O. W. MEISSNER.

DOOR.

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1,043,953.

Patented Nov. 12, 1912.

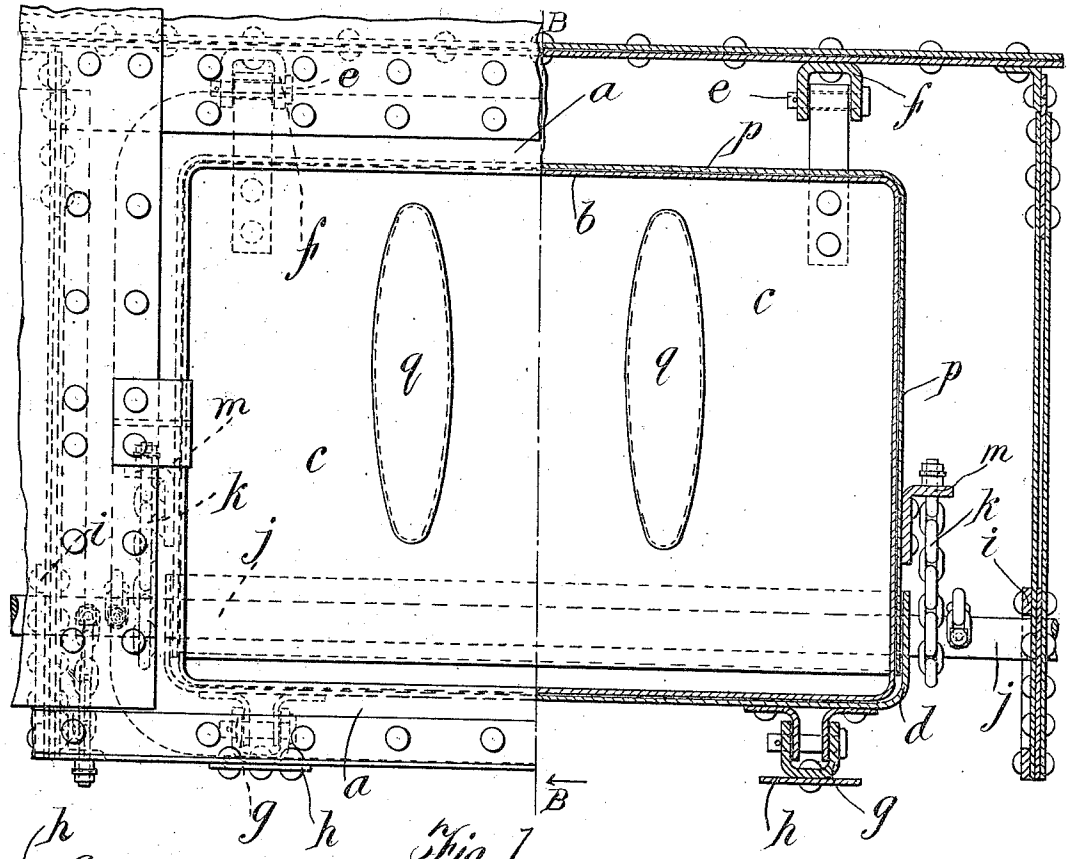

Fig. 1.

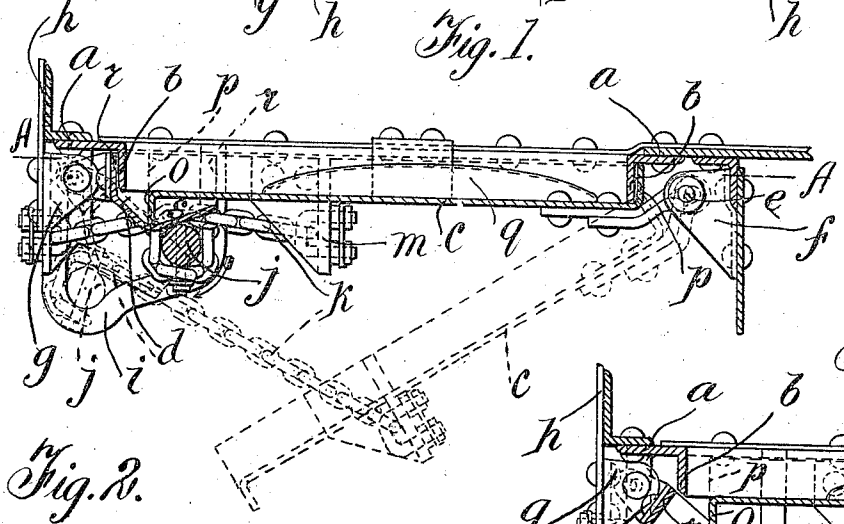

Fig. 2.

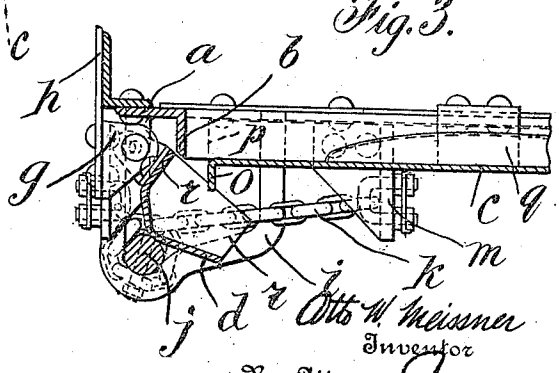

Fig. 3.

