

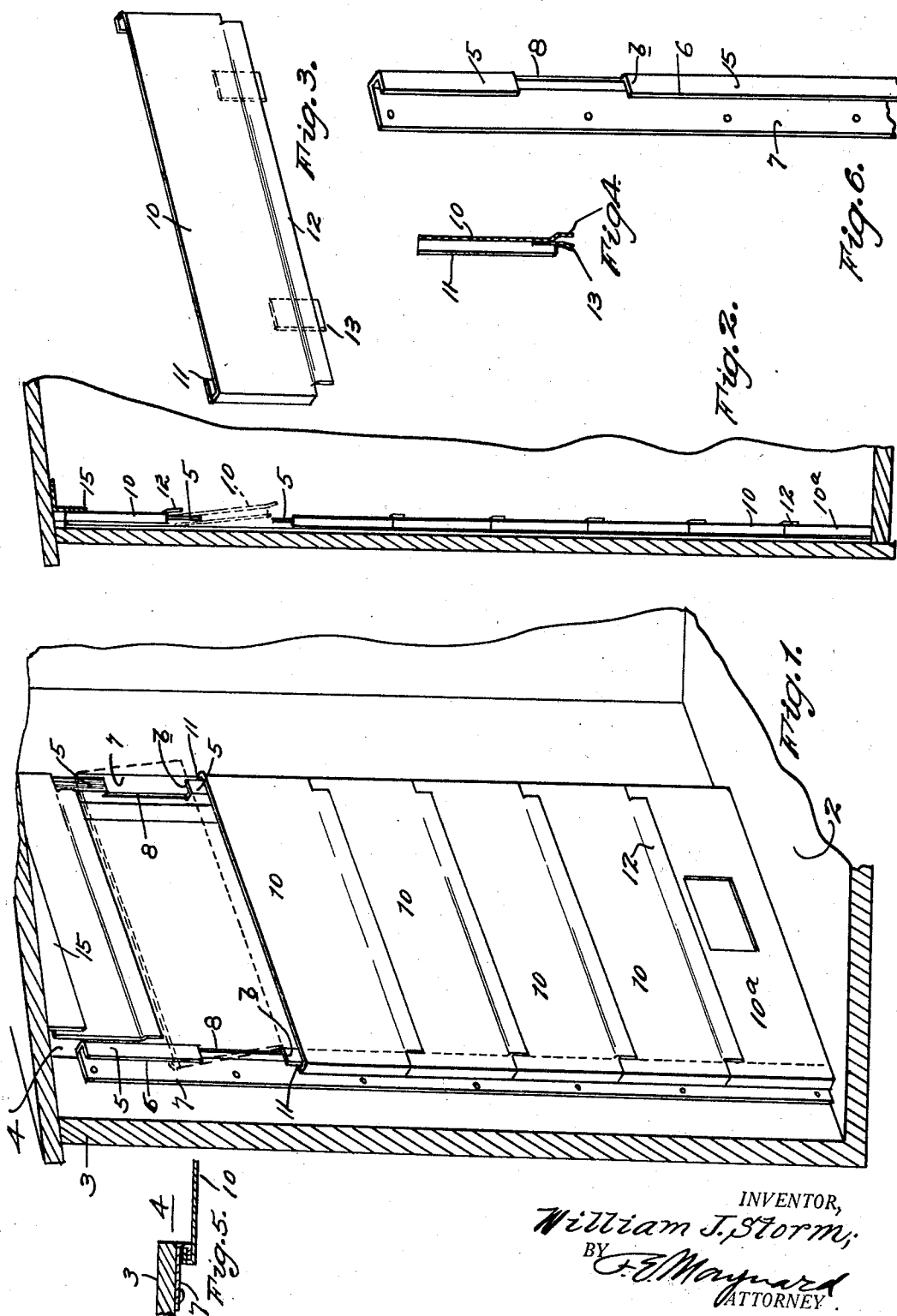
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GRAIN DOOR FOR BOX CARS

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GRAIN DOOR FOR BOX CARS

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This invention relates to box car doors and more especially to grain doors for box cars.

