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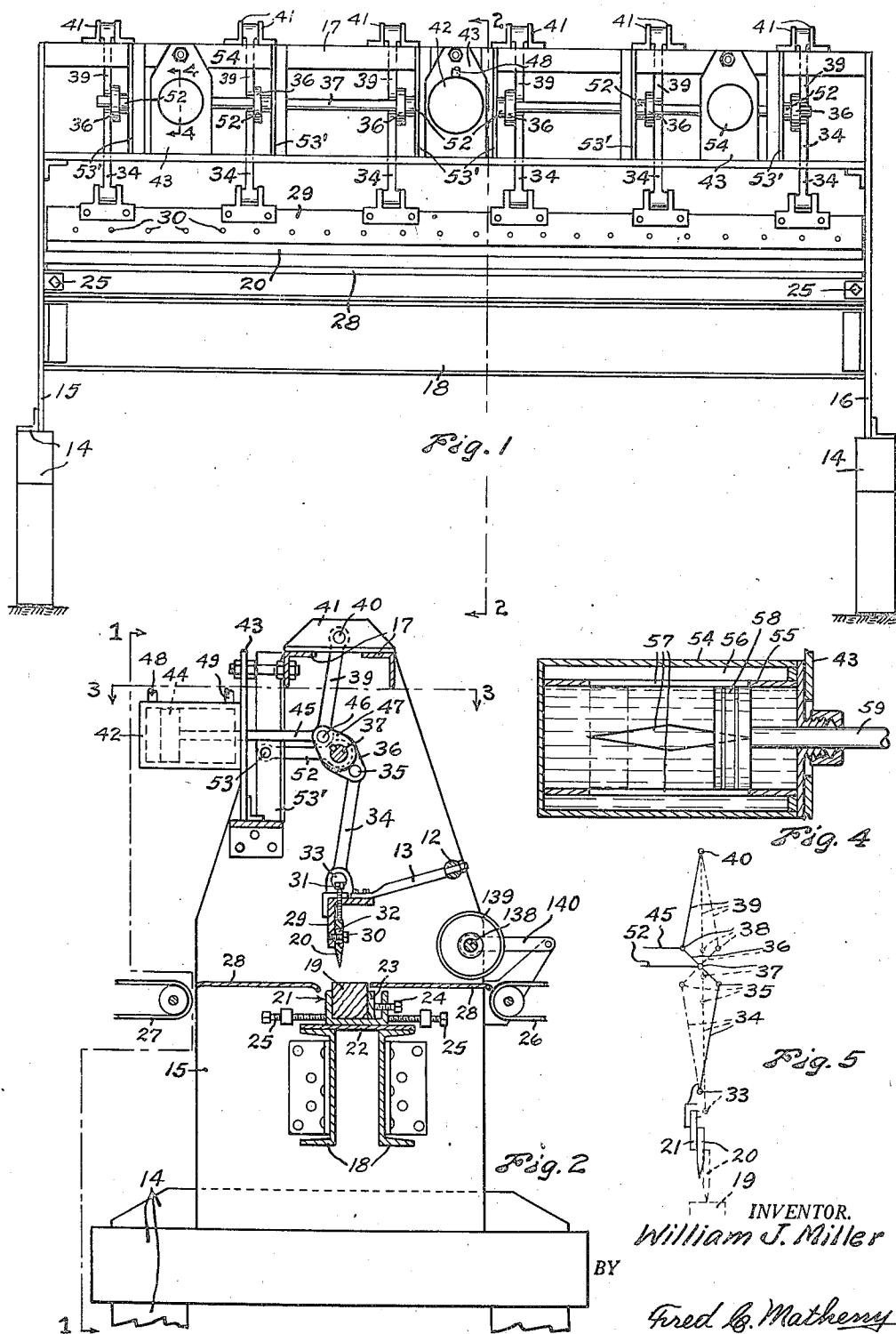
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2,394,324

