April 13, 1943. A. P. HAASE 2,316,688

GRAIN DOOR

Filed April 29, 1941 2 Sheets-Sheet 1

Fig. 1.

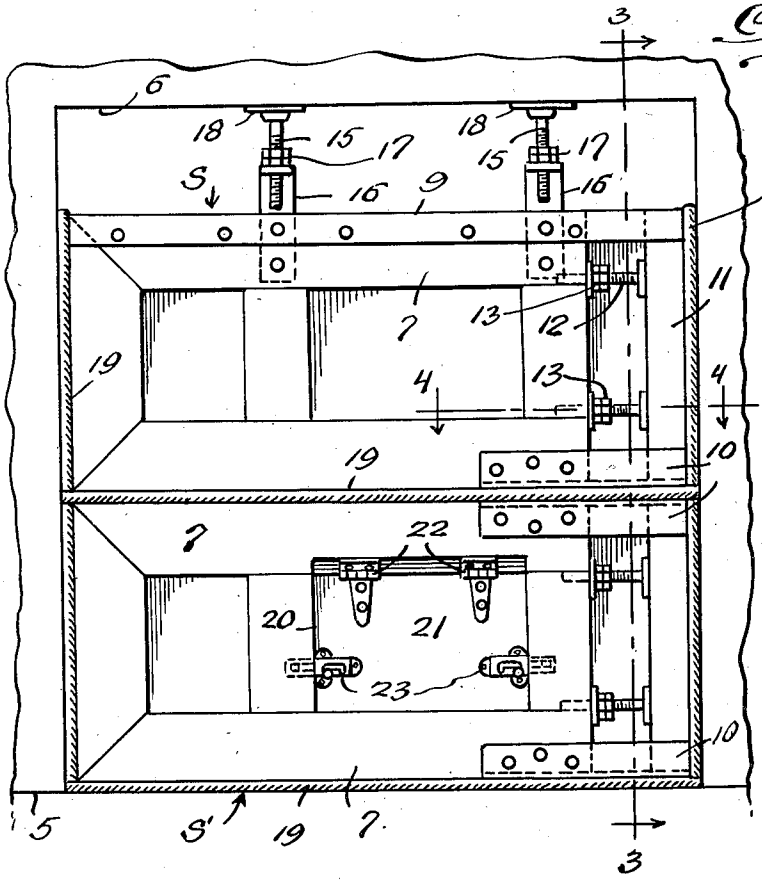


Fig. 3.

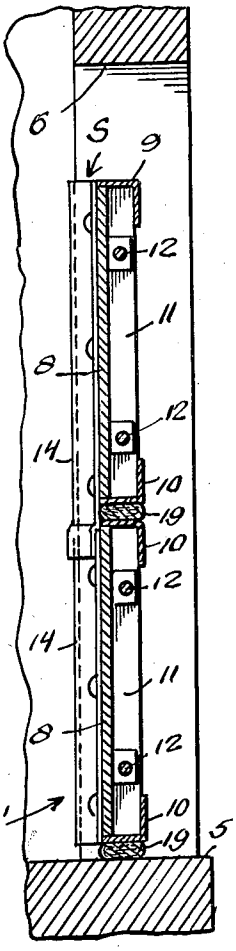
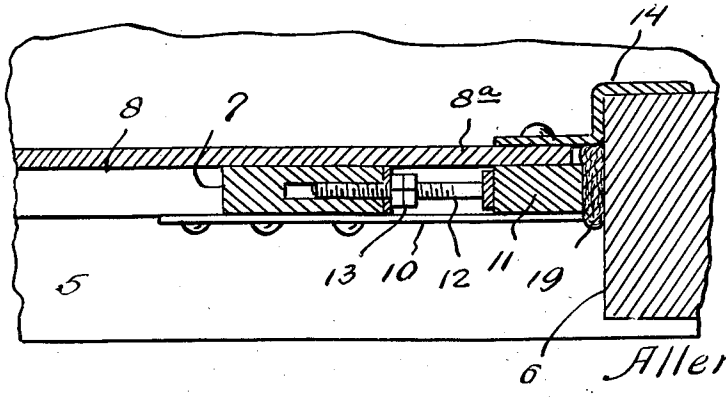


Fig. 4.



