

W. D. PLUE.
HINGE FOR SILO DOORS.
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1,003,065.

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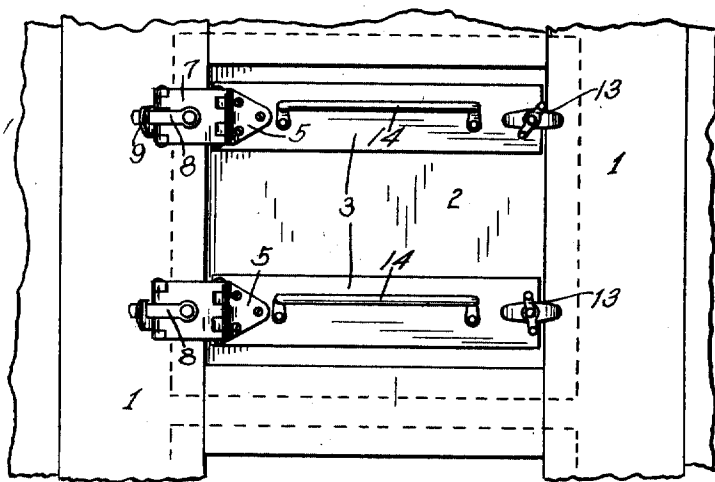


Fig. 1

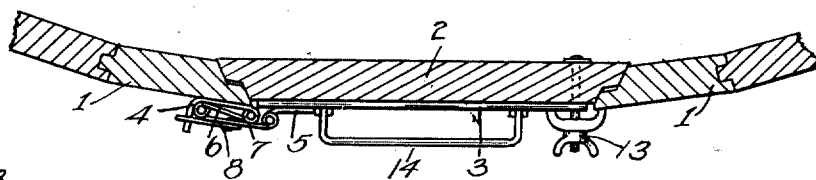


Fig. 2

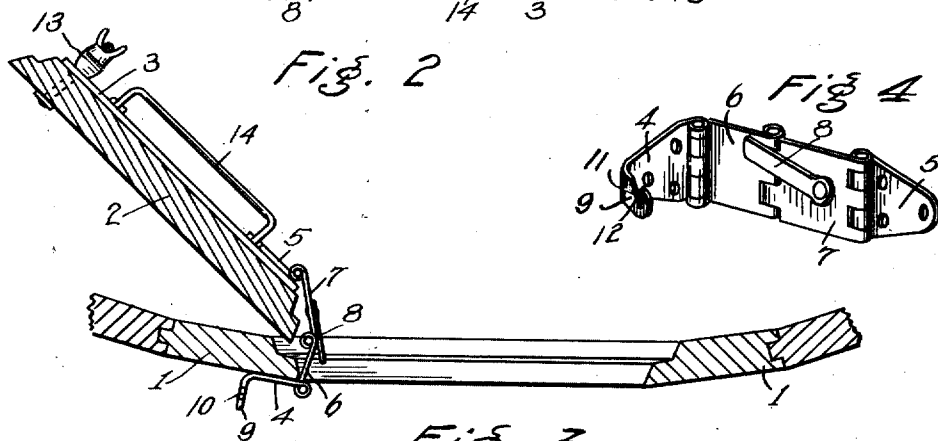


Fig. 3

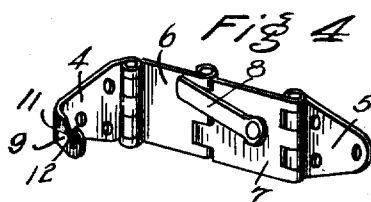


Fig. 4

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HINGE FOR SILO-DOORS.

1,003,065.

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To all whom it may concern:

Be it known that I, WILLIAM D. PLUE, a citizen of the United States, residing at Rainier, in the county of Columbia and State of Oregon, have invented certain new and useful Improvements in Hinges for Silo-Doors, of which the following is a specification.

This invention relates to improvements in hinges and fastenings for silo doors and has for its object the provision of a simple and serviceable hinge which may be locked when the door is in its closed position to constrain the door within the door-frame to insure an air-tight fit therebetween.

The invention consists in a plurality of hinge-members pivotally connected together and arranged when the door is closed to fold together within narrow limits; one of said members bearing a projecting notched arm and another member having a pivoted bar adapted to engage within said notch when the hinge members are folded to secure them in such condition. Provision is also afforded whereby said bar may apply a measure of tension upon the members whereby the door to which secured may be held with some force within the door frame.

The invention further consists in the novel construction, adaptation and combination of parts, as hereinafter shown in the accompanying drawings described in the specification, and finally set forth in the claims.

In said drawings, Figure 1 is a front elevational view of embodiments of my invention shown in operative positions upon a silo door. Fig. 2 is a top view of the same with the door and a portion of the silo in section. Fig. 3 is a view similar to Fig. 2 with the silo door open. Fig. 4 is a detached perspective view of the invention.

