

March 30, 1943.

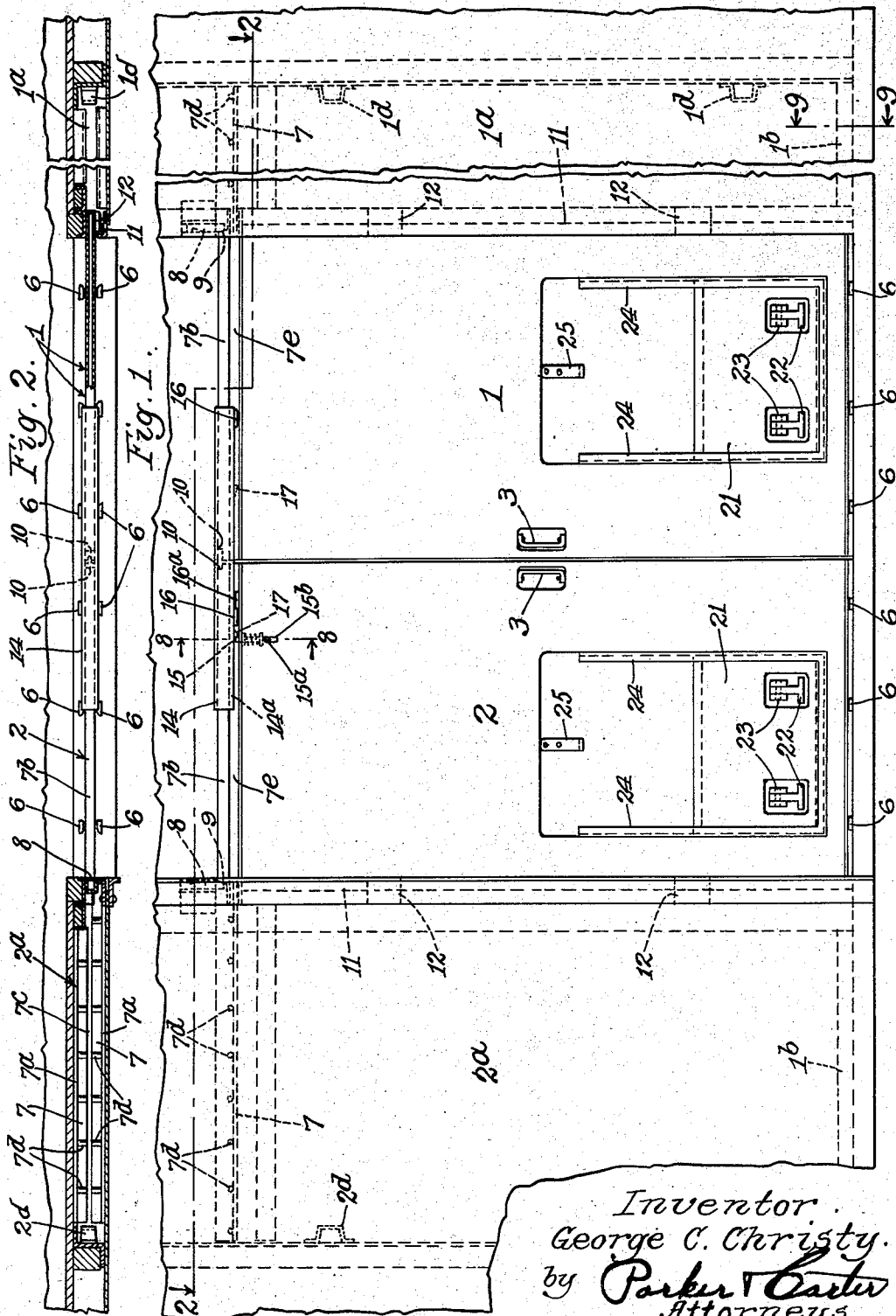
G. C. CHRISTY

2,315,365

AUXILIARY DOOR CONSTRUCTION

Filed July 31, 1939

2 Sheets-Sheet 1



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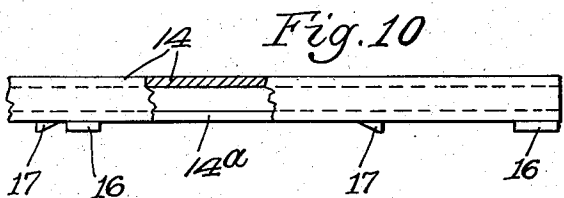
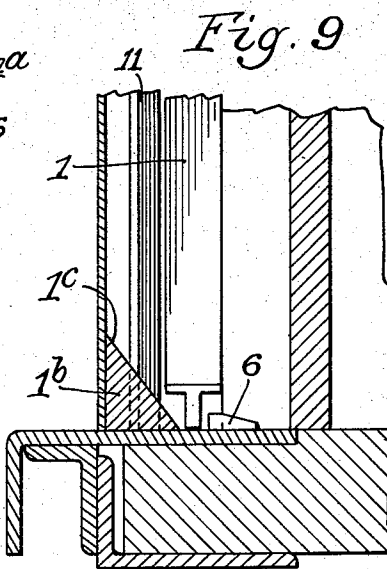
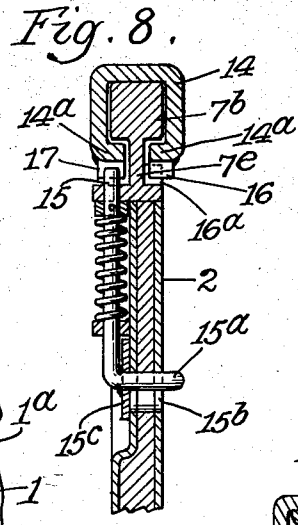
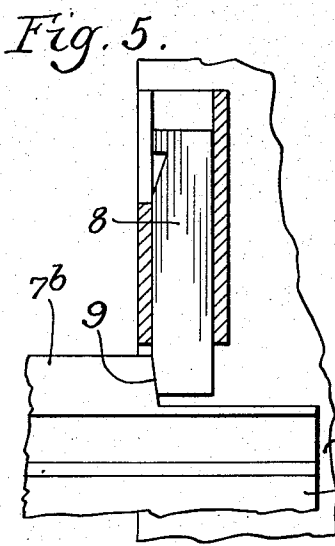
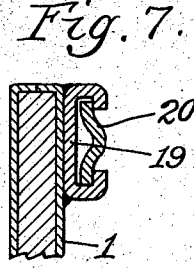
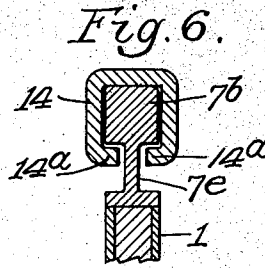
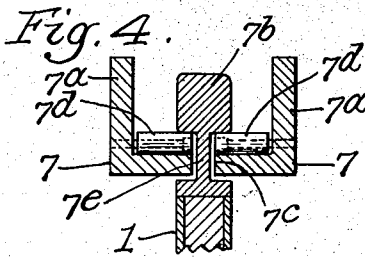
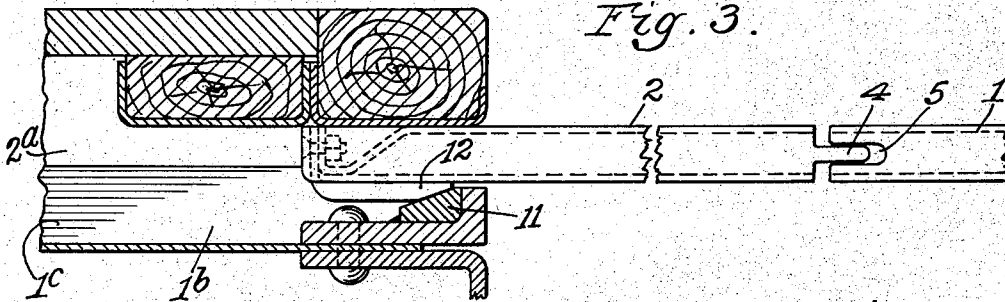
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AUXILIARY DOOR CONSTRUCTION

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UNITED STATES PATENT OFFICE

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AUXILIARY DOOR CONSTRUCTION

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6 Claims. (Cl. 20—22)

This invention relates to auxiliary door constructions to be used for vehicles of any kind to which it is adapted and has for its object to provide a new and improved device of this description.

The invention has as a further object to provide an auxiliary door construction particularly adapted for railway cars used in the shipment of grain or other bulk commodities, or small package goods, where there is a likelihood of the material being shipped to become dislodged in transit, obstructing or preventing the opening of the main car door. In the shipping of grain, it is usual at the present time to provide a closure for the lower part of the door opening by nailing boards in position across the door opening. When the car is unloaded, these boards are knocked off and are usually injured or broken so that they cannot be used again. This results in a very large expense to the railroad, requiring new boards for each shipment of grain. One of the objects of the present invention is to provide an auxiliary door construction which becomes a part of the car and which can be moved into an inoperative position when other commodities are being shipped, and then can be easily and quickly moved into an operative position when grain or similar material is shipped in the car, the auxiliary door construction lasting the life of the car.

