J. M. DALY.

COMBINED GRAIN DOOR AND MERCHANDISE BRACE.

APPLICATION FILED FEB. 9, 1916.

1,247,230.

Patented Nov. 20, 1917.

2 SHEETS—SHEET 1.

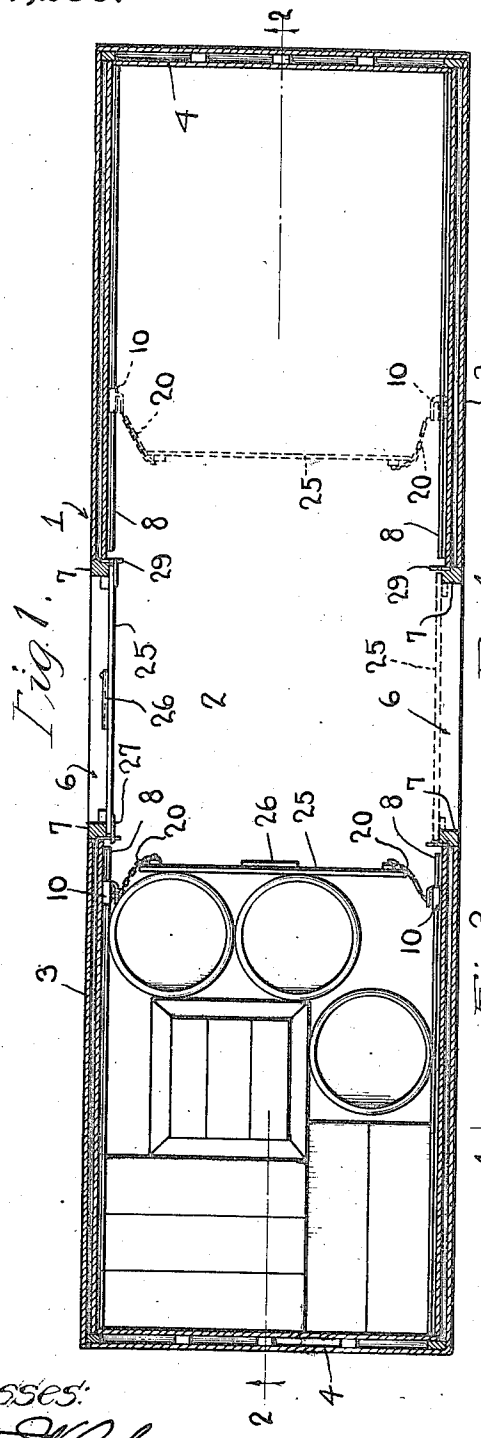


Fig. 1.

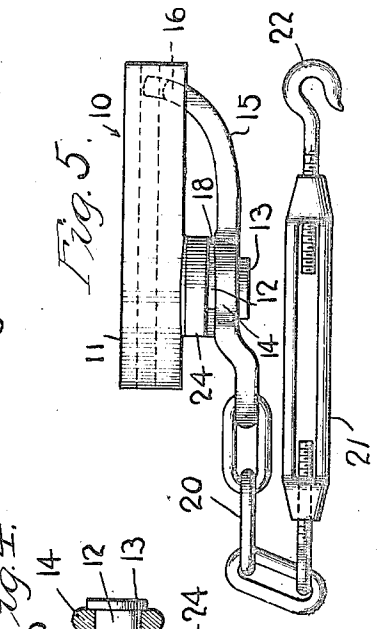


Fig. 5.

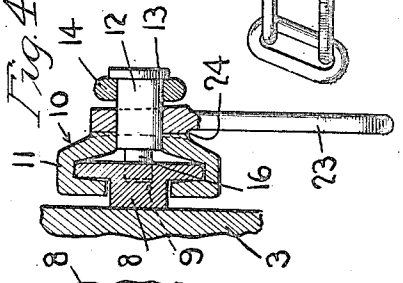


Fig. 4.

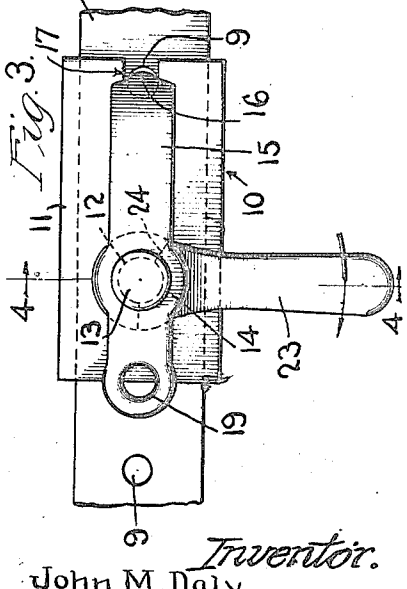


Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 2.

