March 29, 1966 J. A. SCHIKOFSKY 3,242,954

VENEER JOINTER

Filed Oct. 28, 1963 2 Sheets-Sheet 1

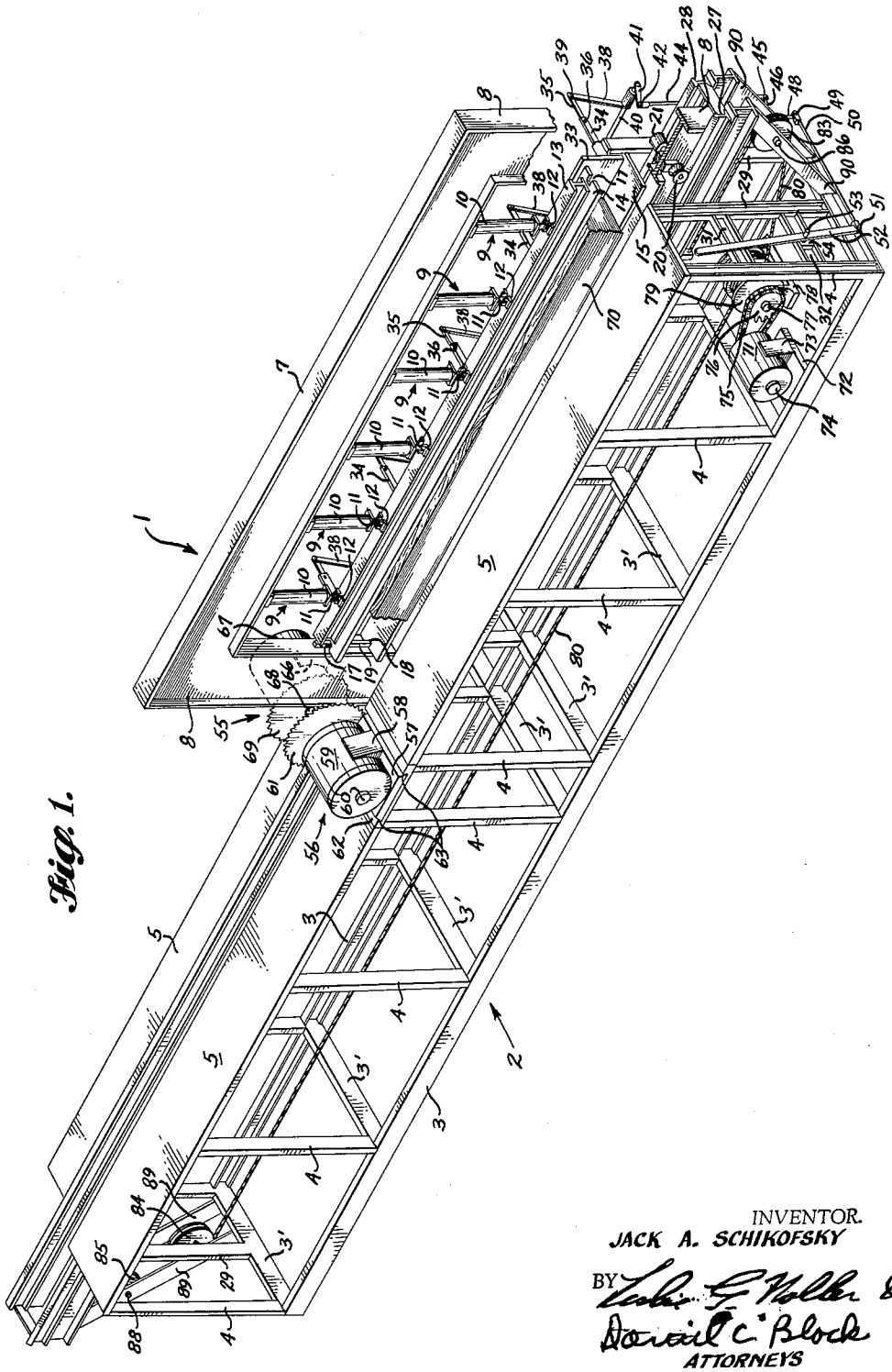


Fig. 1.

