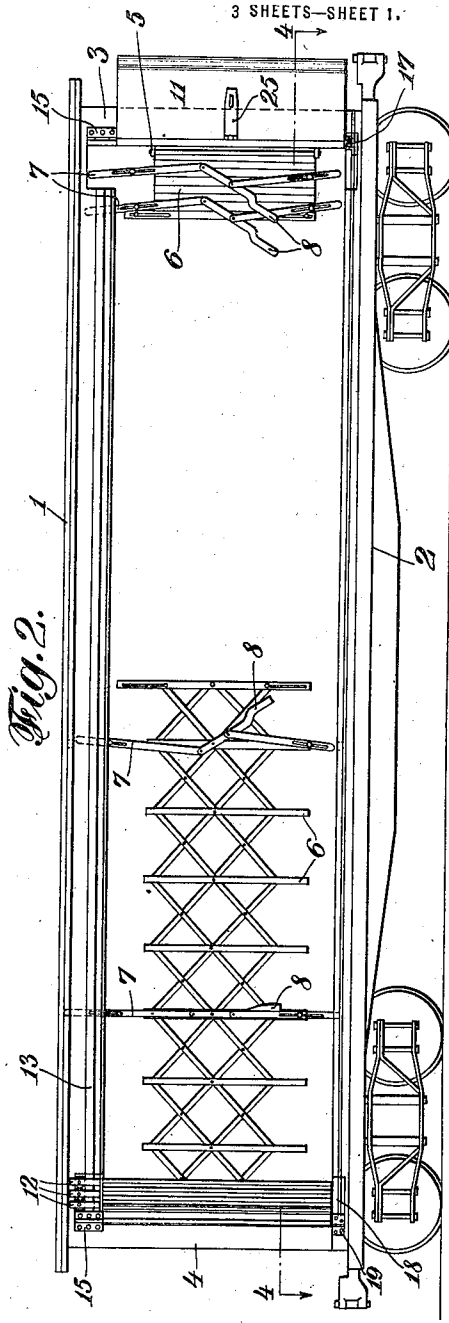
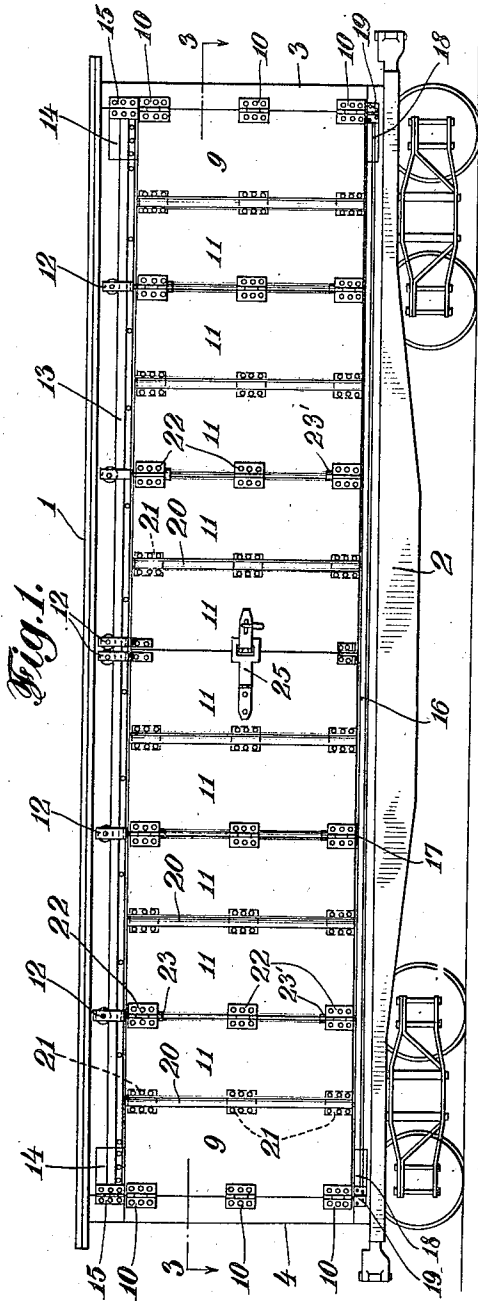


T. J. CALLERY.
 FREIGHT CAR CLOSING DEVICE.
 APPLICATION FILED MAY 18, 1921.

1,405,485.