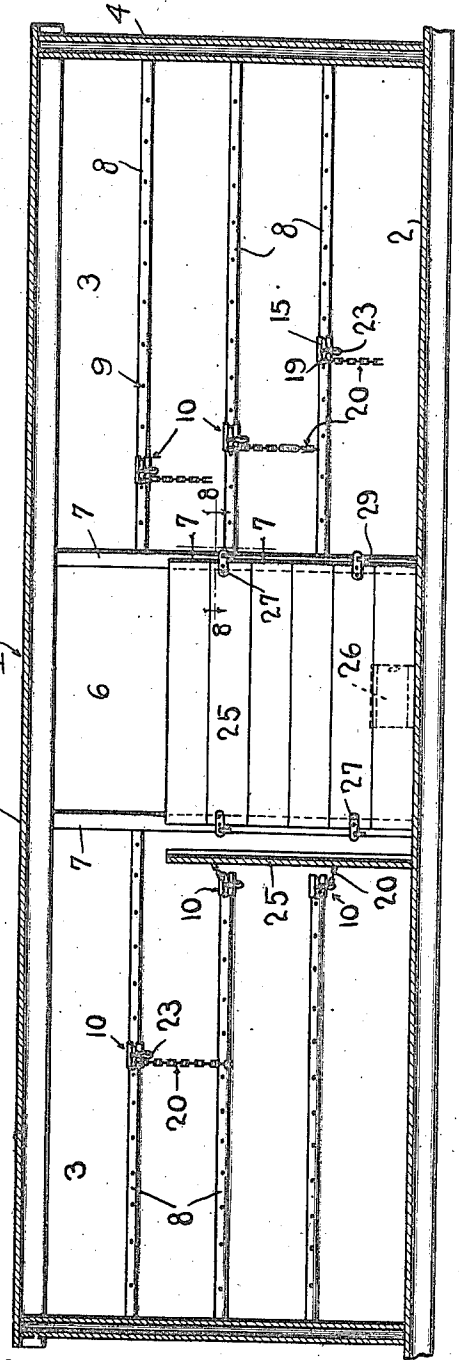


Fig. 8.

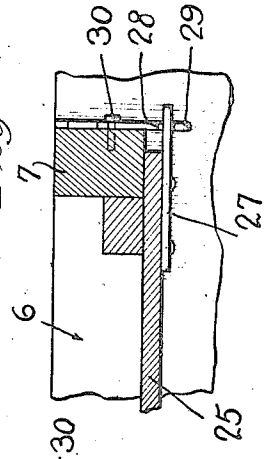


Fig. 7.

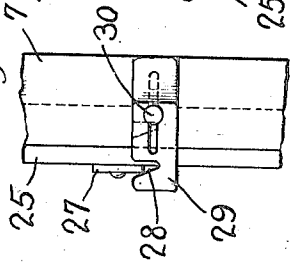
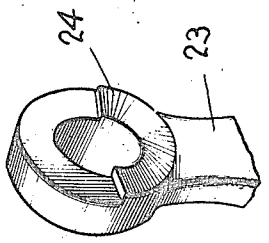


Fig. 6



Witnesses:

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COMBINED GRAIN-DOOR AND MERCHANDISE-BRACE.

1,247,230. Specification of Letters Patent. Patented Nov. 20, 1917.

Application filed February 9, 1916. Serial No. 77,311.

To all whom it may concern:

Be it known that I, JOHN M. DALY, a citizen of the United States, a resident of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Combined Grain-Doors and Merchandise-Braces, of which the following is a specification.

This invention relates to improvements in freight cars and contemplates the provision of a combined grain door and merchandise brace, which may be provided as a permanent part of the car.

Another object of this invention is the provision of a grain door in combination with a plurality of longitudinal adjusting holding means adapted to be connected to the opposite edges of the grain door so that the same may serve as a simple and efficient brace for merchandise within the freight car.

Another object of this invention is the provision of an improved locking means for adjustably and positively holding the brace in position.

In the drawings,

Figure 1 represents a longitudinal horizontal section of a car constructed so as to embody my invention, one grain door being illustrated in position in one of the door ways and the other being shown in use as a merchandise brace in full lines, dotted lines also indicating the other positions thereof;

Fig. 2 is a vertical longitudinal section of Fig. 1, taken substantially on line 2—2;

Fig. 3 represents a side elevation of one of the locking boxes for adjustably holding the brace in position;

Fig. 4 is a vertical cross sectional view on the line 4—4 of Fig. 3;

Fig. 5 is a plan view of the same with the flexible connection attached;

Fig. 6 is a perspective view of the inner face of the operating member showing the actuating cam portion;

Fig. 7 is a side elevation of the latch for the grain door looking from line 7—7, Fig. 2;

Fig. 8 is a horizontal section showing the latch, looking from line 8—8, Fig. 2.

Referring now to the drawings, the numeral 1 designates a freight car which may be of the usual standard construction or may be especially constructed to embody my invention, having the floor 2, side walls 3, end walls 4, roof 5 and door-way 6, having the side frames 7.

