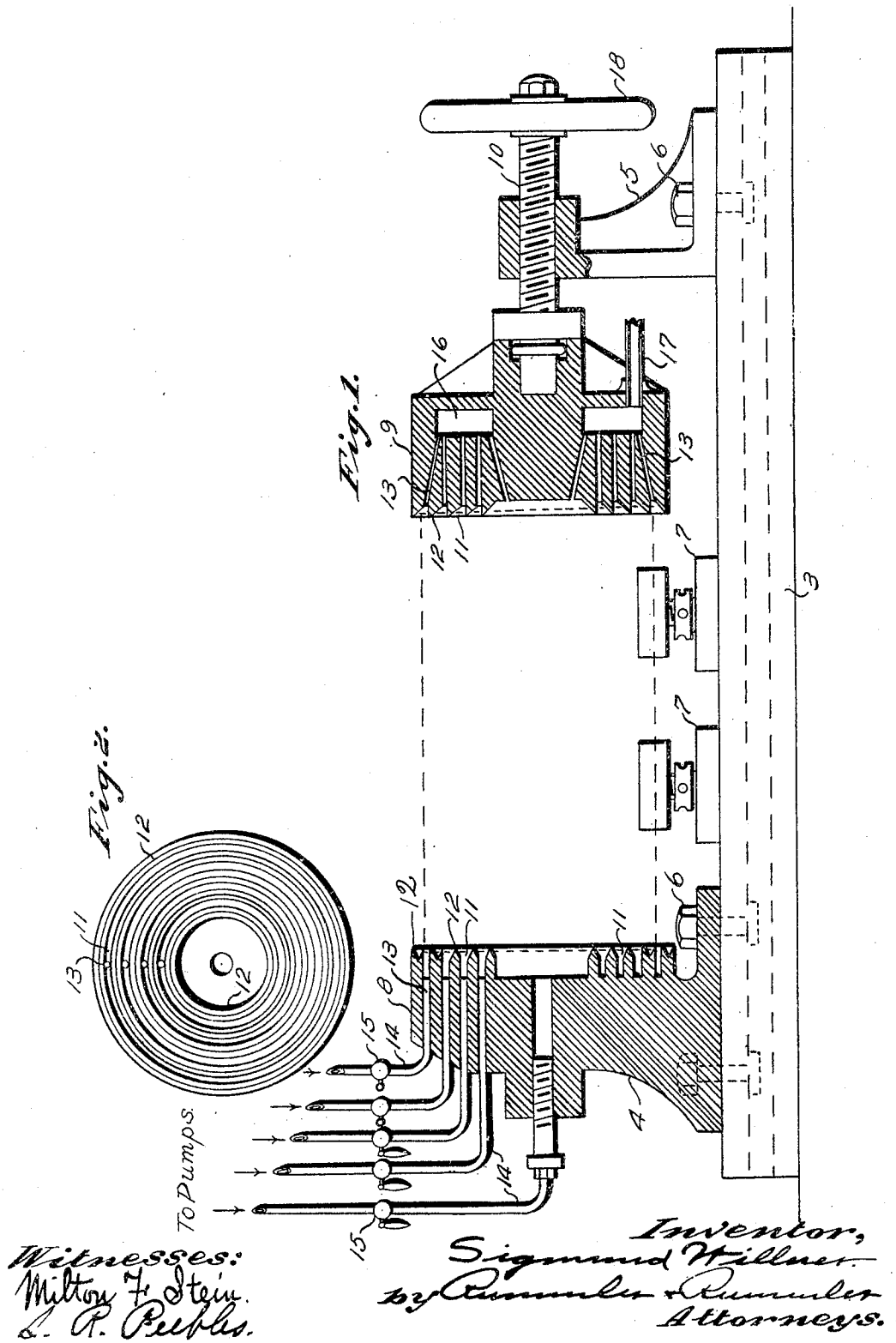


No. 807,411.

PATENTED DEC. 12, 1905.

S. WILLNER.
APPARATUS FOR FORCING FLUIDS INTO WOOD.
APPLICATION FILED MAY 6, 1905.



UNITED STATES PATENT OFFICE.

SIGMUND WILLNER, OF MEMPHIS, TENNESSEE.

APPARATUS FOR FORCING FLUIDS INTO WOOD.

No. 807,411.

Specification of Letters Patent.

Patented Dec. 12, 1905.

Application filed May 6, 1905. Serial No. 259,244.

To all whom it may concern:

Be it known that I, SIGMUND WILLNER, a subject of the German Emperor, and a resident of Memphis, county of Shelby, and State of Tennessee, have invented certain new and useful Improvements in Apparatus for Forcing Fluids into Wood, of which the following is a specification.

This invention relates to apparatus for causing chemicals and liquids to penetrate the interior of a piece of wood, and has particular reference to devices for coloring the wood.

The main objects of this invention are to provide in a device of this class means for producing a variegated coloring to the wood in the interior of a log by forcing coloring-matter of different shades or colors into the grain of different parts of the log and to provide an improved construction for such apparatus whereby the distribution of colors in the interior of the log may be controlled by the operator. I accomplish these objects by the device shown in the accompanying drawings, in which—

Figure 1 is a longitudinal section of a device constructed according to my invention, a log being indicated in position therein by dotted lines. Fig. 2 is an elevation showing the formation of the gripping-face of one of the members for engaging the log.

