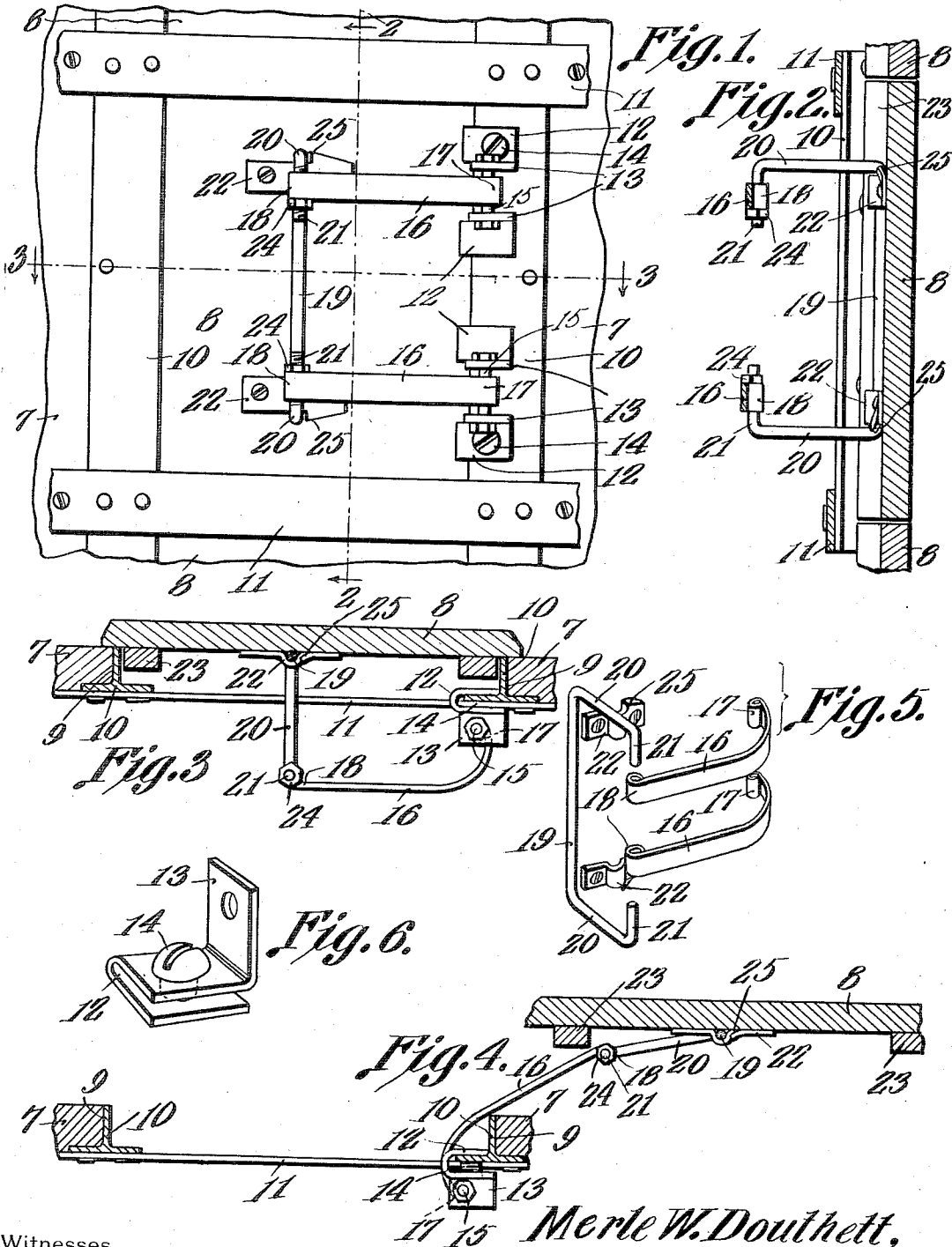


M. W. DOUTHETT.
SILO DOOR.
APPLICATION FILED JULY 8, 1912.

1,068,045.

Patented July 22, 1913.



Witnesses

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UNITED STATES PATENT OFFICE.

MERLE W. DOUTHETT, OF SUPERIOR, NEBRASKA.