Witnesses

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DOOR.

1,043,953. Specification of Letters Patent. Patented Nov. 12, 1912.

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To all whom it may concern:

Be it known that I, OTTO WILLIAM MEISSNER, of the town of Westmount, Province of Quebec, Canada, a citizen of the United States, have invented certain new and useful Improvements in 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 dump cars although applicable to doors of any kind requiring to be tightly and securely closed.

The invention consists of a two part door one of the parts whereof acts as a valvular member and has side flanges adapted to straddle and envelop the other door part, the latter being formed with a depending transverse flange received in a depression in the first mentioned door part to constitute a trap for preventing leakage, while the main door part is formed with ribs pressed upwardly out of the same. For full comprehension, however of my invention reference must be had to the accompanying drawings forming a part of this specification and wherein corresponding reference numerals indicate the same parts.

Figure 1 is a part plan and part horizontal sectional view of a door constructed according to my invention, the section being taken on line A A Fig. 2; and Fig. 2 is a transverse vertical sectional view taken on line B B Fig. 1. Fig. 3 is a similar view to Fig. 2 and illustrating the relative positions of the door member in the act of closing and just before the valvular member begins to move upwardly.

The opening in the door frame, *a*, is provided with an encircling flange *b* and the door is preferably of trough form and divided into two parts *c* and *d* of which the part *c* is shorter than the door opening and the balance of such opening is closed by the part *d* which extends from side to side of and overlaps and completely envelops the free end of the part *c*. The door *c* is hinged as at *e* to a pair of U-brackets *f* fixed to the door frame, and the door *d* is hinged to a pair of similar brackets *g* fixed to a pair of depending rigid members *h* carried by the door frame. A pair of short door rails *i* support a shaft *j* beneath the door *d* and a pair of chains *k* are connected at one end to the shaft and at their other ends to brackets *m* upon the sides of and extending below the door *c*, the chains being fastened to the parts of the brackets beneath the door. The free end of the door *c* is formed with a depending transverse flange *o* and the sides and hinged end thereof have a continuous upwardly projecting flange *p* constituting the trough formation and adapted to inclose the corresponding portions of the door frame flange. The bottom of this door has a pair of prolated oval ribs *q*. The door *d* is formed with an angular bottom and side and hinge-end flanges *r*, the interior recess presented by the angular bottom receiving the depending flange *o*, the chamber *s* (Fig. 2) outside of the flange acting as a trap for any material leaking between the flange *o* and the angular bottom.

To open the door the shaft is rotated in the direction indicated which causes it to roll on the underside of door *d* thus permitting such door to fall, and the door *c* accompanies it and continues to fall as the chains are unwound, the door *d* resting on the shaft as it moves down the incline unwinding the chains, both doors being in full open position when the shaft is stalled at the lower ends of the rails.

When closing the doors the shaft is rotated in the opposite direction and the chains wound thereon, and as the resistance offered by the incline of the rails and the tendency of the shaft to roll down such incline, is greater than that offered by the door *c* the latter is lifted until the brackets *m* and the shaft are in alinement, and then the shaft climbs the chain. At the time when the shaft begins to climb the chains the free end of the door *c* is above the level of the edge of the door *d* and therefore in position to have the latter close over the same and retain it in closed position.

The trap door disclosed is not claimed broadly herein as the broad idea thereof forms the subject matter of an application No. 401,876, filed Nov. 12, 1907.

What I claim is as follows:

1. The combination with a flanged door frame presenting a door opening, of a door flanged on three sides to present a trough having one end open, and a member coacting with such door in closing the door opening and adapted to overlap and inclose the bottom and sides of said open end of the trough.

2. The combination with a downwardly flanged door frame, of a two part drop door the parts whereof are hinged on opposite

sides of the door frame and each has a continuous flange projecting upwardly from the hinged side and the two adjacent sides thereof the space between the ends of the flanges at the remaining side of each door being open, such flanges closely inclosing the downward flanges of the door frame on all sides thereof, the free edges of the door parts and the adjacent portions of the flanges overlapping.

3. The combination with a flanged door frame, of a two part drop door, one door part having a knife-like transverse flange extending downwardly substantially at right angles to the door from the free end thereof, the other door part having an angular bottom adapted to overlap the first mentioned door part with the apex of the angle engaged by the lower edge of the said transverse flange, for the purpose set forth.

4. The combination with a door frame, of a two-part drop door, one door part having a knife-like transverse flange extending downwardly from the free end thereof, the other door part presenting a concaved chamber within which the said flange is located when the door is closed with the edge of the flange engaging the bottom of the said chamber.

5. The combination with a flanged door frame, of a two part drop door each part whereof is formed with upwardly projecting flanges extending around three of its sides, one door part having a knife-like transverse flange extending downwardly from the remaining side thereof, the second door part being adapted to overlap the first mentioned door part with the ends of the upwardly projecting flange thereon closely straddling the adjacent ends of the upwardly projecting flange of the first mentioned door part, such second door part having an angular bottom adapted to overlap the first mentioned door part with the apex of the angle engaged by the lower edge of the said transverse flange, for the purpose set forth.

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

OTTO WILLIAM MEISSNER.

Witnesses:

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FRED J. SEARS.