

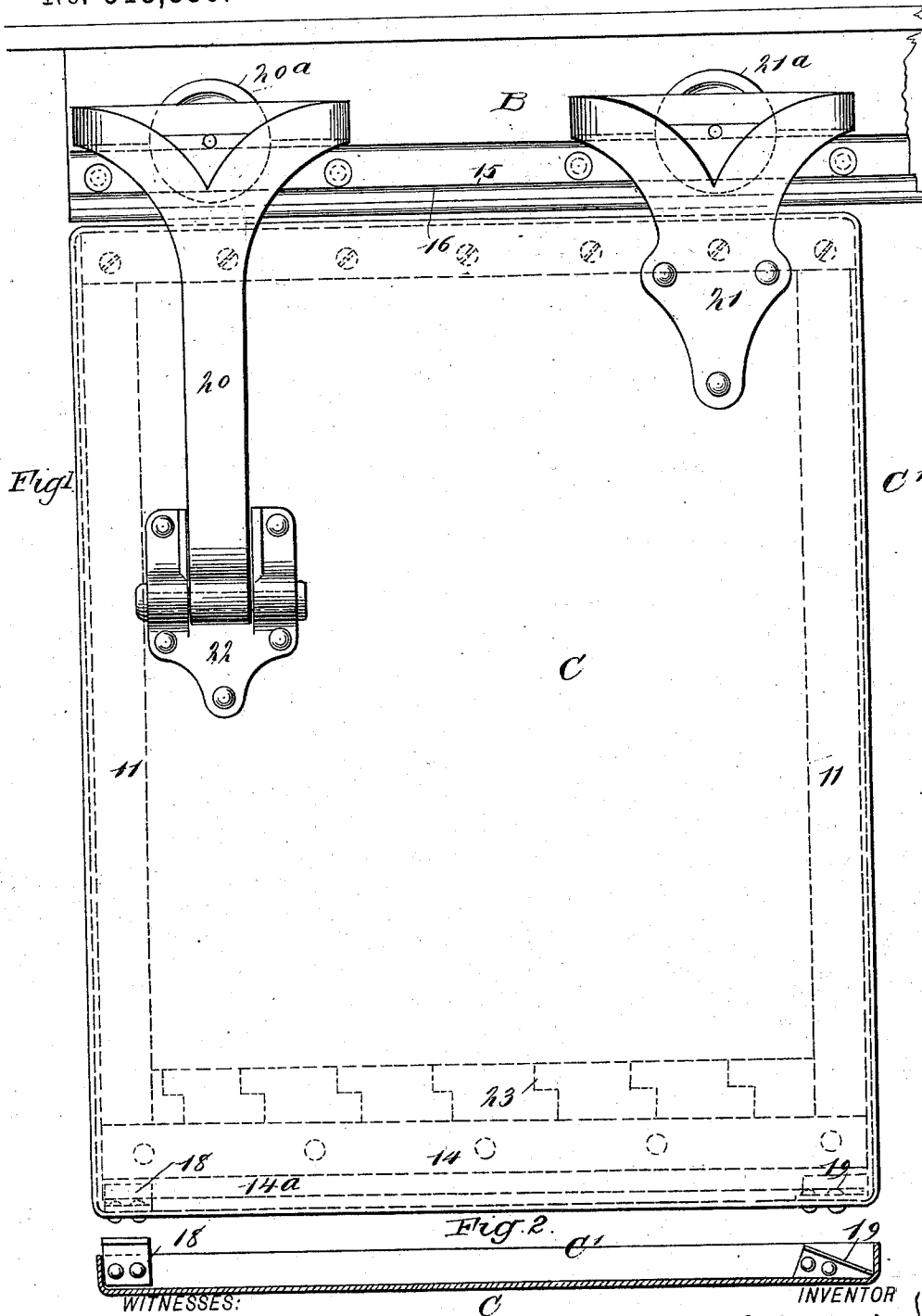
(No Model.)

