(No Model.)

S. M. LAND & S. A. VAN BUSKIRK.

EMBELLISHING WOOD.

No. 443,447. Patented Dec. 23, 1890.

Fig. I.

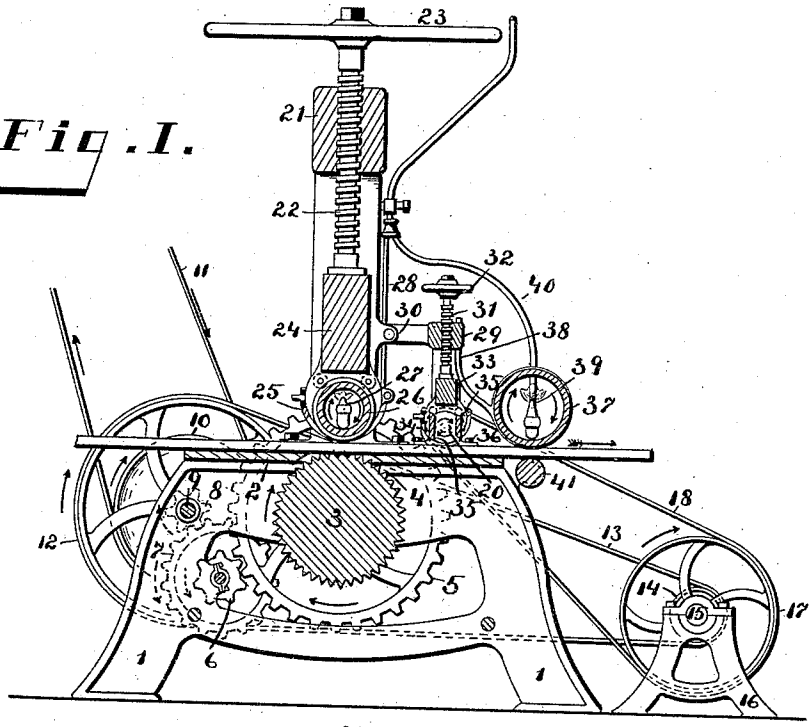


Fig. III.

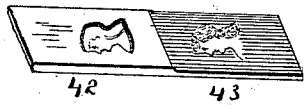
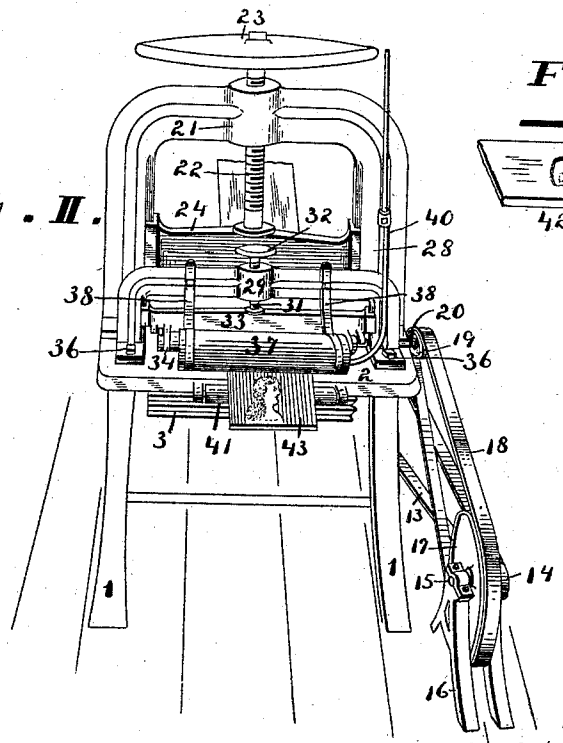


Fig. II.



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UNITED STATES PATENT OFFICE.

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EMBELLISHING WOOD.

SPECIFICATION forming part of Letters Patent No. 443,447, dated December 23, 1890.

Application filed September 20, 1889. Serial No. 324,557. (No model.)

To all whom it may concern:

Be it known that we, SILAS M. LAND and SAMUEL A. VAN BUSKIRK, both of Fort Scott, in the county of Bourbon and State of Kansas, have invented a certain new and useful Process of Embellishing Wood, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which means for carrying out our process is shown.

Our invention consists in a process, hereinafter described, by which a design of any desired configuration may be transferred to the wood and then reduced to a smooth and finished condition.

We will now proceed to describe one of the ways by which our improved process may be carried out.

Figure I is a vertical longitudinal section of a machine for carrying out our process. Fig. II is a perspective view of the same. Fig. III is a perspective view of the embellished wood, showing a portion of the same in a finished condition and a portion in an unfinished condition.

Referring to the drawings, 1 represents the supporting-frame of the machine, on the top of which is a table 2, over which the material passes as it is being embellished.

