W. S. WRIGHT.

FOLDING GATE FOR CAR VESTIBULES.

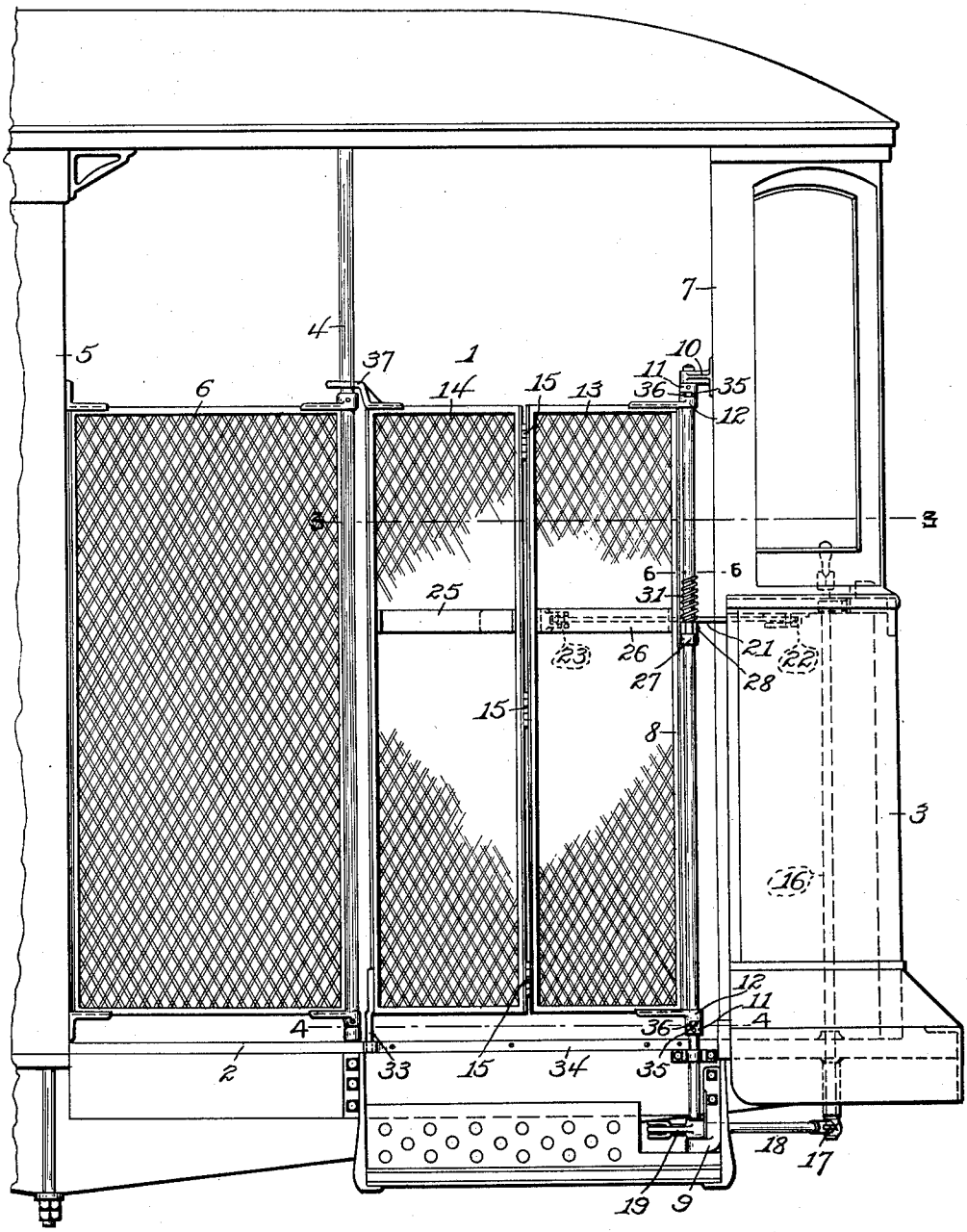
APPLICATION FILED MAY 16, 1911.