VENEER CLIPPER AND CONTROL MEANS THEREOF

Filed April 26, 1943

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

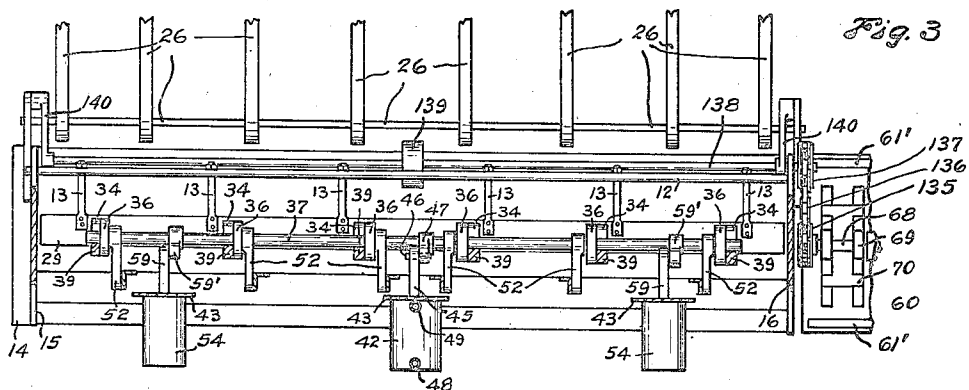
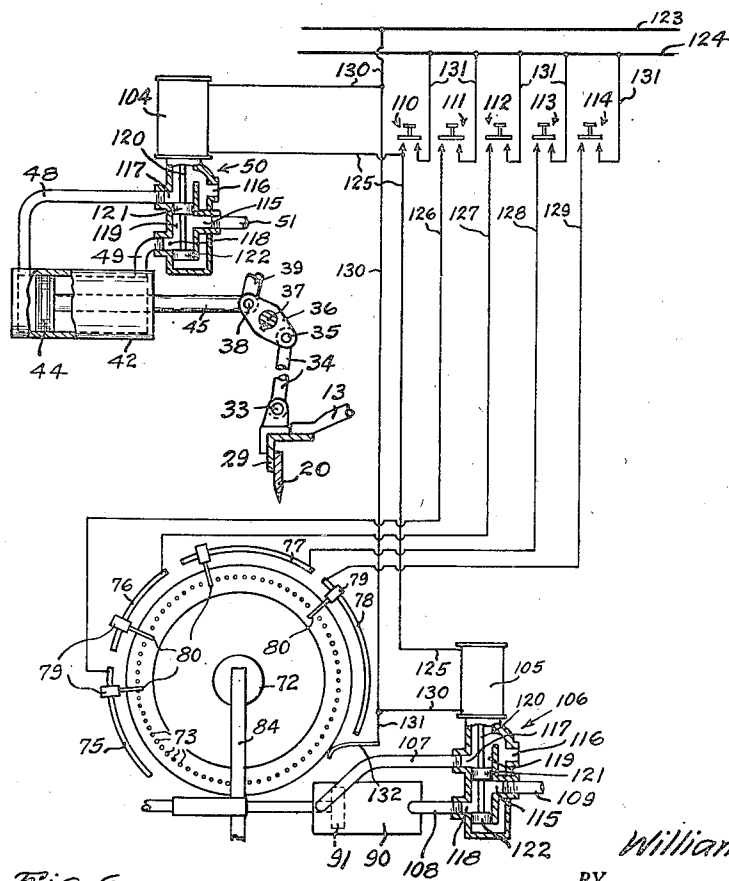


