UNITED STATES PATENT OFFICE.

HENRY NORTH, OF PORTLAND, OREGON, ASSIGNOR TO NATIONAL TANK & PIPE CO., OF PORTLAND, OREGON, A CORPORATION OF OREGON.

CLAMPING DOOR-HINGE.

1,277,106.


To all whom it may concern:

Be it known that I, HENRY NORTH, a citizen of the United States, and a resident of the city of Portland, county of Multnomah, State of Oregon, have invented certain new and useful Improvements in Clamping Door-Hinges, of which the following is a specification.

This invention relates generally to hinges for silo doors, and has particular reference to a hinge adapted for adjustment relatively to the door-jamb, for the purpose of drawing the door and jamb into air tight relationship.

For the effective protection of the ensilage it is important that exterior air be excluded from the silo as much as possible. Hence it is important that there are no open joints between the doors and jambs, through which exterior air may enter the silo; and therefore, one of the main objects of my invention is to provide a hinge for mounting the doors, which also embodies means for drawing the hinged side of the door tightly against the jamb. And in connection with such hinge I provide means whereby the other side of the door may be tightly drawn against its jamb, and locked in that state.

Another object of my invention is to make the hinge and the lock in simple devices, easily operated.

The details of my invention are fully set forth in the accompanying drawings, in which:

Figure 1 is a horizontal section through a door opening of a silo, showing the door provided with my improved hinge, and locking means for the free end of the door.

Fig. 2 is a front elevation of the parts shown in Fig. 1;

Fig. 3 is a larger scaled front elevation of one of the hinges; and Fig. 4 is a fragmental view similar to Fig. 1, but showing a different mode for fastening the hinge strap to the door.

a represents the silo staves, b, c, are the door jambs and d is a spacing bar which holds the jambs in spaced relationship. Doors as e, are adapted to overlap the inner edges of the door openings, and said doors may be of any of the types ordinarily used in silos.

Securely fastened on one vertical edge of each door is a hinge strap f, provided with knuckles g. A threaded bolt h is provided with a knuckle i, through which and the knuckles g and i is inserted a hinge pin j. (See Fig. 3.) The bolt h is inserted through a bore in the door-jamb b, and on its projecting outer end is a washer k and wing nut l. Since the bolt h is not rotatable, therefore a rotation of the wing nut l will cause a longitudinal movement of this bolt in the door jamb. It will thus be seen that after the door has been swung shut the hinges may be operated so as to cause a clamping action whereby the abutting edge of the door is drawn up tightly against the jamb, so as to form an air tight joint; and to release the door, so that it may swing freely on its hinge, the nut is released and the bolt h is pushed in a little.

The means for making a similar air-tight joint between the other end of the door and the opposite jamb o, consists of the following arrangement. A bolt m is rigidly mounted in a bore of the door, as shown in Fig. 1. Said bolt projects perpendicularly from the door, and is so positioned that when the door is swung on its hinges, it will just clear the inner edge of the jamb o. A latch n is pivoted on a lag-screw o, in the jamb o and is adapted to be hooked over the bolt m. The latch is made with an enlarged head, adapted to form a firm bearing for the wing-nut p, which engages the outer end of the bolt m. By rotating the wing-nut p, the corresponding edge of the door may be drawn tightly against the door jamb, and the same devices also form a secure lock for the door.

When the door is to be opened, the nut p is loosened and the latch n disengaged from the bolt m, wherupon the door may be rotated freely on its hinges.

After the door is closed, the side edges thereof may be clamped up tightly against the jambs in the manner described.

In Fig. 4, I have shown an alternate arrangement of the hinge. In this view, the door o is made a little wider, and a recess r is cut in its outer face. The hinge strap f' is adapted to be fastened in this recess, the other parts being arranged in the same manner as previously described. The advantage of this construction over the other lies in the fact that the hinge is removed from contact with the ensilage. The latter construc-
tion, however, costs more, and is not as easily operated as apparent by comparing Figs. 1 and 4.

I claim—

1. In a silo having a door on the interior of its opening, the combination of a hinge for one side of the door comprising a bolt and a hinge-strap journaled on such bolt, the hinge-strap being fastened to the door, the bolt bearing in a hole of the door-casing and projecting a substantial distance beyond the exterior of the latter, and tightening means on such projecting end, the bolt being of such length as to permit the movement of the hinge-side of the door from its casing, the hinging of the door to its casing being so arranged that the opposed bearing faces of the door and its casing will prevent the former from being swung on its hinge until the bolt of the hinge is loosened so as to permit the inward movement of the door.

2. In a silo having a door on the interior of its opening, the combination of a hinge for one side of the door comprising a screw-bolt having a T-shaped head and a hinge-strap journaled on such head-end, the hinge-strap being fastened to the door, the bolt bearing in a hole of the door casing and projecting a substantial distance beyond the exterior of the latter, and a nut on such projecting end, the bolt being of such length as to permit the movement of the hinge-side of the door from its casing, the hinging of the door to its casing being so arranged that the opposed bearing faces of the door and its casing will prevent the former from being swung on its hinge until the bolt of the hinge is loosened so as to permit the inward movement of the door.

HENRY NORTH.

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