3 represents a corrugated feed-roll, which is journaled in the frame 1 in the proper position, so that its corrugations may extend up through an opening 4 in the table a slight distance above the plane of the table in order that it may engage the material being embellished and force it along through the machine.

5 6 7 8 represent a train of gear-wheels connecting the feed-roll 3 with the power-shaft 9.

10 represents a pulley on the power-shaft, which may be driven by a band 11.

12 represents an additional pulley on the power-shaft 9, said pulley being connected by a band 13 with a pulley 14 on a shaft 15. The shaft 15 is supported by a frame 16. On the shaft 15 is an additional pulley 17, which is connected by a band 18 with a pulley 19 on a planer-shaft 20.

21 represents a U-shaped frame, in which works a screw 22, having a hand-wheel 23 on its upper end. Secured to the lower end of the screw 22 is a vertically-sliding frame 24. Secured to the lower side of the frame 24 by straps 25 is a hollow impression roll or die 26. Said impression-roll may be heated by a gas or other jet 27, located therein, the jet being supplied by a pipe 28.

29 represents a frame, which may be hinged to the frame 21 at 30.

31 represents a screw working in the frame 29, on the upper end of which is a hand-wheel 32, and on the lower end of which is secured a vertically-sliding frame 33. To the frame 33 is secured by straps 34 the planer-shaft 20, on which the planing-knives 35 are situated. The frame 29 may be secured to table by bolts 36, or the bolts may be removed and the frame and planer turned back on its pivot 30, when so desired.

37 represents a hollow burnishing-roller supported by braces 38, which are connected to the frame 29.

39 represents a gas-jet located in the roller 37, which may be supplied by a pipe 40.

41 represents a roller, on which the material travels in passing through the machine, and which acts as a support to the material beneath the burnishing-roll.

42 represents a portion of the material after it has been acted upon by the impression-roll or die, and 43 represents the same after it has been acted upon by the planer and burnishing-roll.

The operation is as follows: The wood is first passed under the heated die or impression roll 26, which may have any desired design thereon, the die of course embossing the wood to a greater or less degree, according to the depth of the design in the die and the pressure placed upon the die. For instance, if it is desired to have an impression with certain parts of the same of a darker shade than other parts, the design on the die is made of greater or less prominence, so that when the impression is made in the wood the portion that is to be the darkest will be the deepest, the heat of course making the wood dark. After the wood has passed beneath the die, it then passes beneath the planer, which reduces the raised or embossed portions of the

wood down to a comparatively smooth surface, and thus producing a design or figure in dark and light wood, wherein the shadows and other portions intended to be dark are the depressed portions and the high lights and portions intended to be white or of a light color are those portions which were more or less elevated and which were shaved off by the planer, thus removing their charred or dark surfaces and exposing the natural or light color of the wood. It will of course be understood that gradation of shade or the blending of the lights and shadows is attained and governed by the extent to which certain portions are depressed, the darkest portions being deepest, while the medium tints are not so deep and the highest lights are left above the general level. Thus it will be seen that the planer will entirely remove the discoloration from the prominent portions, while it only reaches and removes the outer surface of the discoloration of the intermediate elevations, thus blending the high lights with the deep shadows in the lower depressions, into which latter the planer does not extend at all. The planer, however, while it is effective in producing the proper lights and shades and in reducing to a considerable extent the prominent or elevated portions, yet it cannot, for reasons obvious, make the whole surface of the design perfectly smooth and flat and on a level with the background. Hence it is necessary for this reason and for the further purpose of producing a highly-polished surface to pass the board beneath a heated burnishing-roller 37, which, being driven at a higher rate of speed than the embossing-die, simultaneously smoothes out the elevations so as to reduce them to the level of the deepest depressions and burnishes or polishes the whole surface, producing a very artistic effect, and one which closely resembles hand-painting.

We claim as our invention—

1. The process of embellishing wood, which consists in embossing the same with a heated die, planing off the surface of the wood so as to remove the discoloration from the more prominent portions, and finally smoothing out the remaining elevations so as to reduce them to the level of the depressions, but without cutting away any of the discolored surfaces, substantially as set forth.

2. The process of embellishing wood, which consists in embossing the same with a heated die, planing off the surface of the wood so as to remove the discoloration from the more prominent portions, and finally rubbing the surface under the influence of heat until the remaining elevations are reduced to the level of the depressions and the whole surface is burnished, substantially as set forth.

3. The process of embellishing wood, which consists in first passing the wood under a heated die and forming a design in cameo therein, which is made darker than the other parts of the wood under the influence of the heat, then cutting away the raised portions of the wood, leaving the reduced parts lighter, and finally passing the wood under the heated burnisher, substantially as set forth.

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