Patented Feb. 7, 1922.

3 SHEETS—SHEET 1.



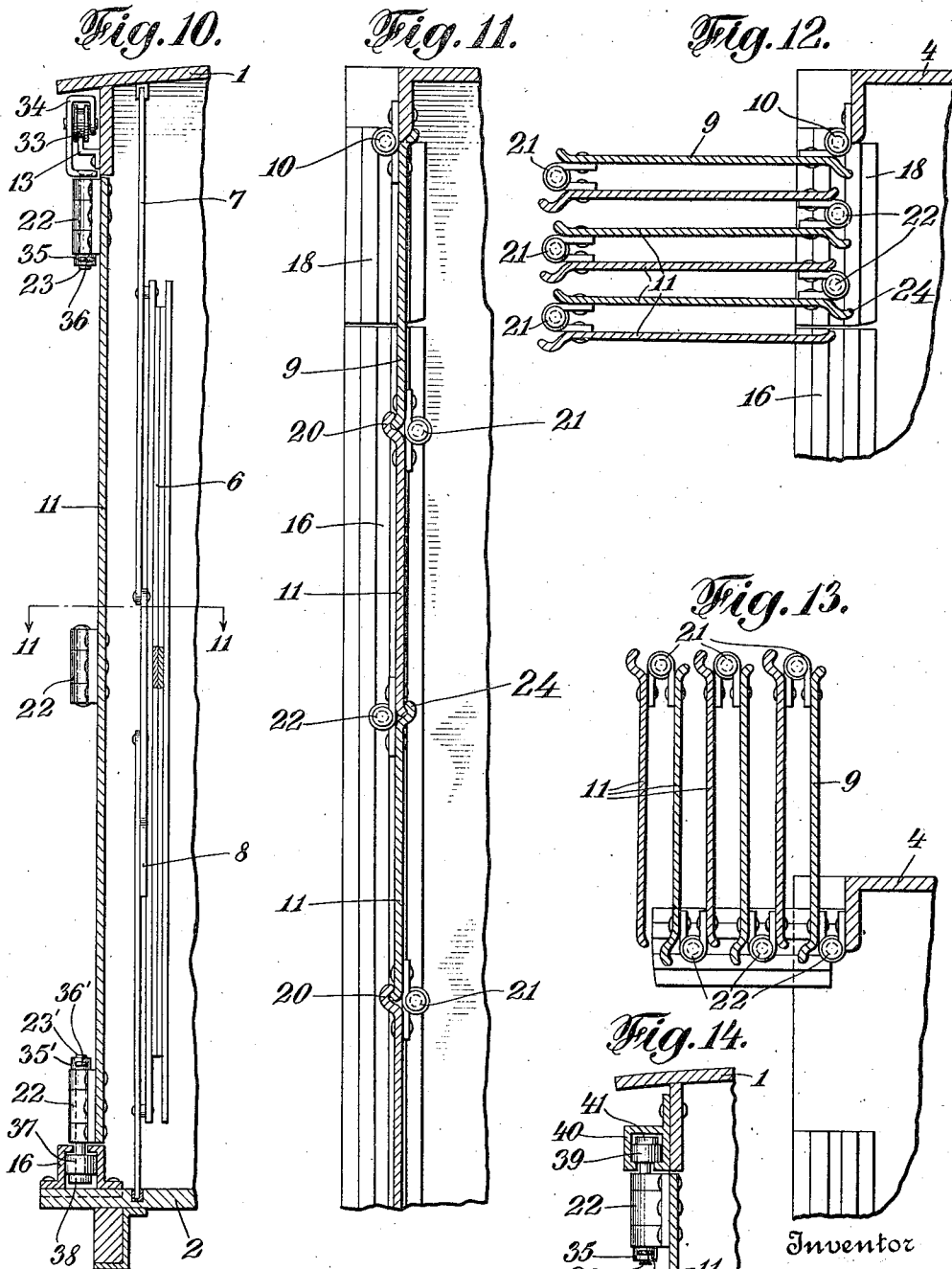
Inventor
Thomas J. Callery
 By his Attorney
Pennington

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Inventor
 Thomas J. Callery
 By his Attorney
 Paul Mallin

UNITED STATES PATENT OFFICE.

