

Feb. 7, 1928.

1,658,641

S. G. ILIEFF

GRAIN CAR DOOR

Filed Jan. 10, 1927

2 Sheets-Sheet 1

Fig. 1.

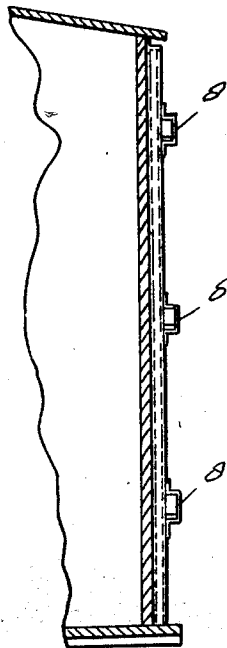
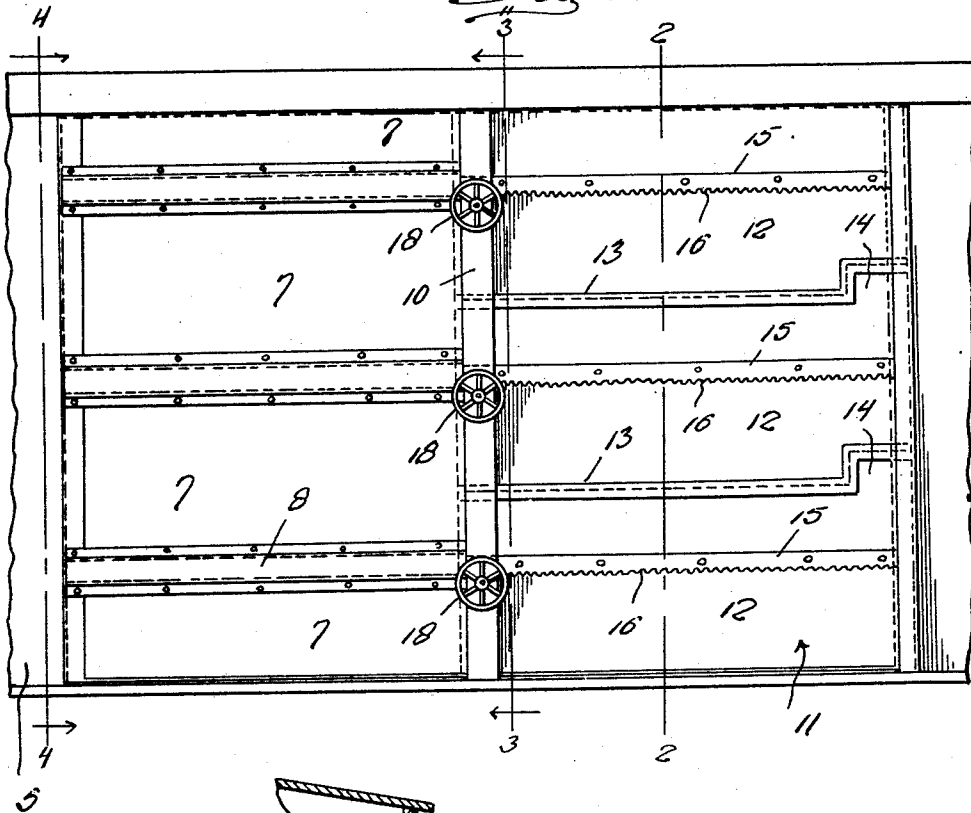


Fig. 4.

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2 Sheets-Sheet 2

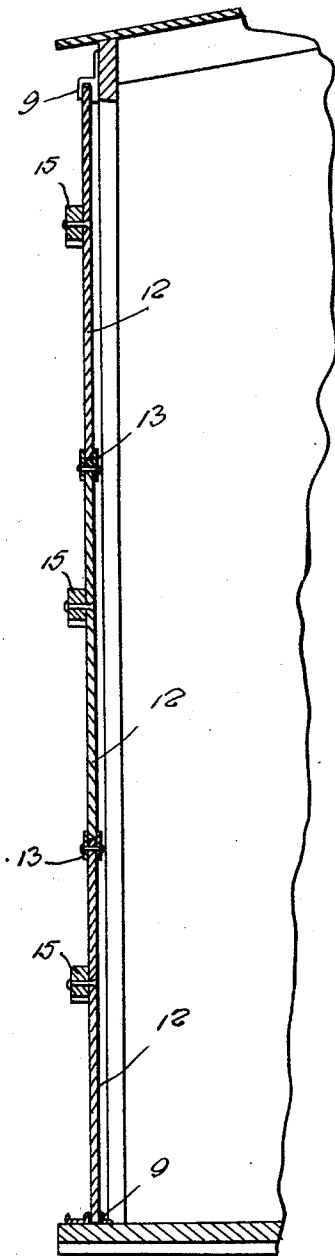


Fig. 2.

