July 18, 1944. E. M. FRID 2,353,957

DEVICE FOR ROLLING RODS OF VENEER AND THE LIKE

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Fig. 1.

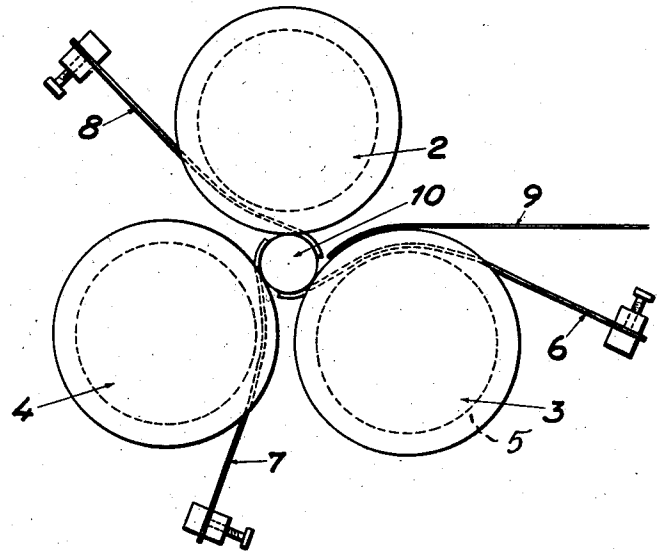
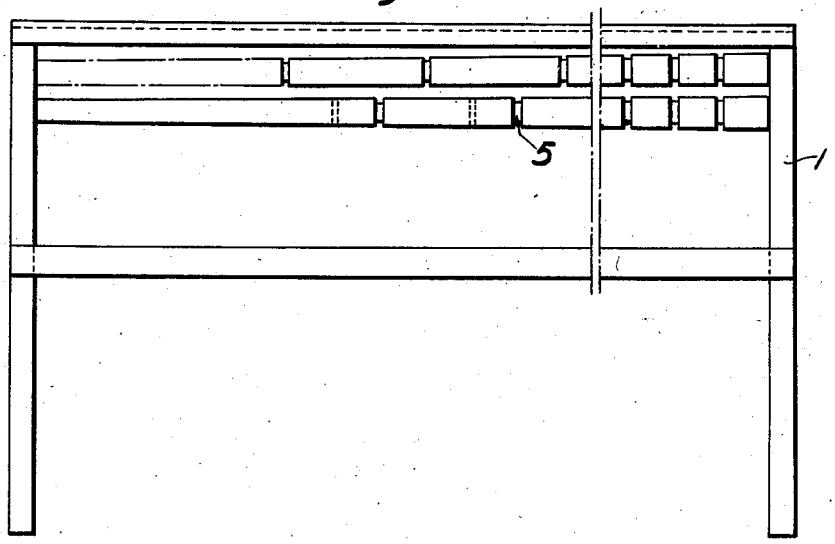


Fig. 2.



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Fig. 3

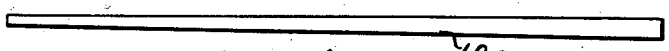


Fig. 4.

