

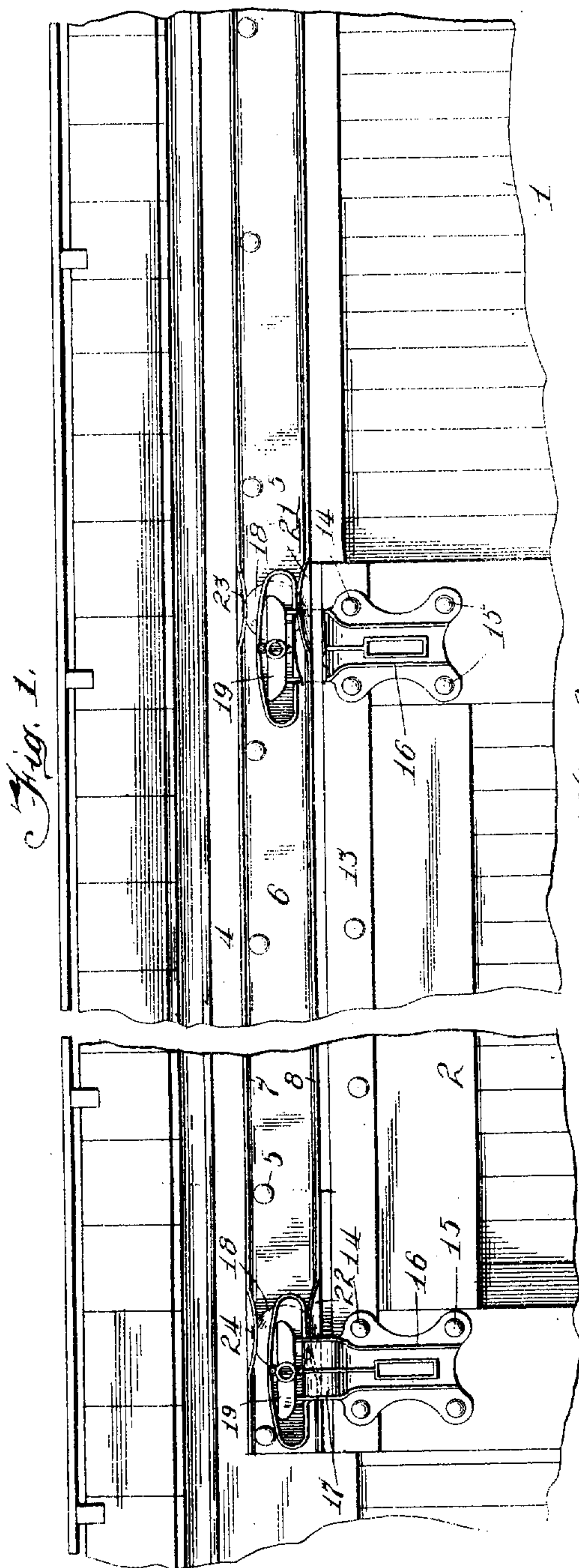
A. J. RICKER.
CAR DOOR.

APPLICATION FILED NOV. 22, 1909.

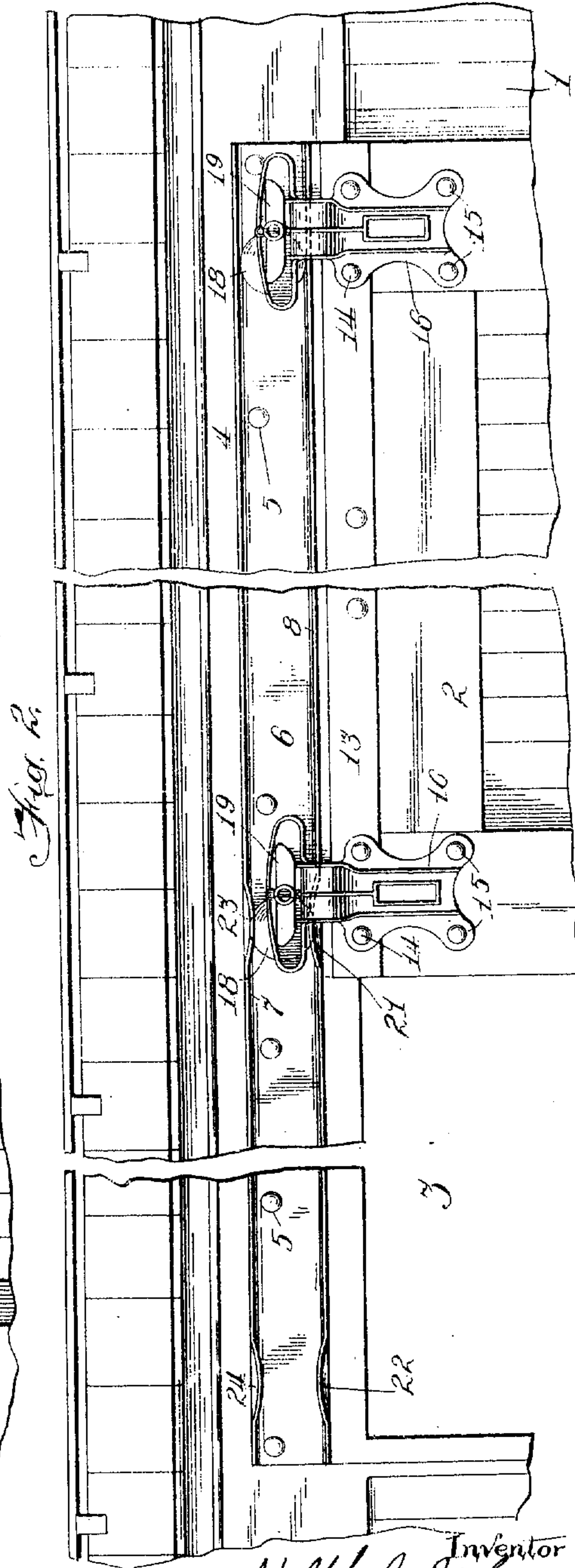
Patented Oct. 25, 1910.