1,007,835.

Patented Nov. 7, 1911.

3 SHEETS—SHEET 1.

Fig. I



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3 SHEETS—SHEET 2.

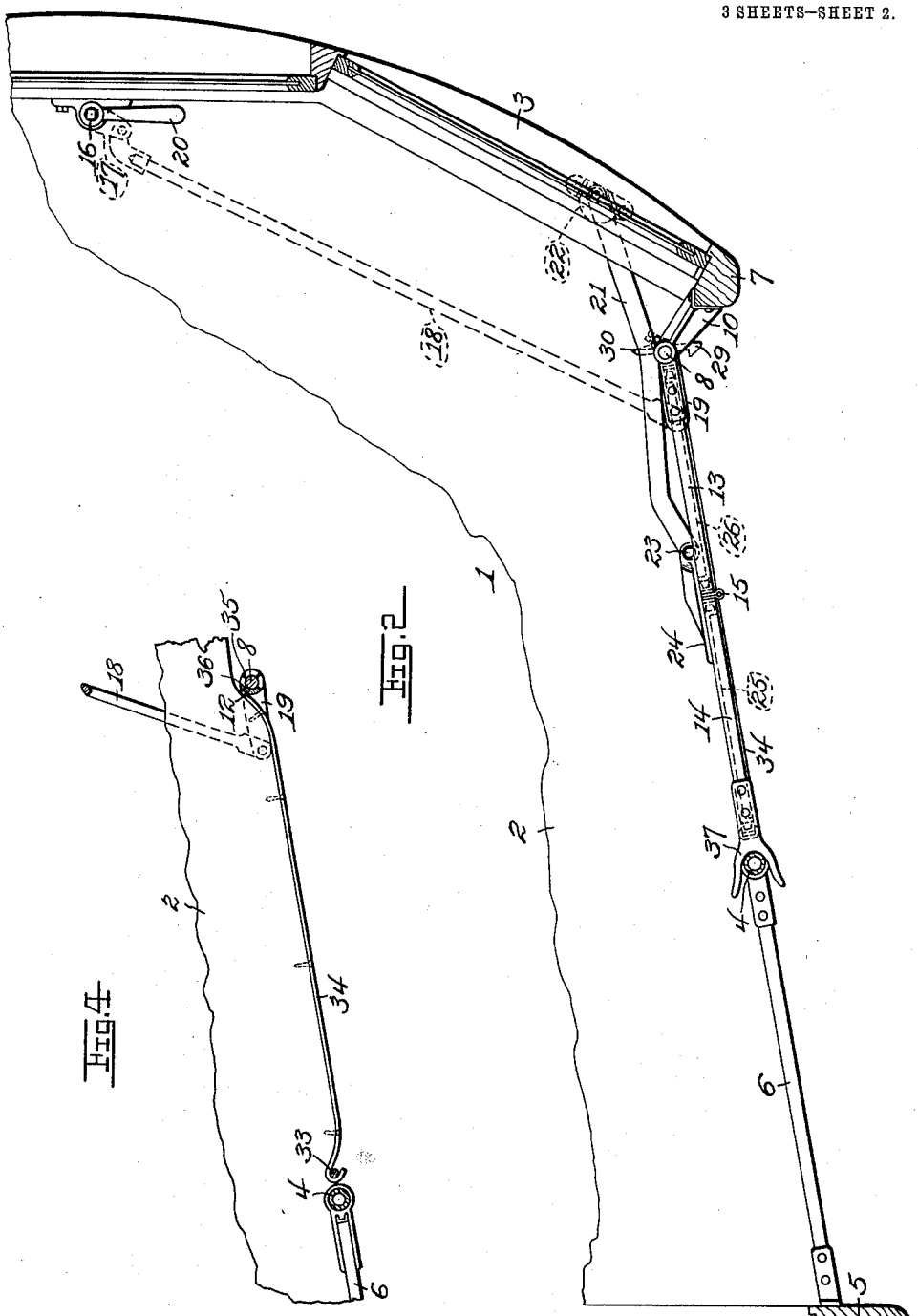

Fig. 2

Fig. 4

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3 SHEETS—SHEET 3.

