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1,946,375

VENEER MACHINE

Filed Sept. 15, 1931

2 Sheets-Sheet 1

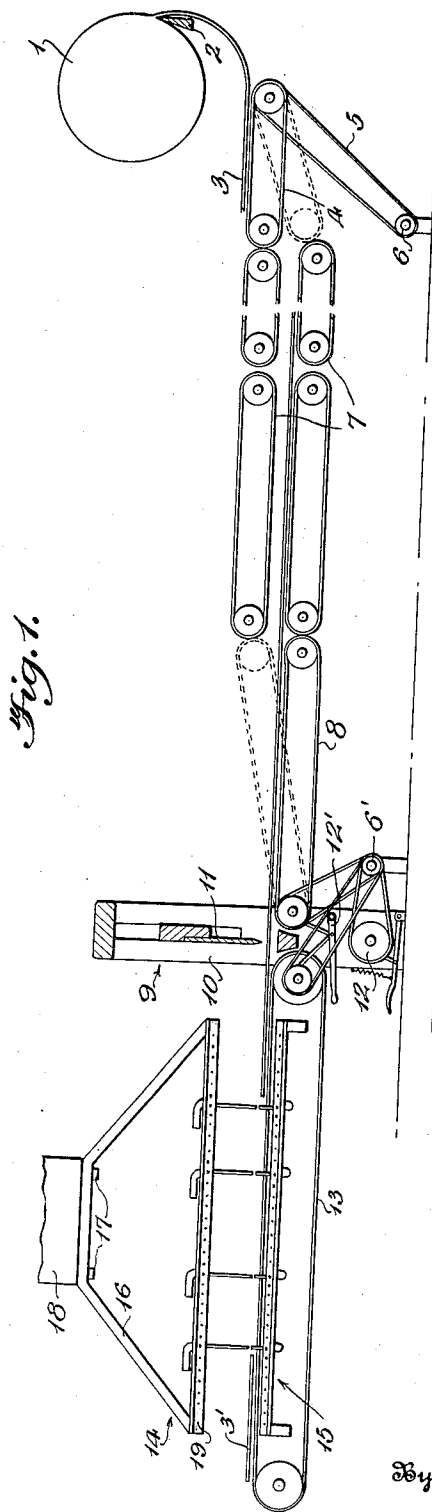


Fig. 1.

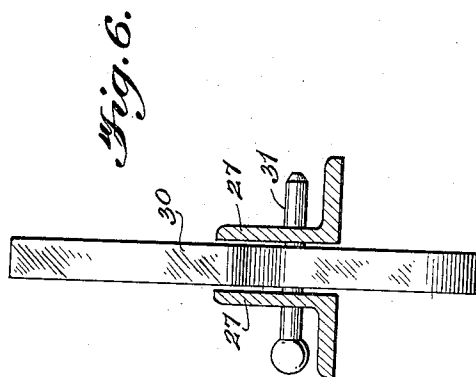


Fig. 6.

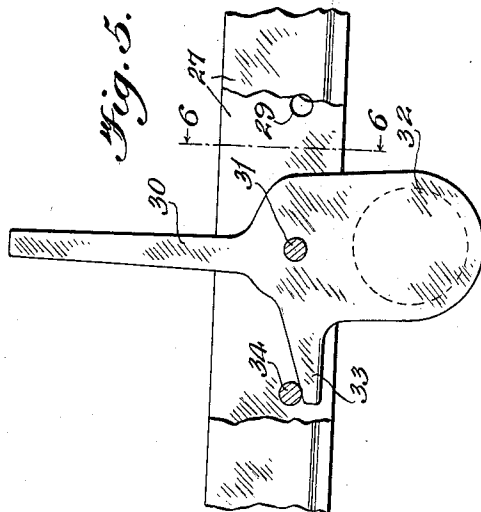


Fig. 5.