Fig. 6

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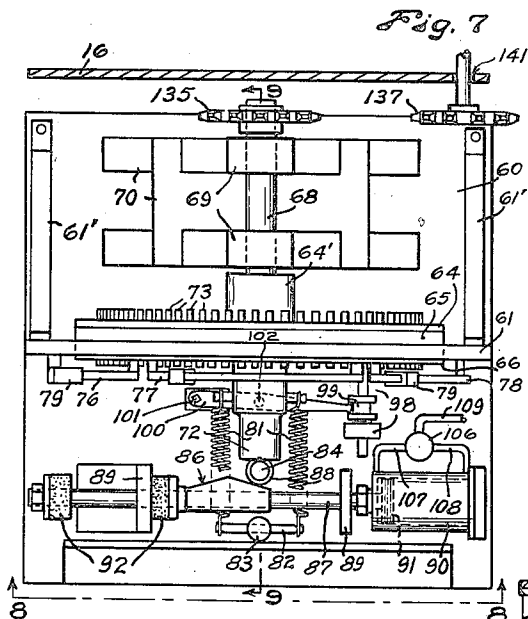
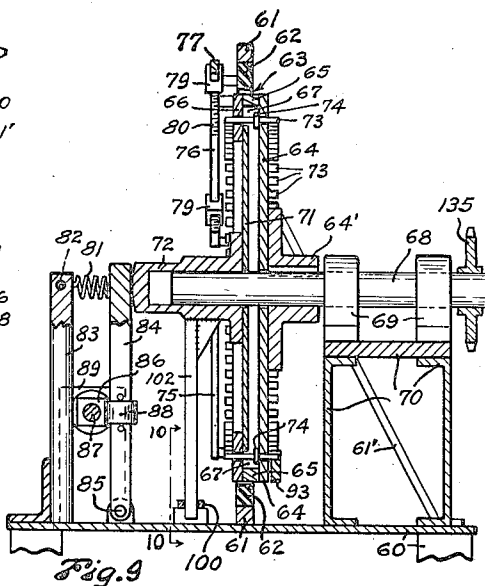
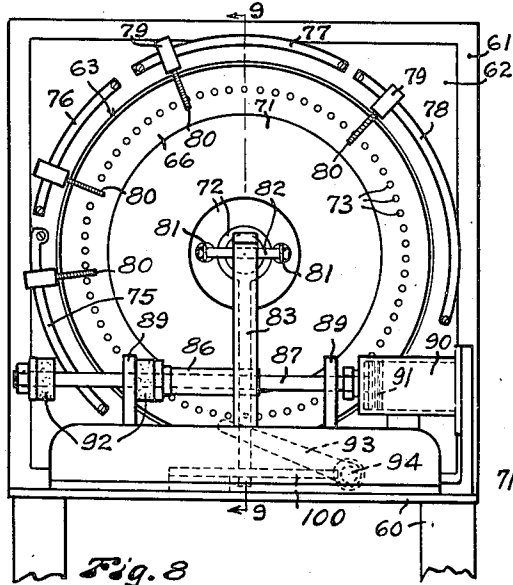
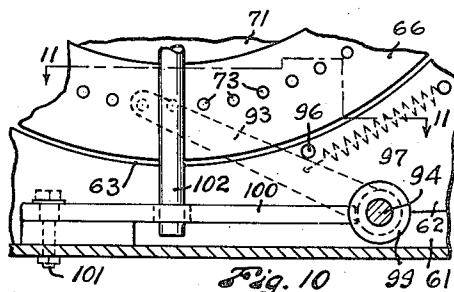
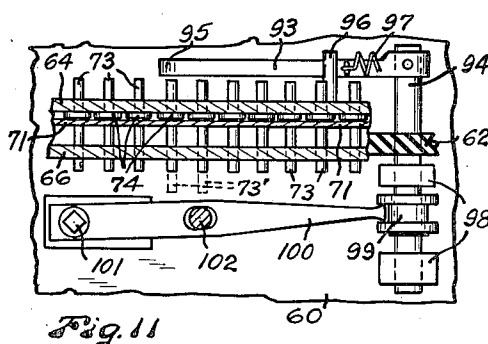
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VENEER CLIPPER AND CONTROL MEANS THEREOF

Filed April 26, 1943

3 Sheets-Sheet 3



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2,394,324

VENEER CLIPPER AND CONTROL MEANS
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Application April 26, 1943, Serial No. 484,673

11 Claims. (Cl. 164—47)

My invention relates to veneer clippers and control means for the same.