2 SHEETS-SHEET 1.

973,701.



Witnesses
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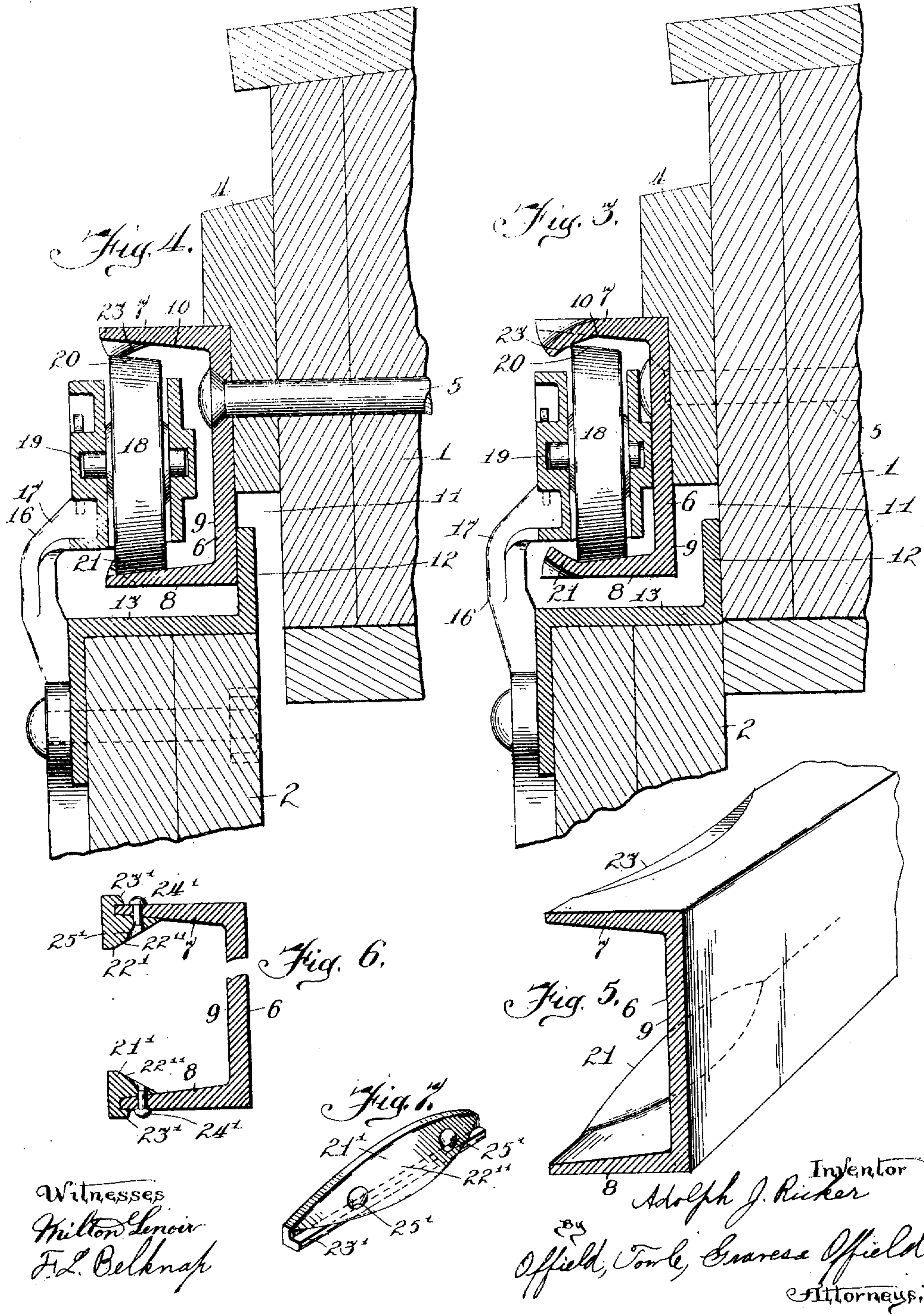
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UNITED STATES PATENT OFFICE.