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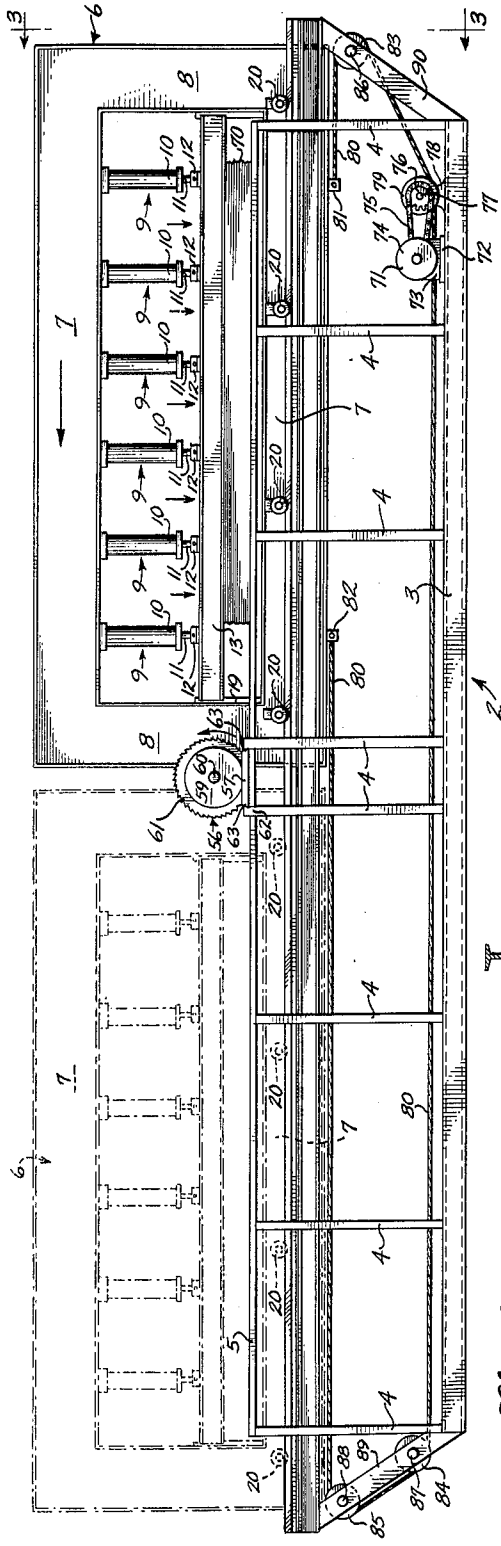


Fig. 2.

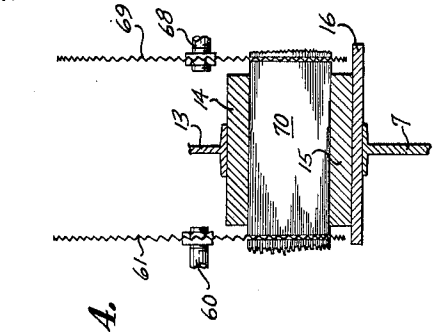


Fig. 4.

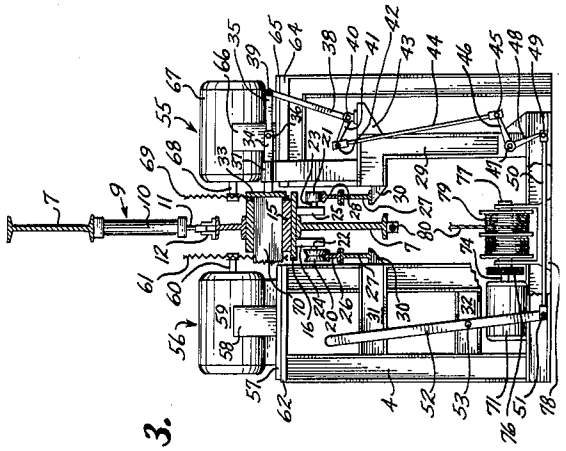


Fig. 3.

