No. 726,639. PATENTED APR. 28, 1903.

J. P. CHRISTENSEN.

SILO.

APPLICATION FILED APR. 16, 1902.

NO MODEL.

Fig. 1.

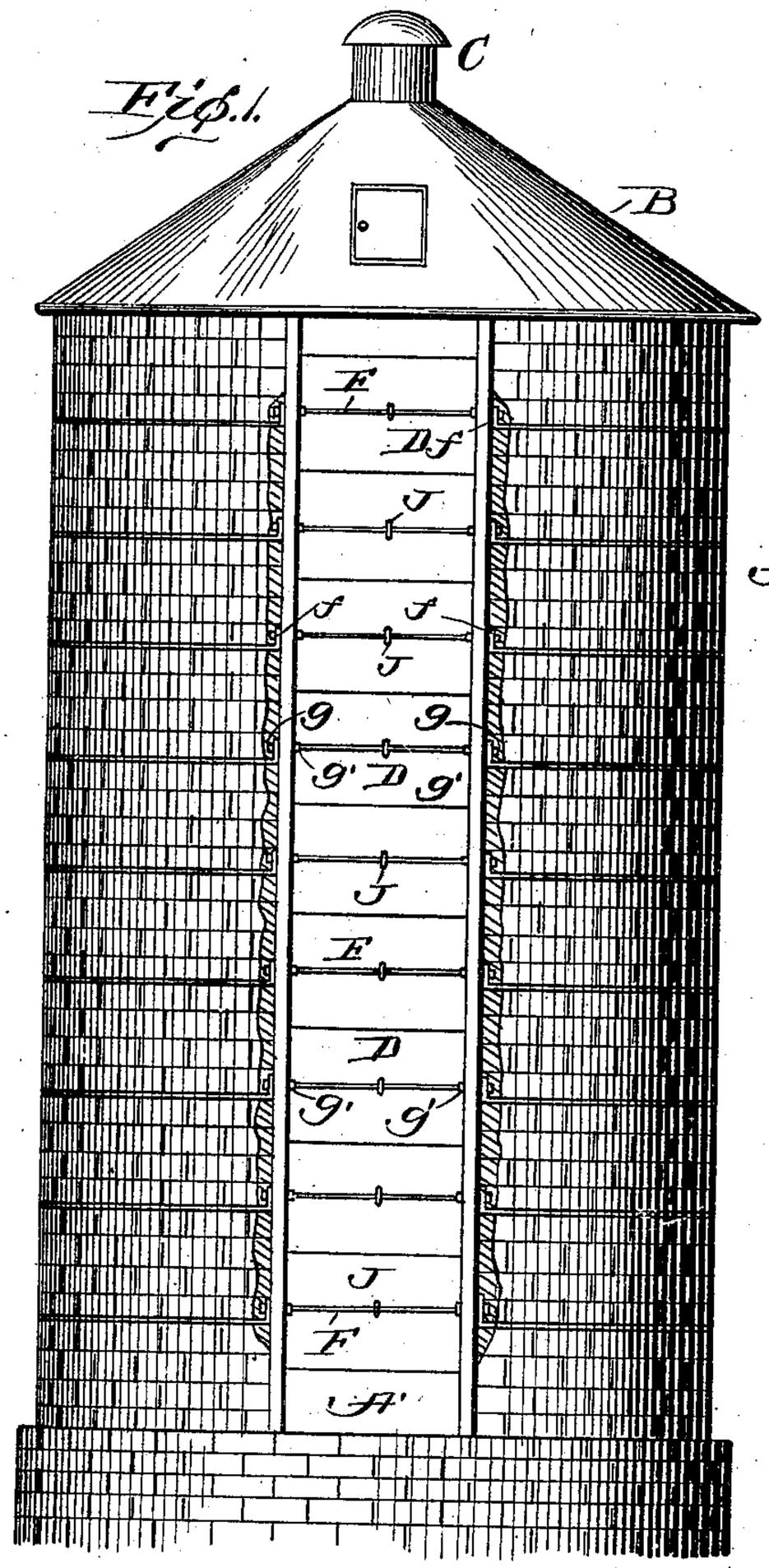


Fig. 2.

