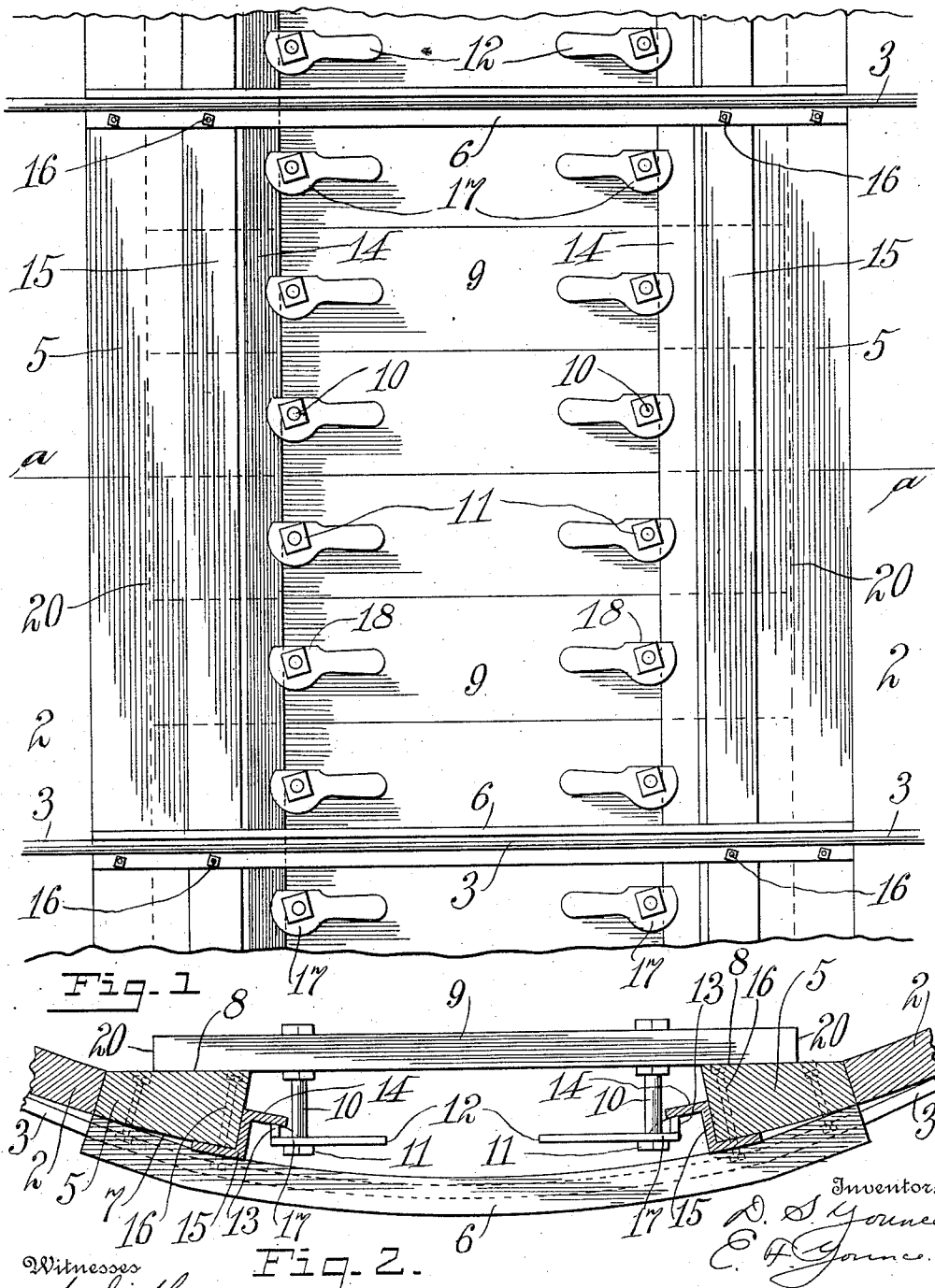


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 SILO.
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Patented Feb. 27, 1912.



