

(No Model.)

I. V. ROY.
WOODEN PULLEY.

No. 370,495.

Patented Sept. 27, 1887.

Fig. 1.

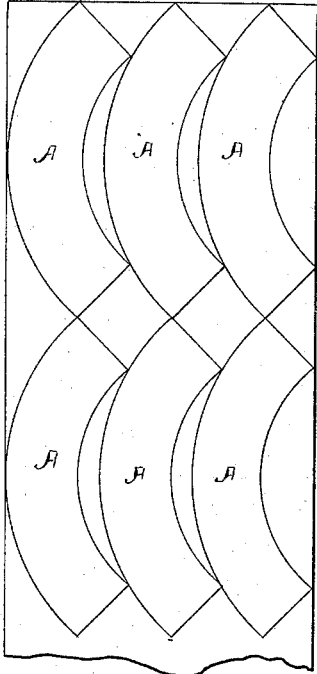


Fig. 2.

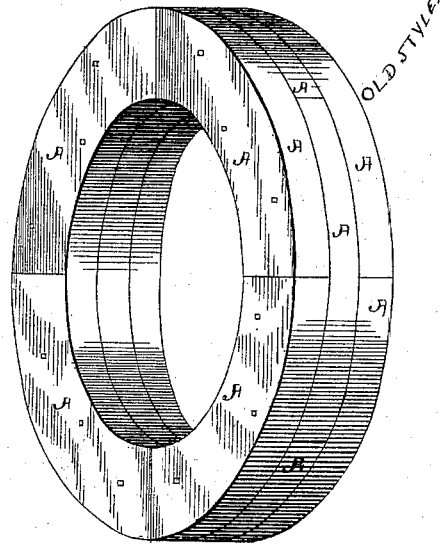


Fig. 3.

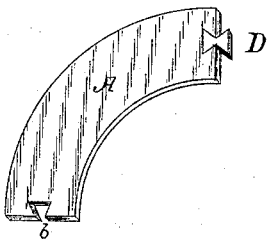


Fig. 4.

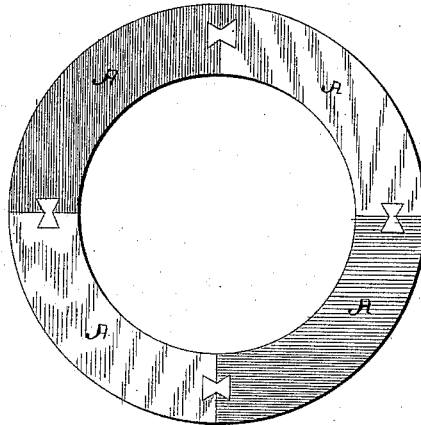
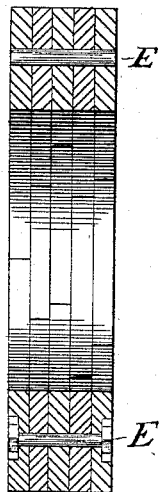


Fig. 5.



Witnesses:

J. B. McElinn.
H. H. Cooper.

Inventor:

I. V. Roy
By his Attor
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UNITED STATES PATENT OFFICE.

ISIDORE V. ROY, OF MISHAWAKA, INDIANA, ASSIGNOR TO THE DODGE
MANUFACTURING COMPANY, OF SAME PLACE.

WOODEN PULLEY.

SPECIFICATION forming part of Letters Patent No. 370,495, dated September 27, 1887.

Application filed April 2, 1886. Serial No. 197,562. (No model.)

To all whom it may concern:

Be it known that I, ISIDORE V. ROY, of Mishawaka, in the county of St. Joseph and State of Indiana, have invented a new and useful Improvement in Wooden Pulleys; and I do hereby declare that the following is a full and accurate description of the same.

In constructing wooden pulleys it has heretofore been customary to make circular segments of ninety degrees or less by sawing the same from planed boards. These segments have been assembled by placing a sufficient number end to end to complete a circle. Others were then placed on the first ring, breaking joints, with glue between, and fastened together with nails. In this way the pulley is built up to the desired thickness, the nails acting as clamps to hold the pieces together while the glue is hardening. The spokes have been inserted as the building-up progressed, or attached to the inner surface of the pulley-ring. When the glued joints are thoroughly dry, the rough pulley is put on a lathe and turned and finished.

The use of nails, as above described, is objectionable because of the expense, and also because they do not insure sound joints and are liable to damage the turning-tools. To avoid such use, George Philion first united the segments at their abutting ends, to constitute individual rings capable of being handled as entreties, which rings were afterward assembled with glue between and submitted to heavy pressure in a press, whereby the several parts were united with sound glue-joints throughout, without using nails. Therefore I do not claim herein the mode of building up a pulley by first forming the segments into rings and afterward assembling these rings with glue between, as covered in said Philion's patent. The adjoining ends of the segments, being end wood, cannot be readily and strongly united by glue alone when the segments are of large radius; and my invention principally consists in the employment of an auxiliary fastening inserted in the adjoining ends of the segments, which, by preference, are also glued.

I am aware that fellies of a wheel have been

joined at their ends by dowels and by tongue and groove cut radially in the abutting ends, respectively; but such means are inapplicable to the purposes of this improvement, because they are liable to inaccuracy, which will render a re-dressing of the outer surfaces necessary to bring them to the same plane. I therefore employ a key capable of being inserted from the outside and incapable of displacing the surface plane of either of the parts united. I have sometimes, after gluing the rings together, inserted transverse dowels to bind the rings all together and to strengthen the pulley. I have also sometimes employed bolts with screw-nuts instead of dowels, but not generally.

In the accompanying drawings, Figure 1 is a diagram showing the segments as cut from a planed board. Fig. 2 is a perspective view of a partly-completed pulley, showing the manner of building up the pulley in the usual way. Fig. 3 is a perspective view of a single section provided with my end dowel. Fig. 4 is a plan showing a completed ring with ends united with dowels. Fig. 5 is a transverse section of a pulley.

A A are my segments, each of which may constitute an arc of a circle embracing ninety degrees or less, as convenient or according to the diameter of the pulley. In the end of each I cut a dovetailed notch, *b*, and I provide for the same dovetailed keys or dowels D to fit into said notches, though this particular form for the notches and keys is merely preferred, and is not essential.

When the segments are properly prepared, a sufficient number to constitute a ring are laid upon a table with their ends well glued and in contact. The keys D are glued and are then driven into the notches *b*, firmly binding the several segments together, and when the glue has become hard constitute a solid ring much stronger than it would be if cut entire from a single piece of wood. In assembling these rings adjoining sides are well glued, and, after being piled to the requisite thickness, are strongly squeezed together with screw-clamps until thoroughly dried.

If the pulley is very large, or if, for any

other reason, it may be desired, transverse dowels or screw-bolts E may be inserted, as shown in Fig. 5.

Having described my invention, I claim as
5 new—

1. The ring composed of circular segments A, provided at each end with notches b, combined with wooden keys D, corresponding in shape with said notches, whereby the abutting
10 segments are joined, for the purpose set forth.

2. A pulley constructed of wooden segments, whereof the abutting ends are united by wooden keys and the whole firmly joined together with glue consolidated by pressure.

ISIDORE V. ROY.

Witnesses:

W. B. HOSFORD,
WILL W. DODGE.