5 An object is to provide a door of this class which is of very effective and at the same time simple structure and one which consists of a number of similar demountable sections which may be easily handled and quickly set up and removed.

10 A further object is to provide a grain door whose panel parts are subject to a tight closing position one on the other under load in the car.

15 The invention consists in certain advancements in this art as set forth in the ensuing disclosure and having, with the above, additional objects and advantages, and whose construction, combination and details of means, and the manner of operation will be made 20 manifest in the ensuing description of the herewith illustrative apparatus; it being understood that modifications, variations and adaptations may be resorted to within the scope, principle and spirit of the invention as it is more directly claimed hereinafter.

25 Figure 1 is a perspective of installed door structure in a car.

Figure 2 is an edge elevation of the door elements; the car wall being in section.

30 Figure 3 is a perspective of a door panel.

Figure 4 is a vertical section of a panel showing the inner and outer joint lap parts.

Figure 5 is a horizontal section of interlocked stile and panel means.

35 Figure 6 is a perspective of a fragment of a stile.

40 A portion of a box car 2 is shown as having a side wall 3 with a door opening 4 therein. It is understood that this opening is covered by an appropriate outside door, not here shown; as not forming a part of this invention.

45 The grain door structure is installed on the inside face of the wall 3 and includes a pair of stiles which have vertical flanges 5 fixed in inwardly spaced relation from the wall surface to provide runways or channels therealong. These flanges have edges 6 turned outward or away from the door opening and are here shown as bent front fastening or base

strips 7 rigidly fastened to the wall at each side of the doorway 4.

Adjacent to their upper ends each of the guide flanges 5 is cut away at 8 for a length which is determined by the height of a door 55 panel or unit 10, of which a number is provided to constitute a built-up closure from the floor of the car to near its roof.

These panels are of heavy, meaning stiff, sheet metal and have inturned or folded end, 60 clinching flanges 11 spaced from the outer face of the panel so as to receive and slide along the respective stile flanges 5.

The several panels 10 are alike except the 65 bottom panel 10^a whose bottom edge is designed to bear snug along the car floor; the other panels having bottom lips 12 slightly inset so as to overlap the next lower panel.

Also, the panels 10 have outer cleats 13 to 70 lap over the supporting panel and prevent inward buckle of one over the other.

When the door is to be set up the base panel 10^a is lifted up to and its top edge is tilted 75 into the cut-out 8 of the stiles so that the flanges 5 enter the spaces under the hook flanges 11 of the panel which is pushed up high enough to register its lower part over the stile butts 7 then the panel is drawn down so that the butt runs into the hook space; the 80 panel then being shifted down the flanges 5 to the floor. Following insertion of the base panel, the other panels 10 are registered into place on the flanges 5; the topmost panel being inserted and pushed up to limit while 85 the next lower panel, shown in Fig. 2, is being installed to close over the interruptions 8 in the flanges 5, after which the two highest panels slip down to stationary relation, supported by the third panel, (in order from the 90 top).

It will be seen that the load of grain or other mobile-mass cargo will pack up against the stacked door panels and these will be forced snug against the stile flanges 5. The 95 interlocked hooks 11 lapping around the flanges 5 close the sliding joint and the lap lips prevent leak at the horizontal panel edges; the laps closing tightly and also form stiffening means for the panels.

A head curtain 15 may be employed at the top of the door if desired to prevent out-surg-ing of grain.

The bottom panel 10^a is provided with a small door for the discharge of grain in cases where this may be desired.

The stile base 7 and its inspaced flange 6 form a member of J-shape cross-section.

What is claimed is:

10 A grain door for box cars having a pair of stiles with oppositely disposed flanges form-
ing guides, and a door structure consisting
of a plurality of panels set longitudinally
edge on edge, and each panel having end
15 flanges forming hook means to interlock
with, lap over and slide vertically along the
stiles; whereby the several panels form a ver-
tical closure along stiles; said stile flanges
being interrupted below their upper ends to
20 form notches for the introduction of the sev-
eral panels onto the guide flanges and the
upper ends having flanges to retain the top-
most door panel, the latter interlocking on
flanges at the ends of the notches.

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