April 12, 1949. C. M. DEWITT 2,467,194

MACHINE FOR REMOVING THE SOFT WOOD FROM THE SURFACE OF PLYWOOD PANELS

Filed Feb. 6, 1946

2 Sheets-Sheet 1

Fig. 1.

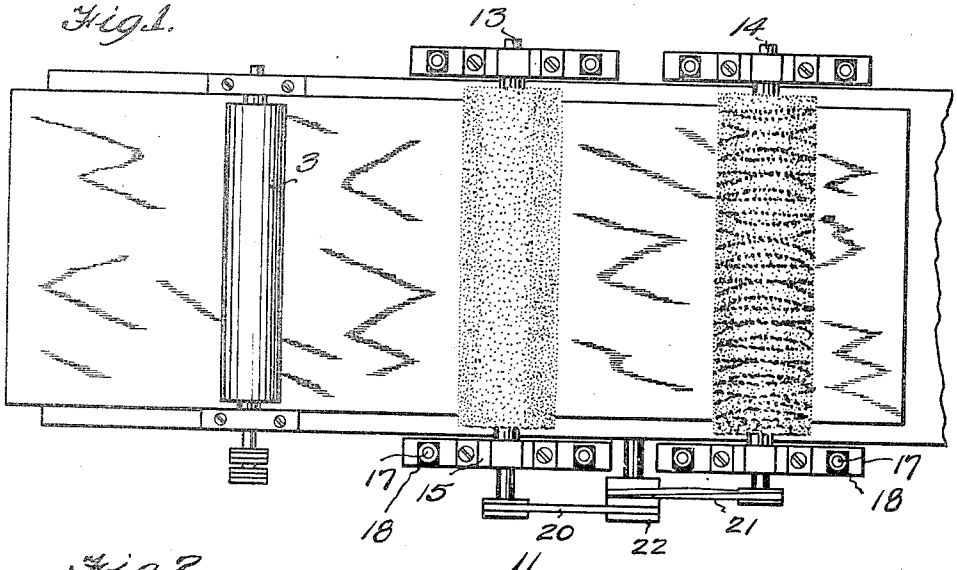
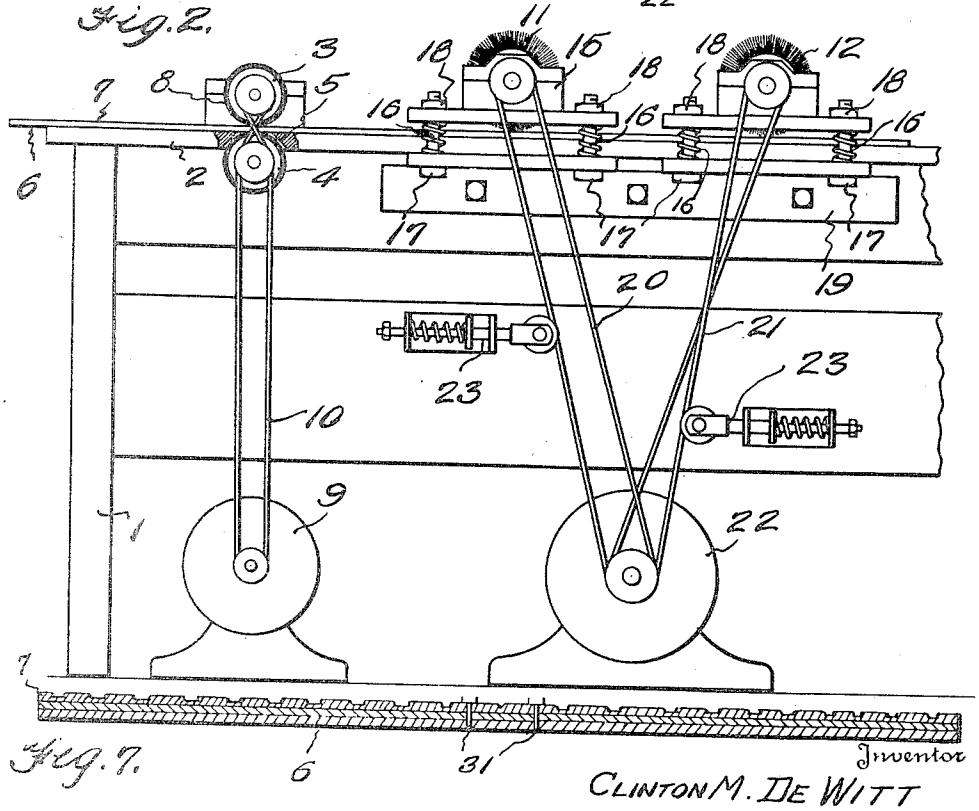