SILO-DOOR.

1,068,045.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MERLE W. DOUTHETT, a citizen of the United States, residing at Superior, in the county of Nuckolls and State of Nebraska, have invented a new and useful Silo-Door, of which the following is a specification.

This invention relates to silos, and more particularly to the door mountings thereof.

10 The present invention contemplates the provision of a novel and improved means for mounting the doors to the door-frame of the silo, in order to permit the doors to seat against the inner side of the door frame and to swing inwardly within the silo in order to open the silo.

15 This invention also aims to provide a device of this character which will enable the doors to swing inwardly within a small compass and in a convenient manner.

20 This invention among its other objects, aims to provide a novel door-frame or jambs for the door opening; to provide a door mounting adjustable vertically upon one of the door jambs; to provide means for limiting the swinging movement of the doors; and to generally improve devices of this character so as to provide a simple, substantial and inexpensive structure, which will be convenient and efficient in use.

25 With the foregoing and other objects in view which will be apparent as the invention is better understood, this invention resides in the novel construction and combination of parts hereinafter set forth and particularly pointed out in the appended claims, it being understood that this device is susceptible of alterations or deviations of its details within the scope of the appended claims without departing from the spirit of the invention.

30 The invention is illustrated in its preferred embodiment in the accompanying drawings, wherein similar reference characters have been employed to denote corresponding parts, and wherein:—

35 Figure 1 is a front view of a fragmental portion of a silo embodying the present invention. Figs. 2 and 3 are sectional views taken on the lines 2—2 and 3—3 of Fig. 1, respectively. Fig. 4 is a view similar to Fig. 3 with the door swung open. Fig. 5 is a perspective view of certain details employed in carrying out the present invention,

the several parts being separated. Fig. 6 is a perspective view of a detail employed in carrying out the invention.

Referring specifically to the drawings, the silo has been designated by the numeral 7, which has a longitudinal or vertical door opening 9 extending throughout the length thereof, as usual. The silo structure may be of any suitable type, preferably of staves.

40 In carrying out the present invention, the jambs 10 are secured along the edges of the door-opening, the said jambs being constructed of T-iron with the webs and one of the flanges secured to the edges of the staves along the door-opening. The flanges of the T-iron are disposed outwardly, one flange of each jamb being secured over the outer or exterior side of the staves adjoining the door-opening and the other flange projecting inwardly relative to the door opening. These jambs 10 may run throughout the length of the door-opening or doorway 9 and provide a suitable door frame, as well as protecting the staves along the edges of the door-opening. It will therefore follow that the said jambs prevent injuries to the staves along the edges of the door frame from the removal of the ensilage from the silo, or from other causes. Cross-bars 11 are secured over the doorway 9 at intervals along its length, the said bars dividing the door-opening or doorway into a plurality of sections, and the said cross-bars may well be portions of the straps encircling the silo to retain the staves in position, although the latter need not be the case and is of no moment.

45 The doors for the various sections of the door-opening are designated by the numeral 8 and are seatable against the inner sides of the door-frame, the said doors having the vertical bars 23 secured thereto along their edges, which are designed to fit between the door jambs when the doors are seated against the door jambs. These doors may be of any preferred construction, and are preferably superposed one above the other along the length of the doorway. The improved means for mounting each of these doors 8 embodies two pairs of U-shaped clips straddling the inner or free flange of one of the door jambs between the cross bars 11, each of the clips having an ear bent outwardly from one edge of its outer arm and forming a bearing for bolts or

rods 15 which pass through the said ears 13. Set-screws 14 are also carried by the outer arms of the clips 12 and are adapted to bind the clips to the corresponding flange of the door jamb, and it will appear that by loosening or unscrewing the set-screws 14, the clips 12 may be adjusted vertically along the corresponding jambs as desirable or necessary. The clips 12 in being thus engaged to the flange of the door jamb may be attached to the flange at any suitable point along its length without drilling holes in the flange or otherwise marring or injuring same.