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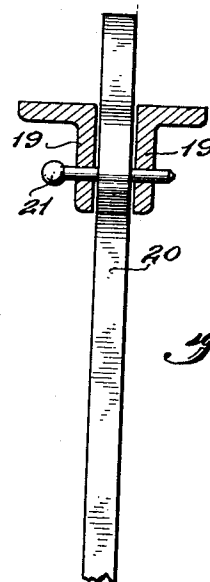
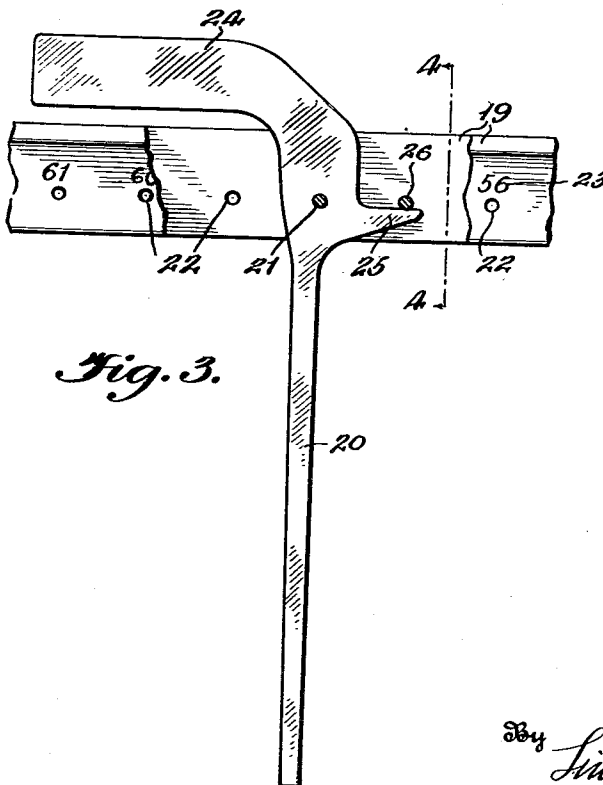
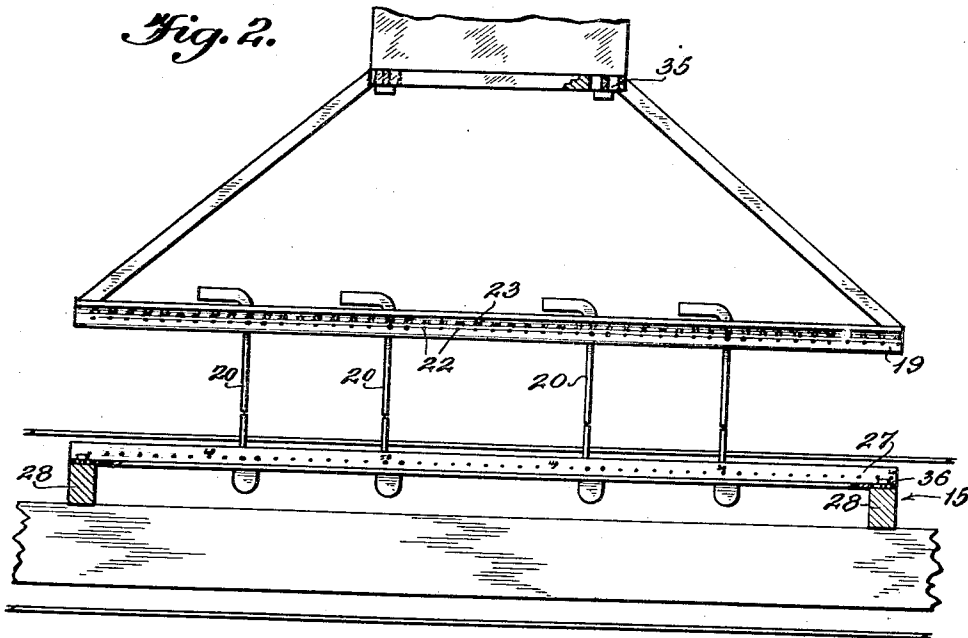
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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VENEER MACHINE

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Application September 15, 1931
Serial No. 562,941

5 Claims. (Cl. 164—48)

The present invention relates to veneer machines and more particularly to a mechanism facilitating the measuring and cutting of veneer at what is known as the "clipper", having for its principal object to provide means capable of permitting the operator of the clipper to positively determine at what precise moment the clipping should be done and to give him perfect control of the veneer strip to be clipped.