ADOLPH J. RICKER, OF SOUTH MILWAUKEE, WISCONSIN, ASSIGNOR TO BELDEN D. JONES, OF CHICAGO, ILLINOIS.

CAR-DOOR.

973,701.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed November 22, 1909. Serial No. 529,274.

To all whom it may concern:

Be it known that I, ADOLPH J. RICKER, a citizen of the United States, residing in the city of South Milwaukee, county of Milwaukee, and State of Wisconsin, have invented certain new and useful Improvements in Car-Doors, of which the following is a specification.

This invention relates to improvements in car doors, and refers more particularly to improvements in the overhead suspension track member.

Among the salient objects of the invention are to provide a construction which automatically secures a weather-proof fit between the door and car body when the former is in closed position, and which at the same time permits the door to slide freely without binding during its opening and closing movements; to provide a construction in which the door, may if desired, be also automatically confined against lateral play when in its fully open position; to provide a construction which effectually prevents rattling of the door and consequent loosening of parts when in either its closed or extended open position; to provide a construction in which the above objects are secured by providing the track member with one or more inwardly sloping inclined portions which force the door inwardly against the face of the car body; to provide a device which is characterized by its extreme simplicity and economy of construction and which nevertheless performs its functions in a positive and reliable manner; and in general to provide an improved construction of the character referred to.

The invention consists in the matters hereinafter described and more particularly pointed out in the appended claims.

In the drawings,—Figure 1 is a fragmentary side elevation of a car body equipped with my invention, the door being shown in closed position; Fig. 2 is a similar view, the door, however, being shown in its extended open position; Fig. 3 is a fragmentary vertical sectional view showing the position of the track wheel when the door is in either its closed or its extended open position; Fig. 4 is a view similar to Fig. 3, but showing the position of the wheels when the door is riding into its open or closed positions; Fig. 5 is a fragmentary perspective view of the horizontal track member; Fig. 6 is a verti-

cal sectional view of the track member, but showing a somewhat modified construction; Fig. 7 is a detail perspective view of the wheel deflector shown in Fig. 6.

The invention relates more particularly to that class of freight car doors which are so supported as to reciprocate in a plane outside of the side walls of the car body and which are, accordingly, exposed to rain or detritus from the roof of the car and, therefore, require special arrangement to make the closure weather proof.

Referring to the drawings, 1 designates as a whole the car body, and 2 the door, which may be of any usual or suitable construction. Above the door opening 3, the car is provided with the usual furring strip 4 to which is secured by means of a plurality of through bolts 5 the track member designated as a whole 6. In the present instance, this track member is of channel form, having upper and lower horizontally extending side flanges 7 and 8 and a vertical back member 9. Preferably the inner faces of the horizontal flanges are inclined outwardly as shown at 10. The lower end of the track member extends below the furring strip and forms in conjunction with the face of the car body a longitudinally extending recess 11. This recess is adapted to receive the upstanding flange 12 of a Z-bar 13 which is secured to the upper edge of the door. This upper flange 12 is of such height and width relative to the recess 11 as to permit limited lateral and upward movement of the flange within the recess. The Z-bar construction referred to, however, forms no part of the present invention.

To the upper edge of the door 2 are secured by suitable through bolts 14, 15, the wheel supporting brackets 16. These brackets are provided with the usual upstanding arms 17, in which are journaled the track wheels 18. Preferably, these brackets are each provided with a closed race-way 19, in which the wheels 18 are loosely journaled. The particular construction of the wheel supporting brackets, however, forms no part of the present invention and need not be described in detail. It will be noted that the peripheries of the wheels are beveled as shown at 20 in order to conform with the inner faces of the track wheels.