THOMAS J. CALLERY, OF JERSEY CITY, NEW JERSEY.

FREIGHT-CAR-CLOSING DEVICE

1,405,485.

Specification of Letters Patent.

Patented Feb. 7, 1922.

Application filed May 18, 1921. Serial No. 470,725.

To all whom it may concern:

Be it known that I, THOMAS J. CALLERY, a citizen of the United States, and resident of 299 Seventh St., Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Freight-Car-Closing Devices, of which the following is a specification.

This invention relates to freight car closing devices.

One of the objects of my invention is to provide collapsible means for use as blocking within the car adapted to prevent cargo from shifting and moving toward the door sides.

Another object of my invention is to provide collapsible doors for closing the car, and so arranged that when collapsed they may be swung out from the car, so as not to interfere with the loading or unloading operation.

A further object of my invention is to provide in connection with the collapsible blocking device, means for rigidly securing it in sections to the car structure.

A further object of my device is to provide in connection with the collapsible doors, supporting, suspension and guide means for facilitating the operation of the doors.

A further object of my invention is to provide interlocking door units hingedly connected with each other and so arranged as to overlap at their ends, so as to prevent rain from entering the car.

The foregoing and still further objects will be fully understood from the following description and the accompanying drawings forming part of this specification in which:

Fig. 1 is an elevation showing a freight car equipped with one preferred form of my collapsible doors.

Fig. 2 is a side elevation of a car showing the blocking and the doors opened and collapsed.

Fig. 3 is a partial cross sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a cross sectional view taken on line 4—4 of Fig. 2.

Fig. 5 is a transverse typical cross sectional view through part of the car.

Fig. 6 is a detail view showing part of a closed door, the units of which being made of corrugated metal.

Fig. 7 is a typical cross sectional view

showing how the units of the doors interlock.

Fig. 8 is a typical cross sectional view taken on line 8—8 of Fig. 6.

Fig. 9 is a typical cross sectional view through a door composed of units, the edges of which are formed into hinges.

Fig. 10 is a typical transverse cross sectional view through a preferred form of my door with a suspension on the outside of the car.

Fig. 11 is a cross sectional view taken on line 11—11 of Fig. 10.

Fig. 12 is a typical cross sectional view through the collapsed units before swinging them outward.

Fig. 13 is a similar cross sectional view with the collapsed units swung outward.

Fig. 14 is a detail cross sectional view of a modified form of suspension of my door units.

Fig. 15 is a partial elevation showing a freight car equipped with a modified form of my collapsible doors.

Referring to the drawings, numeral 1 represents the upper or roof structure of a freight car. Numeral 2 indicates the lower or floor structure of a freight car.

Within the car and hingedly and permanently attached to the car ends, as indicated at 5, and opening toward the center and closing toward the ends of the car, is a lazy-tong blocking indicated at 6, arranged in sections. At the end of each section there is provided a double acting locking bolt 7, adapted to engage the upper roof structure and the bottom or floor structure of the car, when the blocking is in open position.

In order to facilitate the locking of the bolt, a hand lever 8 is provided, which when turned upwards unlocks the bolt, and when swung downwards causes the bolt to enter into the sockets provided in the roof and floor structures.

This lazy-tong blocking becomes of great importance in preventing the cargo from shifting within the car, and particularly from moving toward the doors, whereby the closing and opening operation of the doors is greatly facilitated.

The car doors are composed of foldable units hingedly connected with each other and adapted to fold toward the ends of the car: As seen in Figs. 1 and 2, there are end units 9, hinged at 10 to the corner posts

of the car while units 11, hingedly connected with each other and to the end units 9, are suspended by means of rollers or other suitable suspension means 12.