Veneering is usually manufactured from log blocks of certain sizes, which are placed in a peeler, that is, the blocks are placed in a turning device which rotates said blocks against a sharp knife, peeling off the veneer in a continuous thin sheet or strip. This thin sheet of veneer is taken up by a set of conveyors and directed thereby through the clipper and in passing through the latter, the veneer is clipped or cut into desired widths. The width to which the veneer is to be cut has heretofore commonly been measured by a set of numerals or figures disposed on the side of the conveyor frame, and the operator of the clipping machine standing opposite the knife can only guess when the end of the moving veneer is over the marking numeral or figure. In cutting, it is necessary to allow for shrinkage and waste occurring during the drying, matching and trimming of the stock. Under the commonly used systems of measuring, there occurs an unreasonable and unwarranted waste because, the operator is unable to follow the moving sheet of veneer to measure the same, as the clipper working arrangement which he operates is stationarily mounted. The operator, therefore, cannot adequately gauge the exact size and allow for the shrinkage and waste, for the material comes through relatively fast and it is necessary to keep it moving so as not to slow down the peeling machine. Further, the operator must watch the oncoming veneer in order to judge the proper width to which the next piece must be cut, because the amount of veneer to be allowed for shrinkage varies with the width of the strip. Consequently, it is a further object of the present invention to overcome these inconveniences by providing an arrangement whereby the operator may accurately ascertain the various widths of the veneer to be cut from the strip and to readily clip the same.

It is an equally important object of the invention to provide adjustable indicating elements pivotally supported in the path of the moving veneer strip, whereby to positively indicate to the operator of the clipper that said strip should be cut.

Still another object of the invention resides in the provision of means adapted to take away the cut veneer faster than the oncoming strip in order to afford a clear way to the new cut and eliminate the necessity of slowing up the machine, thus increasing the output in production. Other objects and advantages of the invention will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by those skilled in the art, I have in the accompanying drawings and in the detailed description based thereupon, set forth a possible embodiment of the same.

In these drawings:

Figure 1 is a diametrical representation, in side elevation, of a veneer machine constructed in accordance with the invention;

Figure 2 is an enlarged elevation of the measuring section of the device;

Figure 3 is an enlarged detail of an upper indicating element;

Figure 4 is a section of the same taken on line 4—4 of Figure 3;

Figure 5 is a detail of the lower indicating element; and,

Figure 6 is a section taken on line 6—6 of Figure 5.

Having more particular reference to the drawings wherein like characters of reference will designate corresponding parts throughout, I have conventionally shown a veneer machine wherein the wooden block 1 is mounted to rotate against the peeler knife 2 peeling off the thin continuous strip of veneer 3, which is taken up by a continuous apron 4 driven by means of a belt 5 in engagement with a driving shaft 6.

Working in correlation with the apron 4 is a set of superposed endless conveyors 7 disposed to receive thereon the veneer strip 3 from said apron 4. The apron 4 is preferably mounted for vertical pivotal adjustment as illustrated in dotted lines of Figure 1 of the drawings, in order to direct the veneer strip 3 to any one of the superposed endless conveyors 7.

From the conveyors 7, the strip of veneer 3 is directed onto another conveyor section 8 which is also disposed to have vertical pivotal movement, whereby it may be adjusted to work in conjunction with any one of the superposed sets of conveyors 7 to convey the veneer strip to the clipping mechanism 9, including the frame 10 and clipper or cutter 11, the latter being operable through any suitable clutch arrangement

12, known in the art. The veneer strip 3 passes freely through the clipping mechanism 9 and is received upon the endless conveyor 13 arranged upon the other side of said clipper. The veneer strip proceeds in this manner through the clipper until the desired width is had, whereupon the strip is stopped and cut through operation of the clipper 11.

For the purpose of cutting the veneer to the desired width, the strip is stopped in its movement by stopping the conveyors 8 and 13 each arranged on the opposite sides of the clipping mechanism 9 and working in conjunction by means of a common driving shaft 6' and operable through a suitable known clutch arrangement 12' acting simultaneously on both of said conveyors 8 and 13. The conveyor 13 intended for carrying the cut veneer section 3' is mounted to travel faster than the conveyor 8 so that said veneer section 3' will be taken away quickly to afford a clear passage of the oncoming veneer strip 3 to be cut.

In order that the operator of the clipper may readily and accurately ascertain the proper width of the strip of veneer to be cut, I have devised a measuring attachment which consists in an upper frame 14 and a lower frame 15 disposed in parallel superposed relation.

