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998,575.

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Witnesses:
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UNITED STATES PATENT OFFICE

WILLIAM HANSON AND ANTON PALMQUIST, OF BARRON, WISCONSIN.

SILLO.

998,575.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed March 23, 1911. Serial No. 616,293.

To all whom it may concern:

Be it known that we, WILLIAM HANSON and ANTON PALMQUIST, citizens of the United States, residing at Barron, in the county of Barron and State of Wisconsin, have invented certain new and useful Improvements in Silos, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to improvements in roofed cylindrical structures and particularly to improvements in such structures the cylindrical wall of which is made up of staves; a silo is a common example of
15 such a structure.

An object of this invention is to provide a structure of the character just mentioned with a roof which will not interfere with the inward and outward movement of the
20 staves which make up the cylindrical wall and which are commonly held together or bound by hoops.

In the drawings illustrating the principle of this invention and the best mode now
25 known to us of applying that principle. Figure 1 is a perspective view of a silo embodying this invention, the roof being shown removed; Fig. 2 is a fragmentary elevation showing the roof timbers in place; Fig. 3
30 is a section on the line A—A. of Fig. 2; Fig. 4 is a perspective view of the roof timbers assembled; and Fig. 5 shows the roof boards in place upon the roof timbers of Fig. 4.

35 The cylindrical wall of the silo *a* is made up of the staves *b* which are bound together by the hoops *c*. The ends of the latter are formed with ears *d* which are held together by bolts *e*; and by loosening and tightening
40 these bolts the hoops may be adjusted to allow for the contraction and expansion of the staves. The cylindrical wall of the silo is provided in the usual manner with the doors *f*. The roof frame *g* consists of a pair
45 of stringers or principals *h* which are bolted together at their ends and centrally disposed between which is fastened a base block *i* set in a mortise in which is the foot, or

tenon, of the crown-post *j*. Fastened to the stringers or principals *h* of the roof frame
50 are the inner ends of the purlins *k*, which extend outwardly in a radial direction. The outer ends of the purlins *k* and the principals *h* rest loosely in kerfs or gains *k'*, *h'* formed in the upper end of the cylindrical
55 wall of the silo. The lower ends of the rafters *m* are fastened to the outer ends of the purlins *k*, while the upper ends of the rafters *m* are fastened to the top of the crown-post *j*. To the rafters *m* are nailed
60 the roof boards *n* in the usual manner. The roof boards *n* may be covered with shingles *o* or any felt or composition roofing. No fastening devices are used to bind the horizontal members of the roof frame to the cy-
65 lindrical wall of the silo; but the roof frame is held in place thereon merely by its weight. As the hoops are tightened or loosened and the cylindrical wall is thereby contracted or allowed to expand, there is a slight rela-
70 tive movement of the outer ends of the horizontal frame members of the roof in the kerfs or gains *h'*, *k'*.

It is obvious that the roof hereinbefore described will protect the contents of the
75 silo from the elements and at the same time will not interfere with the tightening or the loosening of the hoops or bands, as the stave-formed cylindrical wall contracts or ex-
80 pands.

We claim:

1. A roofed structure of the character described having a body portion of staves formed at its upper end with notches; and a roof frame the members of which are slid-
85 ably mounted in said notches and thereby permit the free inward and outward movement of the upper ends of said staves as the body portion contracts and expands.

2. A roofed structure of the character described having a body portion of staves formed at its upper end with notches; roof-frame members which are slidably mounted in said notches and thereby permit the free
90 inward and outward movement of the upper ends of said staves as the body portion con-

tracts and expands; and means which control the degree of said inward and outward movement of the upper ends of said staves.

3. A roofed silo the stave-formed body of
5 which is formed with notches in which rest slidably the horizontal frame members of the roof; the upper end of the body being free to contract and expand and to move relatively to said frame members in doing so.

Signed at Barron, Wisconsin, this 18th day of March, A. D. 1911, in the presence of the two undersigned witnesses.

WILLIAM HANSON.
ANTON PALMQUIST.

Witnesses:

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