V. W. JANSEN.

GRAIN BIN DOOR.

APPLICATION FILED JULY 17, 1911.

1,010,431. Patented Dec. 5, 1911.

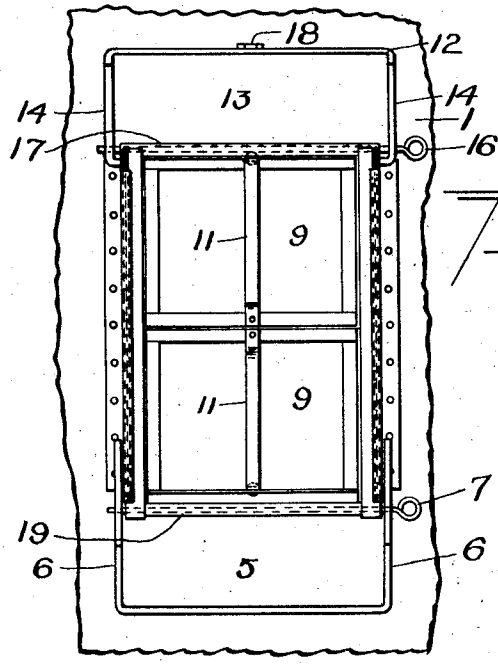

Fig. 1.

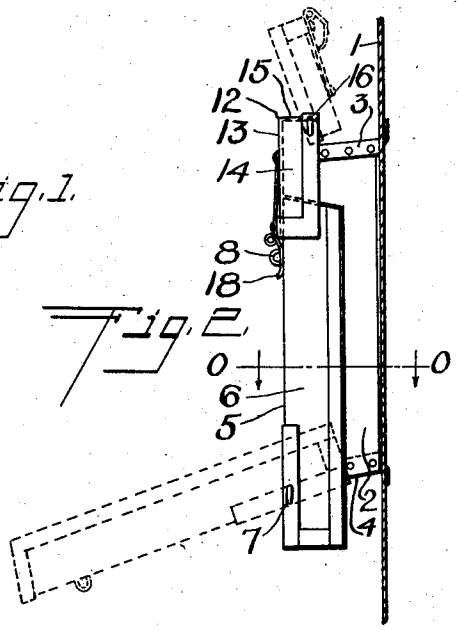

Fig. 2.

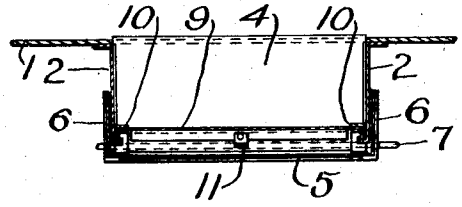

Fig. 3.

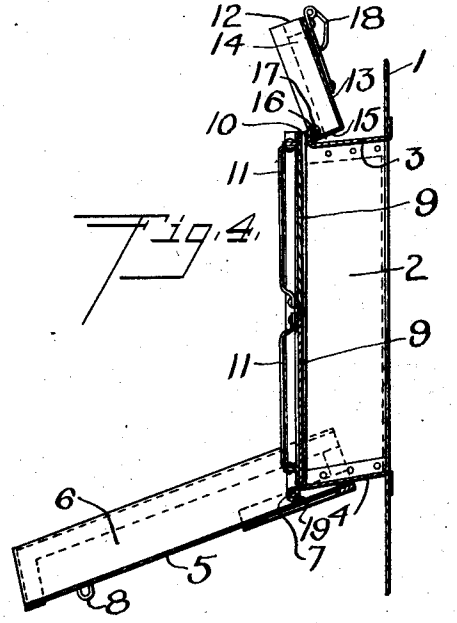

Fig. 4.

Witnesses

Roy G. Kratz.

Edna M. Peterson

Inventor:

Victor W. Jansen,

By Willard Eddy, Attorney

UNITED STATES PATENT OFFICE.

VICTOR W. JANSEN, OF NORTH BEND, NEBRASKA.

GRAIN-BIN DOOR.

1,010,431. Specification of Letters Patent. Patented Dec. 5, 1911.

Application filed July 17, 1911. Serial No. 638,837.

To all whom it may concern:

Be it known that I, VICTOR W. JANSEN, of North Bend, in Dodge county, in the State of Nebraska, have invented certain new and useful Improvements in Grain-Bin Doors, which improvements are described in the following specification and are illustrated by the accompanying drawings.

The invention relates in general to doors for grain bins and other like receptacles, and relates in particular to those doors of this class which comprise a door casing, a slide in the casing and a hinged or swinging chute attached to the casing.