Inventor

Allen P. Haase,

By McMorrow & Berman

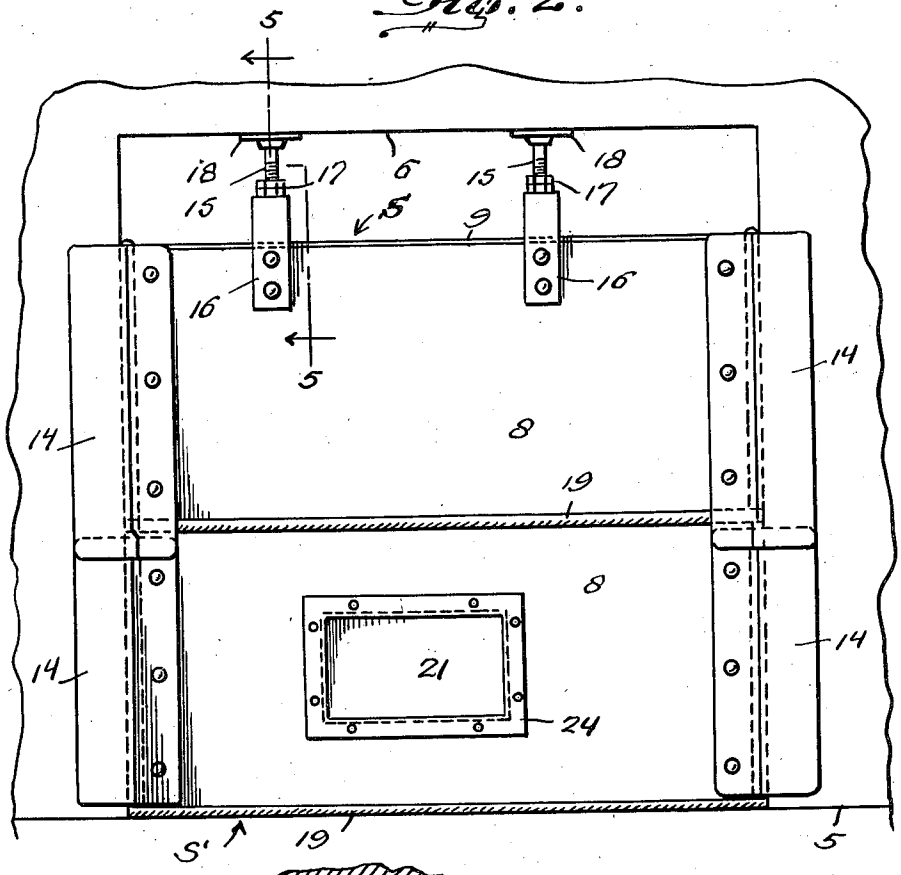
Attorneys

April 13, 1943. A. P. HAASE 2,316,688

GRAIN DOOR

Filed April 29, 1941 2 Sheets-Sheet 2

Fig. 2.



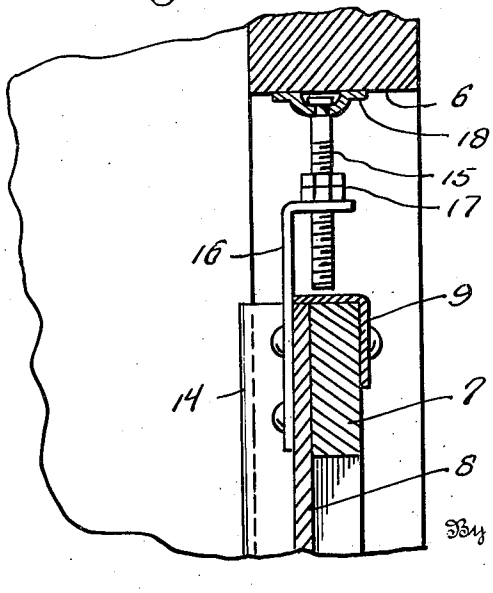


Fig. 5.

Inventor

Allen P. Haase,

By McMorrow & Berman

Attorneys

Patented Apr. 13, 1943 2,316,688

UNITED STATES PATENT OFFICE

2,316,688

GRAIN DOOR

Allen P. Haase, Lackawanna, N. Y.

Application April 29, 1941, Serial No. 390,974

1 Claim. (Cl. 20—30)

This invention relates to grain doors for cars, and the primary object is to provide a simple and highly efficient device of this kind.

A more specific object of the present invention is to provide a grain door whose use does not involve changing the car door jamb in any way, which can be readily installed by one person, and which can be fastened and locked in place by the mere use of a single wrench.

Other objects and features of the present invention will become apparent from the following description when considered in connection with the accompanying drawings. The invention consists in the novel form, combination and arrangement of parts illustrated and described.

In the drawings:

Figure 1 is an outside elevational view showing the door opening of a car equipped with a grain door constructed in accordance with the present invention.

Figure 2 is an inside elevational view thereof.

Figure 3 is a vertical section taken on line 3—3 of Figure 1.

