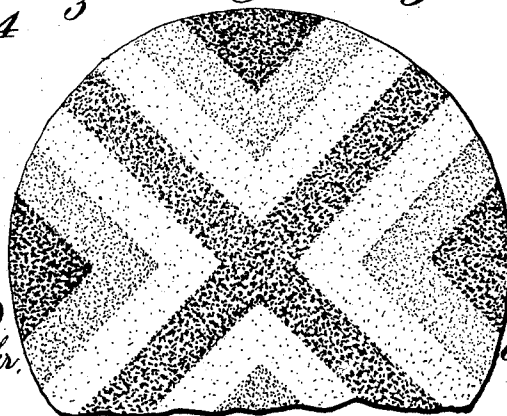
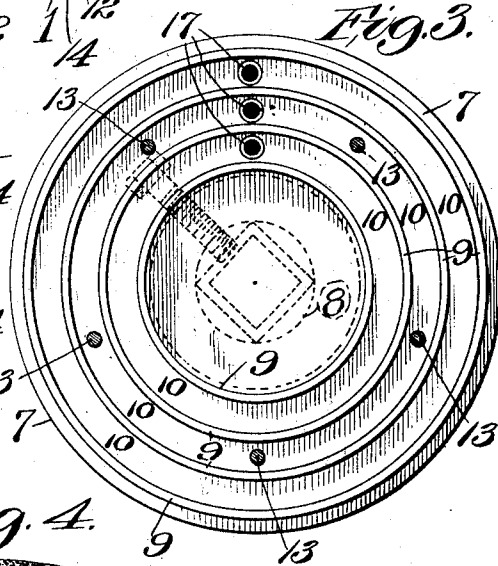
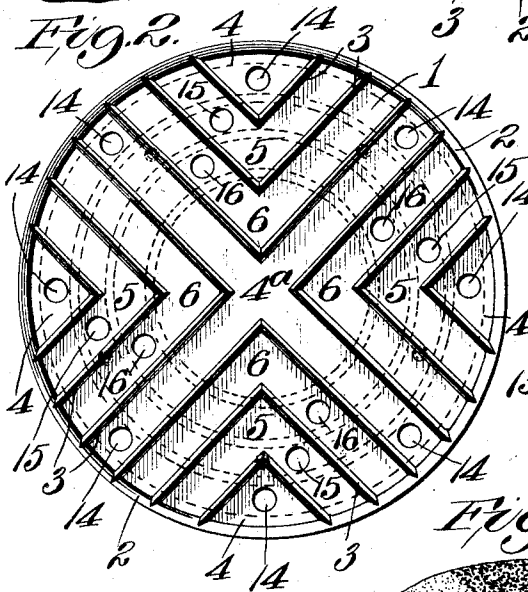
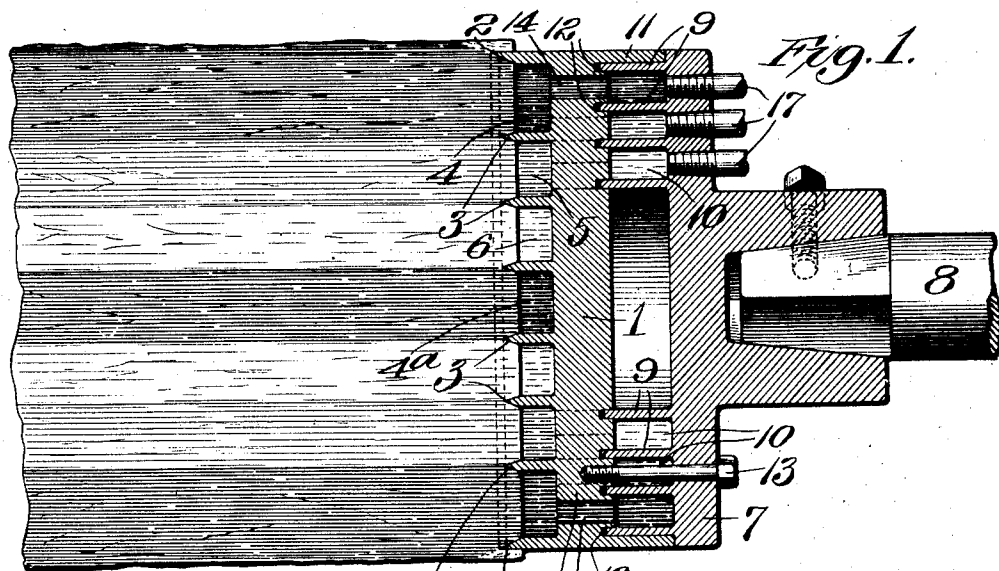


W. W. NORMAN.  
 APPARATUS FOR IMPREGNATING WOOD.  
 APPLICATION FILED NOV. 20, 1908.

1,038,423.