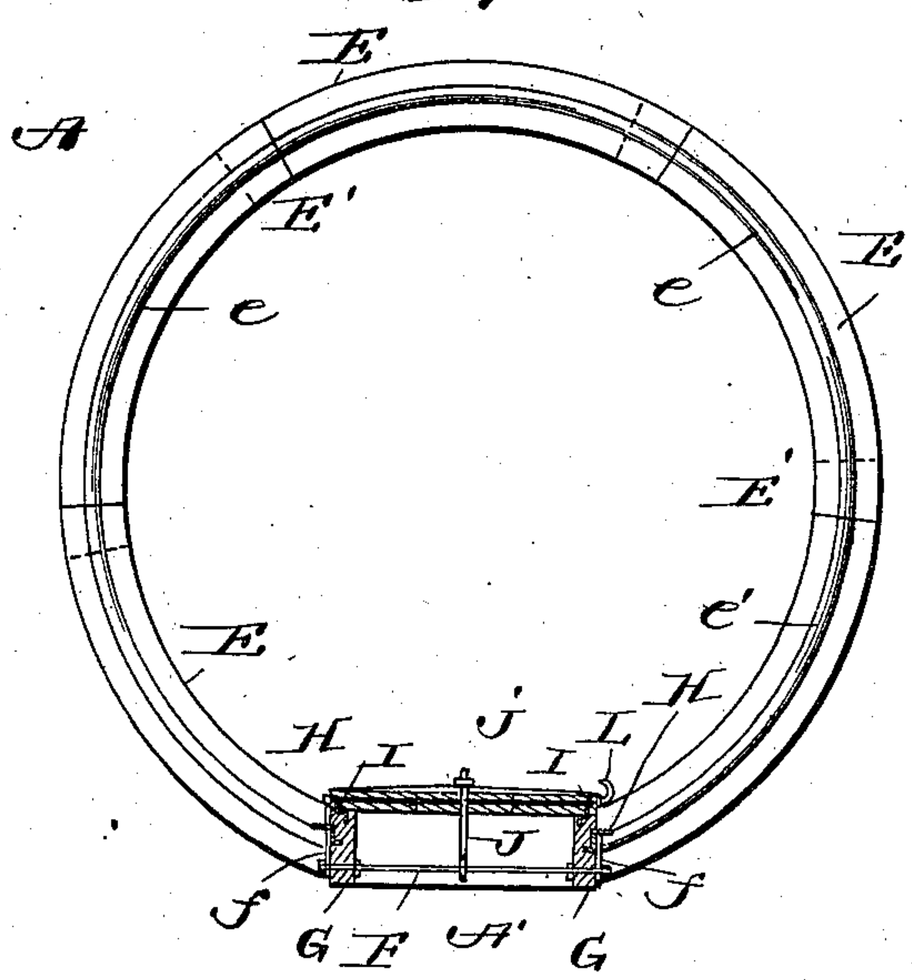
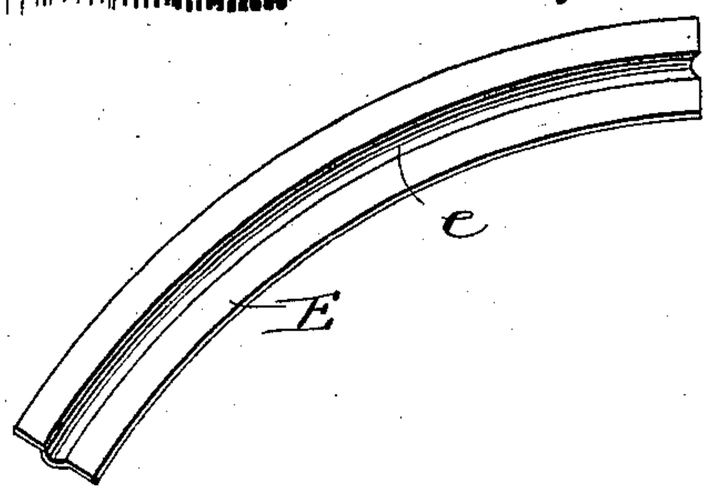


Fig. 3



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UNITED STATES PATENT OFFICE.

JAMES P. CHRISTENSEN, OF VINLAND, WISCONSIN.