An object of my invention is to provide an efficient veneer clipper for clipping up into pieces a moving sheet of veneer.

Another object is to provide efficient means for manually controlling the clipper to cut the veneer into pieces of varying width or for automatically controlling the clipper to cut the veneer into pieces of predetermined standard widths.

Another object is to provide a veneer clipper and control therefor which is very fast and very accurate in operation thereby making it possible to cut up moving veneer as it comes from the peelers in such a manner as to reduce waste to a minimum and most efficiently utilize the stock.

Another object is to provide an efficient veneer clipper having a clipping knife which will clip moving veneer feeding means without stopping the veneer and without moving the knife along with the veneer at the time the cut is being made.

Another object is to provide a veneer clipper having a reciprocable veneer clipping knife and having efficient shock absorbing means for cushioning the movement of said knife.

Other objects will be apparent from the following description taken in connection with the accompanying drawings.

In the drawings, Figure 1, is an elevation looking in the direction of the line 1—1 of Fig. 2, of a veneer clipper constructed in accordance with this invention; Fig. 2 is a vertical sectional view of the same taken substantially on broken line 2—2 of Fig. 1; Fig. 3 is a plan view with parts in section looking down substantially on broken line 3—3 of Fig. 2, and showing a fragment of a control device connected with the clipper; Fig. 4 is a detached sectional view taken substantially on broken line 4—4 of Fig. 1, showing shock absorbing means; Fig. 5 is a detached view showing the operation of link means by which the knife is stroked; Fig. 6 is a wiring diagram showing electrical connections to the clipper and control means; Fig. 7 is a detached plan view on a larger scale than the preceding figures showing a control device; Fig. 8 is a side elevation of said control device looking in the direction indicated by broken line 8—8 of Fig. 7; Fig. 9 is a vertical sectional view taken substantially on broken lines 9—9 of Figs. 7 and 8; Fig. 10 is an enlarged fragmentary view partly in section and partly in elevation taken substantially on broken line 10—10 of Fig. 9, and Fig. 11 is a view partly in section and partly in plan taken substantially on broken line 11—11 of Fig. 10.

Like reference numerals designate like parts throughout the several views.

The veneer clipper shown in Figs. 1 to 4 inclusive comprises two upright end frame plates 15 and 16 supported on base frame means 14 and maintained in spaced apart relation by transverse frame bars 17 positioned near the upper ends of the plates 15 and 16 and other transverse frame bars 18 spaced below said upper frame bars 17.

A die block 19, Fig. 2, is supported by the frame bars 18 and a reciprocable knife 20 is supported from the frame bars 17 by means hereinafter described.

Preferably the die block 19 is of a material, such as hard wood, that is suitable for the knife 20 to cut against and soft enough so that it will not dull said knife.

The die block 19 is preferably supported in a channel iron 21 that rests on a plate 22. The plate 22 is supported on the frame bars 18. Preferably clamping plate means 23 and screw means 24 rigidly secure the die block 19 in the channel iron 21. Also preferably the channel iron is adjustably supported at each end by cap screws 25 thus making transverse adjustment of the die block 19 possible.

The veneer is preferably fed to the clipper by endless traveling conveyor means 26, Figs. 2 and 3 and may be taken away by discharge conveyor means 27, Fig. 2. Veneer supports 28, substantially flush with the die block 19 may be used to bridge the space between the die block 19 and the conveyors 26 and 27.

The knife 20 is preferably secured to an angle bar 29, Fig. 2, by holding screws 30 and adjustment screws 31. The holding screws extend through slots 32 in the knife and are threaded into the angle bar 29. The adjusting screws 31 are threaded through the top flange of the angle bar 29 and are engaged by the top edge of the knife 20.