Patented Sept. 10, 1912.



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# UNITED STATES PATENT OFFICE.

WILLIAM W. NORMAN, OF HUNTERVILLE, MISSOURI.

## APPARATUS FOR IMPREGNATING WOOD.

1,038,423.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed November 20, 1908. Serial No. 463,648.

*To all whom it may concern:*

Be it known that I, WILLIAM W. NORMAN, a citizen of the United States, residing at Hunterville, Missouri, have invented a new and useful Apparatus for Impregnating Wood, of which the following is a specification.

This invention has reference to an apparatus for impregnating wood with chemical or coloring matter, and particularly to an apparatus for coloring wood with one or more colors as desired.

The object of the invention is to provide means for producing harmonious variegated coloring in bodies of wood by forcing coloring matter of different shades into different parts of the wood in such relation that both slabs or boards, as well as veneer surfaces cut from around the bodies of wood, will contain a series of multicolor strips which harmonize with each other, thereby enhancing the pleasing appearance of the finished product.

I am aware that bodies of wood have been rendered multicolor by having the coloring matter forced therein in concentric circles with the centers or axes of the bodies of wood as the centers of the circles. An apparatus for treating the wood in this way is described in the patent to Willner, No. 807,411, dated December 12, 1905.

I am also aware that bodies of wood have been rendered multicolor by forcing a single coloring matter into radial channels in the end of the wood and thence through the grain of the wood; then changing the position of the wood body being treated and forcing another coloring matter into other radial channels, and then repeating the operation until the strips of coloring fill the entire body of wood, or so much thereof as it is desired to color. An apparatus for coloring the wood in this way is described in the patent to Willner, No. 771,689, dated October 4, 1904.

It will be observed that my improved apparatus and the wood treated thereby differ essentially from the above, all of which will clearly appear from the following description, reference being made to the accompanying drawings in which—

Figure 1 is a longitudinal sectional view of the apparatus and a body of wood engaged therewith and showing the stripes of coloring matter which have been forced through the wood. Fig. 2 is an elevation

illustrating the face of the gripping-head which engages the wood, and showing the chambers thereon from which the different colors are injected into the wood. Fig. 3 is an elevation of the supporting-head showing the channels or passages which conduct the coloring fluids to the proper chambers. Fig. 4 is an end or cross sectional view of a body of wood which has been subjected to treatment by my improved coloring apparatus, showing that all the colors extend inwardly from the surface of the wood.

This device comprises a gripping-head adapted to have interlocking connection with the end of a body of wood to be treated and having its engaging surface divided into a number of compartments into which the coloring fluids are to be forced, and from which said substances are forced into the wood. A supporting-head is provided for the gripping-head and is provided with means for conducting the fluids into the several chambers without permitting intermixture thereof.

The gripping-head 1 is provided with an annular flange 2 whose inner side is beveled, thereby providing said flange with substantially a sharp edge. This flange is intended to engage in the end of the body of wood, as shown in Fig. 1, the beveled side of the flange deflecting and compressing the wood fibers and thereby forming a water tight joint or connection with the wood. A multiplicity of flanges or ridges 3 are formed on the face of the gripping-head and have their outer ends in integral connection with the inclosing flange 2. These flanges or ridges divide the face of the gripping-head into a plurality of separate chambers or compartments, arranged preferably in series, those of each series being designated by like reference characters. The chambers are so arranged that the layers of veneer cut from around the body of wood are cut transversely of the layers of color thus formed, which is also true of boards or layers of veneer quarter sawed from the body and such parts will contain longitudinal strips of all the colors contained in the wood.

The supporting-head 7 is attached to a shaft 8. Said supporting-head is provided with a series of concentric annular flanges 9 which form a series of annular passages 10. The rear side of the gripping-head has an annular flange 11 which encircles the outer flange 9. A series of grooves are formed in

the rear face of the gripping-head and the flanges 9 extend into said grooves, making tight joints with suitable sections of packing 12 in said grooves. A series of screw-bolts 13 extend through holes in the supporting-head and screw into internally-threaded holes in the gripping-head, thereby rigidly fastening and holding said parts together. From that series of compartments designated by 4 and 4<sup>a</sup> holes 14 open into the outer annular passage between the parts 1 and 7, constituting passages for admission of the coloring fluids into said series of chambers. From that series of chambers 15 designated by 5 holes 15 open into the next annular passage 10, admitting similar coloring matter into each of said chambers 5. From the series of chambers 6 holes 16 open into another annular passage 10, thereby admitting the same kind of coloring matter to all the chambers in this series. It will be observed that if fluids of different colors be in the different passages 10 such different colors will also be in the different series of chambers. Pipes 17 opening into the annular passages 10 constitute passages for the admission of the fluids and the pressure whereby said fluids are forced into the wood.

