

A. H. GLANDON.

CAR DOOR.

APPLICATION FILED NOV. 10, 1910.

994,097.

Patented May 30, 1911.

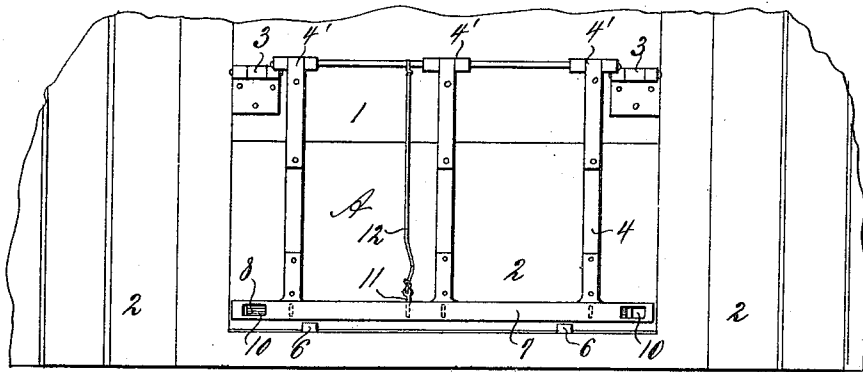


Fig. 1

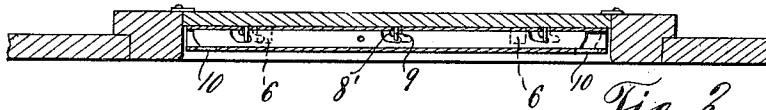


Fig. 2

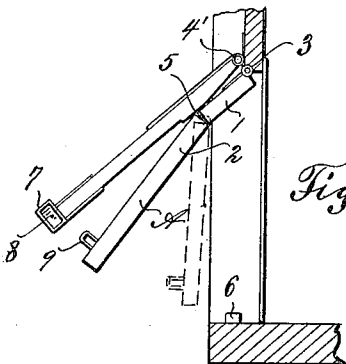


Fig. 3

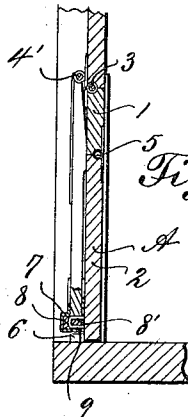


Fig. 4

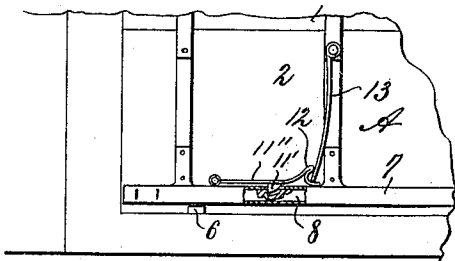


Fig. 5

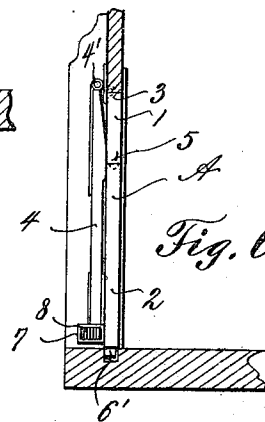


Fig. 6

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UNITED STATES PATENT OFFICE.

ALEXANDER H. GLANDON, OF WABEDO, MINNESOTA.

CAR-DOOR.

994,097.

Specification of Letters Patent.

Patented May 30, 1911.

Original application filed August 3, 1909, Serial No. 510,983. Divided and this application filed November 10, 1910. Serial No. 591,672.

To all whom it may concern:

Be it known that I, ALEXANDER H. GLANDON, a citizen of the United States, residing at Wabedo, in the county of Cass and State of Minnesota, have invented certain new and useful Improvements in Car-Doors, being a division of my United States application, Serial No. 510,983, filed August 3, 1909, and of which the following is a specification.

The present invention comprises an improved form of door particularly designed for use on cars, granaries, corn cribs, wagon boxes, tanks, or the like, and so constructed as to facilitate dumping of the contents of a receptacle or other container upon which the door may be used.

The present invention was illustrated as an auxiliary door in the construction of car door embodied in my United States Letters Patent No. 967,757, issued August 16, 1910.

A full comprehension of the present invention, including its merits and advantages under practical conditions of use, will be had by reference to the accompanying drawings, in which—

Figure 1 is a front elevation of a door embodying the principal features of the present invention; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a vertical section showing the door when in open position, dotted lines bringing out clearly the disengaging movement of the lower section with respect to the stops coacting with its lower edge; Fig. 4 is a vertical sectional view showing the door closed and locked; Fig. 5 is a modification in respect to the catch cooperating with the locking bar; Fig. 6 is a modification showing the stops, holding the door at its lower edge, arranged on the door instead of carried by the base of the door frame.

As will be readily observed upon reference to the drawings, the door of this invention is shown at A, and comprises jointed sections 1 and 2. The door A is pivoted at its upper edge as shown at 3 to a suitable support such as the frame of a car, building,

tank, etc., and normally when the door is closed, the sections 1 and 2 are held in alinement by means of a locking frame 4. The sections 1 and 2 of the door are connected together by hinges or pivotal connections of any desired type, shown at 5, and the lower section 2 engages stops 6 on the base or threshold portion of the frame in which the door is mounted when the door is closed, as shown in Fig. 4.

