(No Model.) 2 Sheets—Sheet 1.

# W. G. CURTIS & J. D. ISAACS.

## WOOD CONSTRUCTION.

No. 592,219. Patented Oct. 19, 1897.

Fig. 1.

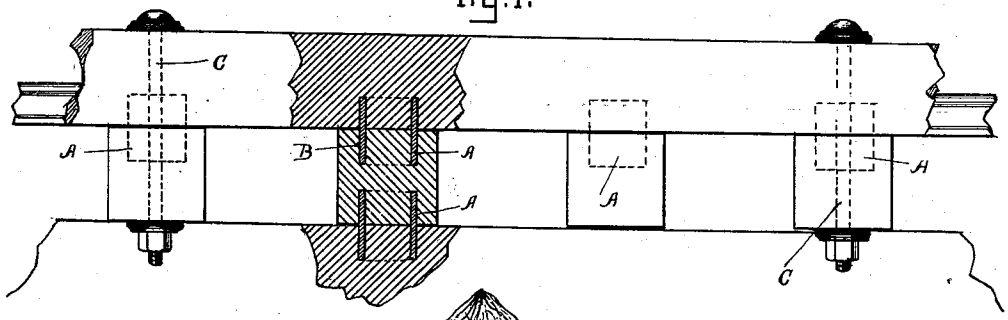



Fig. 2.

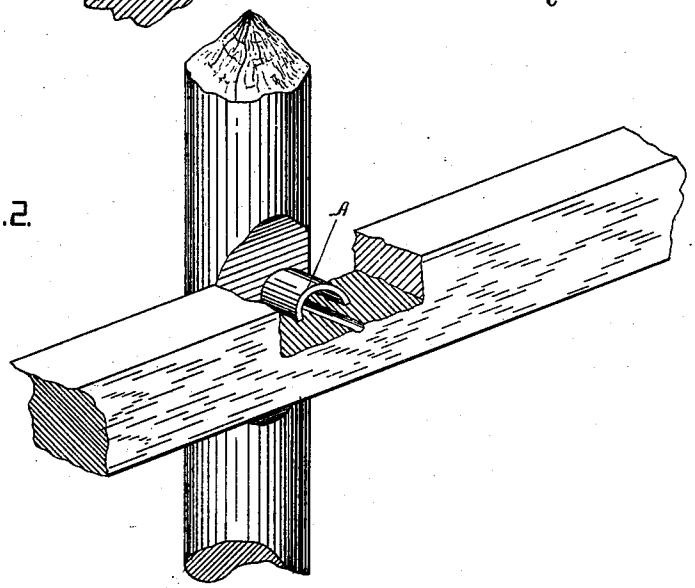
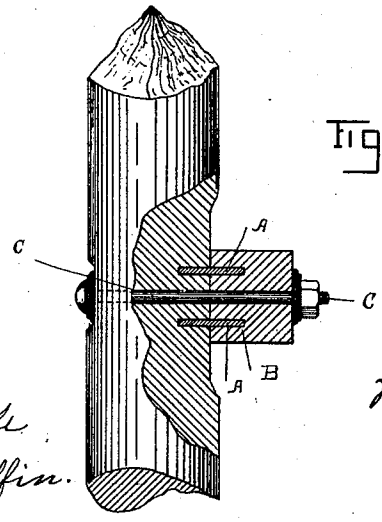



Fig. 3.




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(No Model.)

2 Sheets—Sheet 2.

# W. G. CURTIS & J. D. ISAACS.

## WOOD CONSTRUCTION.

No. 592,219. Patented Oct. 19, 1897.

