

T. OSWALD.
GRAIN CAR DOOR.
APPLICATION FILED APR. 1, 1909.

950,007.

Patented Feb. 22, 1910.
2 SHEETS—SHEET 1.

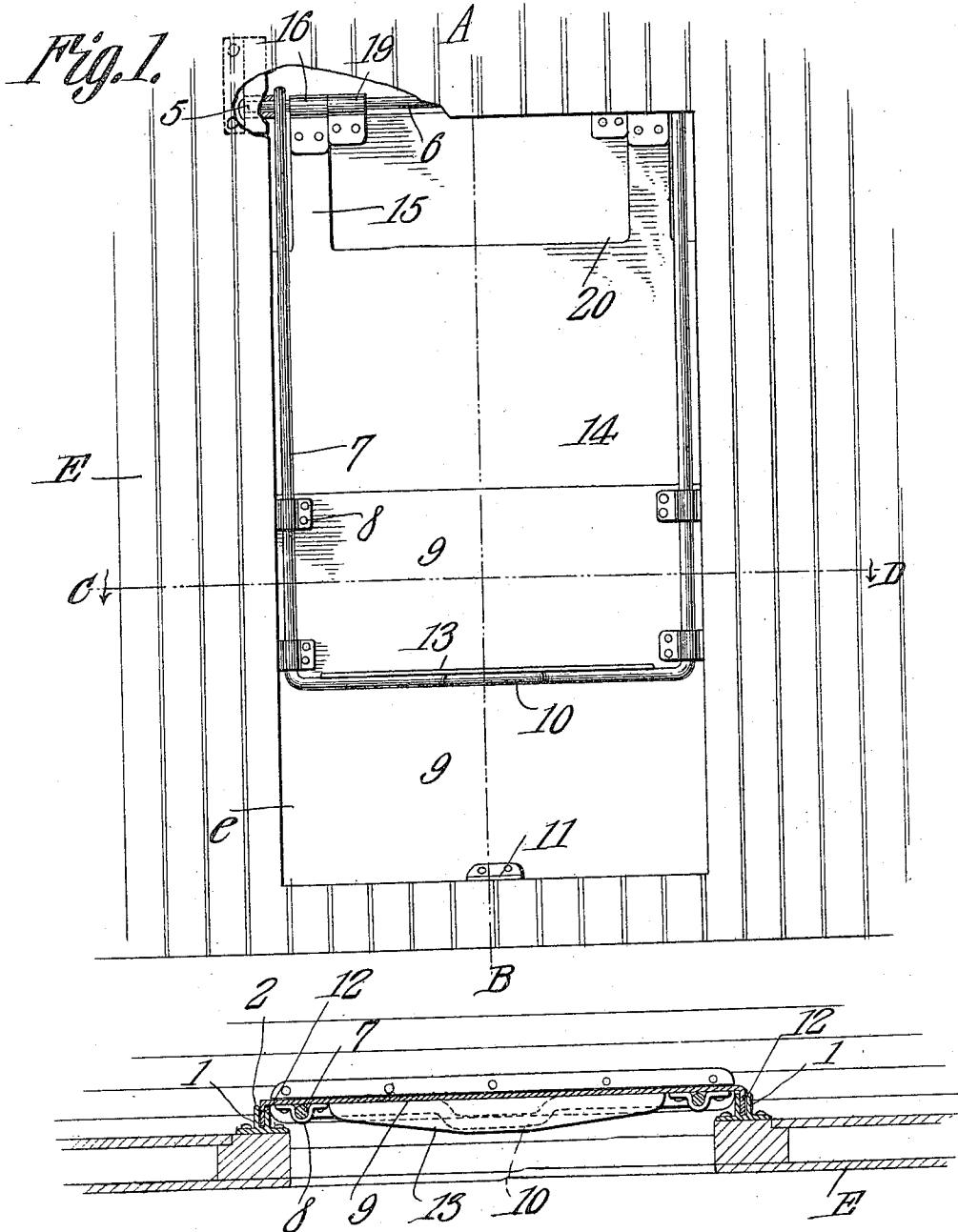


Fig. 3.

Witnesses

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TONY OSWALD, OF CANOVA, SOUTH DAKOTA.

GRAIN-CAR DOOR.

950,007.

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To all whom it may concern:

Be it known that I, TONY OSWALD, a citizen of the United States, residing at Canova, in the county of Miner and State of South Dakota, have invented a new and useful Grain-Car Door, of which the following is a specification.

This invention relates to doors for grain cars and its object is to provide a door of this character which, when not in use and when raised toward the ceiling of the car, can be collapsed so as to occupy the minimum amount of space, it therefore being possible to hold two opposed doors of a car in elevated position by means of separate supporting devices, said doors when thus supported being removed from each other and not lapping as heretofore.

A further object is to provide a door made up of movably connected sections which may be successively lowered into closed position.

A further object is to provide novel means for retaining the doors against lateral displacement while they are in closed position.

With these and other objects in view the invention consists in certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a front elevation of a door embodying the present improvements, the adjoining portion of a car being shown in elevation. Fig. 2 is a section on line A—B Fig. 1, and showing by dotted lines the positions assumed by the doors when raised. Fig. 3 is a section on line C—D of Fig. 1.

