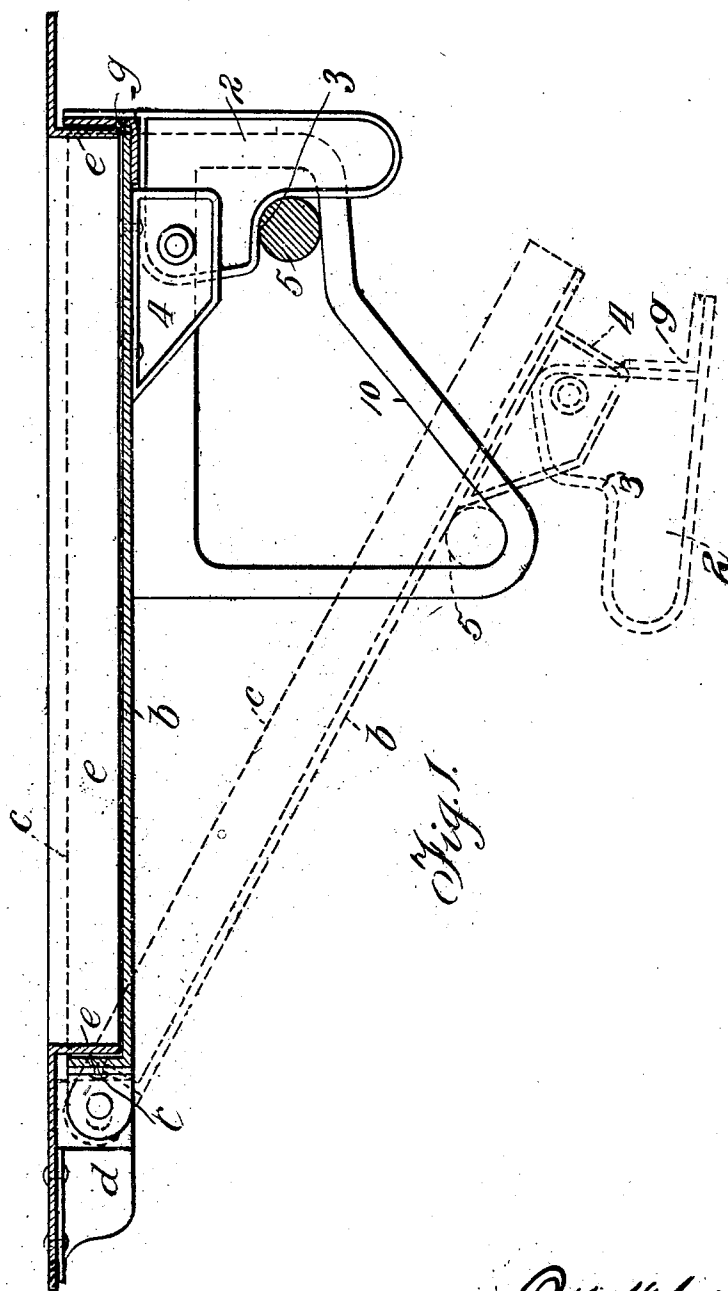


O. W. MEISSNER.
TRAP DOOR.
APPLICATION FILED NOV. 13, 1907.

1,023,951.

Patented Apr. 23, 1912.

2 SHEETS—SHEET 1.



Witnesses

Superior Register
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Inventor

By Attorney

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

OTTO WILLIAM MEISSNER, OF WESTMOUNT, QUEBEC, CANADA.

TRAP-DOOR.

1,023,951.

Specification of Letters Patent.

Patented Apr. 23, 1912.

Application filed November 13, 1907. Serial No. 401,955.

To all whom it may concern:

Be it known that I, OTTO WILLIAM MEISSNER, of Westmount, Province of Quebec, Canada, have invented certain new and useful Improvements in Trap-Doors; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates particularly to trap doors for use in controlling the flow of cereals, coal, ore and other loose commodities, although it can be applied, with advantage to other doors requiring to be sealed, and it may be said briefly to consist of a trap door having three sides flanged, a valvular member adapted to close and seal the fourth side, such member being preferably carried by the door, and means for moving such member to and from sealing position. For full comprehension, however, of my invention reference must be had to the accompanying drawings forming a part of this specification, wherein corresponding reference numerals indicate the same parts, and in which—

Figure 1 is a longitudinal sectional view of a portion of a railway car with my invention applied thereto; and Fig. 2 is a plan view thereof.

