This invention relates to a veneer jointer that cuts a longitudinal edge of two strips of veneer simultaneously and then conveys the cut edges of the two strips of veneer together so that they can be accurately secured together by suitable adhesives.

Therefore, it has been the practice to place a stack of veneer sheets in a jointer, clamp the stack in place and cut one longitudinal side of the stack. The stack of veneer is then unclamped, turned over and reclamped so that the other side can be cut.

This practice has proved to be unsatisfactory primarily because the side edges of the veneer strip cannot be cut parallel to each other. This is mainly due to shifting of the veneer strips in the stack when the stack is unclamped, turned over and reclamped.

An object of this invention is to provide an inline jointer that simultaneously trims the longitudinal edges of a pair of veneer strips so that the edges are parallel with each other.

Another object of this invention is to provide an inline jointer that simultaneously trims the longitudinal edges of a pair of veneer strips and then places the pair of veneer strips adjacent each other so that the cut longitudinal edges thereof can be glued together.

These and other objects and advantages will become manifestly clear to those skilled in the art when taken in conjunction with the detailed description and drawings, wherein:

**FIGURE 1** is a side elevation view of the in-line veneer jointer with parts broken away to show internal details.

**FIGURE 2** is an end view of the in-line jointer with portions thereof broken away to show details.

**FIGURE 3** is a perspective view of the in-line veneer jointer with parts broken away to show internal details.

**FIGURE 4** is an end view similar to **FIGURE 2** with portions broken away and shown in cross-sectional view of the in-line veneer jointer.

Referring now to the drawings, the in-line veneer jointer is generally indicated at 1. The in-line jointer 1 is supported by spaced apart vertical posts 2 and horizontal post 3 connecting the vertical posts 2. Also, cross post 4 extends between the vertical posts 2 to present a generally rectangular frame for the in-line jointer 1.

Positioned on one side of the frame structure is a first horizontally positioned drum member 6 mounted on a horizontal shaft 9. The shaft 9 is connected to one of the horizontal posts 3 and a support member 12. Positioned adjacent the horizontal drum 6 is another tilted drum 5 whose axis is tilted with respect to the horizontal plane. The drum 5 is supported by a shaft 7 connected between the support member 12 and the post 3. The shaft 7 is connected to the post 3 by a suitable bearing means 8. The tilted drum 5 is so positioned that the lower portion of the drum converges toward the bottom portion of the horizontal drum 6 so that the bottom portion of each are adjacent each other as indicated at 92 in **FIGURE 4**.

The horizontal drum 6 is driven by a belt 11 which extends around a lower pulley 51 having a shaft 52 that is supported in a support member 53. The pulley 51 is driven by a belt 54 which extends from the pulley 51 to a pulley or sprocket 71 mounted on a shaft 55 that extends from one side of the frame member to the other.

The shaft 55 is driven by a motor means 60 in the form of an electric motor having a shaft 61 and a pulley or sprocket 62 mounted thereon. A belt or chain 63 extends around the pulley or sprocket 62 and around a pulley or sprocket 64 mounted on the shaft 55.

The belt 11 extending around pulley 51 also extends around another pulley 38 mounted on a shaft 40 and bearing 39. The belt 11 then extends up around another pulley 41 mounted on a shaft 43 and then extends around a fourth pulley 44 mounted on a shaft 45. The shaft 45 is supported by a pair of arms 46 and 47 which are in turn connected to a shaft 48 mounted in babbit bearings 49 and 50 supported by a crossarm 4 as shown in **FIGURE 3**.

Accordingly, when the motor 60 is actuated, the pulley 51 is driven by shaft 55 and the belt 11 will cause the drum 6 to rotate.

A belt 10 extends around a portion of the periphery of the tilted drum 5 and around a pulley 30 mounted on a shaft 31. The shaft 31 is connected to another shaft 35 by a coupler member 32 which is driven by a belt 37 extending around a sprocket or pulley 36. The belt 37 extends around another pulley 66 mounted on shaft 55 which is driven by the motor 60 as noted above. The belt 10 extends through the lower portion of the frame member around a second pulley 13 mounted on a shaft 17 and fitted in a bearing 15. The belt 10 extends upwardly around another pulley 14 mounted on the shaft 18 in bearing member 16. A fourth pulley 19 is positioned on the infeed side of the apparatus and is mounted on a shaft 20 which in turn is mounted between a pair of arms 21 and 22 connected to a shaft 23 mounted in babbit bearings 24 and 25 which are connected to the crossarm 4.

Accordingly, when the motor 60 is turned on, the shaft 55 will rotate the pulley 30 which will rotate or cause the belt 10 to move and will accordingly turn the drum 5.

Mounted below the pulley 19 is a second idler pulley or guide pulley 29 mounted on a shaft 30 mounted in an arm between a pair of support arms 26 and 27 by shaft member 28. In this manner, any veneer fed between members 19 and 29 will be carried around the periphery of the drum 5 between the outer periphery of the drum 5 and the belt 10. It should be noted that a similar guide pulley is positioned below the pulley 39 extending for a purpose identical with that of the pulley member 29.

The motor 60 is mounted on a motor support member 56 having a plurality of vertical posts 57 and a plurality of horizontal posts 59 connected to the post members 2 and 3 as shown in **FIGURES 1–3** inclusive. Positioned between the posts 58 is a horizontal plate member 59 which connects the motor 60 to the support means 56.