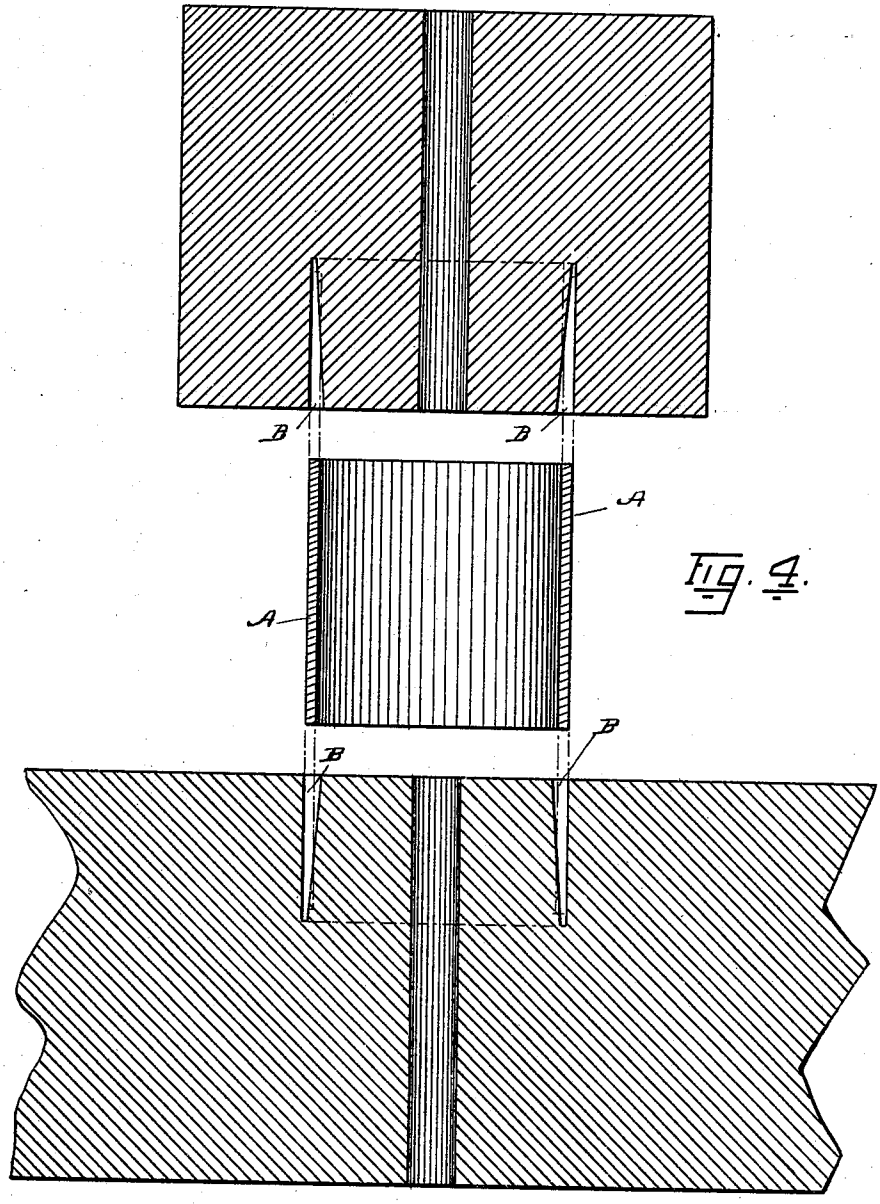



Fig. 4.

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# UNITED STATES PATENT OFFICE.

WILLIAM G. CURTIS AND JOHN D. ISAACS, OF SAN FRANCISCO, CALIFORNIA.

## WOOD CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 592,219, dated October 19, 1897.

Application filed May 6, 1896. Serial No. 590,480. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM G. CURTIS and JOHN D. ISAACS, citizens of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Wood Constructions; and we do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

This invention relates to wood-construction details and more particularly to the method of making dowel connections.

It has for its object to obtain as large a surface for the joining member as possible without weakening the structure.

It consists in setting into the abutting faces of the parts to be joined a hollow metal form and drawing the parts together by a bolt which passes through the parts and the hollow form.

In the drawings, Figure 1 is a side view of a guard-rail, showing the invention as applied thereto. Fig. 2 is an isometrical perspective of the invention as applied to pile construction, the framing-timber being cut away to show the dowel. Fig. 3 is a sectional view through the juncture, the pile being partly cut away. Fig. 4 is an enlarged detailed view of two timbers about to be joined by a dowel constructed in accordance with this invention, the parts being separated and dotted lines being used to show the positions of the parts relatively when joined.

As shown in the drawings, the dowel A is round, as the construction preferred by us. These dowels we cast of desired size and shape or make from pipe by sawing it in short sections. The wood parts which it is sought to join are provided on their faces with grooves B, cut to receive the hollow dowels. These grooves B are so formed as to slightly taper toward the bottom, the taper being preferably from the inner portion of the wood, or that contained within the dowel, outward. By so constructing the groove the wood within the dowel is slightly compressed when the dowel is driven in place, and, further, all tendency to split the timber is overcome and corrected. The dowel A may be set in either piece of the timber and the other timber be driven on it when so set. In this position the two are secured by a bolt C, which is passed through both, extending through the center of the dowels, as shown. When this bolt is drawn taut, the timbers are prevented from separating and all compression strains are received on the wood contained within the dowels A and the timber in which they are set.

We have shown in Figs. 2 and 3 this construction as applied to "pile constructions," so called, as we find that in this construction the invention is particularly advantageous, though we do not wish to be understood as confining ourselves to such form of structure, as we find it useful in guard-rail, as shown in Fig. 1, and various other constructions where large timbers calculated for heavy strains are used.

Having thus described this invention, what is claimed is—

In wood constructions a connection for timbers consisting in the combination with circular grooves formed in the faces of the timbers to be joined, said grooves forming an internal core, the sides of which are tapered inward from the base to the top of the said core, of a circular metal ring adapted to fit within both of the said grooves, and of slightly-smaller internal diameter than the base of the said core, and a screw-threaded bolt adapted to be extended through perforations provided in the said timbers through the center of the said cores, substantially as described, whereby the splitting of the timber at the point of connection is prevented.

In testimony whereof we have hereunto set our hands this 30th day of March, 1896.

WILLIAM G. CURTIS.
JOHN D. ISAACS.

Witnesses:
HARVEY B. TITCOMB,
JOHN G. SUTTON.