W. W. COATES.

SILO DOOR.

APPLICATION FILED AUG. 5, 1912.

1,068,857. Patented July 29, 1913.

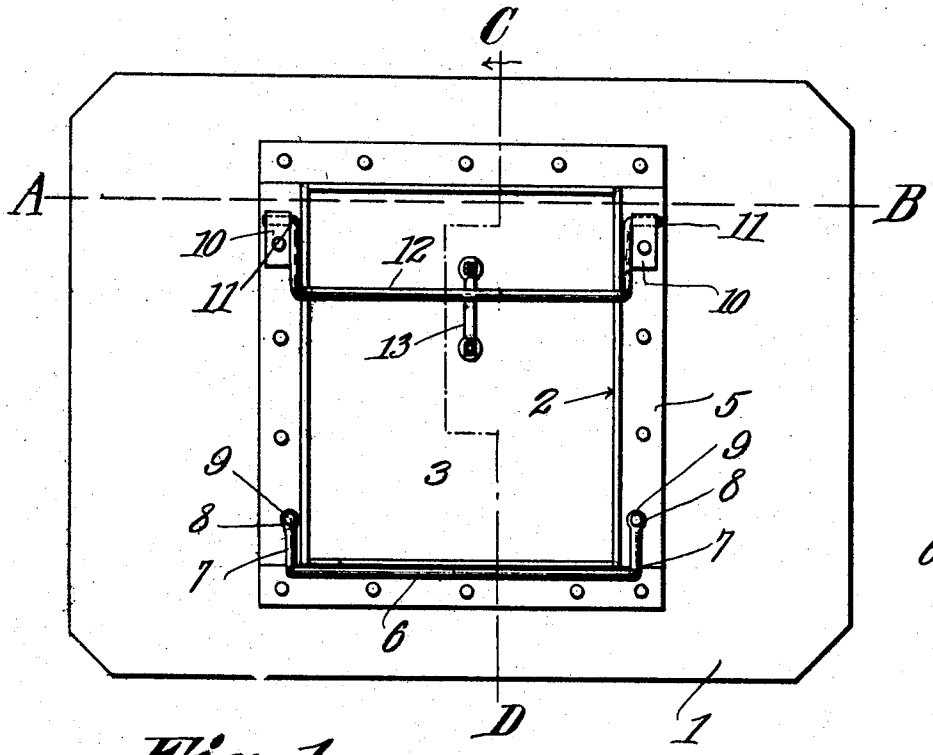

Fig. 1.

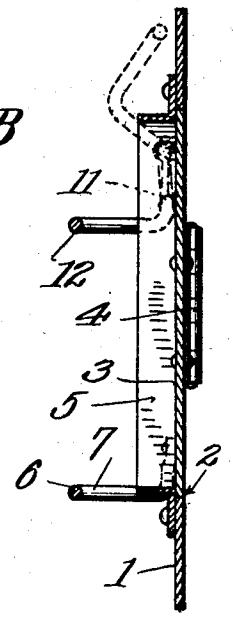

Fig. 3.

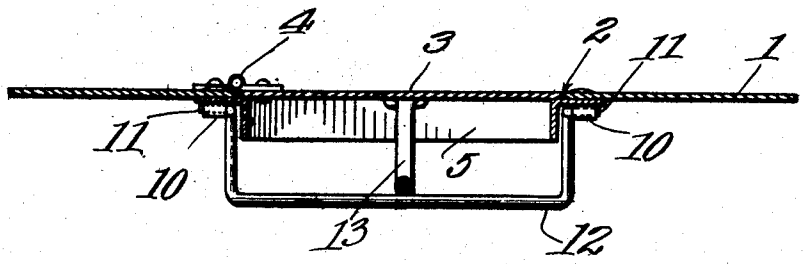

Fig. 2.

William W. Coates
Inventor,

Witnesses
J. P. Gomes
R. F. Peacock

by C. A. Snow & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM W. COATES, OF ENID, OKLAHOMA.