15 A pair of hanger arms 16 are pivoted to the respective rods 15 between the corresponding ears or bearings 13 of the clips, each of the said arms being bowed outwardly or being L-shaped and having its extremities bent in to the eyes 17 and 18, the eyes 17 of the arms engaging or encompassing the rods 15.

A pair of bearings 22 are secured to the exterior or outer side of each door 8, the said bearings being preferably in the form of straps secured at their ends to the door and looped intermediate their ends to form the bearing, and an upright rod 19 passes through the said bearings and is bent angularly outside of the bearings to form hanger arms 20 with the free ends bent angularly or toward each other to form pintles 21, the pintles 21 being received by the eyes 18 at the free ends of the hanger arms 16 so as to pivot the free ends of the two pairs of hanger arms together. Nuts 24 may be engaged on the ends of the pintles 21 in order to retain the respective hanger arms in engagement with each other. The bearings 22 are provided with stops 25 co-acting with the hanger arms 20 in order to limit the swinging movement of the door 8, so that the edge of the door adjacent the hanger arms 16 may not be swung excessively toward the said arms. In this manner, the door may be readily opened by an inward pressure at any point thereon, and the door may be swung inwardly without binding or without the edge adjoining the arms 16 swinging toward the said arms, which would tend to impair the opening of the door. With the door mounting thus provided, it will be seen that the door may be readily and conveniently swung inwardly within the silo away from the door-opening and within a small compass. The doors when swung outward so as to seat against the inner side of the door frame will effectually close the doorway, and may be locked or clamped in closed position in any suitable manner, which it is not necessary to illustrate or describe in detail. It will also be noted that the doors 8 may be adjusted vertically as desired or necessary, and the hanger arms 20 will permit the doors to

shift laterally so as to properly seat against the door frame, the said hanger arms also serving to permit the door to open within a smaller compass than ordinarily. The arms 16 may also be adjusted vertically upon the rods 15 so as to permit the doors to shift vertically due to the expansion or contraction of the silo or doors therefor.

Door jambs of the particular form provided, not only form a substantial and suitable door frame for the attachment of the door mountings, but also prevent injuries to the staves adjoining the door-opening when the ensilage is removed, or due to other causes. The present door mounting is not effected in its operation by the expansion of the silo due to expansion of the ensilage undergoing the curing or cooking process.

The various hanger arms 16 throughout the doorway will also be positioned on the exterior of the silo when the doors are closed, so that the various hanger arms form rungs which will serve as a ladder so as to enable a workman or attendant to ascend the silo.

Having thus described the invention, what is claimed as new is:—

1. The combination with a silo having a doorway, of jambs secured to the edges of the silo along the doorway and including flanges projecting inwardly relative to the doorway, clips attached to one of said flanges, a door seatable against the inner sides of the jambs, and hanger arms pivoted to the exterior side of the door and pivoted to the said clips.

2. The combination with a silo having a door opening, of jambs secured to the silo along the edges of the opening, and including flanges, clips adjustable upon one of the flanges and including bearings, means for clamping the clips to the flange, a door seatable against the inner side of the jambs, and hanger arms pivoted to the bearings and to the exterior side of the door.

3. The combination with a silo having a doorway, of jambs secured to the edges of the silo along the doorway, and including flanges projecting inwardly relative to the doorway, U-shaped clips straddling one of the flanges and having bearings projecting from their outer arms, a set-screw carried by one arm of each of the clips for binding same to the flange, a door seatable against the inner sides of the jambs, and hanger arms pivoted to the bearings and to the exterior side of the door.

4. The combination with a silo having a doorway, of jambs secured to the silo along the edges of the doorway, and including flanges, two pairs of bearings adjustable upon one of the flanges, a rod passing through each pair of said bearings, a door seatable against the inner sides of the jambs,

and hanger arms pivotally connected to said rods and connected to the exterior side of the door.

5 The combination with a silo having a doorway, of T-iron jambs having their webs and one of their flanges secured to the edges of the silo along the doorway, bearings connected to one of the free flanges, a door seatable against the inner side of the jambs, and

hanger arms connecting the bearings and 10 the exterior side of the door.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

MERLE W. DOUTHETT.

Witnesses:

FRANK ALBERTSON,
J. M. DAILEY.