The invention has other objects which are more particularly pointed out in the accompanying description.

Referring now to the drawings, Fig. 1 is a side view of a portion of a car showing the door opening and the auxiliary door construction in its closed position;

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a part sectional view, with parts broken away, showing the door and the door post;

Fig. 4 is a sectional view showing the upper guiding device for the door;

Fig. 5 is a view showing the gravity latch at the top of the door;

Fig. 6 is a sectional view showing the locking bar for connecting the meeting edges of the two doors when closed;

Fig. 7 is a view showing a modified form of connecting the meeting edges of the two doors when closed;

Fig. 8 is a sectional view taken on line 8—8 of Fig. 1;

Fig. 9 is a fragmentary sectional view taken on line 9—9 of Fig. 1; and

Fig. 10 is a side view of the locking bar removed from the door.

Like numerals refer to like parts throughout the several figures.

The present invention embodies a door construction, in addition to the regular doors of the car, which becomes a permanent part of the car and which is out of the way when not in use, but which is brought into position to close the lower part of the door opening when grain or similar material is to be hauled in the car. As herein shown, the auxiliary door construction consists of two sections, 1 and 2, which may be made in any desired manner of suitable material so as to have sufficient strength. When the door is in use, the two sections are pulled out by means of the countersunk handles 3, until their edges meet. When the door sections are not in use, they are moved back into door receiving receptacles 1a and 2a in the wall of the car so as to be entirely out of the way. There is preferably a member 1b located at the bottom of the receptacles 1a and 2a which has an inclined face 1c, so that if any grain or other material should get into the space between the door and the outer wall of the car, it will automatically be discharged therefrom.

One of the door sections is provided with a tongue 4 and the other with a groove 5, the tongue going into the groove when the door sections are closed, as shown in Fig. 3, to prevent leakage of the grain. There are guides 6 on the floor of the car between which the door sections are guided, and at the upper end of the door sections there are guides 7. These guides are angles 7a, as shown in Fig. 4, and the door has a T-top 7b. The thin portion of the door section 7c fits into the space 7c between the guides. There are preferably roller bearings 7d between the T-top 7b and the angle guides 7a. There is a gravity latch 8 at each edge of the door opening. This gravity latch when the door section is moved to its closed position, drops into a recess so as to be behind a shoulder 9 on the door section, so as to hold it in its closed position. When the door section is moved to its open position against the stops 1d, 2d, this same gravity latch drops in front of a shoulder 10 on the door, see Fig. 1, so that the gravity latch holds the door section either in its open position or in its closed position and it moves automatically to its holding position, but must be released by hand. There are wedges 11 on the door post and wedges 12 on each door section, which engage when the door is moved to its closed position, so as to in-

sure a tight fit of the door against the inside door post, see Fig. 3.

The latch and its relation to the top of the door is shown in Fig. 5. When the door sections are brought together to close the opening, there is a sliding locking bar or keeper for locking them in position. This may be of two forms. As shown in Figs. 1 and 6, this locking bar 14 is channel-shaped and slides along the top of the door sections. When the door sections are in their open position, it is slid back along one of the doors so as to be entirely out of the way. When the door sections are in their closed positions, it is slid along so as to engage both door sections, as shown in Fig. 1, and is held in position by a spring lock 15 on the side of one of the door sections, as the door section 2. The end of this lock engages lugs 17 on the locking bar, see Fig. 8. The lock 15 has a bent end 15a which passes through a slot 15b in the door section so that the lock may be controlled from the outside of the door. There is a baffle plate 15c which is attached to the lock 15 and which is of sufficient length to cover the slot 15b. There are stop lugs 16 on the locking bar which engage lugs 16a on the door sections so as to limit the sliding movement of the locking bar and there are also locking lugs 14a on the locking bar which lock the bar when it is in its locking position, so that it cannot be moved upwardly off of the door sections.

The locking bar may also be of the form shown in Fig. 7, which consists of a member 19, one on each door section, and a sliding member 20 which slides in these members and when the door sections are closed, slides across so as to be in the member 19 of each door section. It is then locked in position.

