

A. O. HUBBARD.
SILO.

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1,030,406.

Patented June 25, 1912.

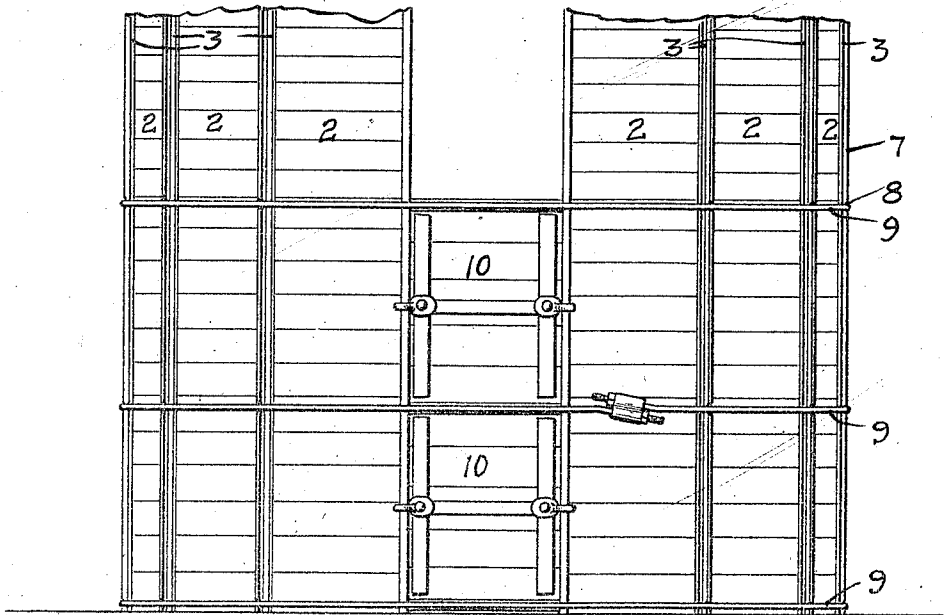


Fig 1.

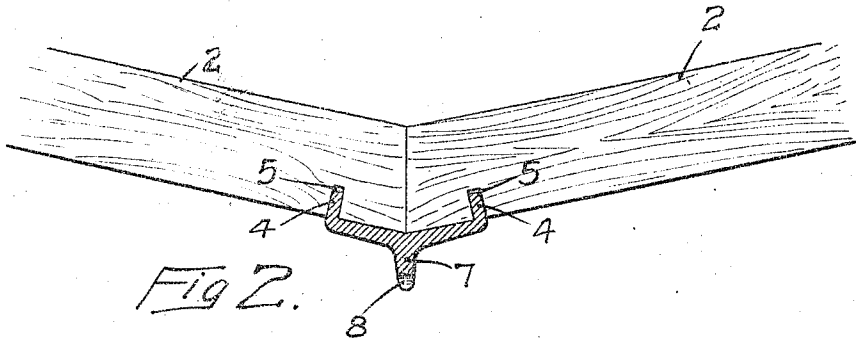


Fig 2.

WITNESSES
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UNITED STATES PATENT OFFICE.

ARTHUR O. HUBBARD, OF MINNEAPOLIS, MINNESOTA.

SILLO.

1,030,406.

Specification of Letters Patent.

Patented June 25, 1912.

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To all whom it may concern:

Be it known that I, ARTHUR O. HUBBARD, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful
5 Improvements in Silos, of which the following is a specification.

The object of my invention is to provide a wooden silo construction in which metal
uprights are introduced between the vertical
10 panels of the silo, with means for hooping the panels and uprights to bind them securely together to the end that the panels
will be securely held and the joints between
15 them will be impervious to the passage of air from the outside or acids from the inside of the silo.

My invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed
20 out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is an elevation of the lower portion of a silo, illustrating my improved construction. Fig.
25 2 is a transverse sectional view showing the joints between the abutting panels and the upright bars on which the silo hoops are seated.

In the drawing, 2 represents the vertical
30 panels of the silo, each consisting, preferably, of a series of narrow wooden strips placed edge to edge to form panels of suitable length.

3 is a metal upright that is placed over
35 the joint between the panels and provided with inwardly turned vertical edges 4 which are inserted into vertical grooves 5 formed in the strips composing the vertical panels. These grooves are so arranged that when
40 the edges of the uprights are inserted therein the middle portion of the uprights will be centered on the joints between the panels. The abutting vertical edges of the panels are
seated snugly against one another and form
45 air and acid tight joints and positively prevent the liquid in the silo from working out through the joints into contact with the metal uprights. Each metal upright is provided
50 with a centrally arranged bracing and stiffening web 7 intermediate to the inwardly turned edges of the uprights and having notches 8 therein in which the hoops 9 of the

silo are seated. These webs space the hoops from the walls of the silo and stiffen and strengthen them to such an extent that the
55 tension of the hoops will not bend or buckle the uprights or unduly compress the joints of the panels. The flanges formed on the edges of the uprights may vary in width and I do not wish to be confined to the precise
60 construction herein shown. I prefer also to turn the side portions of the webs inwardly so that they will fit snugly against the outer surfaces of the abutting edges of the panels.

The silo is provided with the usual door
65 opening extending from the top to the bottom of the silo with doors 10 fitting therein, one above another, and secured by a suitable means which will allow their convenient removal and access to the silo, as desired. 70

I claim as my invention:—

1. A silo composed of upright panels having abutting vertical edges, upright metal
bars seated over the joints between the abutting vertical edges of the panels and having
75 side webs projecting laterally on each side of said joints, said webs having inwardly turned edges adapted to enter vertical grooves in the staves of the panels and said bars also having strengthening ribs or webs
80 intermediate to said side webs and projecting outwardly therefrom, and hoops seated on said projecting webs and binding them and said panels together.

2. A silo composed of upright panels having abutting vertical edges, upright metal
bars seated over the joints between the abutting vertical edges of the panels and having
85 side webs projecting laterally on each side of said joints, means for holding said upright bars in vertical alinement with said joints, said bars also having strengthening ribs or webs intermediate to said side webs and projecting outwardly beyond the plane thereof,
90 and hoops seated on said projecting webs and binding said upright bars and said panels securely together. 95

In witness whereof, I have hereunto set my hand this 23d day of October, 1911.

ARTHUR O. HUBBARD.

Witnesses:

GENEVIEVE E. SORENSEN,
EDWARD A. PAUL.