G. A. LEONARD.

SILO ROOF.

APPLICATION FILED APR. 5, 1915.

1,203,019. Patented Oct. 31, 1916.

Fig. 1.

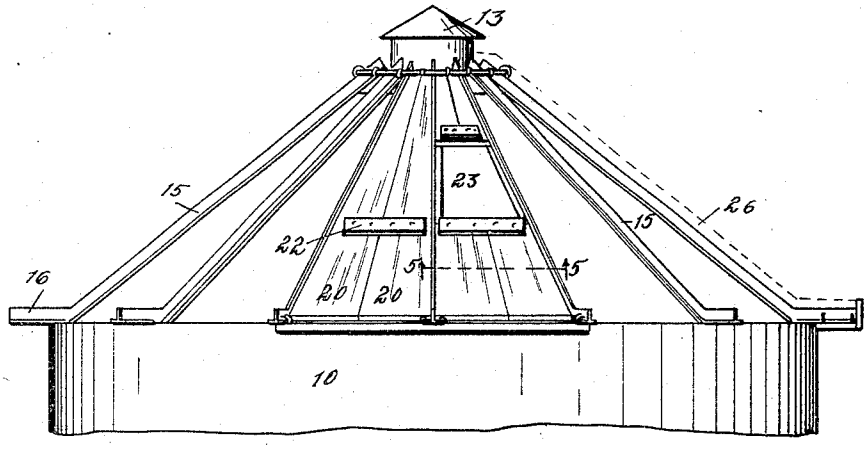


Fig. 2.

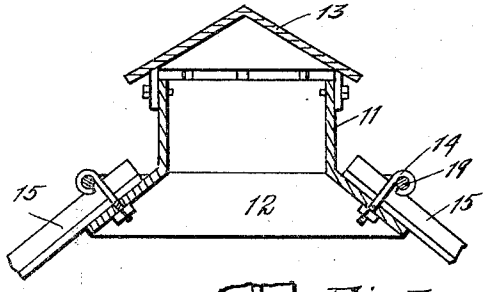


Fig. 4.

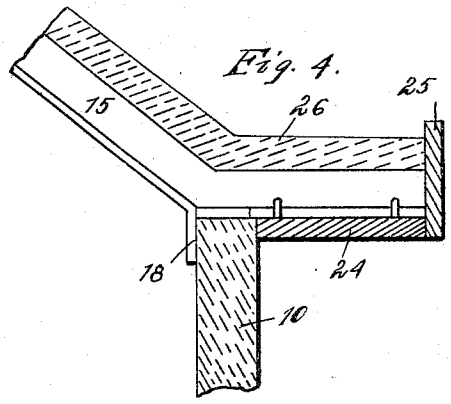


Fig. 3.

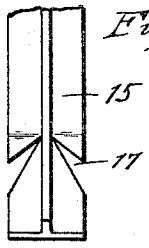
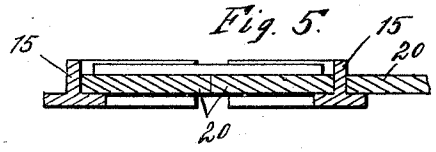


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SILO-ROOF.

1,203,019. Specification of Letters Patent. Patented Oct. 31, 1916.

Application filed April 5, 1915. Serial No. 19,387.

To all whom it may concern:

Be it known that I, GEORGE A. LEONARD, a citizen of the United States, and resident of Sheffield, in the county of Franklin, State of Iowa, have invented a certain new and useful Silo-Roof, of which the following is a specification.

The object of my invention is to provide a silo roof of extremely simple and strong construction.

A further object is to provide a silo roof having proper reinforcing members and having supporting means, and a continuous plastic cover.

A further object is to provide a silo roof having members so constructed and arranged as to be readily and easily assembled.

A further object is to provide such a roof having the supporting rafters so arranged as to be readily adjusted at their lower ends to the upper end of the silo in connection with a centering and supporting device at the upper ends of the rafters, and means for connecting the rafters to said centering and supporting devices regardless of variations from a true circle in the shape of the upper end of the silo.

A further object is to provide such a roof having the rafters so constructed that they may be completed before being assembled in proper form, ready for assembling, without the necessity of cutting or shaping the rafters on the job.