5 These suspension means are preferably guided by a suspension rail 13, which is preferably attached at the outside of the roof structure. The ends 14 of the rails are separated from main rail 13 and hinged at
10 15 to the car posts. The door units 11 are also guided at the bottom in a rail indicated at 16, which receives a guided supporting member 17. The ends 18 of rail 16 are similarly hinged at 19 as are end rails 14
15 at 15, and are also adapted to swing out of the car.

When the door sections 11 and 9 are folded together as shown in Fig. 2 and when they reach their respective car ends,
20 as clearly shown in Fig. 12, they may be swung out in the manner indicated in Fig. 13. By swinging the doors out in this manner, the loading and unloading operation is greatly facilitated, insofar that the sides
25 of the cars are entirely opened.

The lazy-tong blocking 6 may also be swung out in a similar manner as shown in Fig. 4 (at the right hand side) when collapsed.

30 The door sections or units are hinged together in such a manner that end section 9 and the adjacent sections 11 swing outward with their hinged edges 20. This is accomplished by providing hinges connecting
35 the two sections within the car, as indicated at 21.

The next section is again connected to the first section 11 by outer hinges 22. The pins 23 and 23' of the upper and lower
40 hinges are preferably connected with suspension means 12 and supporting means 17, respectively, whereby the edges 24 of these two sections are held within the car while edges 20 are swung out.

45 At the center sections there are provided convenient locking means 25, by means of which the door halves when closed may be drawn together and locked. The edges of each section are so arranged that they overlap or interlock with each other in order to prevent rain from entering the car.

The shape of the units may vary according to desire as shown in Figs. 6, 7, 8 and 9. In Fig. 7 the door sections comprise
55 sheet metal strips 25' provided with a longitudinal groove 26 and an upturned portion 27 with an edge 28, registering with groove 26. In Fig. 9, the door sections are composed of sheet metal strips, the edges of which are formed into hinges, as indicated
60 at 29. In Figs. 6 and 8 there are shown door sections made of corrugated metal, hingedly connected in the same manner as the previously mentioned sections, however,
65 so arranged that the last corrugation of

each section matches with the last corrugation of the adjacent section, as shown at 30. Figs. 5 and 6 also illustrates another manner of suspension of my car doors, arranged within the car as indicated at 31. 70 This suspension roller glides upon inner rail 32.

Referring to Figs. 10, 11, 12, and 13, the arrangement of my sections 9 and 11 is clearly shown, and particularly how the
75 hinges 10, 21, and 22 are arranged. In Fig. 10 the suspension arrangement of my door sections may be seen where a roller 33 is shown supported by suspension rail 13. The bearings of the roller 33 are provided
80 in a clip 34 which extends below suspension rail 13, where pin 23 provided with a washer 35 and a cotter pin 36, passes through outer hinge 22.

At the bottom of the door sections, a 85 similar arrangement may be seen. The guide rail 16 is composed of two Z-shaped members between which is guided roller 37, suspended by pin 23' which passes through hinge 22, and is provided with a head 38, 90 a washer 35' and a cotter pin 36'.

In Fig. 14 is shown a preferred form of my suspension means which is somewhat similar to the guide means in Fig. 10, but instead of a roller 33 as shown in Fig. 10, 95 a horizontally arranged guide roller 39 is shown gliding in a recess by a suspension guide 40. From the roller is again suspended the hinged bolt 23 provided with a washer 35, a cotter pin 36, while a head 41
100 supports the weight of the door section.

The suspension and guiding or supporting means may be also arranged at the center of each door unit, as shown in Fig. 15. In this case, the end units 9 are not hinged to
105 the end posts of the car, but all the units are hingedly connected with each other. Each of the sections swings, when opening and folding the door, upon a pin so that one half of the units turn inwards, and the
110 other half outwards.

While I have shown a specific construction of my door sections and their suspension and support means, be it understood that changes and improvements may be
115 made within the scope of my invention, for which I claim:

1. In combination with a freight car, a lazy-tong cargo blocking disposed within the car for preventing cargo from shifting toward the car doors, means connected with said blocking for positively anchoring it in sections as desired.

