B. S. WILLIAMS.

WOODEN BUILDING.

APPLICATION FILED DEC. 2, 1913.

1,126,927.

Patented Feb. 2, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

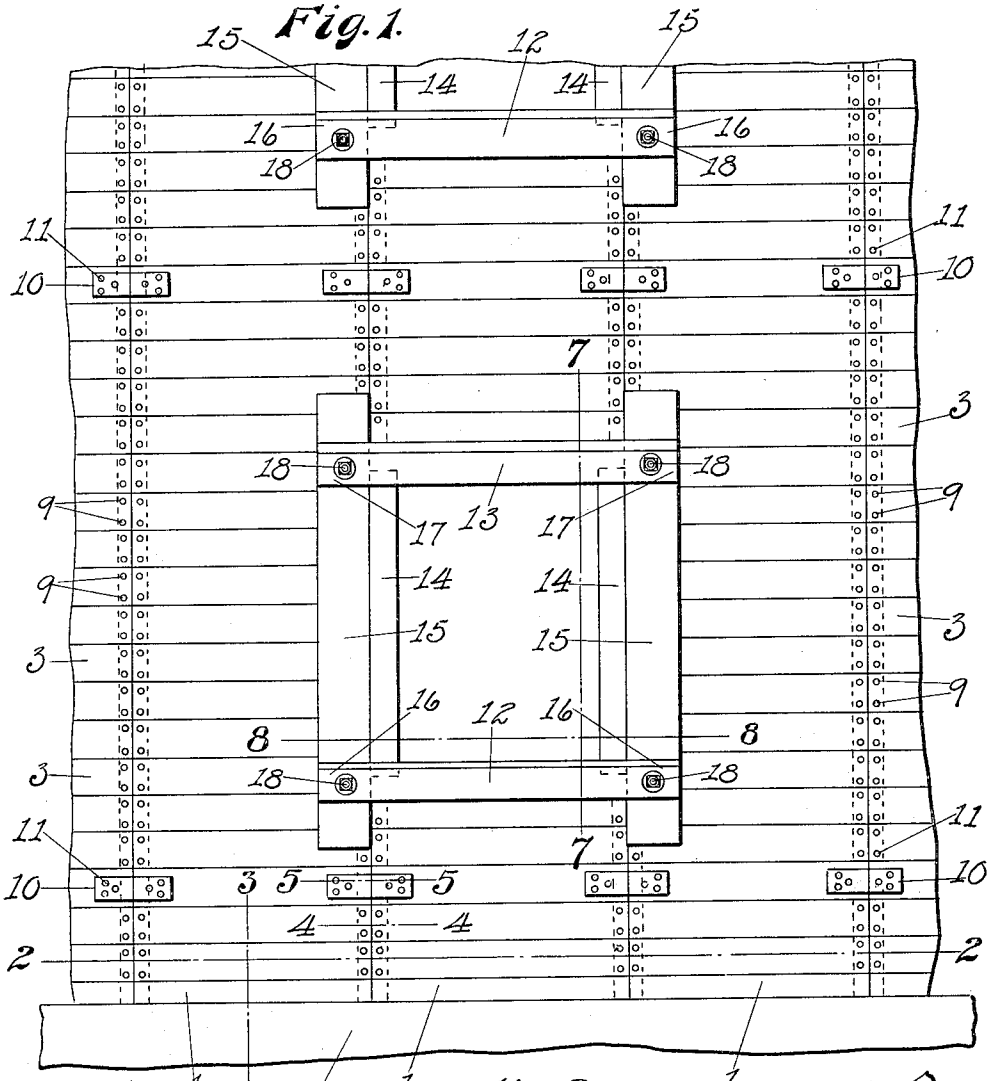
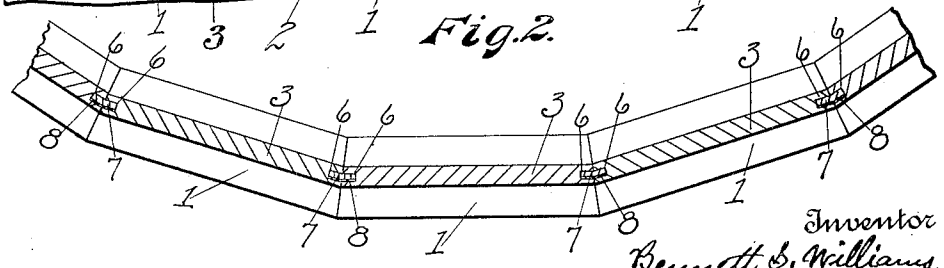


Fig. 2.