SILO-DOOR.

1,068,857. Specification of Letters Patent. Patented July 29, 1913.

Application filed August 5, 1912. Serial No. 713,387.

To all whom it may concern:

Be it known that I, WILLIAM W. COATES, citizen of the United States, residing at Enid, in the county of Garfield and State of Oklahoma, have invented certain new and useful Improvements in Silo-Doors, of which the following is a specification.

This invention relates to doors for silos, its object being to provide a metallic door formed by cutting an angular opening within a metal sheet adapted to be secured across the opening in the wall of the silo, the metal removed in the formation of the door opening being utilized as the door *per se* and being connected to the plate by means of hinges provided therefor.

Another object is to provide means mounted on the plate for limiting the swinging movement of the door in one direction.

A further object is to provide ladder rungs of novel form which are connected to the plate, one of the rungs being extended normally transversely of the opening but being adapted to swing upwardly away from the opening so as to leave said opening unobstructed when the door is opened.

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 the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings: Figure 1 is a front elevation of the door constituting the present invention. Fig. 2 is a transverse section therethrough on line A—B Fig. 1. Fig. 3 is a section on line C—D Fig. 1, the position of the movable ladder rung when raised being indicated by dotted lines.

Referring to the figures by characters of reference 1 designates a metal plate of any desired proportions and a rectangular opening 2 is cut into this plate, the metal thus removed being used as a door 3 for closing the opening. This door is connected to the plate 1 by means of hinges 4. The opening 2 is surrounded by a door frame 5 which can be made up of lengths of angle iron riveted or otherwise secured to the plate 1, the said angle irons being extended slightly beyond the walls of the opening so as to constitute stops for limiting the movement of the door 3 in one direction, as will be apparent by referring particularly to Fig. 2.

A ladder rung 6 extends transversely below the opening 2 and is preferably formed of a rod having L-shaped arms 7 formed by the ends thereof, the terminals of these arms bearing flat against the side angle irons 5 and being provided with eyes 8 for the reception of rivets 9 or the like whereby the rung is secured in place.

Secured to the side angle irons 5 close to the upper end of the opening 2 are brackets 10 engaged by crank arms 11 which merge into a bail-shaped ladder rung 12, the said crank arms occupying a plane perpendicular to the plane of the ladder rung and normally bearing against the side angle irons 5 as shown particularly in Fig. 3.

The various parts are so proportioned that, when two or more plates 1 are secured to a silo structure, the distance between the upper rung 12 adjacent one door and the lower rung 6 of the next door thereabove will be equal or substantially equal to the normal distance between the rungs 6 and 12 of one door. Thus, obviously, when the various plates 1 and the parts connected thereto, are secured to a silo, the rungs 6 and 12 will form a ladder extending continuously up the silo wall. When the door 3 is opened, the rung 12 can be swung upwardly to the position indicated by dotted lines in Fig. 3 so as to thus leave the opening 2 unobstructed. As shown particularly in Fig. 1, a handle 13 may be arranged vertically upon the door 3. It is to be understood that doors of any shapes desired may be used.

What is claimed is:—

1. In a device of the class described, the combination with a plate having an opening therein, and a door, of a door frame secured to the plate and constituting means for limiting the movement of the door in one direction within the opening, a ladder rung extending transversely of the plate and adjacent the lower end of the opening, said rung being fixed relative to the plate, and a second rung extending transversely of the plate adjacent the upper portion of the opening and pivotally connected to the plate, said rung being adapted to swing upwardly above the door.

2. In a device of the class described the combination with a plate having a door opening, and a door formed of the material removed from the opening, of a ladder rung outstanding from the plate and below the opening, a second ladder rung extending transversely of the upper portion of the opening and having terminal crank arms pivotally connected to the plate, said rung being adapted to swing upwardly to a point above the door opening.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM W. COATES.

Witnesses:
BENJ. KOOS,
BAB O'CONNOR.