Referring to the drawings, the reference numeral 1 designates the door-frame of a silo; 2 is a door fitted therein, and 3 cross-braces upon said door. Hinges for said door are each comprised of a plurality of members, preferably four, suitably connected together by common hinge-joints allowing flexure and extension in a horizontal plane. The members 4 and 5 at opposite ends of the hinge are provided with holes for the reception of screws for securing the hinge to the outer surface of a frame and door, respectively. The intermediate member 6 having direct connection with the member 4 is proportioned shorter in horizontal length

than the other intermediate member 7 by approximately the thickness of said hinge-joints.

8 is a bar pivoted at one end about centrally of the plane portion of the member 7, and extending for a distance beyond the joint of the latter with the member 6.

The inner extremity of the member 4 is extended at 9 at right angles to the body portion of the member through which it is secured to the frame and is provided with a notch 10 formed in its upper edge; said notch having a vertical wall 11 and an outwardly inclined wall 12 connecting there-with.

When the door is in its closed position the hinge members are disposed in substantially parallel planes with each other and the door; the member 6 being of shorter length than the other intermediate member 7 allows the joint therebetween to fold into the space in line between the remaining two joints, as shown in Fig. 2 and thus bringing the connected members together within very close confines.

In opening a door the various joints are flexed and the intermediate hinge members are extended in the progressive movements of the door inwardly until the latter is swung into close contact with the inner wall of the silo. Said intermediate member 6 is of length to extend through the door opening while the other member 7 affords additional flexibility and permits of the extension of the door within the silo to obviate projection of same within the door opening. The hinge is adapted to lie closely to the door frame when extended within the door opening and to furnish a practically unobstructed passageway. In closing the door the hinge elements in their reverse movements to those just described swing into their compact condition previously described. In such condition, the hinge is latched and one edge of the door reliably secured within the door-frame by the engagement of the pivoted bar 8 within the notch 10. Said bar and notch are so disposed in relation to one another that when the same are to be fastened together the bar is first brought against the upper edge of the inclined wall 12 and then pushed with relatively considerable pressure farther into the notch and outwardly from the silo wall until contacted with the vertical wall 11 of the notch. In so doing, the hinge member 7 to

which said bar is attached is sprung outwardly which in like manner so influences the proximate edge of the door urging the same into closer contact with the door frame to make an air-tight joint therebetween. The opposite edge of the door may be secured to the frame through any suitable form of clamp, as that illustrated at 13 in the views.

14 are individual iron steps rigidly secured to the door cross-braces 3 and spaced apart upon the several doors to form a ladder extending the full height of the silo.

Having described my invention, what I claim as new and desire to secure by Letters-Patent, is—

1. In a hinge for silo doors, hinge members fixedly secured to the door and door-frame, respectively, and a plurality of intermediate hinge members hingedly connected together and with the first named hinge members, respectively, said intermediate members arranged to fold together when the door is closed and lie in planes substantially parallel with the outer side of said door.

2. In a hinge for silo doors, hinge members fixedly secured to the door and door-frame, respectively, a plurality of intermediate hinge members hingedly connected together and with the first named hinge members, respectively, said intermediate members arranged to fold together when the door is closed and lie in planes substantially parallel with said door, and means to lock said hinge members in such folded positions.

3. In a hinge for silo doors, hinge members fixedly secured to the door and door-frame, respectively, a plurality of intermediate hinge members hingedly connected together and with the first named hinge members, respectively, said intermediate members arranged to fold together when the door is closed and lie in planes substantially parallel with said door, and a lock for said hinge adapted to communicate tension to said door to secure the latter within the door frame.

4. A hinge for silo doors, consisting of a plurality of members hingedly connected together, the outermost members of which

are respectively secured to a silo door and the door-frame, the intermediate said members being of unequal lengths to allow of their folding closely together, and means to lock said hinge members in such folded positions.

5. A hinge for silo doors comprising a pair of hinge members fixedly secured to the silo door and door frame, respectively, the latter of which is formed with a rectangular extension having a notch provided therein, a pair of intermediate hinge members hingedly connected to the first named members, one of said intermediate members being of shorter length than the other of said intermediate members, and a bar pivotally secured to one of said intermediate members and adapted to be received within said notch when the door is in closed position, and to cooperate therewith to exert an outward tension upon the intermediate member of the hinge and upon the attached door.

6. A hinge for silo doors comprising a pair of hinge members fixedly secured to the silo door and door frame respectively, the latter of which is formed with a rectangular extension having a notch provided therein, a pair of intermediate hinge members hingedly connected to the first named members, and a bar pivotally secured to one of said intermediate members and adapted to be received within said notch when the door is in closed position.

7. A hinge for silo doors comprising a pair of hinge members fixedly secured to the silo door and door frames respectively, the latter of which is formed with a rectangular extension having a notch provided therein, a pair of intermediate hinge members hingedly connected to the first named members, one of said intermediate members being of shorter length than the other of said intermediate members, and a bar pivotally secured to one of said intermediate members and adapted to be received within said notch when the door is in closed position.

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Witnesses:

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