Fig. 3

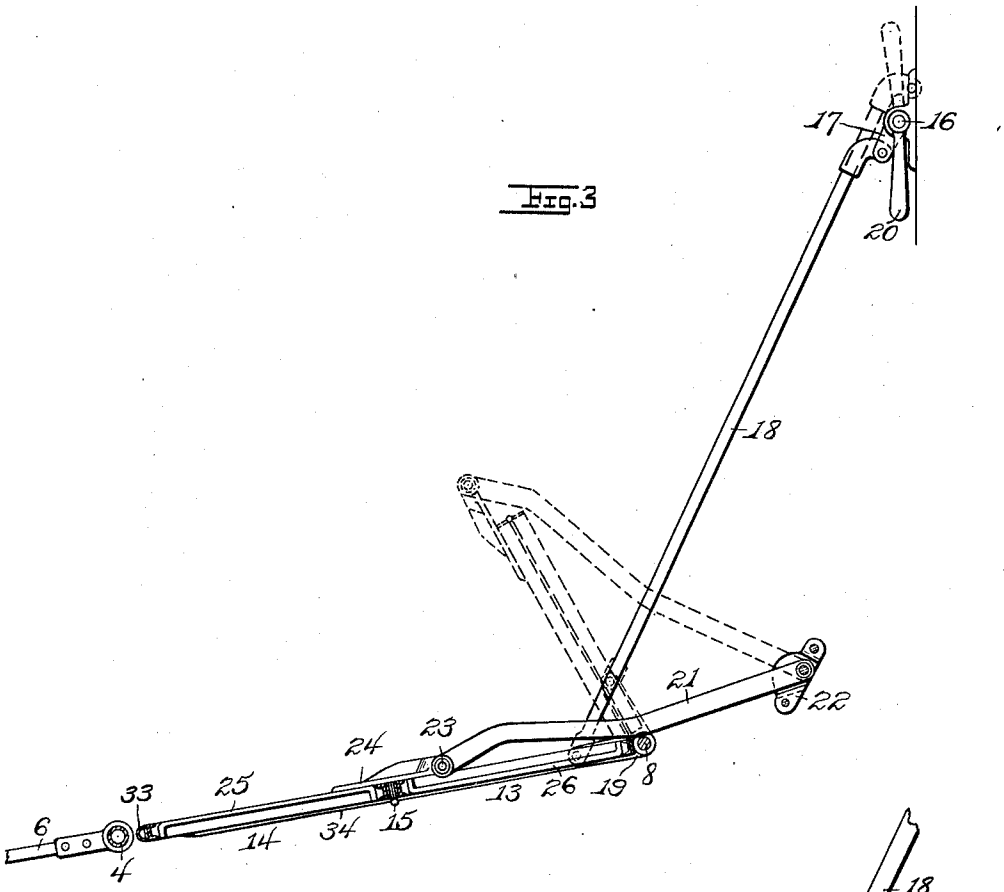


Fig. 5

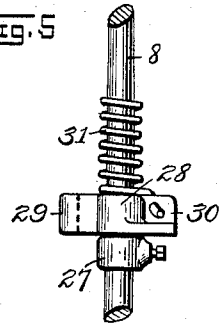


Fig. 6

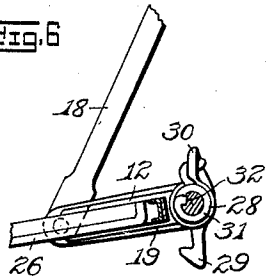
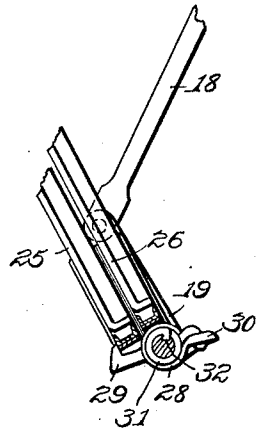


Fig. 7



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UNITED STATES PATENT OFFICE.