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UNITED STATES PATENT OFFICE.

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SILLO.

1,018,540.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, DAVID S. YOUNCE and ELIAS F. YOUNCE, citizens of the United States, residing at Union, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Silos; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in silos, with special reference to the door construction and operation.

The object of the invention is to provide a silo door that will accommodate itself to the inequalities of the door jamb, and which is easy of manipulation in providing an opening for the insertion and extraction of the silage, as will be hereinafter described and claimed.

Referring to the annexed drawings, Figure 1 is an elevation of a front portion of a silo in accordance with our invention; Fig. 2 is a section on the line *a-a* of Fig. 1.

Throughout the specification and drawings, similar reference characters indicate corresponding parts.

Referring more particularly to the drawings, 2 represents the body of the silo encircled by hoops 3. Along one side of the silo is an opening extending from the bottom to the top of the silo and formed by vertical posts 5 which abut against the adjacent edges of the silo.

Fig. 2 shows the cross sectional form of the uprights or door posts 5, where it will be seen that the thickness from front to rear gradually becomes greater as the distance from the wall 2 increases. This is essential in order to provide a straight or flat surface 8 on the inner side of each of the said posts 5. Connecting the posts 5 are metal braces or struts 6 over which pass the hoops 3. The struts 6 maintain the posts 5 in their relative positions against the strain of the hoops 3. The outer faces 7 of the posts 5 conform approximately to the curvature of the silo, while the inner faces or surfaces 8 lie substantially in the same plane. Lying flat against the inner straight surfaces of

the posts 5, is a plurality of panels 9 forming door members, the ends 20 of which are uninclosed. These door panels are therefore capable of lateral and vertical movement. The said door panels therefore will accommodate themselves to any inequalities of the door opening, and they may be easily elevated or lowered irrespective of any slight variations in the width of the door opening. The said door panels are held rigidly against the inner sides of the posts 5 by the following means. Extending from the outer sides of said panels are two series of pins 10 which are provided with suitable heads 11. Pivotaly supported on these pins are two series of locking levers 12 having each a head 17 provided with a cam surface 13. The cam surfaces 13 of said locking levers are adapted to engage the inner flanges 14 of Z-bars 15. These bars lie along the outer corners of the uprights or posts 5 and are attached to the said posts by bolts 16 which are also instrumental in attaching the struts 6 to the uprights. When the locking levers 12 are in a horizontal position, the cams 13 engage the flanges 14 and draw the door panels 9 rigidly against the inner faces 8 of the uprights. When said levers 12 are thrown downwardly, the cams 13 release the door panels 9 and allow them to be elevated or lowered by hand, as the case may require, the heads 17 in connection with the flanges 14 acting as guides. A portion of said head 17, it will be noted, is removed as at 18, so that when said levers 12 are thrown upwardly, said heads will clear the flanges 14, which allows the door members to be removed. The outer flanges of the Z-bars engage the outer sides of the uprights and some of the bolts 16 which secure the struts 6 also secure the Z-bars to the uprights. The door opening in the silo is closed by a plurality of the door panels 9, and when it is desired to provide an entrance to allow access to the interior of the silo, the door members 9 above the desired points are elevated. An entrance to the silo may be made higher or lower by raising or lowering the next top or bottom door panel, as will be understood.

Having described our invention, we claim:

The combination with a silo having uprights forming the frame of an opening extending from the base to the top thereof,

and a plurality of struts extending across said opening and lying entirely outside the plane of the outer sides of said uprights, of Z-bars secured to said uprights, the outer
5 flanges of said bars engaging the outer sides of said uprights, and the inner flanges thereof lying within the space of the door frame formed by said uprights, a plurality of door panels arranged on the inside of
10 said door frames, across said opening, and locking members pivoted to said panels and engaging the inner flanges of the Z-bars to hold said panels in position, said locking

members lying inwardly from the plane of the struts, whereby the said door panels 15 may be raised or lowered without the locking members being obstructed by the struts, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

DAVID S. YOUNCE.
ELIAS F. YOUNCE.

Witnesses:

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