

J. D. LA TIER.
BRACE CONNECTION FOR SILO DOORWAYS.
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1,046,612.

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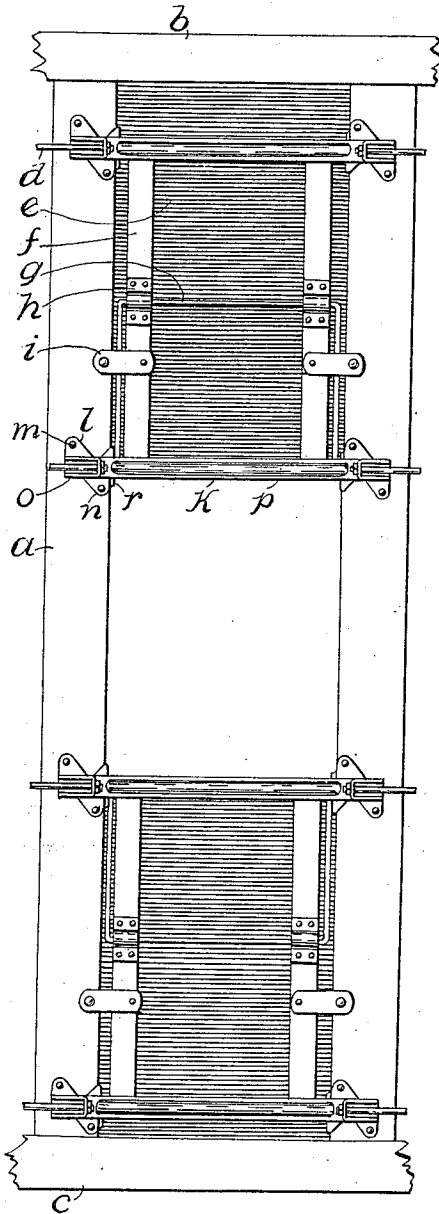
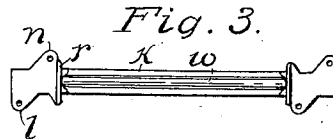
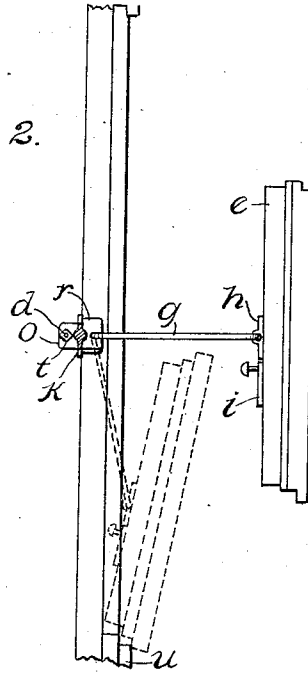


Fig. 1.

Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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BRACE CONNECTION FOR SILO-DOORWAYS.

1,046,612.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES D. LA TIER, a citizen of the United States of America, and a resident of Waterloo, Blackhawk county, Iowa, have invented certain new and useful Improvements in Brace Connections for Silo-Doorways, of which the following is a specification.

My invention relates to improvements in silos, and the object of my improvement is to provide for silos which have continuous vertical doorways, brace-connections for the side-frames of said doorways, which are adapted to both secure and brace said frames in a convenient, inexpensive and practical manner. This object I have accomplished by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawings, in which:

Figure 1 is an exterior view or front elevation of the portion of a silo which contains its continuous vertical doorway supplied with my improved brace-connections for its side-frames. Fig. 2 is a detail side elevation of a portion of the inner face of one of the side-frames of such a door-opening, showing the brace-connection in medial transverse section, and with a vertical swing door hinged thereto in an inwardly projected position. Fig. 3 is a rear elevation of one of my said improved brace-connections. Fig. 4 is a top plan view of said brace-connection.

Similar characters of reference designate similar parts throughout the several views.

My improved brace-connection for the side-frames of silo doorways, is designed so as to be used at will with side-beams of wood, of metal, or of other materials, such as reinforced concrete.

I have shown in Fig. 1, a view of the continuous vertical doorway of a silo, having top and bottom, and side frames or bounding beams *b*, *c*, and *a* respectively. The side-frames or beams *a* are connected together and braced by my improved cross-connections *k* which are preferably formed of malleable iron, and which serve, when in position as ladder rounds coöperatively with the

horizontal rock-shafts *g* of the hinge arms which connect the vertical swing doors *e* to the side-frames. Said hinge-arms are offset at right-angles from the said shaft and have their outer ends again offset at right-angles to project horizontally and oppositely into bearing-openings *j* in the inwardly projecting lugs *r* of the brace-connections *k*. The rock-shafts *g* are movably mounted in the horizontal bearings *h* on braces *f* on said doors, and said doors are adapted to rock inwardly and be moved either vertically up or down to cover different parts of said door opening, as shown in Figs. 1 and 2. The said doors may be secured in their closed positions by means of turn-plates *i*.

The brace-connections *k* are placed transversely across said door opening, with their inwardly projecting lugs *r* in engagement with the inner faces of the side-beams *a*. The ends of said connections beyond said lugs have their inner faces in contact with the outer faces of said beams, as are also the projections *l* and *n* which extend vertically from said connections. The said projections are provided with orifices serving as bolt-holes whereby bolts *m* may be inserted therethrough and through said side-beams to secure said parts firmly together. Outwardly-extending webbed lugs *o* are located on said brace-connections adjacent to their ends, and have horizontal orifices adapted to receive the ends of the outer truss-rods *d* which encompass the exterior of the silo body and serve to sustain the compression caused by the weight of ensilage within. The ends of said rods are secured to said lugs by threaded nuts *t*. The shaft of said connection *k* is reinforced by means of medial longitudinal strengthening ribs *p* and *w* on the front and back of each respectively.

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

The combination with a silo having a continuous vertical door-opening, of a one piece brace-connection adapted to connect and support the side-beams of said door-opening, provided with integral lugs projecting inwardly and engaging opposite inner faces of

said side-beams, and being provided with orificed bearings for the hinges of a vertically-swinging door, said brace-connections having webbed outwardly-extending integral
5 lugs orificed to receive the ends of truss-rods compressively encircling the silo-body, and having vertically-extending integral projections near its ends adapted to contact with the outer faces of said beams, and

means for securing said projections to said 10 beams.

Signed at Waterloo, Iowa, this 19th day of Aug. 1911.

JAMES D. LA TIER.

Witnesses:

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