Heretofore, considerable difficulty has been experienced in constructing a commer-

cial practical device of this character which would permit the door to slide freely without binding during its opening and closing movements and which at the same time would insure a weather-proof fit between the door and car body when the former is in closed position. This difficulty has been enhanced by reason of the fact that structures of this character are exposed at all times to the weather and are subject to more or less rough use. To obviate the above difficulty, I provide the track member, which in the present instance is of channeled form, with one or more wheel deflectors, which at pre-determined points in the travel of the door force the latter into weather-proof engagement with the car body. Accordingly, the lower face of the track member is struck up to provide a pair of wheel deflectors 21 and 22 and the upper flange member is struck down to provide generally similar wheel deflectors 23 and 24 respectively. The lower deflectors 21 and 22 curve gradually upwardly at either end in order to permit the wheels to ride readily over them and are inclined inwardly, as shown more clearly in Fig. 5. In order to force the passing wheel toward the rear face 9 of the track member, as shown more clearly in Fig. 3, the upper deflectors 23 and 24 are of generally similar construction, except that they extend inwardly slightly farther than the lower deflectors in order to more effectually confine the upper peripheries of the wheels when the latter are forced inwardly by deflectors. These deflectors are so arranged that the wheels 18 will be behind them when the door is in closed position as shown more clearly in Fig. 1. The wheels are in this position forced inwardly against the track member as shown in Fig. 3 and the door thus held in weather-proof engagement with the car body. It may also be desirable to prevent lateral play of the door when it is in its extended open position. Accordingly, the rear end of the track member is provided with a suitable stop for limiting the opening movement of the door at the point when the front wheel rides between the deflectors 21 and 23. When the door is being opened or closed, the wheels by reason of the deflection of the inner surfaces of the track member ride upon the outer edge of the latter, thus permitting the door to swing free from the car body and avoiding any danger of binding. From the foregoing, it will be noted that the wheels can ride easily over the deflectors, while at the same time the latter are so arranged as to effectively force the door inwardly against the car body.

In Figs. 6 and 7, I have shown a somewhat modified construction of the wheel deflector and in this instance, each of the deflectors is, or may be formed as a separate

casting designated as a whole 21' and 22'. Each of these castings is provided with a curved inclined inner face 22' and at its lower end with an inwardly extending right angled lip 23' which fits over the outer edge of the corresponding flange of the track member. These deflectors may be rigidly secured in position by means of countersunk rivets 24' insulated through suitable apertures 25'.

The invention is not limited to the details of construction shown, except as set forth in the appended claims.

I claim as my invention:

1. The combination with a car body having a door opening, of a door adapted to be moved across said opening, an outwardly facing channel-shaped track member mounted above said opening, a pair of wheel deflectors carried by one of the horizontal flanges of said track-way, and supporting brackets connected to the door and having wheels riding in said track member, said wheels being adapted to engage said deflectors and be forced inwardly thereby when the door is in closed position.

2. The combination with a car body having a door opening, of a door adapted to be moved across said opening, an outwardly facing channel shaped track member mounted above said opening, an inwardly inclined wheel deflector carried by each of the opposed flanges of said track-way, and supporting brackets connected to the door and having wheels riding in said track member.

3. The combination with a car body having a door opening, of a door adapted to be moved across said opening, a substantially horizontal track member extending longitudinally above said opening and parallel with the car body throughout its length, an inwardly inclined wedge-shaped wheel deflector upon the upper face of said track member, a supporting bracket carried by the door and having a wheel riding on said way, said wheel engaging the deflector and being forced inwardly thereby when the door is in closed position.

4. The combination with a car body having a door opening, of a door mounted to move across said opening, of a track member extending horizontally above said opening and parallel with the car body throughout its length, and a wheel deflector mounted to extend above the track-way of said track member, and supporting brackets connected to the door and having track wheels riding in said way.

5. The combination with a car body having a door opening, of a door mounted to move across said opening, an outwardly facing channel-shaped track-way extending above the door, supporting brackets carried by the door and having track wheels riding in said track member, one of the horizontal

flanges of said track member having an inclined raised portion forming a wheel deflector.

5 6. The combination with a car body provided with a door opening, of a door adapted to be moved across said opening, a track member mounted above said opening having a vertically extending rear face secured to the car body and a horizontally extending
10 track-way extending outwardly from said rear face and parallel with the car body throughout its length, a supporting bracket connected to the door and having a track wheel riding in said way, and an inwardly
15 inclined wedge-shaped wheel deflector mounted upon the upper face of said track-

way and forcing the wheel inwardly as the latter engages said deflector.

7. The combination with a car body having a door opening, of a door mounted to
20 move across said opening, an outwardly facing channel-shaped track-way extending above the door, supporting brackets carried by the door and having wheels riding in said track-way, and means adapted to be engaged
25 by the said wheels for positively forcing the latter toward the car body at a predetermined point in their travel.

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