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VENEER JOINTER

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3 Claims. (Cl. 143—52)

This invention relates to a veneer jointer that cuts both sides of a stack of veneer simultaneously to insure that the the sides thereof are parallel to each other. More specifically, this invention relates to a veneer jointer for cutting both sides of a stack of veneer employing a movable saw table which moves horizontally with respect to the saws.

Heretofore, veneer stacks have been jointed by a traveling head machine or a guillotine-type machine that is capable of cutting only one side of a veneer stack at a time. This requires that the operator first clamp the bundle in the machine, then cut one side thereof. Then, the operator must unclamp the bundle or stack of veneer, turn the bundle over, and try to line up the smooth edge with a scribe line or the like, reclamp and cut the other side. This allows the veneer to move from internal stress changes when it is unclamped and before the other side is jointed parallel. Also, when veneer is joined in stacks, the friction between individual sheets often prevents perfect alignment of the jointed side, thus making some pieces that are not parallel with the cut side. Moreover, differences in human error in placing the cut side with the scribe line or against stops causes the side to be unparallel. This problem of forming the sides of the veneer in an unparallel manner is especially important in hardwood veneer because of the high value of the veneer and because such veneer is used for decorative panels where appearance is a prime consideration.

An object of this invention is to provide a veneer jointer which forms the sides of a stack of veneer in a parallel manner.

Another object of this invention is to provide a veneer jointer machine which reduces the handling of the veneer stack by cutting both sides of the stack at the same time without additional handling.

An object of this invention is to provide a veneer jointer which is capable of being adjusted to cut veneer stacks in various widths.

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

FIGURE 1 is a perspective view of the jointer machine.

FIGURE 2 is a side elevation of the jointer machine.

FIGURE 3 is an end view of the jointer machine looking on line 3—3 of FIGURE 2 with parts shown in cross section to show internal details.

FIGURE 4 is a cross-sectional view illustrating the manner in which the saws cut the veneer stack.

Referring now to the drawings, the veneer jointer is generally indicated at 1 and is supported by a frame 2 which is provided with horizontal beams 3 and vertical beams 4 with cross beams 3' between the horizontal beams 3. Above the vertical beams 4 are provided a pair of spaced-apart, elongated tables 5 to support the veneer stack during loading and unloading of the machine.

Positioned between the tables 5 is a horizontally movable saw table 6 comprising a pair of horizontal, spaced-apart I-beams 7 and end vertical I-beams 8 which present a generally rectangular configuration. Hydraulic motors 9 are connected to the upper I-beams 7 and comprise a cylinder 10 with a piston, not shown, therein and a piston rod 11 extending out the lower end thereof. The piston rod 11 is connected to a pressure bar 13 by a coupling means 12. An upper pressure plate 14 is connected to the bottom of the side of the pressure bar 13 so as to be readily removable and changed in width. It should be of such material as wood or a soft metal to prevent damage to the saw teeth if they come in contact with it. Each end of the pressure plate 14 is provided with a groove 17 that receives a guide bar 19 to insure vertical movement of the pressure bar 13 and upper pressure plate 14. The guide bar 19 is rigidly secured to the vertical I-beam 8, as shown in FIGURE 1.

A lower pressure plate 15 is mounted on a lower support plate 16 which in turn is mounted on the upper surface of the lower horizontal I-beam 7. The lower pressure plate 15 is so mounted on lower support plate 16 so that it can be readily changed for a plate of a different width. This plate 15 should be of such substance as wood or soft metal so as to prevent damage to saw teeth if they come in contact with it. The opposite ends of the pressure plate 15 are provided with grooves 18 to accommodate the guide bar 19 to insure parallelism with respect to the upper pressure plate 14.

The horizontally-movable saw table 6 is mounted on rollers which permit lateral movement of the saw table. The rollers 20 and 21 are mounted on shafts 22 and 23 which are connected to legs 24 and 25 secured to the I-beam 7. It should be noted that the rollers 20 are provided with a V-groove around its periphery and the roller 21 is flat.