The upper frame 14, being suitably suspended over the conveyor 13 from a support 16 fixed by means of bolts 17 or other securing devices to a beam 18 or the like, is preferably formed of a pair of angle bars 19 as more clearly shown in Figures 3 and 4 of the drawings, being relatively spaced from each other for the free insertion therebetween of one or more indicating elements 20. Each element 20 is pivotally supported upon the bars 19 preferably by means of a pin 21 or the like to movably engage in any one of a series of equidistant apertures 22 formed transversely throughout the entire length of said bars.

To facilitate the adjustment of the elements 20, each aperture 22 is designated preferably by a numeral 23 indicating a certain number of inches, the numerals being disposed adjacent their respective apertures by stamping or otherwise applying the same on the exposed side of the bars 19. The elements 20 are designed to be normally maintained in an upright or vertical position, and for that purpose, have their upper ends 24 weighted and bent at right angles to their body portions, in order to retain the elements in normal vertical position, which is maintained by means of a stop or tongue-like extension 25 coming in contact with the pin 26 removably inserted in the aperture 22 adjacent that receiving the pin 21 associated with the element 20.

The lower frame 15 likewise comprises a pair of angular bars 27 supported in spaced relation beneath the working surface of the conveyor 13 upon cross pieces 28 and provided with equidistant designated apertures 29 disposed in alignment and corresponding with those in the bars 19 of the upper frame 14. These lower bars 24 support also a set of indicating elements or fingers 30 pivoted on pins 31 and are so constructed to be normally suspended in a vertical position, having their lower ends 32 weighted and provided with a lateral projection 33 coming in contact with the adjacent pin 34.

It will be appreciated that a veneer machine constructed as hereinbefore described, will effect a considerable saving in material and great-

ly speed up the operation, because the operator of the clipping mechanism does not have to guess at the width, but just watches the indicating device until the oncoming veneer touches it. The operator may readily see the movement of the indicating device, whereupon he may instantly stop the conveyors under his control and operate the clipping machine to cut the veneer to the desired width and then set the conveyors back in movement without appreciable loss of time. As soon as a piece is cut to the desired width and freed from the oncoming veneer, it moves on faster than the oncoming sheet from the peeler, because the conveyor beyond the clipping machine is speeded up faster than that between the peeler and clipper.

As soon as the veneer section is cut to size, it passes the indicating devices which right themselves by reason of the weighted ends and come back to an upright or working position when the oncoming piece of veneer touches it again and the cutting operation is repeated. The device can be made to take care of every inch, the frame or angle sides being drilled or punched with holes at the proper length or distance allowing for shrinkage according to the size of the piece, and for waste, so that the indicating elements can be moved along the frame according to the sizes being cut.

The use of the extra pin, it will be understood, acts as a bumper, so that when the indicating element or finger rights itself by reason of its weighted end, it will not keep swinging, but immediately come to an upright or working position by reason of the projection or stop on said element coming in contact with the bumper pin to limit the swing of the element.

At times, it is desirable to cut veneer sections of different sizes from the same sheet or strip. Supposing for instance, that veneer sections of three different sizes are desired, say 24 inches, 36 inches and 48 inches, then three of the indicating devices would be set in the frame at the proper distances or points from the clipper, and when it is desired to cut a 24 inch piece, just as soon as the veneer touches the first element, the clipper operator cuts a 24 inch piece; and then the next piece if it is to be 36 inches, then the operator lets the moving veneer pass over the first indicating device and as soon as it touches the second device, the operator cuts a 36 inch section; and, then the next piece to be 48 inches, the operator lets the moving veneer pass over the first two indicating elements, and when it touches the 48 inch indicating element, the operator cuts a 48 inch section. Of course, it will be readily understood that the bumper pin is set down far enough in the frame to allow the indicating element or finger to disappear between the sides of the frame and lie flush with the top of the frame when the veneer is passing over any one of the indicators.

The indicating elements or fingers are always free to work, because as hereinbefore stated, the conveyor beyond the clipper mechanism is speeded up and takes the free and disengaged piece of veneer away faster than the oncoming sheet.