Fig. 2.



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2 Sheets-Sheet 2

Fig. 3.

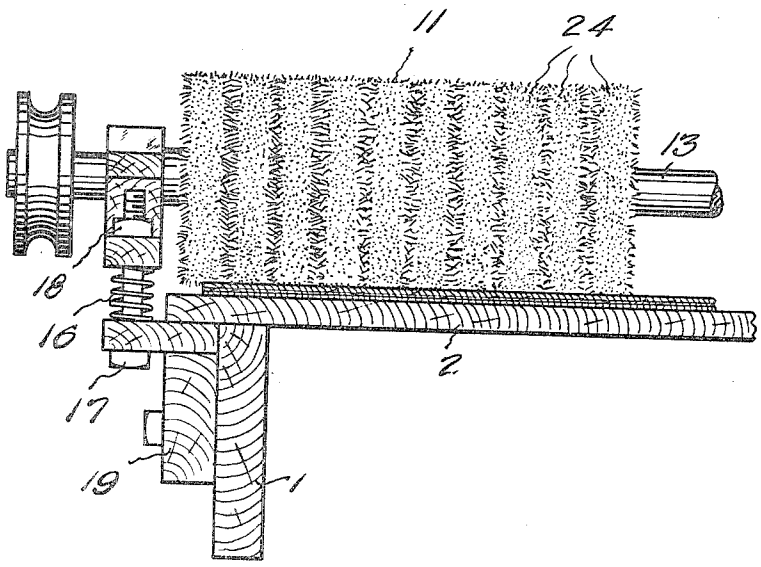


Fig. 4.

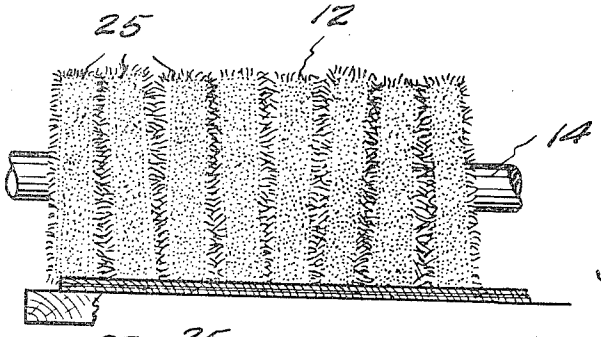


Fig. 8.

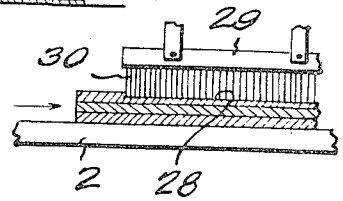


Fig. 5.

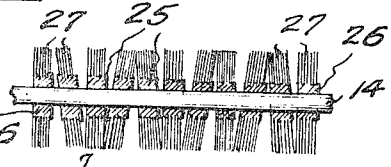
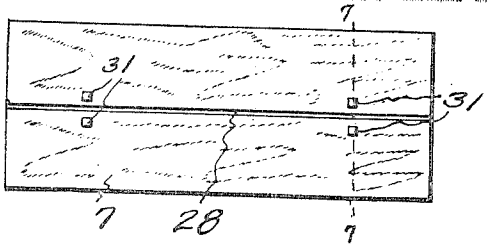


Fig. 6.