2 Sheets—Sheet 1.

J. J. MULLIGAN.
FREIGHT CAR DOOR.

No. 513,336.

Patented Jan. 23, 1894.



WITNESSES:
Paul J. Baker
C. Bodgwick

INVENTOR
J. J. Mulligan
BY *Mum & Co*
ATTORNEYS.

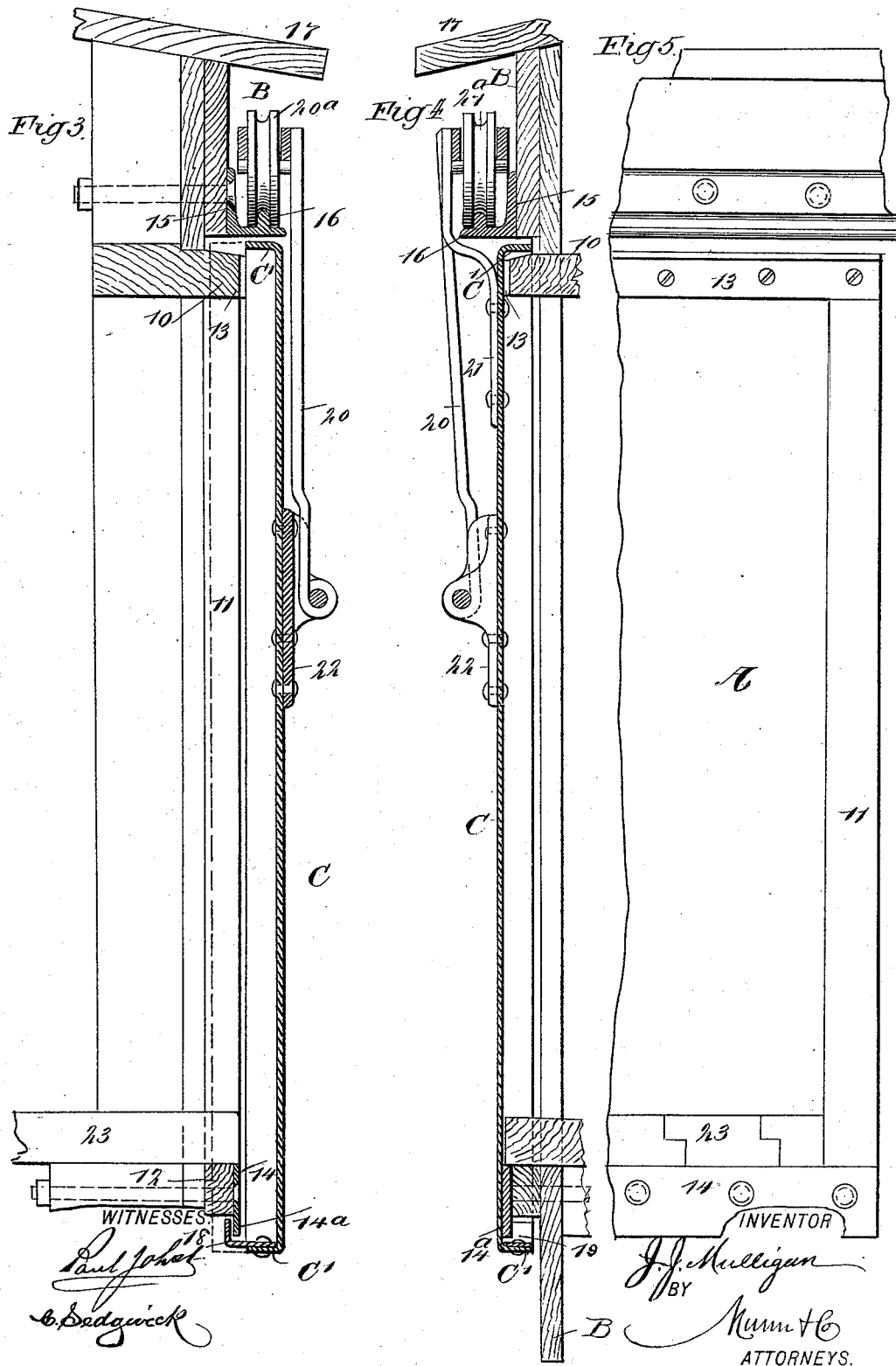
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UNITED STATES PATENT OFFICE.