In operation the flanges 2 and 3 are engaged in the end of the wood, in the manner shown in Fig. 1. The fluids, whether of coloring matter or other material for the impregnation of wood, are admitted into the annular passages 10, and thence into the chambers on the face of the gripping-head, the single outer annular passage 10 supplying one kind of coloring matter into that series of chambers indicated by 4 and 4<sup>a</sup>, while the middle annular passage supplies coloring matter of one color to all the chambers designated by 5, and the next annular passage admits coloring matter of one color to all the chambers to which the reference character 6 is applied. Pressure, such as may be obtained from steam or compressed air, as then admitted through the pipes 17, and thereby the fluids will be forced into and through the wood longitudinally with the grain thereof. In this way the wood may be made of variegated colors which will be intersected or cut across when the layers of veneer are cut from around the body of wood or boards or veneer are quarter sawed from the body, all of which will be readily understood by referring to Fig. 4 which shows a body of wood after the coloring matter has been forced thereinto. It will thus be seen that the layers of color extend transversely across the rings of growth and for this reason the contiguous edges of the adjacent layers of color will flow into each other and combine more readily by following the grain or rings of growth.

I am aware that there may be variations from the construction described and shown

without departing from the spirit and scope of the invention. I do not restrict myself to identical features, but

What I claim and desire to secure by Letters Patent is—

1. An apparatus for impregnating bodies of wood for veneer purposes comprising a gripping-head having an annular flange on the outer edge thereof, and flanges extending from the annular flange for forming chambers, which chambers extend from the annular flange inwardly toward the center of the gripping-head, some of said chambers receiving one kind of a coloring fluid, and others, other coloring fluids, said chambers so placed that the layers of veneer cut from around the bodies of wood contain a series of multi-colored strips, and means for introducing different colored fluids into the chambers for impregnating the wood with the different coloring fluids at one operation.

2. An apparatus for impregnating bodies of wood for veneer purposes comprising a gripping-head having an annular flange on the outer edge thereof, V-shaped flanges extending from the annular flange inwardly toward the center for forming fluid chambers therebetween, said chambers having passages for the introduction of coloring fluids therein, some of the chambers receiving one coloring fluid, and others receiving other coloring fluids, said chambers so placed that the layers of veneer cut from around the bodies of wood contain a series of multi-colored strips, and means for introducing the different coloring fluids into the various chambers, whereby the wood will be impregnated with the coloring fluids simultaneously.

3. An apparatus for impregnating wood comprising a gripping-head having an annular flange on the outer edge thereof, flanges extending inwardly toward the center from the annular flange for forming fluid chambers between the inwardly extending flanges, said chambers having passages leading thereto for the introduction of the fluids, some of the chambers receiving one kind of a coloring fluid and the other chambers receiving other coloring fluids, a supporting head connected to the gripping-head, concentric flanges formed on the supporting head engaging the gripping-head for forming chambers for the various coloring fluids therebetween, said last-named chambers in communication with the chambers on the gripping-head, and means for introducing the various coloring fluids to the concentric chambers whereby the wood to be treated will be impregnated with the various coloring fluids simultaneously.

4. An apparatus for impregnating bodies of wood for veneer purposes comprising a gripping-head adapted to engage an end of the wood being treated, a plurality of

chambers formed on the gripping-head extending from the outer edge of the head so that the coloring fluid will extend from the outer edge of the object being treated toward the center thereof and layers of veneer cut from around the bodies of wood are cut transversely of the layers of color thus formed, some of said chambers receiving one kind of a coloring fluid, and other chambers receiving other coloring fluids, and means for introducing various coloring fluids into the chambers of the gripping-head for impregnating the wood simultaneously with a variety of coloring fluids.

5. An apparatus for impregnating wood comprising a head having grooves radiating from the center, and grooves parallel therewith on one side of the head, and concentric grooves on the opposite side in communication with the radial grooves.

In testimony whereof, I hereunto affix my signature to this specification this 9th day of September, 1908, in the presence of two subscribing witnesses.

WILLIAM W. NORMAN. [L. S.]

Witnesses:

FRANKLIN MILLER,  
J. D. RIPPEY.

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