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THE NORRIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 8.

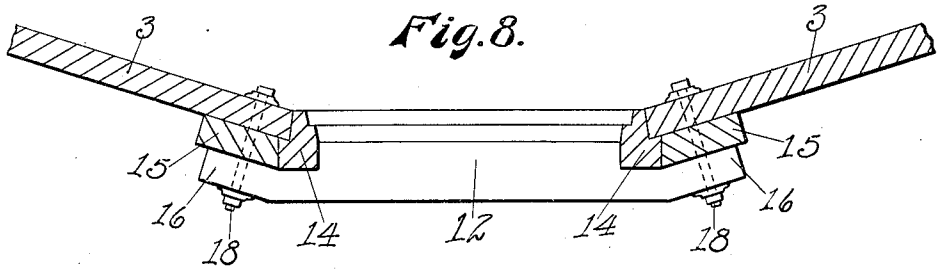


Fig. 7.

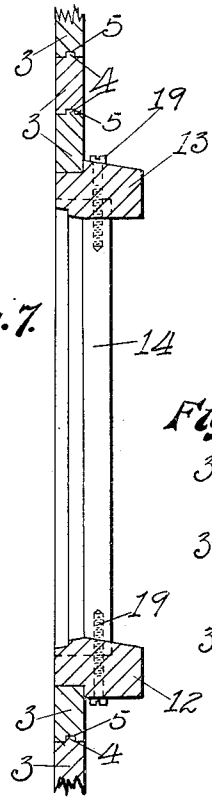


Fig. 6.

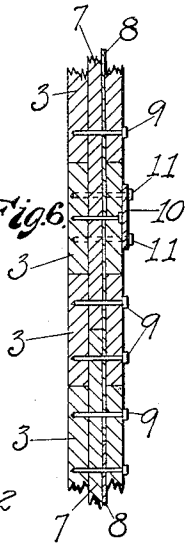


Fig. 5.

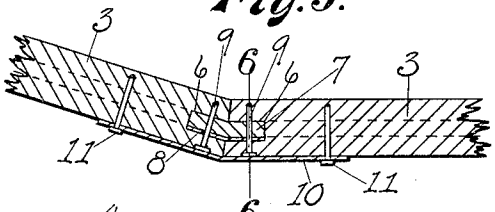


Fig. 9.

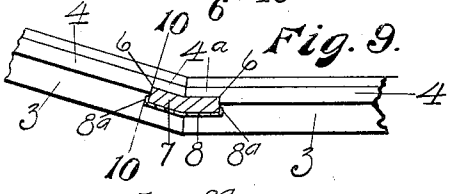


Fig. 10.

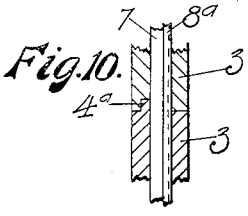


Fig. 4.

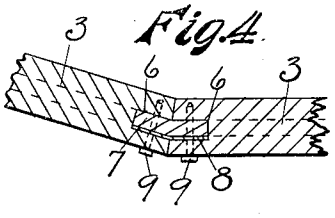
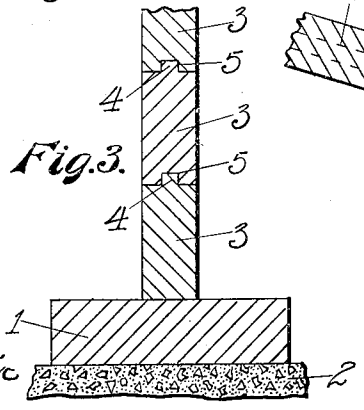


Fig. 3.



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UNITED STATES PATENT OFFICE.

BENNETT S. WILLIAMS, OF KNOXVILLE, TENNESSEE.

WOODEN BUILDING.