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MACHINE FOR REMOVING THE SOFT WOOD FROM THE SURFACE OF PLYWOOD PANELS

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Application February 6, 1946, Serial No. 645,728

4 Claims. (Cl. 144—115)

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This invention relates to a machine for treating plywood, so as to cut out the soft wood and allow the hard wood to remain to simulate grain in the wood, the cutting-out of the soft wood leaving irregular grooves between the hard wood portions of the surface of the plywood panel and thereby producing a planking effect on the plywood panel.

A further object of this invention is the production of a simple and efficient method of producing a clean-cut grain having the effect of planking in a sheet or panel of plywood by means of a dry moistureless method employing rotary brushes for cutting-out the soft wood and leaving the hard wood to simulate grain.

Other objects and advantages of this invention will appear throughout the following specification and claims.

In the drawings:

Figure 1 is a top plan view of the machine;

Figure 2 is a side elevational view thereof;

Figure 3 is a fragmentary side elevational view of the regular tension brush;

Figure 4 is a fragmentary side elevational view of the irregular tension brush;

Figure 5 is a longitudinal sectional view of a portion of the irregular brush, or buffer element;

Figure 6 is a plan view of the finished plywood product after being treated;

Figure 7 is an enlarged transverse sectional view taken on line 7—7 of Figure 6;

Figure 8 is a fragmentary sectional view of a portion of the plywood sheet illustrating the means for forming the longitudinal channel therein.

By referring to the drawings, it will be seen that 1 designates the base of the machine which supports the table 2. A pair of rubber covered feed rollers 3 and 4 extend transversely of the table 2 near one end thereof, the roller 3 being located above and the roller 4 being located below the table 2. The table 2 is cut-away as at 5, to allow the roller 4 to extend therethrough for a sufficient distance to contact the under surface 6 of the plywood panel 7. These feed rollers are driven in the conventional manner by a cross-belt 8, and from a suitable motor 9 and driving belt 10. The panel 7 passes between the rollers 3 and 4, the upper roller 3 engaging the upper face of the panel and the lower roller 4 engaging the lower face thereof.

A pair of rotatable buffer elements 11 and 12 are mounted transversely of the table 2 and in spaced relation relative to each other, as shown in Figures 1 and 2. The buffer elements are

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carried by shafts 13 and 14 respectively. Each buffer element shaft 13 and 14 is supported by a tension journal 15 at each end. Each journal 15 is supported upon the springs 16 which are carried by the bolts 17, the tension of the springs 16 being adjustable by adjusting the nuts 18 upon the bolts 17. The bolts 17 are supported upon the frames 19 carried upon opposite sides of the base 1. As shown, the buffer elements 11 and 12 are similarly supported by the spring tension adjustable means defined above, to regulate the cuts of the buffer elements on the plywood panel 7.

These buffer elements 11 and 12 are driven by belts 20 and 21 respectively, the belts 20 and 21 being driven by the motor 22. Conventional spring tension belt idlers 23 engage the belts 20 and 21 to maintain a proper uniform tension thereon. The buffer element 11 comprises a series of closely fitting aligned and straight brushes 24 set in a perfect line, whereas the buffer element 12 comprises a series of brushes 25 set on the shaft 14 at various angles to the longitudinal axis so as to make the brushes follow an irregular or wabbling path to cut out all soft wood between the irregular hard grain of the panel. Each brush 25 is preferably of the conventional wire-brush type consisting of a hub portion 26 formed of steel having a plurality of sharp wire or metal points 27 firmly secured in the hub to provide a wire buffer brush.

In carrying out the invention, the sheet 7 of plywood is moved longitudinally of the table 2 by the feed rollers 3 and 4 and under the rotatable buffer elements 11 and 12. The proper tension for the buffer elements is set by adjusting the nuts 18 upon the bolts 17 to regulate the tension of the springs 16. In this way the depth of cut of the buffer elements 11 and 12 may be regulated to suit the desire of the operator. The buffer element 11 is formed of regularly set brush elements consisting of wooden hubs having sharp wire or metal points firmly secured in the hub to provide wire buffer brushes fitting closely together to produce a surface buffing means for the plywood. These buffing elements dig out the soft portions of the wood, and the pitching of the wire buffer brushes 25 in the manner shown in Figure 5 provides the irregular graining effect upon the panel.

