J. M. MOORE.

DOOR FOR SILOS.

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Fig. 1.

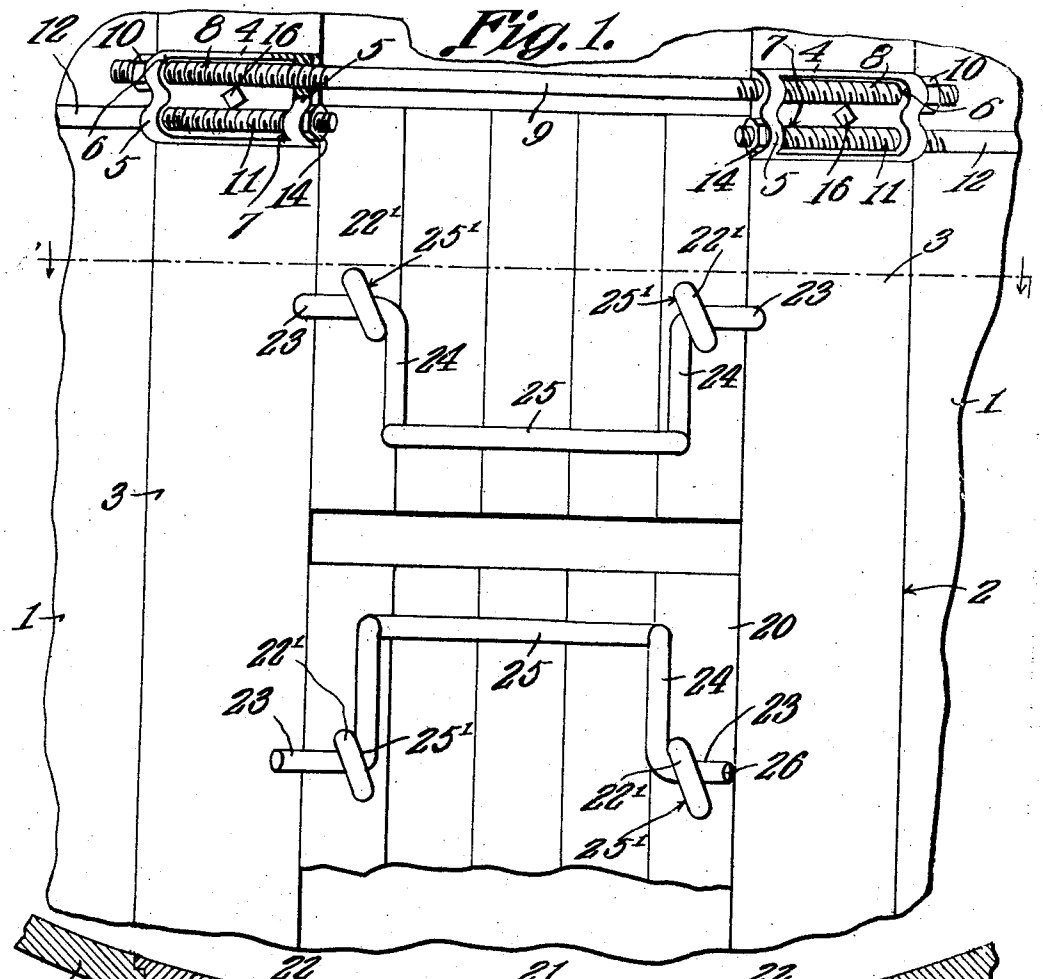

Fig. 2.

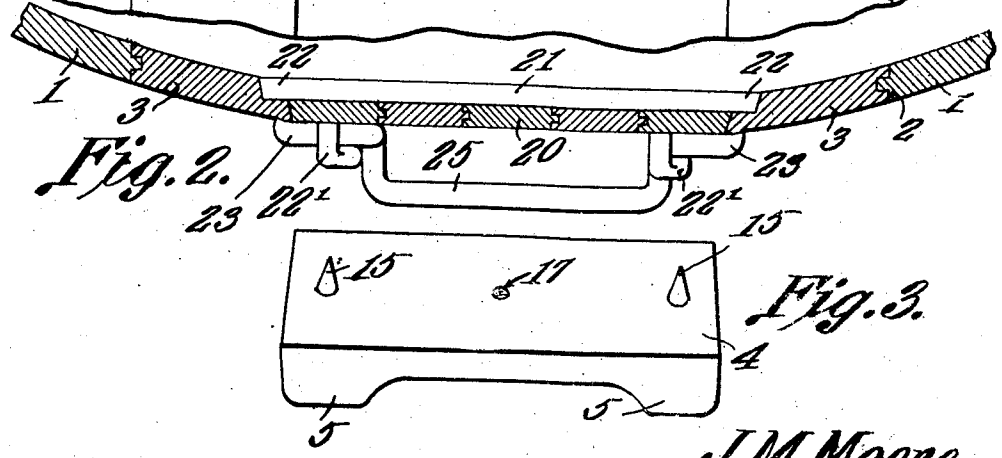

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

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DOOR FOR SILOS.

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To all whom it may concern:

Be it known that I, JOSEPH M. MOORE, a citizen of the United States, residing at Unadilla, in the county of Otsego and State of New York, have invented a new and useful Door for Silos, of which the following is a specification.

It is the object of the present invention to provide a door frame of novel and improved construction, adapted to constitute a part of a silo or like structure, in which an adjustable door frame is required, the door frame being so constructed that its stiles may be adjusted with respect to each other, thereby providing for an expansion and contraction in the structure with which the door frame is assembled.