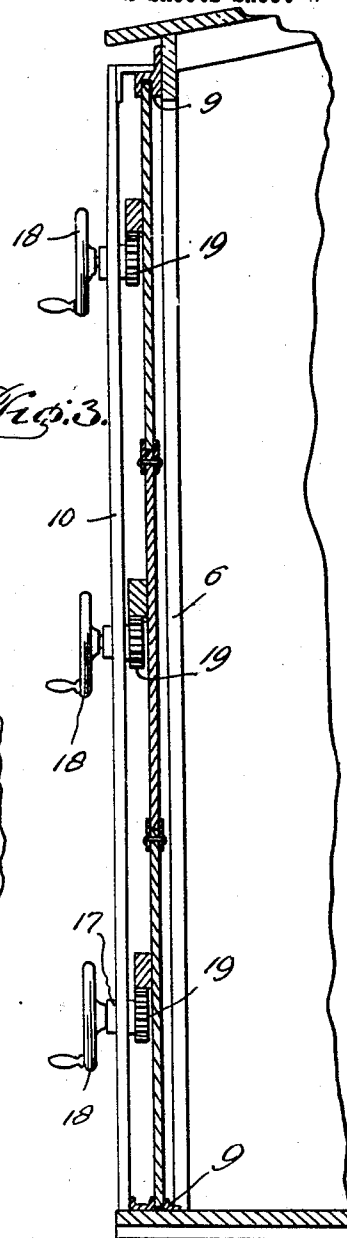
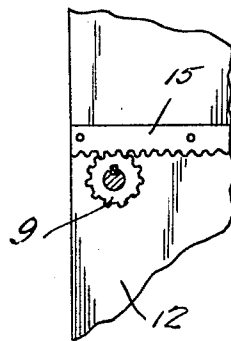


Fig. 3.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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GRAIN-CAR DOOR.

Application filed January 10, 1927. Serial No. 160,237.

This invention relates to new and useful improvements in doors for grain cars, and has for its primary object to provide a door of this character that consists of a plurality of horizontally slidable door sections that may be separately slid to open position from the top section downwardly or wherein the entire number of sections may be unitarily moved to open position and wherein all of the sections may be simultaneously moved to closed position.

A further and important object is to provide a door of this character that includes simple means whereby the sections may be moved to open or closed position and wherein grain tight joints are provided between the adjacent edges of the door sections.

With the foregoing and other objects in view as the nature of the invention will be better understood, the same comprises the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings wherein like reference characters indicate corresponding parts throughout the several views:

Figure 1 is a fragmentary side elevation of a grain car equipped with a door constructed in accordance with the present invention.

Figure 2 is a detail vertical section taken substantially upon the line 2—2 of Figure 1.

Figure 3 is a similar view taken substantially upon the line 3—3 of Figure 1, and looking in the direction of the arrows.

Figure 4 is a reduced vertical section taken substantially upon the line 4—4 of Figure 1, and also looking in the direction of the arrows, and

Figure 5 is a fragmentary front side elevation of one of the sliding door sections.

Now having particular reference to the drawings, 5 designates generally one side of a freight car that is formed with the usual rectangular shaped door opening 6 at one side of which the wall of the car is formed of a plurality of horizontally arranged panels 7 spaced apart at their longitudinal edges and interconnected by horizontal sheet metal channel bars 8. Extending longitudinally at the top and bottom of the door opening 6 as well as in back of the panels of the car wall are channel rails 9—9, while at the inner edge of the paneled area of the car

wall and in outwardly spaced relation therewith is a vertical panel bar 10.

Longitudinally slidable into position in front of the door opening 6 or in back of the paneled area of the car wall is a sectional sliding door designated generally by the reference character 11. This door consists of a plurality of sections, preferably three in number, each of which is designated by the reference character 12. The adjacent edges of these sections are slidably interconnected by U-shaped metallic joints 13—13 that are rigidly secured to the upper edges of the lower and central section, as clearly indicated in the sectional view of Figure 2. At the rear end of the lower and central sections the upper edges thereof are formed with vertical projections 14—14 that have interfitting relation within corresponding pockets in the lower edges of the central and uppermost sections as clearly indicated in Figure 1. It is of course to be understood that the metallic joints 13—13 are so formed at their inner ends as to provide a tight joint between the respective projections and pockets as also disclosed in this figure.

At the front face of each section 12 and at substantially a little above the center thereof is a rack bar 15 formed at its lower edge with teeth 16.

Mounted within suitable bearings 17 in the outwardly spaced vertical channel 10 are three stub shafts, the outer ends of which are equipped with hand wheels 18, while the inner ends thereof are equipped with spur gears 19 that have mesh with the teeth 16 of the rack bars 15 of the respective door sections 12.

Obviously when the door is entirely closed as in Figure 1, the entire number of sections may be moved to open position by turning the lowermost hand wheel 18 in the proper direction. This is occasioned by reason of the interconnections between the door sections consisting of the projections and pockets heretofore described. However, should it only be desired to open the uppermost or the two uppermost sections, the uppermost hand wheel 18, or the center hand wheel 18 may be so turned as to cause such an opening without the simultaneous opening of the lower section 12.

Obviously the spaced relation of the stationary panels 7 of the car wall permits the rack bars 15 to move therebetween, while by

reason of the channel bar connections 8 between these panels 7 the said paneled area of the side wall is entirely grain tight as is necessary.

5 It will thus be seen that I have provided a highly novel, simple, and efficient door structure for grain cars that is well adapted for all the purposes heretofore designated, even though I have herein shown and described
10 the invention as consisting of certain detail structural elements it is nevertheless to be understood that certain changes may be made therein without affecting the spirit and scope of the appended claim.

15 Having thus described the invention, what I claim is:—

In a grain car wherein the side wall thereof is formed with a door opening, the wall of the car at one side of the opening being

provided with spaced horizontal panels, 20 channel bars interconnecting the adjacent edges of the panels, a plurality of longitudinally slidable horizontal door sections mounted within the door opening, a rack bar longitudinally disposed on the outer face of 25 each section and adapted for engagement within the respective channel bar between the adjacent panels of the car side wall when the particular section is moved to an open position, manually operable pinions mounted 30 on the side of the car for cooperation with the respective rack bars for actuating the door sections, and interfitting projections and sockets formed on the adjacent edges of the door sections whereby said sections may be 35 actuated simultaneously as a unit.

In testimony whereof I affix my signature.
SAMUEL G. ILIEFF.