The roller 20 cooperates with a guide track 26 having a configuration to extend into the V-groove portion of the roller 20. Also, a track 28 is provided on the opposite side of the saw table 6 to accommodate the flat roller 21. The tracks 26 and 28 are mounted on the I-beams 27 which are spaced apart and run parallel with respect to the entire machine. The entire track mechanism is supported by vertical I-beams 29 with the I-beams 27 and 28 supported by wing track supports 30 shown in FIGURE 3. Further support is provided for the guide tracks by brace arm 31 extending across and connected to one of the vertical I-beams 4.

An adjustable stop plate 33 is provided that extends from one vertical I-beam member 8 to the other for the purpose of aligning the stack of veneer 70 therewith when the veneer 70 is loaded onto the table 6. The adjustable plate 33 is supported by rod 34 extending through a babbitt bearing 37 mounted on the frame. Connected to the support rod 34 by pin 36 is a push rod 35. The push rod 35 is secured to an arm 38 by a pivot pin 39. The arm 38 is rigidly secured to an elongated rod 40 that extends the full length of the table. It should be noted that a plurality of spaced-apart rods 34, 35, and 38 are provided as clearly shown in FIGURE 1.

The elongated rod 40 is adapted to be rotated by a linkage mechanism including an arm 41 rigidly connected to the rod 40 and pivotally connected to another rod or lever 44 by a pivot pin 42. The lever 44 is pivotally connected to arm 46 by a pivot pin 45. The arm 46 is pivotally connected to arm 48 by a pivot pin 47. The arm 48 is pivotally connected to a rod 50 by a pivot

pin 49. The rod 50 is connected to a lever 52 by a pivot pin 51. The lever 52 is supported by a horizontal support beam 32 by a support member 54. Pivot pin 53 extends through the lever 52 and into the support member 54. Accordingly, when the upper end of the lever 52 is moved back and forth the various linkage arms and levers will provide movement into or out of contact with the stack 70. It should be noted that the elongated rod 40 is supported by support members 43 connected to the frame.

Intermediate to the ends of the table 5 and support frame 2 are provided a pair of spaced-apart saws 55 and 56. The saw 56 is provided with a sliding support plate 57 which connects the motor 59 through a bracket 58. The motor 59 is provided with the usual shaft 60 which is in turn connected to the saw blade 61. The saw 56 is provided with a saw support 62 in the framework and is connected to the slidable support plate 57 by a dovetail connection 63 so that the saw may move laterally with respect to the table or frame 5.

The saw 55 is provided with a support 64 on the frame which cooperates with a slide plate 65 that mounts the motor with the bracket 66. The motor is indicated at 67 and is provided with the usual shaft 68 which is connected to the saw blade 69.

The saws 55 and 56 are adapted to be spaced a predetermined distance apart so that the sides of a bundle or stack of veneer 70 will be cut parallel with respect to each other.

The table 6 is adapted to be moved laterally or horizontally with respect to the frame 2 by a drive mechanism, including a motor 71, mounted on a plate 72 by a bracket 73. The motor 71 is provided with the usual shaft 74 having a sprocket, not shown, connected to the end thereof. The sprocket has extending therearound a chain 75 which extends around another sprocket 76 on a spool 79. The spool 79 is provided with a shaft 77 which mounts the sprocket 76. The spool is mounted on a support member 78 to secure the spool 79 in its position. The spool 79 is provided with a cable 80 which extends around a pulley 83 mounted between a pair of support beams 90 and mounted therein by a shaft 86. The cable 80 extends around a pulley 83 and is connected to the table 6 by connecting means 81.

The other end of the cable extends the entire length of the frame and around a pulley 84 mounted on a shaft 87 in angularly spaced-apart support members 89. The cable 80 extends around another pulley 85 mounted on a shaft 88 and is connected to the movable table 6 by a connection indicated at 82.

