W. L. HARTNELL.

DOME ROOF CONSTRUCTION.

APPLICATION FILED FEB. 8, 1913.

1,099,599. Patented June 9, 1914.

Fig. 1.

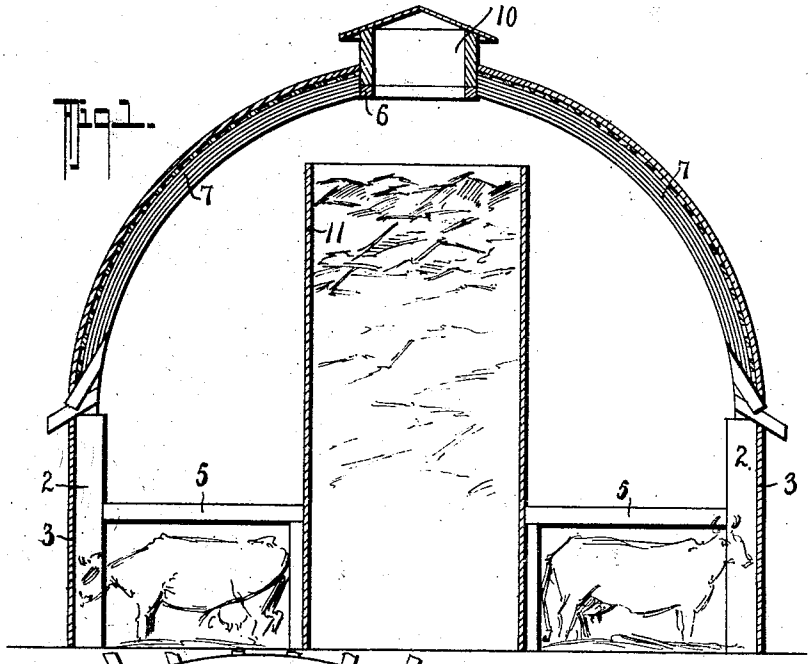


Fig. 2.

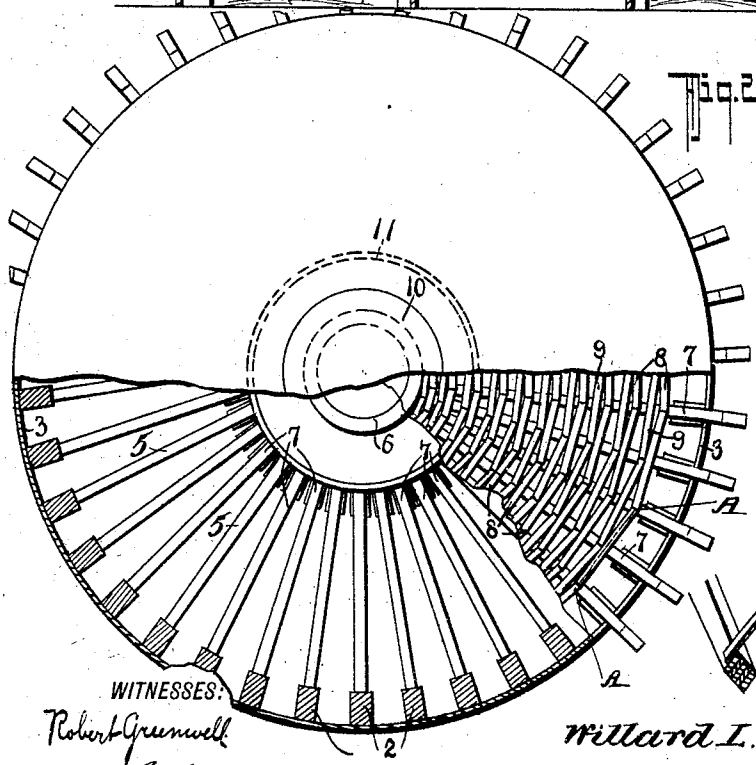
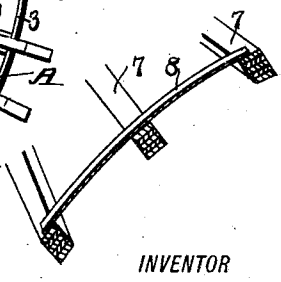


Fig. 3.



