the center of gravity of the latter located to the left of the pivot as seen in Figure 5, thereby assuring the automatic return of the latch to its lowermost position.

The socket member E is of generally rectangular outline and is provided with a continuous flange 54. The socket member E is set into the brace 127 as clearly shown in Figure 5, being secured thereto by screws, or any other suitable fastening devices passing through the flange as clearly shown in Figure 4. As will be evident upon reference to Figure 4, the socket member E is spaced the proper distance from the rear end of the door to permit the latch C to drop into the same when the door is closed to hold the door locked in that position.

The operation of the automatic locking mechanism is as follows, assuming that the door is being moved from open to closed position. At the beginning of the sliding movement of the door, the latch will be supported by the toe thereof engaging with the inner flat surface of the brace 127, and during the sliding movement of the door will ride on the brace 127. In the sliding closing movement of the door the socket member E is brought into registration with the latch, whereupon the latter will drop into the socket due to the influence of gravity, thus automatically locking the door in closed position.

To unlock the latching mechanism, the toe 46 of the latch C is withdrawn from the socket member E by raising the latch C to the dotted line position shown in Figure 5, whereupon the door is free to be moved to open position. In the operation of opening the door when the socket member E has passed beyond the latch C the latter due to the influence of gravity drops into position in front of the socket with the toe engaging the brace 27.

Referring to the embodiment of the invention disclosed in Figure 8, the construction is in all respects similar to that shown in Figures 4, 5, 6 and 7 with the exception that the door A' corresponding to the door A' is not provided with the projecting flange 137 and does not have the strip 133 projecting beyond the edge of the door, the strip 133

and the section of angle bar 136, being replaced by a single angular section secured to the outer face of the door and extending over the edge at the front of the latter.

The construction shown in Figure 8 comprises, a main door B² and an auxiliary door A². The main door B² is in all respects similar to the door B¹ shown in Figures 6 and 7 with the exception that the Z-bar 142 is replaced by an angle strip 242 applied to the exposed face of the front edge and the outer side thereof. The front edge of the door A², which is the edge adjacent the door B² when the doors are in closed position, comprises a strip 235 identical with the strip 135 shown in Figure 6, and a section of angle bar 236 having a relatively wide flange 233 secured to the outer face of the door by bolts or any other suitable fastening devices and an elongated leg 238 abutting the front edge of the door and having its inner edge portion riveted to the inner edge portion of the strip 235. The elongated leg 238 of the angle section 236 provides a support for a block 243 similar to the block 143 shown in Figure 6. When the doors A² and B² are in closed position, the edges of the same abut with the flat front face of the strip 242 abutting the flat face of the leg 238.

Referring next to the embodiment of the invention illustrated in Figure 10, the construction is similar to that shown in Figures 1 and 2 with the exception that the front edge of the door is of a somewhat different design. In Figure 10, 318 indicates the door post at the front end of the door opening, 141 the wear plate and 141' the angular strip secured to the outer side of the car. The single outside door is designated by A³, the rear edge of which is of a construction identical with the door A. The front edge of the door A³ comprises a vertically disposed metal strip 333 and a section of Z-shaped strip 336. The Z-strip has a narrow and a relatively wide flange 337 and 338 extending parallel to the side wall of the car. The Z-strip has the flange 338 lying flat against the inner surface of the door and the portion intermediate the flanges abutting the front edge of the same. The outer face of the flange 337 lies in the plane of the outer surface of the door and is riveted or otherwise rigidly secured to the strip 333. Bolts 340 or any other suitable fastening devices serve to secure the strips 333 and 336 to the door. In this connection, it will be noted that the two-ply projecting portion 333 and 337 coacts with the angle strip 141' in a manner similar to the parts 33, 37 and 41 shown in Figure 2, to form a spark and weather seal.

Referring next to the embodiments of the invention illustrated in Figure 11, the construction is also similar to that shown in Figures 1 and 2, with the exception that the front edge of the door is of somewhat dif-