As noted previously, the motor 60 drives the shaft member 55 which in turn drives the belts 10 and 11 through the mechanism of the various pulleys as noted. Also, mounted on shaft 55 is another pulley member 66 having a belt 67 therearound which is connected to another pulley 68 mounted on a shaft 69. This drive mechanism drives the outfeed conveyor system, not shown, positioned on the outfeed support member indicated at 70.

Positioned on the sides of the drums 5 and 6 that the belts 10 and 11 extend around is a pair of saws indicated at 76 and 77. The saw 76 is provided with a dovetail slide member 74 mounted in support member 72 that is mounted on one of the crossrails 4. The motor 76 is provided with shaft 78 that is parallel with the mounting shaft 9 of the drum 6. Moreover, the shaft 78 is provided with a saw blade 80 which saws in a plane parallel to a plane extending through the inner edge of the drum 6.
The saw 77 adjacent tilted drum 5 is mounted in a dove-tail slide member 75 mounted in support 73 connected to frame 71. The saw 77 is provided with a shaft 79 that is parallel with the tilted shaft 5 and also a saw blade 81 mounted thereon which saws in a plane parallel to a plane extending through the inner edge of the drum 5.

Positioned just above the outfeed support member 70 is an elongated outfeed plate indicated at 85. The inner portion of the plate 85 is provided with an inclined surface 86 and the outboard side thereof is also provided with an inclined surface 87. The purpose of the plate 85 is to insure that any veneer coming off of the drums 5 and 6 extends horizontally out onto the support 70 and does not wind around the drums.

At the upper end of the frame member is positioned an infeed 88 and 89 for the respective drums. The infeed members 88 and 89 are each provided with an inclined surface 90 and 91 so that the veneer strip indicated at 83 can be easily positioned in between the members 29 and 19 and similarly strip 82 beneath member 44. 42.

Having fully described the details of the structure of the in-line jointer apparatus 1, the apparatus operates in the following manner:

The operator first adjusts the position of the motors 76 and 77 to insure that the saws 80 and 81 will saw a proper strip member 4. The saw 77 is provided with a shaft 79 whereby the operator then activates the motor 60 which drives the shaft 55 to turn the belts 10 and 11 around the various pulleys as noted above.

With the motor 60 in operation, the drums 5 and 6 turn in the direction of the arrows indicated in FIGURES 3 and 4.

Accordingly, the operator positions himself on a platform indicated at 84 and feeds a pair of veneers 82 and 83 into the slides 91 and 92. When the leading edge of the veneers 82 and 83 comes adjacent the pulleys 29 and 19, the belts 10 and 11 will drive the veneers around the drums 5 and 6 and the inner periphery of the belts 10 and 11. The veneers 82 and 83 are so positioned that the inner edge thereof extends over the edge of the inner edge of the drums 5 and 6 so that when the veneers 82 and 83 reach the saws 76 and 77, the inner edges thereof will be trimmed as indicated at 93 and 94 in FIGURE 4.

In this manner, the inner edges of the veneers 82 and 83 will be cut off parallel to each other. As the veneers 82 and 83 are driven down to the downward position of the drums 5 and 6, they will converge as indicated at 92 so that the edges will be placed adjacent each other. Accordingly, the two veneers will be in side-by-side contact as they reach the outfeed support member 70 and are conveyed from there to a conventional edge gluer to secure the two strips together.

As it can be readily seen, the in-line jointer 1 clips or trims the inner edges of the veneers 82 and 83 in such a manner that they are exactly parallel to each other and also converges the inner edges in adjacent edge-to-edge contact so that the veneers can be readily glued to each other by a standard edge gluing machine. In this manner it can be seen that the edges are identically parallel with each other and post ads that the necessary edge trimming is not required, and also converges the inner edges in adjacent edge-to-edge contact so that the veneers can be readily glued to each other by a standard edge gluing machine. In this manner it can be seen that the edges are identically parallel with each other and post ads that the necessary edge trimming is not required.

While specific details of a preferred embodiment have been set forth above, it will be apparent that many changes and modifications may be made therein without departing from the spirit of the invention. It will therefore be understood that what has been described herein is intended to be illustrative only, and is not intended to limit the scope of the invention.

What is claimed is:

1. In in-line veneer jointer, comprising: a frame; a first drum means mounted in said frame; a lower converging portion of said first drum means and second drum means mounted in said frame; an outfeed plate located within said frame; an inner edge thereof adjacent the outer periphery of the first and second drum means whereby the inner edges thereof are automatically trimmed; and belting means extending around a portion of each of said first and second drum means to carry strips of veneer therefrom to said frame.

2. An in-line veneer jointer of the character described in claim 1 together with an infeed means associated with said first and second drum means including two slide means having an inclined surface on each of said slides whereby said veneer strips may be fed into said first and second drum means.

3. An in-line veneer jointer in accordance with claim 2 together with an outfeed plate associated with said first and second drum means adjacent the lower converging portion of said first and second drum means whereby the veneer strips will be diverted away from said first and second drum means.

4. An in-line veneer jointer in accordance with claim 3 together with a pulley system associated with said first and second drum means for moving said belting means and a drive means associated with said pulley system to drive said belting means around said first and second drum means.

References Cited by the Examiner

UNITED STATES PATENTS

709,864 9/1902 Boening 156—545
2,687,754 8/1954 McFall 156—554

FOREIGN PATENTS

197,574 5/1958 Austria.

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