In practice, the apertures in the frames are spaced approximately $1\frac{1}{8}$ of an inch apart, the allowance for shrinkage of the veneer being $\frac{1}{8}$ inch per inch in width of veneer. This uniform spacing of apertures allow for shrinkage of any size or width, for example, if the indicating element is placed at a point to cut a 24 inch section and one at 40 inch, there will be sixteen spaces

between the two sizes and sixteen times $\frac{1}{8}$ th makes an additional inch allowed for shrinking of a 40 inch piece over a 24 inch piece. Further, $1\frac{1}{2}$ inch is usually to be allowed for waste in trimming, so in placing the device to stop for instance at 16 inches, it would be set 16 inches plus sixteen times $\frac{1}{8}$ th inch or one inch for shrinkage, plus $1\frac{1}{2}$ inches for waste, or a distance of $18\frac{1}{2}$ inches from the clipper knife. It will be understood that the other widths would work out automatically. The flat portion of the frame is also preferably slotted for the fastening screws or bolts as indicated at 35 and 36 in Figure 2 of the drawings, in order that the frame may be moved in either direction for a fraction of an inch so that the allowance for shrinkage may be increased or diminished, since at times, the allowance for shrinkage may vary slightly.

It is to be noted that the provision of the upper and lower frames is for the purpose of taking care of any natural deformation in the veneer strip, for instance, the forward edge of the veneer strip may curl up and this happening, the indicating elements of the upper frame would be acted upon. However, it will be understood that the veneer block, if sufficiently steamed prior to its peeling, as is often done in the art, to soften the same in order that it may lie flat, then the upper frame with its indicating elements may be eliminated without inconveniences.

By providing a set of superposed conveyors from the peeler, the peeled veneer may be directed to any one of said conveyors, and consequently, the operation of the peeler need not be stopped or slowed by the cutter or clipper operation, since the peeler may continue to work by filling one conveyor after the other, while the operator of the clipper works from a conveyor already filled.

Whereas I have described the invention as applicable to veneer machines, it will be understood that it may also be used for other purposes whenever it is desired to subdivide a length of material into sections. Likewise, it will be manifest that the construction shown and described is capable of considerable modification and such modifications as come within the scope of my claims, I consider within the spirit of my invention.

I claim:—

1. In a device of the character described, a cutter, a conveyor for advancing a sheet of material through the cutter, a frame disposed on the outlet side of the cutter, an indicating element adjustable along said frame and pivotally suspended thereon in the path of the advancing material, said element being displaceable upon contact with said material to visually indicate the moment for cutting the same and having a weighted

end for returning said element to its normal suspended position, and means between said frame and element to limit the movement of the latter.

2. In a device of the character described, the combination with a cutter, of a conveyor on the inlet side of the cutter for advancing a sheet of material through the latter, another conveyor on the outlet side of the cutter for receiving and carrying away the cut material, a frame disposed beneath the working surface of said last mentioned conveyor and having adjusting indicating elements pivotally supported thereon, another frame suspended above said working surface of the conveyor and provided with adjustable indicating elements pivotally supported thereby, said elements being disposed in the path of the advancing material and moved by contact therewith to indicate the moment for cutting the material.

3. In a device of the character described, the combination with a cutter, of a conveyor on the inlet side of the cutter for advancing a sheet of material through the latter, another conveyor on the outlet side of the cutter for receiving and carrying away the cut material, a frame disposed beneath the working surface of said last mentioned conveyor and having adjusting indicating elements pivotally supported thereon, another frame suspended above said working surface of the conveyor and provided with adjustable indicating elements pivotally supported thereby, said elements being disposed in the path of the advancing material and moved by contact therewith to visually indicate the moment for cutting the material, and means associated with said frames for their lateral adjustment with respect to the cutter.

4. In a device of the character described, a cutter operable to cut material passing therethrough, a frame arranged adjacent the outlet side of said cutter and having indicating elements pivotally supported thereon, another frame suspended above said first mentioned frame and provided with indicating elements, said elements of each frame being disposed in the path of the material passing through the cutter and moved by contact with said material to visually indicate the moment for operating the cutter.

5. In a device of the character described, a cutter, a conveyor for advancing a sheet of material to the cutter, a frame disposed on the outlet side of the cutter, an indicating element pivotally supported upon said frame in the path of the advancing material, said element being displaceable upon contact with the material to indicate the moment for cutting the same and having a weighted end for returning said element to its normal suspended position.

HERMAN WENTJAR.