ferent design and the outer side of the car adjacent the front edge of the door is provided with an angle strip arranged reversely to the angle strip 41' shown in Figure 2. In Figure 11, 418 indicates the door post at the front end of the door opening and 441 the wear plate. The single outside door is designated by A⁴, the rear edge of which is of a construction identical with the door A. The front edge of the door A⁴ comprises two vertically disposed angle bars 433 and 435 secured respectively to the outer and inner surfaces of the door. The angle bar 433 has a relatively wide flange 434 lying flat against the outer surface of the door and an elongated leg 438 extending inwardly, transversely of the car and lying flat against the front edge of the door. The angle bar 435 also has a relatively wide flange 436, lying flat against the inner surface of the door and a leg 439 extending inwardly, transversely of the car and lying flat against the leg 438 and rigidly secured thereto in any suitable manner. The parts 438 and 439 provide a flange of two-ply metal. The flanges 434 and 436 of the bars are fixed to the door by any suitable means such as bolts 440 extending therethrough. A vertically disposed angular strip 441' is secured to the outer side of the car at the front edge of the door opening, being fixed to the post 418 by one of its flanges and having the other flange projecting outwardly from the post with the face thereof nearest the door in substantially the same plane as the inner transverse face of the post and adapted to coact with and overhang the front edge of the door to provide a weather or spark seal.

It will be evident that my invention is not limited to the use of the various designs of front edges of doors shown in Figures 2, 10 and 11 in connection with single doors, but that the same may be employed equally well in connection with a double door construction of the type illustrated in Figures 3 to 7 inclusive. It will also be evident that the designs of front edges for doors shown, in Figures 3 to 8 inclusive, as applied to double doors may be employed equally well in connection with single doors.

I have herein shown and described what I now consider the preferred manner of carrying out the invention, but the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:

1. In a car door, the combination with a main wooden door portion; of a front edge portion for said wooden portion comprised of fabricated metal, said metal including certain parts arranged with reference to the wooden door portion as to provide a hollow tubular formation.

2. As an article of manufacture, a door

having the main portion thereof formed flat and provided along one vertical edge with a flat metal strip; a metal strip secured to the main body portion of the door at the inner side thereof inwardly of said edge and diverging from said body portion; and a metal member rigidly connecting the edges of both of said strips.

3. As an article of manufacture, a door having a main body portion and provided on one side thereof along one vertical edge with a flat metal strip extending beyond said edge; a metal strip secured to the main body portion of the door at the other side thereof inwardly of said edge and diverging from said body portion; and a third metal member secured to the free edges of said strips.

4. As an article of manufacture, a door having the body portion thereof formed flat and provided along the vertical edge at one side thereof with a flat metal strip extending beyond said edge; a metal strip secured to the main body portion of the door at the other side thereof inwardly of said edge and diverging from said body portion; and a third metal member secured to the free edges of said strips and spanning the space therebetween.

5. In a car having a door opening defined in part by posts, the combination with a slidable door having a front edge composed of fabricated metal and forming a substantially triangular cross section with the inner face of said door, said fabricated front edge including a portion extending beyond the front edge of the door proper and spaced from the side wall of the car, a strip connected to said portion and extending substantially normal to the main plane of said door, and a member connected to said strip in spaced relation to said portion and connected to said door, of a vertically extending member secured to the side of the car adjacent the front end of the door opening and having a projecting flange adapted to coact with said projecting edge portion to form a spark and weather seal.

6. In a car, provided with a side wall having a door opening therein, the combination with a slidable door having the front edge thereof composed of fabricated metal and forming a triangular cross-section with the inner face of said door, said fabricated front edge comprising a vertically extending strip secured to the outer side of the door and projecting beyond the front edge of the main body portion thereof, a strip secured to the inner side of the door inwardly of said main body portion edge, and an angle strip secured to the free edges of said first and second named strips, one arm of said angle strip being disposed in flat face-to-face contact with the projecting portion of said first named strip and forming therewith a double ply edge portion; and a metal strip secured to the outer side of the said wall adjacent said door

opening and coacting with said double ply edge to provide a spark and weather seal.

7. In a car provided with a side wall having a door opening therein, the combination with a slidable door adapted to close said opening, said door having the front edge thereof fabricated of sheet metal and forming an approximately triangular, tubular cross-section with the inner surface of said door, said fabricated front edge including a two ply metal flange extending beyond the front edge of the main body portion of the door; a vertically extending strip secured to the outside of the car wall adjacent one end of said door opening and having a vertically disposed outwardly projecting flange, said strip coacting with said two ply flange of the door to form a spark and weather seal; and coacting means on the side wall of the car adjacent the other end of the door opening and on the adjacent end of the door, when the door is in closed position, providing a second spark and weather seal.

8. In a car, the combination with a main sliding door; of an auxiliary braced sliding door, the latter having the front edge thereof composed of fabricated metal and forming a substantially triangular horizontal cross-section with the inner face of said door; and a block secured to said front edge and adapted to over-lap the adjacent edge of the main door when the doors are in closed position.