1,126,927. Specification of Letters Patent. Patented Feb. 2, 1915.

Application filed December 2, 1913. Serial No. 804,204.

To all whom it may concern:

Be it known that I, BENNETT S. WILLIAMS, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Wooden Buildings, of which the following is a specification, reference being had to the accompanying drawing.

My improvement relates particularly to wooden buildings to be used as silos, bins and similar purposes.

The object of the improvement is to provide a construction which is strong and durable and which can be built of short pieces of wood taken largely from waste mill material, so that the building is chiefly a by-product structure.

A further object of the invention is to provide a structure the parts of which can be produced at a factory and conveniently shipped and easily erected by persons of ordinary mechanical experience.

In the accompanying drawings, Figure 1 is an elevation of a portion of a building embodying my improvement; Fig. 2 is a section on the line, 2—2, of Fig. 1; Fig. 3 is a section on the line, 3—3, of Fig. 1; Fig. 4 is a section on the line, 4—4, of Fig. 1; Fig. 5 is a section on the line, 5—5, of Fig. 1; Fig. 6 is a section on the line, 6—6, of Fig. 5; Fig. 7 is a section on the line, 7—7, of Fig. 1, looking toward the right; Fig. 8 is a section on the line, 8—8, of Fig. 1; Fig. 9 is a horizontal sectional detail plan of another form; Fig. 10 is an upright section on the line, 10—10, of Fig. 9.

Referring to said drawings, 1, 1, are flat sill pieces resting upon a suitable base, 2, of brick or concrete or similar material. The sill pieces, 1, are placed end-to-end and at suitable angles to each other to form a continuous wall which is approximately circular in cross-section. The ends of said pieces are beveled to adapt them to meet closely. Wall pieces, 3, 3, of the same length as the sill pieces are placed upon the latter with their ends meeting over the joints formed by the meeting ends of the sill pieces. In the form shown in the drawings, said wall pieces are set up edgewise and have tongues, 4, fitting into grooves, 5, along the longitudinal edges of said pieces. An upright recess, 6, is cut into the end of each sill piece and wall piece, such recess extending from one end of the piece toward the other end and parallel to the length of said piece and being so located and of such width as to involve the removal of the tongue, 4, as far from the end as the recess extends. When the wall pieces are laid upon each other, the recesses, 6, form an upright chamber twice as wide in cross-section as the width of each such recess, and said chamber is angular in cross-section to conform to the angle at which adjacent and horizontally opposite wall pieces meet, as shown in Figs. 2, 4 and 5. Into said chamber are placed key pieces or splines, 7, which are angular in cross-section in conformity to the cross-sectional angle of said chamber. Outside of said key-pieces or splines are sheet metal pieces, 8, of the width of the outer face of the spline and being angular in horizontal cross-section to conform to the cross sectional angle of the spline, so that said metal strip may bear closely against the outer face of the spline. Said sheet metal strips are preferably of galvanized sheet metal or any other sheet metal adapted to, in a measure, resist corrosion. The splines and the metal strips are of proper cross sectional area to together fill the upright chamber formed by the recesses, 6, 6. The spline pieces and the sheet metal pieces are of suitable length to extend through any desired number of wall pieces, said splines being placed end-to-end and joints being preferably placed so as to avoid alinement with the horizontal joints between the wall pieces, 3, 3. (See Fig. 6.)

Fastening members, 9, which may be screws or nails, are driven from the outer sides of the wall pieces through the outer portions of said pieces and through the metal strips, 8, and the splines, 7, and into the inner portions of the wall pieces. By this means, said wall pieces, metal strips, and splines are bound firmly to each other. The metal strips constitute reinforcing pieces for the splines and they are of suitable strength to engage the fastening members, 9, in amply firm manner, and to prevent the splines from splitting. These wooden pieces and metal strips may be re-

garded as together constituting a compound spline or key. By placing the metal strips on the outer faces of the wooden spline pieces, said strips are protected against the corrosive juices of the ensilage, if the structure is used as a silo. Any desired number of reinforcing strips of metal, 10, may be placed horizontally across the joints between meeting ends of the wall strips on the outside of the structure, fastening members, 11, which may be screws or nails, being driven from the outside through said reinforcing strips into the wall pieces.