WILLIAM S. WRIGHT, OF NEWARK, OHIO.

FOLDING GATE FOR CAR-VESTIBULES.

1,007,835. Specification of Letters Patent. Patented Nov. 7, 1911.

Application filed May 16, 1911. Serial No. 627,564.

To all whom it may concern:

Be it known that I, WILLIAM S. WRIGHT, a citizen of the United States of America, and resident of Newark, county of Licking, and State of Ohio, have invented certain new and useful Improvements in Folding Gates for Car-Vestibules, of which the following is a specification.

This invention relates broadly to folding platform gates or doors for railway-cars, and specifically to mechanism for operating such gates or doors.

The primary object of the invention is to provide a passenger entrance and exit gate or door for the vestibules of railway cars, together with simple, inexpensive and durable mechanism whereby said gates or doors may be conveniently opened and closed by the car operator from his position or station on the platform or vestible.

Other important objects within the contemplation of the invention will in part be obvious and in part pointed out and made readily apparent hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will hereinafter be exemplified and fully described, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of the end of a car showing my invention applied to the vestibule thereof; Fig. 2 is a partial horizontal section of the same, showing parts of the invention in top plan and in gate-closing position; Fig. 3 is a horizontal section of the invention on the line 3—3, Fig. 1, with the floor of the vestibule removed; Fig. 4 is a horizontal section on the line 4—4, Fig. 1; Fig. 5 is an enlarged detail section of a portion of the rotatable post with gate-holding hook; and Figs. 6 and 7 are enlarged sections on the line 6—6, Fig. 1, showing the gate in closed and open position, respectively.

Referring to said drawings, in which like designating characters distinguish like parts throughout the several views—1 indicates generally an end vestibule of a passenger railway car, 2 the floor, and 3 the outer end-wall thereof. Intermediate the ends of the side-opening to the vestibule is a stationary upright post 4 between which and the end of the car-body 5 is a stationary panel 6 of any appropriate type or character, that herein depicted being formed of a frame with wide-mesh woven wire filling.

Rotatably supported adjacent to the corner-post 7 of the end-wall 3 is an upright post 8, said post being mounted at its lower end in a suitable hanger 9 located below the level of the floor, and at its upper end in an outstanding arm 10 fixed on said corner-post 7. Fixed upon said post 8 adjacent to its upper and lower ends are collar-like clutch-members 11 adapted to coact with gate-supporting members 12, which loosely embrace said post, in a manner which will hereinafter be explained.

As above indicated, one edge of one section 13 of a folding gate is rigidly supported on the members 12. The opposite, or second, gate-section 14 is attached, as by outwardly folding hinges 15, to the opposite edge of the gate-section 13 and normally alines therewith. Said gate, when closed, occupies the passageway between the posts 4 and 8 through which passengers enter and depart from the car.

Disposed vertically at a convenient point, as adjacent to the end-wall 3 substantially midway between the ends of the latter, and journaled in suitable bearings, is a shaft 16 whose lower end projects below the level of the floor 2 and has fixed thereto a crank-like arm 17. Pivotally connected to said arm is one end of a horizontally disposed rod or link 18 whose opposite end is pivotally connected to the free end of a crank arm 19 fixed on the rotatable post 8. A hand-lever 20 is fixed on said shaft 16 at its upper end, or at a convenient height, whereby the latter may be rotated for communicating motion to post 8 for opening and closing the gates.