The purpose of the locking frame 4 is to maintain the sections of the door A rigidly in alinement and closed, it being impossible for the door to open until relative pivotal movement of the sections 1 and 2 of the door is permitted in the manner shown in Fig. 3. The locking frame 4 comprises a plurality of arms pivotally connected at 4' with the support in which the door is mounted, the lower ends of the arms being connected, or formed with, a hollow end piece 7. Mounted in the hollow end piece 7 is a locking bar 8 formed with a plurality of hooks 8' adapted to interlock with staples 9 projecting outwardly from the lower portion of the section 2 of the door. The staples 9 are adapted to enter slots in the rear side of the end piece 7, whereupon endwise movement of the bar 8 will cause the several hooks 8' to engage the staples. In this manner, the locking frame is capable of making the door sections rigid so that the latter can not be moved out of alined positions until the hooks 8' are released from the staples 9.

At its opposite ends, the end piece 7 is provided with openings 10 on its outer face to permit of ready introduction of a tool into the hollow portion of the end piece for engagement with the extremities of the locking bar 8. By said tool, not shown, the locking bar may be moved longitudinally in the end piece 7 of the locking frame, in either direction, after the catch 11 has been raised from engagement with the locking bar and end piece. The catch 11 may be a pin carried by a flexible support 12, said pin pass-

ing vertically through the parts 7 and 8. However, preferably, as shown in the modification in Fig. 5, the catch 11' is used in substitution for the catch 11 before referred to, said catch 11' being pivoted to the end piece 7 carried by a plate 11'' formed with a finger piece 12. A spring 13 normally holds the catch 11' in a position in which it extends through the upper side of the end piece 7 and engages in a recess in the locking bar 8.

As shown in Fig. 6, the stops 6' equivalent to the stops 6 shown in Fig. 3, are carried by the lower edge of the door A and engage in recesses in the threshold portion of the door frame, the function of the stops 6' being the same as that of the stops 6, namely, forming engaging means coacting with the lower edge of the door to prevent outward movement thereof until the joint between the sections is broken after the manner illustrated in Fig. 3.

The mounting of the door A and the locking means associated therewith are exceptionally advantageous because the door may be readily opened from the outside of the support on which it is mounted, notwithstanding the exceedingly great pressure against the door from the inside when grain or similar material is bearing against the door.

The door being held in place by three or four permanent catches or locking members is extremely rigid when closed. In opening the door A, the sections 1 and 2 are folded or doubled so to speak, the joint at 5 being broken, whereupon the lower section 2 of the door is raised sufficiently to become disengaged from the engaging means coacting with the lower edge of said section.

The convenience of the door A, and the readiness with which it may be operated are important features of advantage derived from the invention.

Having thus described the invention, what I claim as new is:

1. In combination, a door frame, a door mounted thereon and comprising movably connected sections, a pivotal connection between the upper portion of said door and the door frame, means coacting with the lower portion of the door to normally hold the door closed, a locking frame movably mounted at the outer side of the door and comprising an end piece, a locking bar mounted on said end piece, and members projecting from one of the sections of the door and arranged for detachable engagement by said locking bar.

2. In combination, a door frame, a door mounted thereon and comprising an upper section pivotally connected with a door frame, a lower section pivotally connected

with said upper section, means on the door frame to engage the lower section to prevent outward movement of the door when the sections thereof are in alinement, means to hold the door sections in alinement comprising a locking frame pivotally mounted at the outer side of the door and provided with a hollow end bar, members carried by the lower section of the door and adapted to be received in the hollow portion of said end bar, and a locking bar movably mounted in the hollow portion of the end bar and having hooks for detachable engagement with the members on the lower section of the door.

3. In combination, a door frame, a door mounted thereon and comprising movably connected sections, a pivotal connection between the upper portion of said door and the door frame, means coacting with the lower portion of the door to normally hold the door closed, a locking frame movably mounted at the outer side of the door and comprising an end piece, a locking bar mounted on said end piece, members projecting from one of the sections of the door and arranged for detachable engagement by said locking bar, and a catch mounted on the locking frame for coöperation with the locking bar.

4. In combination, a door frame, a door mounted thereon and comprising an upper section pivotally connected with a door frame, a lower section pivotally connected with said upper section, means on the door frame to engage the lower section to prevent outward movement of the door when the sections thereof are in alinement, means to hold the door sections in alinement comprising a locking frame pivotally mounted at the outer side of the door and provided with a hollow end bar, members carried by the lower section of the door and adapted to be received in the hollow portion of said end bar, a locking bar movably mounted in the hollow portion of the end bar and having hooks for detachable engagement with the members on the lower section of the door, and a catch mounted upon the locking frame to engage the locking bar and hold the hooks of the latter in engagement with the members on the lower section of the door.

5. In combination, a door frame, a door mounted thereon and consisting of pivotally connected sections, a pivotal connection between the uppermost section and the door frame, permitting outward movement of the door, engaging means at the base of the door frame coacting with the lower edge of the lower section of the door to hold the door closed when the sections thereof are in alinement, means for holding the sections of the door in alinement comprising a locking frame pivoted at its upper portion to the

door frame, said locking frame having a hollow end piece at its lower portion, a horizontal sliding locking bar mounted in the hollow portion of the end piece, staples projecting from the lower section of the door and movable into the hollow end piece, the locking bar having hooks to engage said staples, and a locking catch mounted on the end piece of the locking frame to engage the locking bar and prevent movement thereof. 10

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER H. GLANDON.

Witnesses:

JAMES E. GUREY,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