Referring to the figures by characters of reference E designates a car structure and e the door-opening therein, and secured to the inner face of each door-jamb is a metallic door-receiving cleat 1 having a longitudinal groove 2 therein perpendicular to the floor of the car and of sufficient width to receive the side flanges of the door sections as heretofore described. These retaining cleats extend throughout the height of the door-jamb and the lower ends of the grooves 2 open into the end portions of a groove 3 formed longitudinally within a metallic sill strip 4 which extends between the lower ends of the door jambs. The groove within the sill strip is sufficiently wide to receive the lower edge of the lower door section.

Secured to the upper ends of the door-jamb is longitudinally slotted supporting brackets 5 in which is slidably mounted a pivot rod 6. Pivotally connected to this rod 60 is a U-shaped hanger 7 preferably formed of a heavy metallic rod, there being eyes at the ends of the hanger for receiving the pivot rod 6. This hanger is slidably engaged by ears 8 which are secured to the 65 outer face of the lower door section 9, said section being thus slidable along the hanger 7. The middle portion of the hanger is off-set as indicated at 10 and outstanding from the door section 9 close to the lower edge 70 thereof is a bracket 11 which is designed, when said door section is shifted along the hanger, to pass through the off-set portion of the hanger. When the lower edge of the door section 9 is seated in the groove 3 the 75 bracket 11 overhangs the sill strip 4 and is spaced a short distance therefrom so as to permit the insertion of a suitable prying tool between the sill strip and the bracket. Flanges 12 are formed along the side edges 80 of the door section 9 and are designed to project into the grooves 2 when the lower end of said section is seated within the groove 3. A bracing strip 13 extends transversely upon the outer face of the section 9 85 and is designed to limit the movement of the section in one direction with relation to its hanger 7.

The intermediate section 14 of the door is provided with parallel hangers 15 having 90 eyes 16 at the free ends through which the rod 6 loosely extends. This section is also provided with longitudinal flanges 17 along its side edges for projecting into the groove 2. This intermediate section is preferably 95 about one half the height of the lower door section 9, and the upper door section 18 is preferably about one half the height of the intermediate door section. This upper door section has eyes 19 at its upper edge through 100 which the rod 6 extends and the side flanges 20 are formed upon said section and designed to extend into the groove 2.

A series of hooks is arranged upon the ceiling of the car, one of the hooks, 21, being 105 designed to engage the upper door section 18, while another hook, 22, is provided for supporting the intermediate door section 14. A third hook, 23, is used for engaging the lower door section 9 and holding it in raised 110 position.

As heretofore pointed out, when the door

is shut the lower edge of the section 9 rests within the groove 3 in the sill strip, while the side flanges of said door rest within the grooves 2. In filling the car with grain the lower door sections are first placed in position across the door openings and after the grain has been filled up to the top of the lower door sections the intermediate door sections are lowered so that their side flanges will rest within the grooves 2. The filling operation can then be continued until the level of the grain reaches the upper edges of the intermediate door sections, after which the small upper door sections may be lowered into closed position. These upper sections are especially desirable for use where light grain is contained within the car.

When the doors are not in use the pivot rod can be slid upwardly into engagement with hooks 5' arranged in the slots in brackets 5 and the door 18 can be engaged by hook 21 and door sections 14 can be engaged by hook 22. The lower door section 9 can be slid longitudinally upon the hanger 7 until the lower end thereof is brought into alignment with the lower end of the hanger, after which said door section can be swung upwardly and placed in engagement with the hook 23.

As heretofore pointed out, by providing a door having a slidably supported lower section, the length of the door can be diminished when the said door is elevated out of use, and it is therefore possible for two opposed doors to be suspended up under the ceiling without lapping. One door will not therefore interfere with the other when it is desired to lower it.

It is of course to be understood that various changes may be made in the construction and arrangement of the parts without departing from the spirit or sacrificing the advantages of the invention.

What is claimed is:—

1. The combination with a car structure having a door opening, of brackets secured to the structure at opposite sides of the open-

ing, and having slots therein a rod mounted at its ends within the slots, a U-shaped hanger pivotally mounted upon the rod, said hanger having an intermediate outstanding portion, a door section slidably mounted on the hanger, a bracket upon the lower portion of the door section and movable through said outstanding portion of the hanger during the movement of the section in an upward direction upon the hanger, and a transversely extending bracing strip upon said section and coöperating with the intermediate portion of the hanger for limiting the downward movement of the door section.

2. The combination with a car structure having a door opening, and longitudinally channeled cleats at the sides of the opening, of slotted brackets secured to the structure at opposite sides of the upper portion of the opening, each slot having a hook projecting thereinto, a rod adjustably mounted at its ends within the slots, a U-shaped hanger pivotally mounted upon the rod, said hanger having an intermediate outstanding portion, a door section slidably mounted on the hanger, a bracket upon the lower portion of the door section and movable through said outstanding portion of the hanger during the movement of the section in an upward direction upon the hanger, transversely extending means upon said section and coöperating with the intermediate portion of the hanger for limiting the downward movement of the door section, additional door sections pivotally mounted upon the rod, all the said sections normally lapping, and flanges along the side edges of the respective door sections and normally seated within the channels in the cleats.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

TONY OSWALD.

Witnesses:

J. F. GROVE,
H. H. SCHULTE.