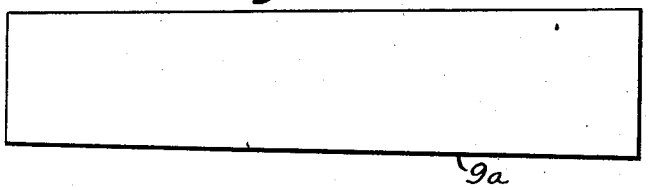
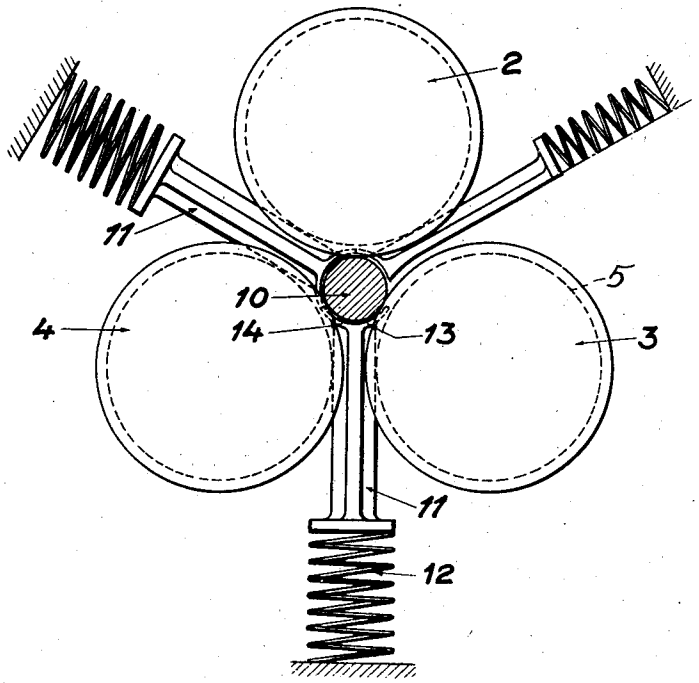


Fig. 5.



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Patented July 18, 1944 2,353,957

UNITED STATES PATENT OFFICE

2,353,957

DEVICE FOR ROLLING RODS OF VENEER AND THE LIKE

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Application November 15, 1941, Serial No. 419,298
In Sweden March 14, 1941

7 Claims. (Cl. 144—268)

It is known to manufacture rods of veneer and the like by rolling the veneer coated with a binder, such as cold glue, on a core between three or more rotating rollers, the surfaces of which are tangents to imagined circles having substantially the same diameter as those of the rods which one wants to manufacture.

In said method one has used an endless cloth web disposed around the rollers in order to bring the veneer between the rollers.

However, said method is connected with the drawback that the cloth web is easily soiled by glue so that interruptions in the drive are caused.

This drawback is eliminated according to the present invention by providing guide members to guide the veneer, said guide members entering between the rollers. The guide members may be resilient, if desired, and be located in annular grooves in the rollers.

The invention is illustrated in the accompanying drawings, in which—

Fig. 1 is a diagrammatical end view of one embodiment of the invention. Fig. 2 is a corresponding lateral view on a smaller scale with removed guide members, the left and the right portions of the figure showing different arrangement of the grooves. Fig. 3 is a core for rolling conical rods. Fig. 4 is a cut-out veneer piece for conical rods. Fig. 5 is an end view of another embodiment.

In the drawings the reference numeral 1 indicates a frame, in which in a known way there are mounted three rollers 2, 3, 4 the surfaces of which are tangents to imagined circles having substantially the same diameter as those of the rods which one intends to manufacture. In case conical rods are to be manufactured the rollers may be conical or mounted at an angle to one another.

The rollers are provided with spaced annular grooves 5 which in the different rollers may be located opposite one another, as shown to the right in Fig. 2, or displaced relatively to one another, as shown to the left in Fig. 2. Between the rollers 2 and 3, 3 and 4, and 4 and 2 there are provided resilient guide members 6, 7, and 8 respectively which in the embodiment shown in Fig. 1 consist of curved springs which are sunk in the annular grooves 5 in a roller 3, 4 and 2 respectively and which extend towards the adjacent roller 4, 2 and 3 respectively and serve to guide a veneer board 9 inserted for instance between the rollers 2 and 3 so that said board rolls itself up to a tubular rod, which rolling may take place on a rotatable core 10 between the rollers.

Fig. 4 shows a veneer piece 9^a for rolling slightly conical rods which may be wound around the tapered core 10^a shown in Fig. 3. As will be seen, it is in the shape of a trapezium as at the thick end the rod contains more veneer than at the thin end. In its turn each such veneer piece can, in a known way, be composed of several veneer pieces placed one upon the other or edge at edge, the grains of said pieces extending in different direction, for example diagonally or longitudinally. The veneer pieces may be rolled in several windings or in such a way that each piece just goes round the whole circumference. This is possible thanks to the guide members.