For folding the gate-sections 13 and 14, one against the other, when the gate is swung to open position, and for extending said sections as the gate is closed, certain novel mechanism is employed. Said mechanism consists of a jointed arm comprising a horizontal bar 21, pivoted or fulcrumed at one end on a suitable bracket 22 which is rigidly mounted at a suitable point upon or adjacent to the end wall 3, and a lap-plate 24 jointed or pivotally connected, as at 23, to the opposite end of bar 21. Said lap-plate is rigidly mounted upon the inner face of gate-section 14 and, when said sections occupy alined positions, overlaps the joint formed by said sections and rests

close against gate-section 13, as shown in Figs. 2 and 3. The mounting for said lap-plate may be of any appropriate character, that herein shown consisting of a plate 25 mounted horizontally between the lateral members of the frame of gate-section 14 with its outturned ends fixed to said members. The inturned ends of a simiar plate 26 are in like manner fixed to the lateral members of the frame of gate-section 13, said plate 26 being disposed in a position reverse to that of plate 25, as is most clearly shown in Fig. 3, so as to not interfere with the joint 23.

Mounted in fixed position upon the post 8 is a collar 27, and loosely embracing said post above, and supported by, said collar is a second collar 28 having integral oppositely disposed extensions, one of which is shaped to form a hook 29 and the other an arm 30. Said arm 30 has attached thereto the lower terminal of a coil spring 31 which encircles the post 8 and has its opposite, or upper, terminal turned inward and seated in a socket 32 provided therefor in said post. Said spring is so adjusted that it normally maintains the collar 28 in a position with the hook 29 directed outward, as indicated in Figs. 2 and 6; and when the post is turned, as when the gate is opened, said hook assumes a position in interlocking engagement with the free edge of gate-section 14, as indicated in Fig. 7.

For preventing free swinging movement of gate-section 14 on its hinges 15 while the gate is being opened and closed, a depending rod 33 is provided on the lower end of said section adjacent to its free edge, said rod being adapted to slide, during the movements of the gate, against the outer face of a horizontal guide-bar 34 which is fixed in suitable position, as against the edge of the floor 2 in the passageway between posts 4 and 8. The opposite ends of said guide-bar are curved inward, as shown in Fig. 4, so as to allow the gate-section 14, when the gate occupies either of its extreme positions, to assume proper position with relation to gate-section 13.

Assuming that the gate occupies a position closing the passageway to and from the car vestibule, as indicated in Figs. 1, 2, 3 and 6, the operation for effecting the opening thereof is substantially as follows: The hand-lever 20 is grasped and moved through a semi-circular path from the position shown in full lines in Fig. 3 to that indicated in dotted lines in said figure. The clutch-members 11 and gate-supporting members 12 interlock with the beginning of movement of the post 8, and the gate-section 13 begins its inward swinging movement, forcing in front of it the lap-plate 24 and bar 21. Said lap-plate being fixed to gate-section 14, the inner edge of the latter also begins to swing inward and the depending rod 33 thereof begins to slide forward along the guide-bar 34. The bar 21 being fulcrumed at 22, and the gate-section 13 being hinged to gate-section 14, inward movement of the section 13 automatically effects the folding of said section 14 against said section 13 until, at the end of said movement, the parts occupy the position shown in Fig. 7 and indicated in dotted lines in Fig. 3. The partial rotation of post 8 turns hook 29 to the position shown in Fig. 7; thus, when the free edge of gate-section 14 strikes against the bill of said hook, the latter is thereby forced back against the tension of spring 31 until said section assumes a position close against section 13, when said hook springs into interlocking engagement with said free edge. In closing the gate, reverse movement is communicated to the parts by turning the hand-lever 20 from left to right. With the beginning of the reverse movement, the post 8 turns a sufficient amount to effect the withdrawal of the hook 29 from engagement with gate-section 14 before closing movement of the gate commences, this being admitted by the positioning of the interlocking portions or shoulders 35 and 36, provided respectively on the coacting clutch-members 11 and the gate-supporting members 12, so that when the gate occupies folded position said shoulders are slightly separated, as is shown in exaggerated form in Figs. 1 and 4. When the said shoulders have interlocked, further movement of the hand-lever 20 effects, through shaft 16 and link 18, the outward swinging of the gate. As said gate moves outward, the bar 21 and lap-plate 24 automatically effect the unfolding of the gate-sections in a manner which is readily apparent, the free edge of section 14 being thrust outward and rearward from the section 13 until at the outward limit of the closing movement said sections stand in alinement, and the bar 21 and plate 24 stand in substantial alinement. A yoke 37 is preferably provided on the top of gate-section 14 so that it will assume straddling position with relation to post 4 when the free edge of said section closely approaches said post, said yoke being adapted to thus give rigidity to the upper end of said section when the gate is closed.