Extending longitudinally along the side walls of the car, I provide the plurality of straps or bars 8 which are T-shaped as shown in Fig. 4, and are provided with a plurality of apertures or sockets 9. Mounted to slide on these tracks or bars 8 are the locking boxes 10 which include the box portion 11 formed so as to embrace the flanges of the T-shaped tracks or bars 8 and be slidable thereon. The stud or short shaft 12 is secured to the box portion and has the head 13 being adapted to receive the locking finger or lug 14 which is loosely mounted thereon and has its forward end portion curved as at 15 and reduced to provide the engaging end 16 which extends through the notch or slot 17 in the box portion 11, to engage one of the apertures 9 in the track or bar 8 to hold the locking box against movement in either direction. As stated before, this locking finger or lug is loosely mounted on the stud 12 and has its inner face provided with the cam portion 18. The rear portion of this locking finger or lug is provided with the eye 19 to receive the flexible connection 20 to which is attached the turn buckle 21 and hook 22.

The operating member or handle 23 is journaled on the stud or short shaft 12 and is provided with the actuating cam portion 24 on its outer face. This cam portion effectively forces and locks the finger or lug 14 in one of the apertures or sockets 9 when the operating member or handle 23 is in its normal position, as illustrated in Fig. 2 and particularly in Figs. 3 and 4, because it engages the inner face of the locking finger or lug 14. When it is desired to release the finger or lug 14 from engagement in one of the apertures or sockets 9, the operating member or handle is moved to the left, as indicated in Fig. 3, this movement bringing the cam surface 24 into engagement with the cam portion 18 on the inner face of the locking finger or lug 14 and thereby withdrawing the engaging end 16 thereof from engagement with the aperture or socket 9, so that the locking box may be shifted along the bar or track 8 to any desired position, it being understood that the flanges of this bar

or track are turned down to prevent removal of the locking box therefrom.

The grain door and brace itself is designated by the numeral 25 and may be made in sections or of integral construction, as desired, having the usual small door 26 for relieving the pressure of the grain. When in use as a grain door, the latches 27 thereon, are forced into the notches 28 on the movable members 29, the notch having the inclined front wall so as to lock the parts by the wedging action. This member 29 is movable into and out of position along the side frame 7 by means of the bolt and slot connection 30.

When it is desired to use the member 25 as a merchandise brace, it is only necessary to connect the hooks 22 thereto, it being recalled that these hooks are connected by means of the chain or other flexible element 20 to the locking boxes 10 and are provided with the turn buckle 21 for necessary adjustment. As these parts are duplicated on both sides of the car, it is readily seen that when the car is loaded to any extent, the locking boxes may be moved to a proper position so that the brace will securely hold the load within the car, and by the tightening of the turn buckles, prevent it from shifting and consequent injury.

By providing this combined grain door and merchandise brace it is obvious that a car can be used for a load of grain in one direction and can be shipped back with a load of merchandise of any description which will be securely braced and held therein. There is no necessity for destroying or damaging the door in removing it and the bracing parts of the mechanism all form a permanent part of the car, their detachment not being possible, so that wherever the car is located, it is equipped to serve as a general freight car or as a grain car. This will increase the utility of cars equipped with this invention and decrease the expense to the railroads and to the shippers or consignees.

What I claim is:

1. In combination with a freight car having door-ways, a member adapted to serve as a grain door and also a merchandise brace transversely of the car, said member when used as a merchandise brace extending only part way across the car body, holding means located on each side of the car body and adjustable relatively thereto, connections between said holding means and said member, said connections being of a flexible character to secure the member firmly against the merchandise and adapted to be positioned out of line with said holding means transversely of the car.

2. In combination in a freight car, a plurality of guiding members, locking members movably mounted on the said guiding members, said guiding members having apertures therein, said locking member including a box member, a locking finger loosely mounted thereon, and a cam member for moving said locking finger into and out of engagement with said apertures.

3. In combination in a freight car, a plurality of guiding members, locking members movably mounted on the said guiding members, said guiding members having apertures therein, said locking member including a box member, a locking finger loosely mounted thereon, a rotatable operating member having a cam portion adapted to engage said locking finger to move it into and out of engagement with one of said apertures.

4. In combination in a freight car, a plurality of guiding members each having apertures therein, locking members on said guiding members, each locking member including a box member having a stud thereon, a locking finger loosely mounted on said stud, a cam member mounted for rotation on said stud and adapted to engage said locking finger to move it into and out of engagement with said apertures.

5. In combination in a freight car, a plurality of guiding members each having apertures therein, locking members on said guiding members, each locking member including a box member having a stud thereon, a locking finger loosely mounted on said stud, an operating member mounted for rotation on said stud and having a cam portion adapted to engage said locking finger to move it into and out of engagement with one of said apertures.

6. In combination in a freight car having doorways, a combined grain door and brace member, means for securing said door within the doorway, a plurality of guiding bar members along the sides of the car, a locking member on each of the guiding bar members, said guiding bar members having a plurality of apertures, said locking member including a locking finger and an operating member having a cam portion adapted to engage said locking finger to move it into and out of engagement with said apertures and connections between said locking members and said combined grain door and brace member whereby it is held in position transversely of the car to act as a brace.

JOHN M. DALY.