9. In a member having a door opening defined in parts by posts, the combination with a main sliding door; of an auxiliary braced sliding door, the latter having the front edge thereof composed of fabricated metal and forming a substantially triangular cross-section with the inner face of said door, said fabricated front edge including a portion extending beyond the front edge of the main body portion of said door and coacting with the adjacent end of the main door when the doors are in closed position; a block secured to the front edge of said auxiliary door and adapted to over-lap the adjacent edge of the main door when the doors are in closed position, said block and edge of the auxiliary door coacting with the adjacent end of said main door to provide a spark and weather seal.

10. In a car, the combination with a sliding door having a longitudinally extending brace; of means carried by a car body adjacent the rear edge of the door, when the latter is in closed position, cooperating with said door for automatically locking it in closed position, said means including a gravity actuated latch member, and a socket member mounted on the door and disposed outside of the inner plane of the brace.

11. In a car, the combination with a sliding door; of a brace extending longitudinally of the door; a socket member seated within said brace rigidly fixed with reference to the door and spaced from the rear edge thereof;

a locking latch pivotally mounted on the car adjacent said rear edge of the door, when the latter is in closed position, said latch being provided with a projecting part adapted to ride on said brace and coact with said socket to hold the door in closed position.

12. A sliding door for cars comprised mainly of wood, said door having one edge thereof fabricated of sheet metal, said edge including a metal strip secured to the main body of the door at the outer side thereof and projecting beyond the edge thereof; a second metal strip secured to the inner side of the door; and a third metal strip secured to the free edges of said first and second named strips and lying flat against the adjacent edge of the door.

13. As an article of manufacture, a door having the main portion thereof formed flat and provided along one vertical edge at the outer side thereof with a flat metal strip; an angle bar having one arm secured to said strip to provide a two-ply flange and having the other arm extending transversely, inwardly of the car beyond the rear face of said door; and a third metal member having one end secured to the main body of the door and the other end secured to said inwardly extending arm to provide a two ply flange.

14. In a car having a door opening defined in part by posts, the combination with a slidable door having a front edge composed of fabricated metal arranged with reference to said door so as to provide a hollow tubular formation substantially triangular in cross-section, said fabricated front edge including a portion extending beyond the front edge of the door proper and spaced from the side wall of the car; of a vertically extending member secured to the side of the car adjacent the front end of the door opening and having a projecting flange adapted to co-act with said projecting edge portion to form a spark and weather seal.

15. A car door comprising a wooden body portion, having the front edge thereof composed of fabricated metal, said metallic edge portion including a vertically arranged member disposed substantially at right angles to the main plane of the door, and extending inwardly of said plane to provide means to which a grain closure may be attached when the latter is applied on the inner side of said door, said member overlying and directly bearing against the front edge of the wood portion.

16. A car door, comprising a wooden body portion, having the front edge thereof composed of fabricated metal embracing the front edge and inner and outer faces thereof, said metallic edge portion including a vertically arranged member disposed substantially at right angles to the main plane of the door, and extending inwardly of said plane to provide means to which a grain closure

may be attached when the latter is applied on the inner side of said door; and means extending from a point spaced from the front edge between said main body portion and said vertically disposed member for bracing the latter.

17. A car door, comprising a main wooden body portion, having a metallic edge including a metallic element extending substantially perpendicularly to the main plane of said body portion; and means for bracing said member against rotation about its longitudinal axis with reference to the main body portion of said door, said means extending diagonally from the wood portion to said member and attached to the latter inwardly of the inner plane of the wood portion.

18. In a car, the combination with a main sliding door and an auxiliary wooden sliding door having a metallic construction at its forward end, said construction including a vertically extending portion disposed substantially at right angles to the main plane of the body portion of said auxiliary door and adapted to co-operate with the adjacent edge of said main sliding door; and means associated with said auxiliary door for bracing said metallic portion against rotation about its longitudinal axis, said means extending diagonally from the wood portion to said member and attached to the latter inwardly of the inner plane of the wood portion.

19. In a car, the combination with main and auxiliary oppositely sliding doors arranged to have their front edges meet when the doors are in closed position, said auxiliary door including a main body portion of wood provided at its forward edge with a metallic construction including a vertically extending metallic element having a section arranged at substantially right angles to the main body portion of said auxiliary door, said section extending inwardly of the main plane of the door; a nailing strip secured to the forward side of said inwardly extended section and a metallic portion on said auxiliary door arranged to over-lap the forward edge of the main door to thereby provide a weather seal when the two doors are closed.

In witness that I claim the foregoing I have hereunto subscribed my name this 7th day of November, 1923.

ALLAN S. BARROWS.