To make openings for doors or windows, any desired number of wall pieces may be omitted and a suitable framing placed into the opening thus formed. In Fig. 4, two such openings are shown, one complete and the lower portion of another. In the form shown in the drawings, each framing is composed of a sill, 12, a cap piece, 13, upright jamb pieces, 14, and upright face pieces, 15. The sill and the cap are alike. The sill has lateral extensions, 16, and the cap has similar extensions, 17. Said extensions extend outside of the jambs and the face pieces. Bolts, 18, extend through said extensions and said face pieces and the adjacent wall pieces and bind the framing firmly to the wall. Upright screws, 19, extend through the sills and the caps and into the ends of the jamb pieces. (See Fig. 7.)

In Figs. 9 and 10, provision is made for the over-lapping of the splines, 7, and a portion of each of the tongues, 4. It will be observed that in the preceding forms, shrinkage of the spline or the wall pieces, or both, may form an air passage between two superposed wall pieces and one edge of the spline and the adjacent end of the tongue which is located between said wall pieces. Such opening may also occur in the absence of shrinkage when the spline and the tongue are not closely fitted against each other and there is a gap between the two wall pieces. This may be avoided by extending a portion of the tongue over one of the side faces of the spline, in other words, partially over-lapping the tongue and the spline. In the form shown by Figs. 9 and 10, this is accomplished by putting the recesses, 6, 6, out of alinement with the tongue, 4, 4, so that a portion, 4^a, of each tongue is left standing beside each such recess. Then, when the spline is put into its place, a portion of each tongue will abut against the edge of the spline while another portion of the tongue over-laps a portion of the adjacent side of the spline.

In Figs. 9 and 10, the sheet metal piece, 8, has upright flanges, 8^a, turned inward to extend over portions of the edges of the wooden spline member, 7. On account of the angularity of said wooden member, the wider portion thereof adjoins the sheet metal strip and the edges of said spline member converge going from the outer face inward, so that the flanges, 8^a, also converge and engage said spline member. In this manner, the sheet metal strips may be applied to the wooden spline members before they are driven downward into the chamber formed by the recesses, 6. Thus the two spline members are made to interengage each other without the aid of securing members, such as nails or screws.

I claim as my invention:

1. In a wooden structure, the combination of horizontal wall pieces placed end-to-end at angles to each other and having upright recesses formed into such ends, and upright splines spanning successive wall pieces and consisting of an inner piece of wood and an outer piece of sheet metal and extending into and filling the chamber formed by two such recesses, and fastening members extending into said wall members and through said splines including said sheet metal pieces, substantially as described.

2. In a wooden structure, the combination of horizontal wall pieces placed end-to-end at angles to each other and having upright recesses formed into such ends approximately parallel to the sides of said pieces, and upright splines spanning successive wall pieces and consisting of an inner piece of wood and an outer piece of sheet metal and extending into and filling the chamber formed by two such recesses, and fastening members extending into said wall members and through said splines including said sheet metal pieces, substantially as described.

3. In a wooden structure, the combination of horizontal wall pieces placed end-to-end at angles to each other and having upright recesses formed into such ends, and upright splines spanning successive wall pieces and consisting of an inner piece of wood and an outer piece of sheet metal and extending into and filling the chamber formed by two such recesses, and fastening members extending into said wall members and through said splines including said sheet metal pieces, and metal reinforcing pieces extending over a portion of the outer faces of horizontally opposite wall pieces and across the joints formed by the meeting of such pieces.

4. In a wooden structure, the combination of horizontal wall pieces placed end-to-end, at angles to each other and having upright recesses formed into such ends, and having grooves and tongues on their edges, portions of said tongues over-lapping said recesses, and upright splines spanning successive wall pieces and consisting of an inner piece of

wood and an outer piece of sheet metal and extending into and filling the chamber formed by two such recesses, and fastening members extending into said wall members and through said splines including said sheet metal pieces, substantially as described.

In testimony whereof I have signed my name, in presence of two witnesses, this 29th day of November, in the year one thousand nine hundred and thirteen.

BENNETT S. WILLIAMS.

Witnesses:
CYRUS KEHR,
S. E. HODGES.

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