In operation, it will be assumed that the pressure bar 13 is in its uppermost position, pressure plates 14 and 15 having a suitable width are properly mounted in position, and that the power mechanisms are idle. The operator first adjusts the stop board or plate 33 to the desired dimension to cut the veneer stack 70. This is done by simply moving the lever 52 to adjust it to the proper position. Then, a stack of veneer 70 is placed onto the lower pressure plate 15 with one side edge thereof abutting the adjustable stop plate 33. The hydraulic motors 9 are then actuated to extend the upper pressure plate 14 in a downward direction and on top of the veneer stack 70. This compresses the veneer stack to insure that the veneers do not move when the edges thereof are trimmed off. The saws 55 and 56 are then adjusted to cut the veneer stack 70 to the proper width. Thereafter, the saws 55 and 56 are activated. The operator then moves the table 6 along the tracks 26 and 28 by the rollers 20 and 21. This is brought about by activating the motor 71 which turns the spool 79 with the cable wrapped therearound. By activating the motor 71 the cable 80 is spooled up onto the spool and the table 6 is pulled from right to left to cut the veneer stack 70 as shown in FIGURE 4. This position of the movable saw table 6 is shown in dotted lines in FIGURE 2. With the table 6 in this position, the cut stack 70 is removed. Then the operator simply reverses the motor 71 and pulls the table 6 back to its original position. Thereafter, another stack 70 may be placed onto the table and cut similarly as noted above.

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. A veneer jointer, comprising: an elongated frame; a pair of spaced-apart rotatable cutter means mounted on said frame rotatable in the same direction and mounted in the path of a stack of veneer for simultaneous cutting of the sides thereof parallel with respect to each other; an elongated table movably mounted on said frame; guide track means mounted on said frame and adapted to carry said table; pressure means mounted on said frame including an elongated rigid pressure plate secured to said table, an elongated vertically movable pressure plate mounted on said table for rigidly holding said stack of veneer on said table and guide means mounted on each end of said table guiding said movable pressure plate relative to said rigid pressure plate; said guide means comprising a vertically mounted elongated bar rigidly attached to said table and rigid pressure plate and extending into a groove formed in each end of said movable pressure plate, said bar being slidable with respect to said groove; hydraulically actuated motor means connected to said movable pressure plate for vertically moving said movable pressure plate.

2. A veneer jointer, comprising: an elongated frame; a pair of spaced-apart rotatable cutter means mounted on said frame rotatable in the same direction and mounted in the path of a stack of veneer for simultaneous cutting of the sides thereof parallel with respect to each other; an elongated table movably mounted on said frame; guide track means mounted on said frame and adapted to carry said table; pressure means mounted in said frame including an elongated rigid pressure plate secured to said table, an elongated vertically movable pressure plate mounted on said table for rigidly holding said stack of veneer on said saw table and guide means mounted on said table guiding said movable pressure plate relative to said rigid plate; said guide means including an elongated bar vertically mounted on each end of said table and extending into a groove in each end of said movable pressure plate, said bar being slidable with respect to said groove; hydraulically actuated motor means connected to said movable pressure plate for vertically moving said movable pressure plate; and an adjustable stop means mounted on said frame adjacent one side of said table to abut one side of said stack of veneer.

3. A veneer jointer, comprising: an elongated frame; a pair of spaced-apart rotatable cutter means mounted on said frame rotatable in the same direction and mounted in the path of a stack of veneer for simultaneous cutting of the sides thereof parallel with respect to each other; an elongated table movably mounted on said frame; guide track means mounted on said frame and adapted to carry said table; means mounted on said frame for moving said table along said elongated frame; pressure means mounted on said frame including an elongated rigid pressure plate secured to said table, an elongated vertically movable pressure plate mounted on said table for rigidly holding said stack of veneer on said table and guide means mounted on each end of said table guiding said movable pressure plate relative to said rigid pressure plate; said guide means including an elongated vertically mounted bar rigidly connected to said table and extending into a groove in each end of said movable pressure plate to guide said movable pressure plate relative to said rigid pressure plate, said bar being slidable with respect to said groove; hydraulically actuated motor means connected to said

movable pressure plate for vertically moving said movable pressure plate; and an adjustable stop means mounted on said frame adjacent one side of said table to abut one side of said stack of veneer.

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