

J. T. BREECE.  
PROCESS OF BENDING WOOD.  
APPLICATION FILED MAY 9, 1908.

938,366.

Patented Oct. 26, 1909.

Fig. 1.

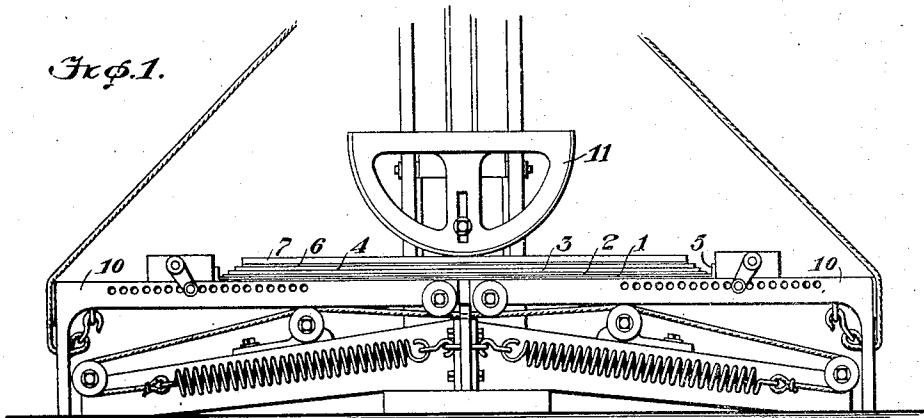


Fig. 2.

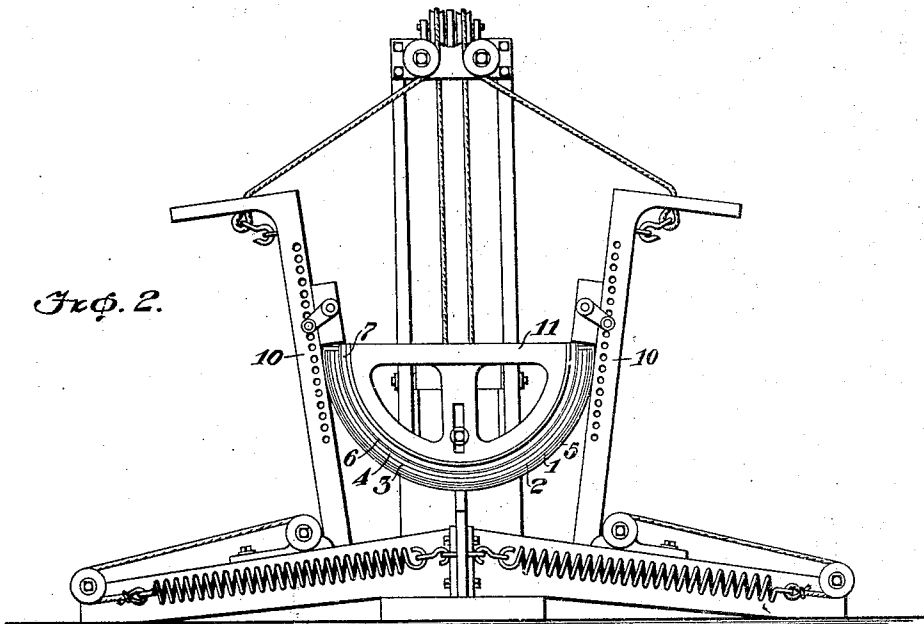
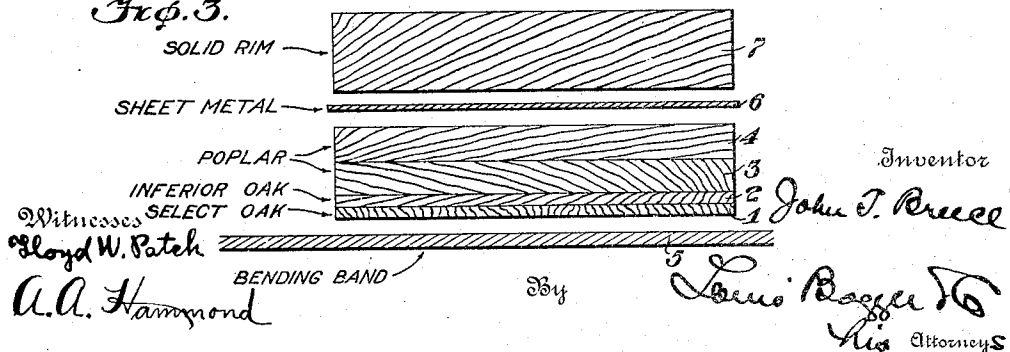


Fig. 3.



# UNITED STATES PATENT OFFICE.

JOHN T. BREECE, OF PORTSMOUTH, OHIO.

PROCESS OF BENDING WOOD.

Specification of Letters Patent.

Patented Oct. 26, 1909.

938,366.

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To all whom it may concern:

Be it known that I, JOHN T. BREECE, a citizen of the United States, residing at Portsmouth, in the county of Scioto and State of Ohio, have invented certain new and useful Improvements in Processes of Bending Wood, of which the following is a specification.

My invention relates to an improved process or method of bending wood, and it consists in an improved method or process of bending solid and built-up rims simultaneously by superimposing them and bending them around a common form with an interposed flexible medium or layer between the solid and built-up rims.

My invention still further consists in an improved method or process whereby a solid and a built-up rim are bent simultaneously with an interposed layer of material which prevents moisture passing from the solid rim to the built-up rim, which interposed layer has the secondary function of distributing and equalizing the strain and heat.

My invention still further consists in certain novel procedure, which will be herein after described and pointed out in the claims.