Figure 4 is an enlarged fragmentary horizontal section taken on line 4—4 of Figure 1; and

Figure 5 is an enlarged fragmentary vertical section taken on line 5—5 of Figure 2.

Referring in detail to the drawings, the numeral 5 indicates a car body having the usual side door opening 6 defined by a suitable frame.

The present improved grain door comprises upper and lower sections S and S', respectively, each of which includes an open rectangular frame 7 covered by a suitable panel 8 on the inside of the frame and projecting beyond one end of the latter as at 8a. Angle iron strips 9 and 10 are provided on the upper and lower edges of the frame 7 and project beyond an end of said frame 7 along the upper and lower marginal portions of the projecting part 8a of the associated panel 8. Slidably disposed on the outer face of the projecting part 8a of panel 8 and having its ends slidably engaged under vertical flanges of the angle strips 9 and 10 is a vertical adjustable pressure bar 11. Jack screws 12 are interposed between the bar 11 and the adjacent end member of frame 7, for the purpose of sliding the bar 12 away from the adjacent end of the frame and thereby tightly securing the door section in place within the door opening. These jack screws have suitable lock nuts 13 for effectively locking the pressure bar 11 in the desired adjusted position so that accidental loosening of the door section will not occur.

Secured on the ends of the panel 8 of each door section on the inside of the latter are angle strips 14 which abut the adjacent sides of the door frame and extend along the inner face of the latter as shown in Figure 4 so as to guard against outward displacement of the door by the pressure of the grain thereon and to effectively guard against seepage of grain outwardly through the door opening. Of course, the jack screws 12 will adjust the pressure bar 11 so as to coact with the strips 14 in holding the door sections against outward pressure of the grain against the grain door. The two grain door sections, when secured in place, will fill the entire door opening except a small upper portion thereof as shown in Figures 1 and 2, and to hold the door sections down against the bottom of the door frame, as well as to assist in securing the door in place, further jack screws 15 are provided at the top of the upper door section S and carried by suitable mounting strips 16 having angular upper ends through which the jack screws extend. Like the jack screws 12, the jack screws 15 have lock nuts 17 to secure the jack screws against accidental loosening. The nuts 13 and 17 are of a size so as to be readily operated by one and the same size wrench. The jack screws are preferably provided with suitable swiveled pressure plates as at 18, adapted to engage the door frame and permit free turning of the screws proper in adjusting them. As shown more clearly in Figures 2 and 3, the angle strips 14 of the upper door section S are of a length to project below the lower edge of said section S and overlap upon the adjacent upper ends of the angle strips 14 carried by the lower door section S'. The lower ends of the strips 14 on the upper section S are offset inwardly so as to overlap the strips 14 on the lower door section in this way, without interfering with proper vertical alignment of the door sections when secured in place. In installing the present door, suitable packing strips 19 are preferably interposed between the door sections, between the ends of the door sections and the sides of the door frame, and between the bottom of the door frame and the lower edge of the lower door section as shown. This results in more efficient sealing of the opening and guards against any seeping of grain outwardly through the portion of the door opening closed by the present grain door.

The lower section S' has a suitable unloading door opening 20 closed by a door 21 hinged along its upper edge as at 22 to the adjacent portion of the frame 7 to swing outwardly and upwardly

to open position. Suitable locking bolts of the barrel type are provided at 23 on opposite sides of the door 21 for securely fastening the latter in lowered closed position. If desired, the opening 20 may be provided with a suitable reenforcing frame 24 as shown at 22.

From the foregoing description, it will be seen that I have provided a simple and highly efficient grain door for cars, and one which may be used without changing the car door frame in any way. The grain door may be readily installed by one person and can be fastened and locked in place with the use of a single wrench.

Minor changes in the details of construction illustrated and described, are contemplated within the spirit and scope of the invention as claimed.

What I claim as new is:

In a grain door, substantially rectangular-shaped door frames positioned in superimposed relation within a vertically arranged door jamb with the upper edge of the upper frame spaced from the upper horizontal wall of the jamb and each frame having one end spaced from one of the vertical walls of the jamb, panels closing the frames and projecting beyond said ends of the frames, L-shaped strips secured to the frames and panels and coacting with the latter beyond said ends of the frames to provide upper and lower horizontally arranged guides for each frame, presser bars slidable in said guides, jack screws arranged between said ends of the frames and bars for forcing the frames and bars against opposite vertical walls of the jamb, jack screws between the upper frame and the jamb to force the frames together and the lower frame against the lower horizontal wall of the jamb, overlapping strips secured to the panels and engaging the jamb, and packing arranged between the frames and between the latter and the jamb and between the presser bars and the jamb.

ALLEN P. HAASE.