The principal features of the device shown are the supporting-frame, gripping members which are adjustable toward each other for engaging opposite ends of a log, the subdivisions of the gripping-faces of said members into independent parts separated by sharp ridges adapted to have water-tight engagement with the log, and means for supplying coloring-matter to each of such compartments independently of the others and forcing such coloring-matter endwise through the grain of the log.

In the construction shown in the drawings the supporting-frame consists of a bed-plate 3, having uprights 4 and 5 secured at opposite ends of the same. The uprights are preferably secured by bolts 6, having their heads seated in slots of T-shaped cross-section to permit of adjusting the uprights along the bed-plate. Mounted upon the bed-plate between the uprights are a pair of adjustable jacks 7, adapted to support a log in alinement with the uprights. The upright 4 has rigid thereon a head or gripping member 8. A similar gripping member 9 is mounted upon a shaft 10, which has threaded engagement

with the upright 5 for adjusting the member 9 toward and away from the member 8. The opposed faces of the members 8 and 9 are each provided with a plurality of concentric annular depressions 11, which are separated by annular pointed ridges 12. The crests of the ridges 12 all lie in the same plane, so that all of the ridges which are opposed to the end of the log will form a water-tight joint therewith when the head 9 is forced inwardly, so as to cause the ridges to penetrate the ends of the log. Each of the depressions 11 communicates with a passage 13, extending through the corresponding member. In the member 8 each of the passages 13 connects with an independent valve-controlled pipe. Each of these pipes connects with a pump by means of which coloring-matter may be independently injected into each of the depressions 11. These pumps are not shown; but it is preferred to have a separate pump for each pipe, so that the grain of the log, which is in communication with each of said apertures, may be subjected to an individual shade of coloring and all parts of the log may be simultaneously treated. The valves for independently controlling the pipes 14 are indicated at 15. The passages 13 in the member 9 all connect to an annular passage 16, and the mixed coloring-matter accumulating in such passage is conducted away by a pipe 17.

The operation of the device is as follows: Before subjecting a log to the coloring treatment, as in the herein-described apparatus, it is usual to drive out the sap, so as to leave the pores of the wood empty. This may be accomplished by forcing suitable chemicals through the wood before injecting the coloring-matter. The log is placed upon the supports 7 in a position of substantially central alinement with the members 8 and 9, and the member 9 is then forced against the log by rotating the wheel 18 until the ridge 12 becomes sufficiently embedded into the ends of the log to form a water-tight partition between the cavities formed by the depressions 11 and the ends of the log. Coloring-matter is then pumped under pressure into each of the pipes 14. The desired shade of coloring is obtained by passing liquids of different colors into the various spaces 11. If the log is of less diameter than the member 8, then such depressions on said member which are not completely closed by the end of the log are cut off by closing their respective valves. The coloring-matter under pressure of the pumps

then forces its way through the grain of the log following the sap-channels and accumulates in the passage 16 in the member 9. The general tendency of the liquid is to flow through the log in the direction of the grain; but enough of the coloring-matter spreads in the interior of the log to provide the proper blending of shades and colors. The double crests of the outermost ridges 12' engage the end of the logs of average diameter near their peripheries and serve to insure water-tightness at this point by preventing splitting of the log.

It will be seen that numerous details of the construction shown may be altered without departing from the spirit of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In an apparatus of the class described, the combination of a frame for supporting a log, a member on said frame having a plurality of depressions in one face thereof, ridges inclosing said depressions and separating each from the other, all of said ridges being adapted to have water-tight engagement with one end of the log when said member is forced against the same and means for supplying liquid under pressure to each of said depressions independently of the others.

2. In an apparatus of the class described the combination of a frame for supporting a log, a member in said frame having a plurality of depressions in one face thereof, pointed ridges inclosing each of said depressions and separating one from the other, said ridges being sharpened and having their crests lying substantially in the same plane and adapted to penetrate the log when said member is forced endwise against the same, means for forcing the log and member toward each other, and means for supplying liquid under pressure to each of said depressions independently of the other depressions.

3. In an apparatus of the class described, the

combination of a frame for supporting a log, a member in said frame having in one face a plurality of concentric annular depressions each separated from the other by a continuous ridge, each of said ridges being sharpened at its crest and the crests of said ridges lying in the same plane and adapted to penetrate the log when said member is forced endwise against the log, and means for supplying liquid to each of said depressions independently of the others.

4. In an apparatus of the class described, the combination of a frame for supporting a log, a member in said frame having in one face a plurality of concentric annular depressions each separated from the other by a continuous ridge, each of said ridges being sharpened at its crest and the crests of said ridges lying in the same plane and adapted to penetrate the log when said member is forced endwise against the log, and individual valve-controlled pipes for conducting liquid to each of said depressions.

5. In an apparatus of the class described, the combination of a frame for supporting a log, a member in said frame having in one face a plurality of concentric annular depressions each separated from the other by a continuous ridge, each of said ridges being sharpened at its crest and the crests of said ridges lying in the same plane and adapted to penetrate the log when said member is forced endwise against the log, means for supplying liquid to each of said depressions independently of the others, and a ridge outside of the outer depression and having a plurality of sharpened crests lying in the same plane with each other.

Signed at Memphis, Tennessee, this 3d day of May, 1905.

SIGMUND WILLNER.

Witnesses:

E. LEFTWICH,
W. S. BRAGG.