In the accompanying drawings:—Figure 1 is a diagrammatic view in side elevation illustrating the machine in which the bending is accomplished just prior to the bending, Fig. 2 is a similar view showing the parts bent around the form, and Fig. 3 is an enlarged transverse sectional view through the rims and veneers, the sheet metal layer, and a portion of the bending band.

My improved method is especially adapted for bending built-up and solid table rims, although, of course, its application might be extended indefinitely. In carrying out my improved method or process in the manufacture of rims for example, it is my purpose to proceed somewhat as follows. The built-up rim is preferably composed of two layers of veneer of the variety of wood of which the table is to be made, as for instance, oak, one layer 1, of veneer being of the best quality, and the second inside layer, 2, might be of an inferior quality, although of the same variety of wood. Then the two inside layers, 3 and 4, are of poplar or other soft and inexpensive wood capable of being easily bent. These strips are coated on their inside surfaces with glue and to accomplish

this, they may be passed through a machine for this purpose, or it might be done by hand. Then the rim thus built-up is placed on the bending band 5 of the machine. As the width of this bending band admits of it, it is customary to place three of these built-up rims thereon, side by side. Then over these, I place an interposed layer 6 of flexible material impervious to water, such as sheet or galvanized iron, for instance. On top, 7 are placed. These solid rims are first steamed for perhaps twenty or thirty minutes until they become thoroughly hot and saturated after the usual manner of preparing solid rims for bending.

The purpose of the flexible layer 6 is twofold. Primarily it is to prevent the moisture of the steamed rims passing to the built-up rim as it is desirable to prevent any of the moisture passing through the veneers. The secondary function of the flexible medium is to distribute and equalize strain upon the built-up rims which would not be as perfectly distributed if the pressure were applied solely through the solid rims. Thus placed together, the levers or bending arms 10, 10, of the machine are set in motion, and the layers are bent around the form 11, after which they are temporarily fastened in the customary manner, and left in this position for the usual length of time until the parts shall have taken a permanent set, when the rims are released and they are ready for the market. While it is perfectly feasible to bend two superimposed solid rims in this fashion, and my improved method or process contemplates that, it is impossible to bend the built-up rims alone without the aid of the solid rim because of the fact that the end pressure applied upon these rims at the conclusion of the bending operation, coming directly upon the ends of the veneers would be too great for them to withstand, and it would result in crushing and splitting them, whereas with the solid rim to withstand this strain, the integrity of the ends or the veneer composing the built-up rim is preserved, and the strain is sustained upon the inner solid rim, and furthermore this end pressure results in an equalized and distributed outer or radial pressure throughout the entire length of the solid rim, which is applied directly upon the built-up rim so that every point of the latter is subjected to

equal compression, the solid rim pressing outward and the bending band pressing inward with the built-up rim compressed therebetween. Thus the layers of the built-up rim are brought tight together, and made to permanently adhere at every point of contact throughout their entire area. There is this additional advantage; the heat of the solid rim which has been previously steamed and saturated with moisture is gradually and evenly conducted through the interposed layer 6 of flexible material to the built-up rim, thus evenly drying and hardening the glue and resulting in a forward and permanent adhesion in the shortest possible period of time, the glue in this way quickly setting, and soon becoming hard and solid.

With this improved method or process, I am enabled to complete as high as 1500 pairs of the table rims per day, on one bending machine, a half of which are solid and the remaining half built-up, thus making the cost in labor and time between one-fifth and one-sixth of the expense of doing the same work heretofore. Three pairs or six rims are usually bent in each operation of the machine.

More or less slight variations might be resorted to in the method pursued without departure from the spirit and scope of my invention, and hence I do not wish to limit myself to the precise steps herein specified, but:—

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The herein described method or process of bending wood which consists in superimposing a solid and a built-up rim and simultaneously bending them concentrically about a common form, with an interposed flexible medium which prevents moisture passing from one rim to the other.

2. The herein described process of method of bending wood which consists in superimposing two rims, one solid and the other built-up, with an interposed layer of flexible material which prevents the passage of moisture from the solid rim to the built-up rim, simultaneously bending them from the center toward both ends, around a common form, and finally applying endwise pressure to the solid or inner rim which is equally dis-

tributed throughout the entire area of the built-up rim.

3. The herein described method or process which consists in bending a solid and built-up rim simultaneously, one superimposed upon the other, and having an interposed layer of material which prevents moisture passing from one rim to the other, which layer has the secondary function of distributing and equalizing the strain upon and throughout the entire area of the built-up rim.

4. The herein described method or process which consists in bending a solid and built-up rim simultaneously, one superimposed upon the other, the solid rim having been previously saturated with moisture, and having a layer of flexible material interposed between said solid and built-up rims which prevents moisture passing from one rim to the other, which layer has the secondary function of distributing and equalizing the strain upon and throughout the entire area of the built-up rim.

5. The herein described process or method, which consists in simultaneously bending superimposed solid rim blanks, which have been previously steamed, over a built up rim composed of veneers having adhesive material between them, and with an intermediate layer of flexible material impervious to moisture interposed between the steamed solid rim and the rim built up of veneers.

6. The herein described method of bending wood which consists in applying adhesive to a plurality of strips of veneer, then superimposing them, then placing said superimposed veneer strips with adhesive applied on the bending band of a bending machine, then placing a layer of flexible non-porous material thereon, superimposing another layer of bendable material on said non-porous layer, and then simultaneously and concentrically bending said layers around a common form.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN T. BREECE.

Witnesses:

FRANK W. MOULTON,  
C. S. MILLER.