My invention consists in the construction, arrangement and combination of the various parts of the device whereby the objects contemplated are attained as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawing, in which—

Figure 1 shows a side elevation of a partially completed silo roof embodying my invention. Fig. 2 shows a vertical sectional central view of the centering and supporting central member, showing the manner in which the upper ends of the rafters are secured thereto. Fig. 3 shows a top or plan view of the lower end of one of the rafters. Fig. 4 shows a vertical sectional view through the upper end of the silo wall, showing the lower end of one of the rafters in side elevation, and Fig. 5 shows a sectional view taken on the line 5—5 of Fig. 1.

In the exemplification of my invention illustrated in the accompanying drawings, I have used the reference numeral 10 to indicate generally the upper end of a circular silo, which may be of cement, wood, or other suitable material.

My improved roof includes a centering and supporting member comprising a vertically arranged cylinder 11, adapted to be placed above the silo at the center of the roof, and having an outwardly flaring lower end 12. Mounted on and spaced slightly above the cylinder 11 is a cover 13. The rafters of my improved silo roof are made of T-irons 15. The lower ends of the T-irons are inclined away from the main bodies thereof in a horizontal plane, at 16, as illustrated in Figs. 1 and 4. At the point of the bend in the rafter, near the lower end thereof, portions of the flat lower flange on each side of the upwardly extending flange, are cut away, leaving notches 17 and are bent downwardly to form engaging members or tongues 18, adapted to engage the inner surface of the upper end of the silo wall 10. The horizontal portions 16 of the rafters, are adapted to rest on the upper end of the silo wall, as illustrated in Figs. 1 and 2, and extend outwardly beyond the silo, as shown. The upper ends of the rafters 15 are rested upon the flaring lower end 12 of the cylinder 11, as illustrated in Fig. 2. A rod 19 is mounted in the eye of the eye-bolt 14, as illustrated in Fig. 2 above the T-iron rafters 15.

Boards 20, or other suitable devices, may be rested upon the horizontal flanges of the rafters 15, as illustrated in Figs. 1 and 5. The boards between each adjacent pair of rafters 15 may be securely connected together by means of cleats 22. A suitable door 23 is provided somewhere in the silo roof. After the boards have been placed in position boards 24 are secured to the lower surfaces of the outwardly projecting lower ends of the rafters 15, as shown in Fig. 4. An upright board 25 may be secured to the outer edges of the boards 24, to serve as a frame member. The entire roof is preferably covered with cement 26, whereby all the metal parts, except the cylinder 11, are entirely covered.

Many of the advantages of my improved

silo roof are found in its convenience for assembling and installation. It will readily be seen that the rafters may be formed and the tongues 18 punched out in the factory and the rafters are then ready for assembling. These rafters, if made of metal, are of course of great strength and it is difficult to punch holes in them or otherwise change their form after they have been delivered on the job. The centering and supporting member 11, is properly placed by means of scaffolding or the like, and a few of the members are installed in position with the members 18 engaging the inner end of the silo wall, and with the inner ends of the rafters resting on the inclined or flared portion 12.

When all of the rafters have been placed in position, it will be seen that the distance of their upper ends from the cylinder 11 may be varied, on account of the fact that very few silos are built to a true circle at their upper ends. The manner of assembling the rafters makes it possible to quickly and easily assemble the parts, and requires no special forming or cutting of the rafters for assembling or installation. The entire roof, when assembled and completely covered with cement is of great strength, will shed water and is practically everlasting.

It will be understood that some changes may be made in the construction and arrangement of the parts of my improved silo roof, without departing from its essential features and purposes, and it is my intent to cover by this application any such changes which may be included within the scope of my claims.

I claim as my invention.

1. In a silo roof a centering and supporting member having an upright portion and having an annular downwardly and outwardly inclined flange, a plurality of rafter members arranged with their near ends resting upon said flange, an annular rod resting upon said rafter members near upper ends, holding members adjustably extended through said flange between the successive rafter members arranged to engage said rod and draw toward said flange for gripping the upper ends of the rafters.

2. In a silo roof a centering and supporting member having an upright portion and having an annular downwardly and outwardly inclined flange, a plurality of rafter members arranged with their near ends resting upon said flange, an annular rod resting upon said rafter members near upper ends, holding members adjustably extended through said flange between the successive rafter members arranged to engage said rod and draw toward said flange for gripping the upper ends of the rafters, said rafters being inclined downwardly and outwardly and having at their lower ends horizontal extensions with downwardly inclined portions adapted to engage a wall.

Des Moines, Iowa, February 4, 1915.

GEORGE A. LEONARD.

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