The preferred embodiment of my invention consists of a door *b* provided with laterally projecting flanges *c* on one end and both sides, such door being hinged in a slotted hinge block *d*, while the opening in the door frame is provided with flanges *e* on all four sides, the door being adapted to inclose these flanges *e* except at one end, and that end is closed by a valvular member constituting the principle feature of this invention. This valvular member consists preferably of an angle iron *g* movably supported and adapted to be set in place supporting and sealing the free end of the door after the latter is closed. This angle iron is carried and operated by the following means:—

A pair of arms 2 are mounted pivotally in bearings 4 secured rigidly upon the underside of the free end of the door, such arms having the angle iron *g* secured rigidly thereto, and they are formed with shoulders 3 adapted to rest upon the usual door raising and lowering shaft 5, when the door is closed. This member is placed in its sealing position by the shaft 5 as the latter closes the door and simultaneously with such action, and as the shaft is lowered the arms 2 and, consequently, the door, follow it, the

arms turning on their pivots owing to the preponderance of weight of the angle-iron, until the member finds its center of gravity, which automatic action places it beneath the free end of the door and therefore entirely out of the path of the material being dumped.

The tracks 10 for guiding the shaft 5 in its action are well known as is also the means for operating the shaft, such parts are therefore not described in detail, and the last mentioned means are not shown.

The object of the sliding hinged connection for the door is to enable the flange of the latter at the hinged end to clear the corresponding flange on the door frame as the door is operated.

The structure herein shown is covered broadly by claims in an application filed by me Nov. 12, 1907, Serial No. 401,876.

What I claim is as follows:—

1. The combination with a flanged trap door of trough form with one end open of a downwardly displaceable flange carried upon the door for closing such open end, and a common operating mechanism for operating the door and flange.

2. The combination with a trap door, of a displaceable flange mounted upon and displaceable away from the door and adapted to seal the joint between one side thereof and the contiguous portion of the door frame, and a common mechanism for operating the door and flange.

3. The combination with a trap door flanged to form a trough with one end open, of a valvular member movably secured to the door and adapted to close the said open end of the trough, and means for operating the said valvular member.

4. The combination with a trap door of a movable valvular member adapted to overlap and inclose one side of the door and the contiguous portion of the door frame when the door is closed and automatically move away from such side when the door is opened.

5. The combination with a trap door and a shaft for raising and lowering the door, of a valvular member for sealing the joint between one side of the door and the contiguous portion of the door frame, and means for operating the said valvular member, including an arm pivoted to the door and adapted to have the shaft bear thereon.

6. The combination with a trap door pre-

5 sending a chute with an open end, of a member carried by the door and presenting a portion adapted to extend above the surface of the chute and close the said open end when the door is closed and recede from such position when the door is opened.

7. The combination with a trap door presenting a chute with an open end, of a member carried by the door and presenting a 10 flange-like portion adapted to extend above the surface of the chute and close the said open end when the door is closed and recede from such position when the door is opened.

8. The combination with a trap door presenting a chute with an open end, of an angular member carried by the door and presenting a flange-like portion adapted to extend above the surface of the chute and close the said open end when the door is closed 20 and recede from such position when the door is opened, and means whereby the said member is operated.

9. The combination with a door frame having a continuous flange extending 25 around all sides of the door opening, a trap door hinged to the frame and having a continuous flange extending around all the sides thereof except one and adapted to inclose the corresponding portion of the flange of the door opening, and displaceable means carried by the door for sealing the joint between the remaining portion of the door and the flanged frame. 30

10. The combination with a door frame having a continuous flange extending 35 around all sides of the door opening, a trap door hinged to the frame and having a continuous flange extending around all the sides thereof except one and adapted to inclose the corresponding portion of the flange of the door opening, an angular member, and 40

means carried by the door for swinging the said member to and from position sealing the joint between the remaining portion of the door and the flanged frame.

11. The combination with a door frame having a continuous flange extending around all sides of the door opening, a trap door hinged to the frame and having a continuous flange extending around all the sides thereof except one and adapted to inclose the corresponding portion of the flange of the door opening, a pair of supporting arms hinged to the door, an angle iron mounted upon such arms, and means for allowing the said supporting arms to swing and at times locking the same with the angle iron in position sealing the joint between the remaining portion of the door and the flanged frame.

12. The combination with a door frame having a continuous flange extending around all sides of the door opening, a trap door slidably hinged to the frame and having a continuous flange extending around all the sides thereof except one and adapted to inclose the corresponding portion of the flange of the door opening; a shaft for raising and lowering the door; a pair of arms pivoted to the door and presenting shoulders adapted to have the said shaft bear thereon; and an angle iron mounted rigidly in the said arms and adapted to seal the joint between the portion of the door not flanged and the corresponding portion of the door frame.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

OTTO WILLIAM MEISSNER.

Witnesses:

WILLIAM P. McFEAT,
ARTHUR H. EVANS.