In the embodiment shown in Fig. 5 the resilient guide members consist of guide plates 11 disposed in the grooves of the rollers, said plates being by means of springs 12 pressed in towards a core 10 provided between the rollers 2, 3, 4, and being at their inner ends provided with guide surfaces 13, 14 to guide an inserted veneer board from one roller to the adjacent roller.

The rods having been wound and a rolling up core, if used, having been removed, the entire rod or certain parts thereof may be pressed to oval shape, while the binder is still wet, and then be dried so as to retain the oval shape.

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

1. In a device for rolling sheet material into the form of a tube, three or more forming rollers, means for rotatably mounting said rollers with their surfaces externally tangent to a circle having a diameter substantially equal to the diameter of the tube which it is desired to manufacture, and resiliently mounted means extending between each adjacent pair of rollers for guiding the sheet material from each roller to the next roller.

2. In a device for rolling sheet material into the form of a tube, three or more forming rollers, means for rotatably mounting said rollers with their surfaces externally tangent to a circle having a diameter substantially equal to the diameter of the tube which it is desired to manufacture, a core disposed between said rollers and substantially concentric with said circle, and separate means extending between each adjacent pair of rollers for guiding the sheet material from each roller to the next roller and around said core, the guiding means being resiliently urged toward said core.

3. In a device for rolling sheet material into the form of a tube, three or more forming rollers, means for rotatably mounting said rollers with

their surfaces externally tangent to a circle having a diameter substantially equal to the diameter of the tube which it is desired to manufacture, a core disposed between said rollers and substantially concentric with said circle, and separate means extending between each adjacent pair of rollers, each means also extending between an adjacent roller and said core, for guiding the sheet material from each roller to the next roller and around said core, each guiding means being resiliently urged against a roller and towards said core.

4. In a device for rolling sheet material into the form of a tube, three or more forming rollers, means for rotatably mounting said rollers with their surfaces externally tangent to a circle having a diameter substantially equal to the diameter of the tube which it is desired to manufacture, a core disposed between said rollers and substantially concentric with said circle, and a separate resilient arm extending between each adjacent pair of rollers, each arm also extending between an adjacent roller and said core, for guiding the sheet material from each roller to the next roller and around said core, the resiliency of each arm urging it against one of said rollers and towards said core.

5. In a device for rolling sheet material into the form of a tube, three or more forming rollers, each roller being provided with an annular groove in the surface thereof, means for rotatably mounting said rollers with their surfaces externally tangent to a circle having a diameter substantially equal to the diameter of the tube which it is desired to manufacture, and separate resiliently mounted means extending between each adjacent pair of rollers for guiding the sheet material from each roller to the next roller, each guide means being disposed in part within the groove of one of said rollers.

6. In a device for rolling sheet material into the form of a tube, three or more forming rollers, each roller being provided with an annular groove in the surface thereof, means for rotatably mounting said rollers with their surfaces externally tangent to a circle having a diameter substantially equal to the diameter of the tube which it is desired to manufacture, a core disposed between said rollers and substantially concentric with said circle, and a separate resilient arm extending between each adjacent pair of rollers, each arm also extending between an adjacent roller and said core, for guiding the sheet material from each roller to the next roller and around said core, each arm being disposed in part within one of said grooves and the resiliency of the arms urging them against the bottoms of the grooves and towards said core.

7. In a device for rolling sheet material into the form of a tube, three or more forming rollers, means for rotatably mounting said rollers with their surfaces externally tangent to a circle having a diameter substantially equal to the diameter of the tube which it is desired to manufacture, a core disposed between said rollers and substantially concentric with said circle, an arm extending between each adjacent pair of rollers and having a curved inner end surface substantially concentric with said circle for guiding the sheet material from each roller to the next roller and around said core, and resilient means for urging the end surfaces of said arms towards said core.

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