JOHN JAMES MULLIGAN, OF VICKSBURG, MISSISSIPPI.

FREIGHT-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 513,336, dated January 23, 1894.

Application filed September 23, 1893. Serial No. 436,300. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAMES MULLIGAN, of Vicksburg, in the county of Warren and State of Mississippi, have invented a new and useful Improvement in Freight-Car Doors, of which the following is a full, clear, and exact description.

My invention relates to an improvement in sliding doors for freight cars, and it has for its object to provide a metallic door which when closed will closely hug an extension of the door opening, thus completely closing the opening, and whereby the door after being opened to a slight extent will hang perpendicularly free from the extension of the door casing, and will have wheeled and guided action upon the outer surface of the car in such manner as to enable an operator to expeditiously and conveniently expose the entire door opening of the car.

A further object of the invention is to provide devices whereby the door when closed will be automatically carried to a binding engagement with the extension of the door frame.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation of the improved door, and the track upon which it is supported. Fig. 2 is a horizontal section through the door, taken near the bottom thereof. Fig. 3 is a vertical section through a portion of the car and door, illustrating the latter as swung out from the door frame and in position to be slid in direction of the ends of the car. Fig. 4 is a section similar to Fig. 3, illustrating the door in its fully closed position; and Fig. 5 is a partial front elevation of a portion of the door opening of the car and supporting track or rail, with the extension of the door framing.

The framing of the door opening A, is provided with an extension rail at its sides, its top and its bottom, the said extension rails

being designated respectively the upper rail as 10, the side extension rails as 11, and the bottom extension or rail as 12; and the outer face of each extension rail or section of the door framing may be provided with a wear plate, but in the drawings such a plate is illustrated as being applied to the top extension of the door framing and to the bottom, the top wear plate being designated as 13 and the lower one as 14. The lower wear plate 14, is made to extend down below the lower extension of the door framing, forming thereby a guide section 14^a, as shown in Figs. 3 and 4.

Above the upper stretch of the extension of the door framing, an angular or L-shaped bracket 15, is rigidly secured to the outer surface B of the car. The horizontal member of the bracket extends over beyond the upper stretch of the extension of the door framing, and is provided with a rail or track 16, which may constitute an integral portion of the bracket or may be secured thereto.

The eave, or roof of the car body, designated as 17, extends sufficiently beyond its sides to cover the entire bracket 15.

The car door C, is constructed entirely of metal, and consists of a plate, or a series of connected plates of metal of sufficient size to entirely cover the door opening A, and extends over the extensions of the door framing, the body of the door being provided with a marginal flange C', as shown in Figs. 2, 3 and 4, which flange is located at a right angle to the inner face of the door body; and when the door is closed, the flange thereof is adapted to fit over and engage with the outer side faces of the extension of the door framing, as shown in Fig. 4, or practically so; but the length of the door is such that its lower flange will be below the plane of the lower edge of the guide section 14^a of the lower wear plate 14 when the door is closed, or when it is open; and at the lower left-hand corner of the flange portion of the door an angular guide bracket 18, is securely fastened, which extends inward beyond the inner face of the lower flange; and the vertical member of the guide bracket 18, is adapted to travel at the rear of the guide extension 14^a of the lower wear plate 14, and thus limit the outward

movement of the door; while at the lower right-hand corner of the door an angular closing bracket 19, is located, which bracket extends diagonally across the lower flange, as shown in Fig. 2, and in the operation of the door, when it has been almost closed, the wider portion of the closing bracket will engage with the guide extension of the bottom wear plate 14, and will act to draw the door inward and cause it to close around the extension of the door framing, as shown in Fig. 4.