It is the object of the invention to render doors of this class and kind simple and easy of construction and operation, durable and not easy to get out of order, free from leakage, and complete and secure in their closure; to close the casing by the slide in such a door, and also additionally to close the same independently of the slide; to utilize the chute as a cover of the slide; to inclose the slide completely, when the door is not in use; to cover and inclose the delivery end of the chute, when not in use; and in general to produce a superior grain-bin door of the kind above specified. To accomplish these results, I incorporate in my improved door a casing that projects from the side wall of the bin, a slide that works vertically in this casing, an overlapping chute that is hinged to the bottom of the casing, and a hinged cover that overlaps the top of the casing as well as the top of the slide and the upturned delivery end of the chute.

The best manner in which I have contemplated applying the principles of the invention, is shown in said drawings; but, as some changes can be made in the construction of the door, and some apparently different embodiments of these principles, without departure from the scope or spirit of the invention, it is intended that all matters contained in the following description, or shown in these drawings, shall be interpreted as illustrative and not in a limiting sense.

In these drawings, Figure 1 is a front elevation of a complete door that is constructed in accordance with these principles; in this view the door, mounted on a vertical wall of a grain bin, is shown with the chute lowered into position for use, and with the hinged cover lifted wide open. Fig. 2 is a side elevation of the same door mounted in the same manner; in this view the hinged chute in its closed position, is shown in full lines, and the same in its open position, is shown in broken lines; and the same holds true as to the hinged cover. Fig. 3 is a horizontal section on the section line O—O of Fig. 2. Fig. 4 is a central vertical section on Fig. 1.

In these figures the numeral 1 denotes a portion of a vertical wall of the grain bin. Continuous with this wall, and projecting outward therefrom, is formed the rectangular door casing, having the vertical and parallel side walls 2, and having the parallel top and bottom flat plates, 3 and 4, inclining slightly downward from their inner to their outer edges, as shown in Figs. 2 and 4. The swinging chute, open at the top and at each end, is external to the door casing. It has the flat bottom 5 and the vertical sides 6, and is hinged to the underside of the door casing by the hingepin 7, which passes through the vertical chute side 6 at a distance from the inner end of the chute, less than the distance of that pin from the face of wall 1, and also passes through the sleeve bracket 19 at the lower forward edge of the bottom casing plate 4. The chute carries an external staple 8, and, like other parts of the device, is suitably reinforced.

A vertically sliding door 9, preferably comprising the duplicate rectangular sections 9 fitted to close edge contact with each other, is seated across the opening of the door casing, and works in vertical grooves 10 formed along the outer edges of the casing walls 2 respectively. This door is provided with handles 11 for the purpose of operating the door to open and close the doorway to any desirable extent as occasion may require.

The cover 12, being of rectangular form, wider than the chute, and comprising connectedly the main plate 13, the end plates 14 and the edge plate 15, is hinged by pin 16 and sleeve bracket 17 to the door casing in a location just back of the path of the vertically sliding door sections 9, and is provided with an external catch 18, which is adapted to engage the staple 8 on the back of the chute.

In the operation of the invention, the chute, when occupying its inclined working position, reaches back for a distance under the outer end of the projecting door casing, and thereby prevents leakage or escape of

grain between the casing above and the chute below. When in that position the chute is fulcrumed upon a very firmly supported portion of the door casing, and also exerts the upward thrust of its inner end, or short arm, under that portion of the door casing which is adjacent to the supporting wall 1; consequently the structure is not unduly strained or bent by the weight or leverage of the chute and its contents.

When occupying its vertical position, the chute is folded over and outside the casing walls 2, and may be there secured by the overlapping and inclosing cover 12, fastened by catch 18, engaging staple 8. In this way the sliding door is inaccessibly covered and inclosed.

I claim as my invention—

A grain-bin door of sheet metal, comprising a rectangular downward sloping door casing projecting out from the side of the bin and continuous therewith, an inside door slidable vertically in inside grooves formed in the sides of said door casing, an overlapping pivoted chute fulcrumed as a lever on said casing in a position alternatively to hug with one arm of the lever the outer end of said casing and with its other lever arm to hug and exert leverage along the sloping bottom of the same, a swinging and overlapping cover hinged to the top of said projecting casing behind the path of said inside slidable door in a position to engage the outer end of said pivoted chute by overlapping the sides and bottom of the same, and means for fastening said swinging chute and said overlapping cover closed unitedly together over the top, the sides and the outer end of said projecting door casing.

In testimony whereof I hereunto set my signature in the presence of two witnesses.

VICTOR W. JANSEN.

Witnesses:
ROY J. CUSACK,
ROSALIE DION.

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