2. In combination with a freight car, a lazy-tong cargo blocking disposed within the
125 car for preventing cargo from shifting toward the car doors, means connected with said blocking for positively anchoring it in sections as desired, and foldable doors for closing the car.

3. In combination with a freight car, a lazy-tong cargo blocking disposed within the car, double locking bars associated with said car, double locking bars associated with said operation, foldable doors comprising a plurality of interlocking hinged door members adapted to be folded, and when completely folded, to be swung out from the car.

4. In combination with a freight car, a lazy-tong cargo blocking disposed within the car, locking bars provided between sections of the blocking and adapted to lockingly engage the car structure at top and bottom when said blocking is in use, a foldable car door, composed of a plurality of interlocking hingedly connected sections, suspension means associated with each two adjacent sections, and means for facilitating said door to be swung out when completely folded.

5. In combination with a freight car having a lazy-tong blocking adapted to be locked in place by sections, a foldable door composed of a plurality of hinged, interlocking units, each adjacent pair of units having suspension means adapted to glide upon a guide rail, guiding means correspondingly arranged with said suspension means disposed at the lower portion of each adjacent pair of units, said guiding means gliding in a bottom rail, hinged guide and bottom rails forming a continuation of the aforementioned rails arranged at the ends of the car and adapted to receive the door when completely folded and further adapted to be swung out when desired.

6. A closing device for freight cars, comprising in combination a lazy-tong blocking attached at both ends and within a car, and provided with a plurality of locking members adapted to engage the roof and floor structure of a car, said locking members arranged between sections of said blocking, foldable outer doors also attached at the ends of a car and composed of hingedly connected sections opening from the center toward the ends of the car, suspension rails provided at the roof structure of a car and guide or supporting rails at the bottom or floor structure of the car, suspension means associated with the upper ends of said sections and gliding upon said suspension rails, and guide or supporting means attached at the bottom ends of said sections and gliding in said guide rails, the ends of said suspension and guide rails at the car ends adapted to swing out of the car when said doors are folded, and means for locking the doors when closed.

7. In combination with a freight car, a foldable door composed of a plurality of hinged, interlocking units, each adjacent pair of units having suspension means adapt-

ed to glide upon a guide rail, guiding means correspondingly arranged with said suspension means disposed at the lower portion of each adjacent pair of units, said guiding means gliding in a bottom rail, hinged guide and bottom rails forming a continuation of the aforementioned rails arranged at the ends of the car and adapted to receive the door when completely folded and further adapted to be swung out when desired.

8. In combination with a freight car, a lazy-tong cargo blocking disposed within the car, locking bars provided between sections of the blocking and adapted to lockingly engage the car structure at top and bottom when said blocking is in use, a foldable car door, composed of a plurality of interlocking hingedly connected sections, suspension means associated with each section, and means for permitting said door to be swung out when completely folded.

9. In combination with a freight car, a foldable door composed of a plurality of hinged, interlocking units, each unit having suspension means adapted to glide upon a guide rail, guiding means correspondingly arranged with said suspension means disposed at the lower portion of each unit, said guiding means gliding in a bottom rail, hinged guide and bottom rails forming a continuation of the aforementioned rails arranged at the ends of the car and adapted to receive the door when completely folded and further adapted to be swung out when desired.

10. A closing device for freight cars, comprising in combination a lazy-tong blocking attached at both ends and within a car, and provided with a plurality of locking members adapted to engage the roof and floor structure of a car, said locking members arranged between sections of said blocking, foldable outer doors composed of hingedly connected sections opening from the center toward the ends of the car, suspension rails provided at the roof structure of a car and guide or supporting rails at the bottom or floor structure of the car, suspension means associated with the upper ends of said sections and gliding upon said suspension rails, and guide or supporting means attached at the bottom ends of said sections and gliding in said guide rails, the ends of said suspension and guide rails at the car ends adapted to swing out of the car when said doors are folded, and means for locking the doors when closed.

Signed at New York in the county of New York and State of New York this 10th day of May A. D. 1921.

THOMAS J. CALLERY.