The door is supported through the medium of two hangers 20 and 21, each of which hangers carries a peripherally grooved wheel, designated respectively as 20^a and 21^a, the said wheels being made to travel upon the track 16 over the door opening. The right-hand hanger 21, is rigidly secured to the upper portion of the body of the door C, and is curved outwardly and upwardly from the door sufficiently to clear the outer edge of the rail bracket 15 when the door is closed, as shown in Fig. 4, the wheel 21^a, being journaled in the upper portion of the bracket in any suitable or approved manner. The left-hand hanger 20, has a hinged connection with the door, the said hanger at its lower end being pivotally connected with a keeper 22, secured upon the outer face of the door at or near the central portion of its left-hand side. The hanger 20, extends upward out beyond the rail bracket, and is slightly inwardly bent above its keeper, as shown in Fig. 3, its wheel 20^a being journaled in its upper end.

It will be seen (Figs. 3 and 4) that the keeper, 22, sets off the hanger, 20, from the door, and the space thus obtained between the latter two enables the door to be moved outward at that side edge which is adjacent to the hanger, 20, and thus separated at such edge from the door framing, as required when it is desired to slide the door to open it. In other words, to open the door, the left-hand edge (see Fig. 1) is pulled directly outward, and thus disengaged from the framing, as shown in Fig. 3, this movement being permitted by the jointed hanger, 20, it being understood that the wheel of hanger, 21^a, fits loosely enough on the track to allow it slight torsion on the same without any danger of derailment. When the door has been thus drawn forward and disengaged at one edge, it may be slid laterally, since the parts 14^a and 19 then disengage.

The hanger 20, by reason of its hinged connection with the door, acts to throw the door outward from engagement with the door framing the moment the closing bracket 19 is released from the guide extension 14^a of the lower wear plate, which extension may be termed a guide rail.

The track 16, is so located upon the rail bracket that it will be over the center of the upper flange of the door when the door is swung bodily outward from the door opening.

The flooring 23 of the car is carried out flush with the lower wear plate 14.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a door for freight cars, the combination, with an outward extension of the door framing of the car, of a door provided with an inwardly-extending marginal flange adapted to substantially surround the extension of the door framing, a rail secured upon the car above the door opening, hangers carrying wheels adapted to travel upon the rail, one hanger being fixed to the door and the other having hinged engagement therewith, and guide and closing brackets located upon the bottom of the door, adapted for engagement with a guide device located upon the body of the car, as and for the purpose specified.

2. In doors for freight cars, the combination, with an outward extension of the door framing, and a track located above the upper extension of the door framing, which track is vertically removed beyond the plane of the outer face of the said door framing, of a flanged door the flange of which is adapted to substantially surround the extension of the door framing, a hanger having a hinged connection with the door, a second hanger having a fixed connection with the door, the latter hanger being upwardly and outwardly curved, wheels carried by the hangers, adapted to travel upon the track, and guide devices located at the bottom of the door, acting in conjunction with the hangers to carry the door substantially to an engagement with the extension of its framing, or out of engagement therewith, as and for the purpose set forth.

3. In a door for freight cars, the combination, with an outward extension of the door framing, a track supported above the upper stretch of the framing beyond the outer face thereof, and a guide rail projected below the lower stretch of the door framing, of a door provided with a marginal flange, capable of receiving the extension of the door framing, the lower portion of the flanged door being provided with a guide bracket for engagement with the guide rail, and a diagonal closing bracket likewise adapted for engagement with the guide rail, the brackets being located at opposite sides of the door, a hanger fixed to the upper portion of the door, outwardly and upwardly curved in its upper portion, a second hanger having hinged connection with the door, and wheels carried by the hangers, engaging with the track, the hangers being located near opposite sides of the door, substantially as shown and described.

JOHN JAMES MULLIGAN.

Witnesses:

CHESTER R. MCFARLAND,
F. E. O'NIEL.