WITNESSES:

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WILLARD L. HARTNELL, OF CLAYBURN, BRITISH COLUMBIA, CANADA.

DOME-ROOF CONSTRUCTION.

1,099,599. Specification of Letters Patent. Patented June 9, 1914.

Application filed February 8, 1913. Serial No. 747,150.

To all whom it may concern:

Be it known that I, WILLARD L. HARTNELL, citizen of the United States of America, residing at Clayburn, in the Province of British Columbia, Canada, have invented a new and useful Dome-Roof Construction, of which the following is a specification.

This invention relates to the construction of a dome roof which has been particularly designed for a circular barn to enable the roof to be simply and safely built and to be self-supporting on its wall without the necessity of any central support, central bracing or cross ties, the object being to apply the necessary covering material of the roof in a manner to effectively sustain the load imposed upon it.

The invention is particularly described in the following specification, reference being made to the drawings by which it is accompanied, in which:

Figure 1 is a vertical section through the axis of the barn. Fig. 2, a plan of a portion of the same showing the subdivisions of the interior of the barn and the roof framing. Fig. 3, a vertical section on the line A—A in Fig. 2.

The wall of the barn, which is circular in plan, is constructed in the usual manner with posts 2 and siding boards 3. From these posts 2 the rafters 7 spring and at the upper and inner end abut against a ring 6 at the crown of the dome. These rafters 7 are built up of laminæ of inch boards each one bent to the required curvature of the roof and securely nailed to the one beneath. The curvature terminates at approximately twenty degrees from the crown and thereafter the line of the rafters is tangentially straight. This is to avoid any extreme flatness at the crown of the dome that the rain may shed more freely from it. The rafters 7 are spaced as close together as practicable on the abutment ring 6 and a series of sheathing boards 8 and 9 is nailed across each at right angles to the rafter, each board extending to and being nailed to the rafter next to it on each side, so that the sheathing boards 8 from one rafter extend angularly down to the next rafter between its sheathing boards 9, as shown in Fig. 2. This manner of nailing the sheathing boards to the rafters is an important feature in the construction of the roof and to it the strength of this roof is largely due. As with this construction, each sheathing board is nailed at its mid-length to one rafter and each end is drawn down to and nailed on the next rafter on each side of it, the sheathing board designed to receive the roof covering, not only prevents lateral displacement of the rafters, but, as shown in Fig. 3, supports it as a truss from those on each side. A considerable self-supporting strength and rigidity is thus imparted to the structure enabling all centering to be dispensed with and the load of the roof comes directly on the wall without any spreading tendency.

Surmounting the crown and based on the abutment ring 6 is a roof ventilator 10.

The eaves of the roof may be carried beyond the wall in the manner shown so as to shed the rain clear of the walls without the requirement of a gutter.

The walls of the barn may be high enough to enable cattle to be stalled beneath the loft, the joists 5 of which tie the post 2 to those of the inner wall of the stalls, and the central part of the circular space may be walled for a silo 11.

The construction is extremely simple and is more economical in material and labor than a barn with an ordinary roof, the trussed frames supporting the roof of which require a considerable amount of material and are not easy to handle and put in place without a large staff of help, whereas in this case the construction of the rafters and building of the roof are all light work with light material.

Although specifically described as constructed of wood, the same features of construction are applicable to a metal construction.

Having now particularly described my invention, I hereby declare that what I claim as new and desire to be protected in by Letters Patent, is:

In a domé roof construction, rafters bent to the curvature of the roof and radiating around a vertical axis, and straight sheathing boards secured at right angles across each rafter, and of a length only to extend to the next adjacent rafter at each side of the one

to which said board is primarily secured, the ends of the sheathing boards being bent down to and secured to the next rafter on each side, the ends of the sheathing boards of one rafter coming in between those of the next rafter, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLARD L. HARTNELL.

Witnesses:

ROWLAND BRITTAIN,

MAY WHYTE.