SILO.

SPECIFICATION forming part of Letters Patent No. 726,639, dated April 28, 1903.

Application filed April 16, 1902. Serial No. 103,186. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. CHRISTENSEN, a citizen of the United States, residing at the town of Vinland, in the county of Winnebago and State of Wisconsin, have invented new and useful Improvements in Silos, of which the following is a specification.

My invention relates to a silo or tank and to a new and novel method of construction, so that brick or other indestructible material may be used for the wall.

The objects of my invention are, first, to provide a means of binding the wall; second, to provide a means of binding the doors tightly and to render them easily removable; third, to construct the silo water-tight, so that it may also be used as a tank for irrigation purposes or otherwise.

In the accompanying drawings, Figure 1 represents a view in side elevation of a silo embodying the features of the present invention. Fig. 2 represents a horizontal section on the plane of one series of tie-plates, and Fig. 3 represents an enlarged detail perspective view of one of the tie-plates.

A represents the circular wall of the silo, provided at one side with a doorway or opening A′, extending from top to bottom.

B is the roof, and C an opening through which the silo may be filled after all doors are closed.

D D D, &c., represent doors.

E represents a circular plate provided with one or more grooves *e e*. The plate E is preferably constructed in sections and lapped at the ends, as shown at E′, Fig. 2. These plates are laid horizontally between the coursings of brick at certain intervals in building the wall and are tied across the doorway A′ by means of rods F F F, &c., passing through eyes in the upturned ends of the plates *f f* and the door-jambs G G and being secured by nuts *g g* and *g′ g′*, the plates and nuts *g g* embedded in the masonry as the wall is built. Perpendicularly-extending strips of double angle-irons H H are also laid between door-jambs G G and the wall upon each side of the opening A′ and are impressed one edge into each wooden jamb and the other edge embedded into the masonry to afford a water-tight joint between the jamb and wall. As the jambs shrink they may be tightened against the edge of the angle-irons by means of the nuts *g′ g′*. Similar angle-irons I I are attached to each door to embed into the edge of the jamb and also upon the bottom of each door to embed into the top of each door underneath. The bottom door is provided with a strip of single angle-iron, which embeds into the edge of the threshold.

The doors D D D, &c., are dropped down from above inside the jambs G G and attached to the respective rods F F F, &c., by one or more hooks J. The doors are constructed of matched material and one or more bolts K passed through the door with nuts upon each end to tighten the joints in case of shrinkage, and a hook L is provided at one end by extension of the bolt to provide a means of hanging up the door after removal either to the rod F or to some other support. It is important that each door be bound tightly against the jamb, and for this purpose the shank of the hook J is passed through a socket in the door and secured by a nut *j*. Each door can then be screwed tightly against the jamb, so as to embed the double angle-iron strips I I into the jamb to render a water-tight joint, and as each door is placed above the lower one it can be hammered or forced down, so as to embed the angle-iron attached to the bottom into the top of the door below. The bottom door, as previously stated, is provided with a single angle-strip embedded in the door and is tightened by means of the hook J to jam against the inside edge of the threshold and embed the edge of the angle-iron into the wood of the threshold. The plates E E, &c., are stiffened by one or more grooves *e*, and in laying up the wall may be lapped without riveting, as the groove in the upper lap will drop into the groove of the lower lap, and thereby prevent spreading at the joints after the wall is laid up. A sectional circular plate of this description is as effective as a solid plate to bind the wall, and a single brick four-inch wall is sufficient for any silo or tank if properly bound.

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

1. The combination with suitable walls of masonry, provided with a vertical opening, of tie-plates built within said masonry and

having their ends extending to said opening, tie-rods connecting said ends, doors closing said opening, and hooks carried by said doors engaging said rods, substantially as described.

2. The combination with suitable inclosing walls having a doorway, of a casing therein, double angle-irons extending longitudinally of said casing and connecting the same with said inclosing walls, and means closing said doorway, substantially as described.

3. The combination with suitable inclosing walls having an opening therein, a door closing said opening, and double angle-bars connecting said door with said walls, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES P. CHRISTENSEN.

Witnesses:
ANNA R. WATERHOUSE,
WILLIAM J. O'ROURKE.