There is an opening in each of the door sections and a pressure release door 21 covering the opening in each of these door sections. These pressure release doors are on the outside of the grain door. There are handles 22 pivotally connected with the door at 23. At the point where the handles are located, there are depressions into which the handles when released, automatically drop, so as to be inside of the door line when not in use. There are guides 24 along which the doors 21 slide. These doors are latched in their open position by the latch 25. When these doors are opened, some of the grain in the car flows out so as to release the pressure of the grain on the main doors so that they may be easily opened. The release doors 21 are preferably countersunk in the auxiliary doors so that they will not interfere with moving the auxiliary doors back into the wall of the car. There is the usual outer door which entirely closes the opening when the auxiliary doors are closed and when they are opened.

I have described in detail a particular construction embodying the invention, but it is of course evident that the parts may be varied in form, construction and arrangement without departing from the spirit of the invention as embodied in the claims hereto appended.

I claim:

1. An inner auxiliary door for railway cars having the car outer wall formed of two substantially parallel wall members separated by a space with a door opening extending through both of said wall members comprising two door sections separate from the regular car door and in the same vertical plane as the space between said wall members of the car outer wall and extending part way up the door opening and having meet-

ing edges adapted to be brought together to close the lower part of the door opening, and door receiving receptacles in and formed by the walls of the car opposite the door opening, into which said door sections are received, so as to be out of the way and enclosed by said walls when not in use.

2. An inner auxiliary door for railway cars having the car outer wall formed of two substantially parallel wall members separated by a space with a door opening extending through both of said wall members comprising two door sections separate from the regular car door and in the same vertical plane as the space between said wall members of the car outer wall and extending part way up the door opening and having meeting edges adapted to be brought together to close the lower part of the door opening, door receiving receptacles in and formed by the walls of the car opposite the door opening, into which said door sections are received, so as to be out of the way and enclosed by said walls when not in use, said door sections being provided with openings, pressure release doors in said openings and in the plane of said sections, said sections having recesses above the pressure release doors providing means for sliding said pressure release doors therein to open the openings, to let out material in the car, to release the pressure on the door sections so that they can be opened.

3. An inner auxiliary door for railway cars having the car outer wall formed of two substantially parallel wall members separated by a space with a door opening extending through both of said wall members comprising two door sections separate from the regular car door and in the same vertical plane as the space between said wall members of the car outer wall and extending part way up the door opening and having meeting edges adapted to be brought together to close the lower part of the door opening, door receiving receptacles in and formed by the walls of the car opposite the door opening, into which said door sections are received, so as to be out of the way and enclosed by said walls when not in use, said door sections being made of metal, and a countersunk release door on one face thereof and separate guides in the plane of said doors along which the countersunk release doors slide to open them.

4. A door for railway cars comprising two sliding door sections having meeting edges adapted to be brought together to close the lower part of the door opening, a channel member into which the upper edge of one of said door sections is received when the door sections are in their open position and movably mounted thereon and adapted to be moved to engage the top of the other door section when the door sections are in a closed position, and a latching device connected with one of the door sections, in the plane of said door section and adapted to engage said channel member when it is in engagement with the other door section so as to fasten it in position.

5. An inner grain door for railway cars having the car outer wall formed of two substantially parallel wall members separated by a space with a door opening extending through both of said wall members, the space between said wall members on each side of the door opening forming door receiving receptacles closed at the top, bottom and end and open at the end opposite the said door opening comprising two movable door sections separate from the regular car door and

in the same vertical plane as the space between said wall members of the car outer wall and adapted to be moved to an open and closed position, said door sections being provided with an opening near the bottom thereof, a pressure release door closing said opening the face of said door section being provided with a depression into which said pressure release door is received, said depression having a portion beyond the door opening into which the pressure release door is received when moved to its open position, and means for moving said pressure release door to open the opening, to let out material in the car, to release the pressure on the door section so that it may be easily opened.

6. An inner auxiliary door for railway cars having the car outer wall formed of two substantially parallel wall members separated by a space

with a door opening extending through both of said wall members, said inner auxiliary door comprising two door sections separate from the regular car door and in the same vertical plane as the space between the said wall members of the car outer wall, said wall members of said car outer wall and the space between them forming door receiving receptacles closed at the top, bottom and one end and open at the end opposite said door opening, said inner auxiliary door sections closing the open ends of said receptacle both when the door sections are in their closed position and in their open position, said inner auxiliary door sections having meeting edges adapted to be brought together to close the door opening.

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