A further object of the invention is to provide novel means for adjusting the space between the stiles of the doorway.

A further object of the invention is to provide a means for adjusting the space between the stiles of a doorway, a portion of said means constituting an attachment for one of the hoops which encircles a silo.

A further object of the invention is to provide a door for a silo, which door may be mounted in various vertical positions.

A further object of the invention is to provide a locking member for a silo door, which locking member may be employed as a ladder, for ascending the silo.

A further object of the invention is to provide a locking member for a silo door, and so to fashion the elements whereby this locking member is assembled with the silo door, that the said members will retract the locking member, when the same is moved pivotally in said members, the movement of the locking member serving to retract one end thereof, within the contour of the door, so that the door may be removed from the structure in which it is mounted.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings,—Figure 1 is an elevation. Fig. 2 is a top plan. Fig. 3 is a perspective of one of the brackets.

In the drawings, the numeral 1 denotes a portion of a silo, having an upright doorway 2 therein. Mounted vertically in the doorway 2 are the stiles 3 of the door. The stiles 3 are provided with any desired number of brackets 4, having, adjacent their ends, lugs 5. These brackets are provided with upper primary openings 6, and with lower secondary openings 7. The primary openings 6 are right and left hand threaded, to receive the threaded ends 8 of an operating member, denoted by the numeral 9, the operating member 9 preferably taking the form of a rod. Upon the ends of the rod 9 are nuts 10, adapted to bear against the outer end faces of the uppermost lugs of the brackets 4. Into the lower, secondary openings 7, may be inserted the threaded ends 11 of the band 12 which encircles the silo, there being nuts 14 upon the ends of the band 12, the nuts 14 engaging the opposite ends of the brackets 11 from those ends which are engaged by the nuts 10. In securing the brackets 4 to the stiles 3, prongs 15 upon the lower faces of the brackets 4, may be driven into the stiles, a bolt 16, or other securing member being extended through an opening 17 in each bracket 4, to engage one of the stiles 3. Stave silos, when filled, swell, and when such silos are empty, shrink, the doors of the silo becoming tight or loose in the frame, as the case may be. To overcome this difficulty, the hereinbefore described adjustment between the stiles 3 is provided.

Owing to the fact that the rod 9 is right and left hand threaded into the lugs of the brackets 4 at 6, it will be seen that by rotating the rod 9 in one direction, the stiles 3 will be separated, while, upon the other hand, if the rod 9 be rotated in an opposite direction, the stiles 3 will be drawn together. The band 12 is not threaded into the brackets 14, and relative movement between the band 12 and the bracket 4 may be provided, by loosening the nuts 14. Obviously, the nuts 10 serve to relieve some of the strain upon the threaded ends 8 of the member 9.

The door is denoted by the numeral 20, the door 20 fitting closely in the space between the adjacent edges of the stiles 3. Upon the back of the door 20 are transverse members 21, the ends 22 of which overlap the rear faces of the stiles 3, thereby preventing the door 20 from being drawn outwardly. Mounted upon the door 20 are a

pair of eyes 22′. Journaled for rotation in the eyes 22′, are fingers 23, extended laterally from the arms 24 of a locking member or bail. The intermediate portion 25 of the bail outstands from the arms 24 of the bail, so that when the arms 24 of the bail rest against the door 20, the intermediate portion 25 of the bail will serve as a rung, the superposed bails constituting a ladder, whereby the silo may be ascended. It is to be noted that the fingers 23 outstand beyond the coutour of the door 20. Moreover, the eyes 22′ are disposed at an acute angle to the fingers 23, the side faces 25′ of the eyes 22′ constituting cam surfaces engageable by the portions 24 of the bail, when the bail is tilted pivotally in the eyes 22′.

The operation of the device is as follows. Presupposing that the parts are disposed as shown in the uppermost door in Fig. 1, it will be seen that the fingers 23, overlapping the forward faces of the stiles 3, and coöperating with the member 21, serve to hold the door in place, against movement either inwardly or outwardly, the eyes 25′ preventing the bail from moving longitudinally. If, however, the portion 25 of the bail be tilted upwardly, as shown in the lower portion of Fig. 1, the portions 24 of the bail will ride along the cam faces 25′ of the eyes 22′, retracting one of the fingers 23 into the position denoted by the numeral 26, in the lower portion of Fig. 1, the finger, when positioned as shown at 26, lying within the contour of the door 20 so that the door 20 may be swung inwardly, into the silo, the opposite finger 23 being withdrawn from engagement with the forward face of one of the stiles 3.

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

In a device of the class described, a door; a rigid, one-piece bail comprising arms, fingers outstanding in opposite directions from the arms, and an intermediate portion connecting the arms and spaced from the plane of the arms, the fingers projecting terminally beyond opposite edges of the door; and a pair of parallel bearings extended across the fingers, the bearings being mounted in the door and being disposed at acute angles to the fingers, all portions of the bearings engaging the fingers upon the outside of the arms, whereby the arms may bear directly against the door; the bearings engaging the arms, when the intermediate portion of the bail is lifted, to move both fingers in a common direction, and to retract one finger only, within the contour 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.

JOSEPH MERRITT MOORF

Witnesses:
ELIZABETH G. MOORE,
GLADYS SOMERVILLE.