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

1. A gate and operating means therefor, comprising a rotatable post, two folding gate-sections, one section mounted on said post and its companion section hinged thereto, means for imparting motion to said post, and a jointed arm controlled by movement of said post for folding and unfolding the gate sections.

2. A gate and operating means therefor,

comprising a rotatable post, two folding gate-sections, one section mounted on said post and its companion section hinged thereto, means for imparting semi-rotary motion to said post, and a jointed arm fulcrumed at one end at a fixed point and rigidly attached at its opposite end to said companion section whereby said sections are automatically folded and unfolded when said motion-imparting means is operated.

3. A device of the character described, comprising a two-section folding gate for closing said passageway, said sections being hinged together, means for moving one section to and from closed position, and a jointed arm controlled by movement of the one section whereby the other section is respectively folded against it and extended from folded position with the opening and closing of said one section.

4. A device of the character described, comprising a two-section folding gate for closing said passageway, said sections being hinged together, means for moving one section to and from closed position, a jointed arm controlled by movement of the one section whereby the other section is respectively folded against it and extended from folded position with the opening and closing of said one section, and automatic means for locking said sections in folded position.

5. A device of the character described, comprising a two-section folding gate for closing said passageway, said sections being hinged together, means for moving one section to and from closed position, a jointed arm controlled by movement of the one section whereby the other section is respectively folded against it and extended from folded position with the opening and closing of said one section, automatic means for locking said sections in folded position, and automatic means for releasing said locking means prior to closing movement of the gate.

6. A device of the character described, comprising a two-section folding gate for closing said passageway, said sections being hinged together, means for moving one section to and from closed position, and a jointed arm fulcrumed at one end at a fixed point and fixed at its opposite end to the opposite section whereby the latter is respectively folded against and extended from the one section with the opening and closing movement of the latter.

7. A device of the character described, comprising a two-section folding gate for closing said passageway, said sections being hinged together, means for moving one section to and from closed position, and a jointed arm interposed between the opposite gate-section and a fixed point whereby the last-mentioned section is folded against the first section and extended therefrom with opening and closing movement, respectively, of the latter.

8. A device of the character described, comprising a two-section folding gate for closing said passageway, said sections being hinged together, means for moving one section to and from closed position, and a jointed arm interposed between the opposite gate-section and a fixed point whereby the last-mentioned section is folded against the first section and extended therefrom with opening and closing movement, respectively, of the latter, said arm comprising a bar and a pivotally connected lap-plate, the latter fixed upon said opposite gate-section, and the bar having the end thereof opposite the said pivotal connection pivoted at said fixed point.

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

WILLIAM S. WRIGHT.

Witnesses:
E. BESUDEN,
W. C. GARDNER.

Corrections in Letters Patent No. 1,007,835.

It is hereby certified that in Letters Patent No. 1,007,835, granted November 7, 1911, upon the application of William S. Wright, of Newark, Ohio, for an improvement in "Folding Gates for Car-Vestibules," errors appear in the printed specification requiring correction as follows: Page 3, lines 12–13, 22–23, 33–34, 47–48, 58–59, and 69–70, strike out the words "for closing said passageway"; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 28th day of November, A. D., 1911.

[SEAL.]

E. B. MOORE,
Commissioner of Patents.