After the graining effect has been produced in order to produce the longitudinal groove 28 and to provide the effect of planking, I support a groove-forming element comprising a timber 29 above the table 2 in any suitable manner. The timber 29 carries a plurality of aligned sharp

metal points 30 which depend therefrom and by pulling or pushing the sheet of plywood under this groove-forming element, the groove 28 is formed. Square-headed nails 31 are then placed upon either side of the groove 28 in selected locations. The finished product as shown in Figure 6 will give a weather-beaten wind-swept or driftwood appearance, and the nails 31 add to the aged appearance of the product.

It should be understood that any number of polishing brushes of the conventional type may be used to polish the surface of the plywood after it passes under the buffer elements 11 and 12, should this be found desirable, without departing from the spirit of the invention. By means of this machine, it is possible to produce a desired paneling effect on plywood sheets or paneling without the necessity of using chemicals, moisture, or heat. Only the mechanical operation of the machine and the treatment of the surface of the plywood by means of the buffer rollers 11 and 12, and the groove-forming element are required to produce the desired effect.

Having described the invention, what I claim is:

1. In an apparatus of the class described, the combination of a support, a feeding means for feeding work upon said support, a buffer element spaced from the feeding element, a second buffer element adapted to cut soft portions of the wood from the face of the work, adjustable tension means supporting the buffer elements for regulating the depth of cut of the buffer elements upon the work, said second buffer element comprising a plurality of wire buffer brushes, a supporting shaft, and the wire brushes being set at varying angles to the longitudinal axis of the shaft to cause the brushes to wobble while rotating and thereby facilitate cutting out of the soft portions of the work.

2. In an apparatus of the class described, the combination of a supporting table, a series of feeding rollers carried by the table between which rollers a sheet of plywood is moved, a buffer element spaced from the feeding rollers comprising a plurality of closely arranged wire buffer brushes set in line and at right angles to the longitudinal axis of the buffer element, a second buffer element spaced from the first mentioned buffer element, said second buffer element comprising a plurality of wire buffer brushes arranged at various angles of tilt to the longitudinal axis of the second buffer element to provide a wobbling action when rotated, means for rotating said buffer elements, and means for adjustably and yieldably supporting the buffer elements to selectively move the buffer elements toward and away from the plywood sheet and thereby regulate the depth of cut on the plywood sheet.

3. In an apparatus of the class described, the combination of a supporting table, a series of feeding rollers carried by the table between which rollers a sheet of plywood is moved, a buffer element spaced from the feeding rollers comprising a plurality of closely arranged wire buffer brushes set in line and at right angles to the longitudinal axis of the buffer element, a second buffer element spaced from the first mentioned buffer element, said second buffer element comprising a plurality of wire buffer brushes arranged at various angles of tilt to the longitudinal axis of the second buffer element to provide a wobbling action when rotated, to cut out all soft wood from the plywood sheet and leave a clean-cut grain appearance of the remaining uncut hard wood upon the surface of the plywood sheet, means for rotating said buffer elements, and means for adjustably and yieldably supporting the buffer elements to selectively move the buffer elements toward and away from the plywood sheet and thereby regulate the depth of cut on the plywood sheet.

4. In an apparatus of the class described, the combination of a support, a feeding means for feeding work upon said support, a buffer element adapted to cut soft portion of the wood from the face of the work, a shaft supporting said buffer element, said buffer element comprising a plurality of buffer members set at varying angles to the longitudinal axis of the shaft to cause the buffer members to wobble while rotating and thereby facilitate cutting-out of the soft portions of the work, and adjustable means supporting the buffer element for regulating the depth of cut of the buffer element upon the work.

CLINTON M. DE WITT.

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