The knife 20 is guided and supported against tipping movement by a plurality of links 13 each preferably having one end portion rigidly connected with the angle bar 29 and the other end portion pivotally supported as by a pivotal support or shaft 12 that preferably extends across the machine between the two end plates 15 and 16 and is pivotally connected with said end plates. The pivotal support 12 is positioned above the knife 20 and at the side of the knife from which the veneer approaches, as shown in Fig. 2. The knife will thus move in a circular path. As the knife moves downwardly to make the cut it

will have a component of motion in a direction opposite to the direction of motion of the incoming veneer and as said knife moves back upwardly after making the cut it will tend to boost ahead and out of the way of the piece of veneer that has just been cut off.

This particular movement of the knife in an arcuate path has been found to produce a clean and satisfactory cut and it does not interfere with the even and continuous flow or travel of the veneer through the trimmer, even though the veneer is stopped for an instant at the time the knife strikes it. The veneer is flexible and the knife operates at fast speed and the slight stoppage of movement of the portions of veneer adjacent the knife is compensated for by a flexing or arching of the on-coming veneer so that there is no stopping or retardation of the movement of the sheet of veneer that is being fed to the clipper.

The angle bar 29 which carries the knife 20, is connected by pivots 33 with the lower ends of link members 34. The upper ends of the link members 34 are connected by pivots 35 with the lower end portions of lever arms 36. The lever arms 36 are mounted on a floating shaft 37 and extend in two directions from said shaft. The upper end portions of the lever arms 36 are connected by pivots 38 with links 39. The upper end portions of the links 39 are connected by pivots 40 with transverse frame bars 41 that are supported on and secured to the angle bars 17 at the top of the frame.

A pneumatic cylinder 42 is fixedly secured to the frame of the machine by supporting means 43. A piston 44 in the cylinder 42 is connected by piston rod means 45 and pivot 46, Figs. 2 and 3, with a crank 47 that is secured to the rock shaft 37. Two air supply conduits 48 and 49, Fig. 6, extend from an electrically controlled air valve 50 to the cylinder 42. The valve 50 is connected by a conduit 51 with a suitable supply of compressed air.

The floating shaft 37 is also connected with a plurality of substantially horizontal link members 52 that each have one end portion pivotally connected with the shaft 37 and the other end portion connected by pivot means 53 with fixed means 53'.

When the piston 44 in the air cylinder 42 is reciprocated it will rock the shaft 37 and this will reciprocate the knife 20, as will be apparent from Fig. 5, the knife 20 being moved downwardly and then upwardly as the pivots 35, 37 and 38 move through the positions shown in said Fig. 5, each time the piston 44 moves from one end of its cylinder to the other.

It will thus be apparent from the foregoing description and from the diagram, Fig. 5, that a stroke or single movement of the piston 44 in either direction will impart a full reciprocation to the knife 20, i. e., a single piston stroke will impart both a downward and a retractile movement to the knife. The piston 44 is actuated by compressed air and the movement of the piston 44 and the knife 20 is very rapid. For this reason efficient means must be provided to absorb the shock which would otherwise result from the stopping of these rapidly moving parts.

To absorb this shock, which, if not cushioned, would result in damage to the machine, I provide a plurality of shock absorbers preferably of duplicate construction. In Figs. 1 and 3, I show two of these shock absorbers and one of said shock absorbers is shown in longitudinal section in Fig. 4.

Each shock absorber, see Fig. 4, comprises two cylinders 54 and 55 of larger and smaller size positioned one within the other so as to leave a chamber 56 between said two cylinders. The inner cylinder 55 has longitudinally extending openings 57 in its walls through which liquid, such as oil may flow. A reciprocable piston 58 in each cylinder 55 is connected by piston rod means 59 with a crank member 59' on the floating shaft 37. The cylinders 54 and 55 are secured to the frame of the machine by frame means 43 and contain liquid, such as oil preferably to about the level of the tops of the inner cylinders 55. The pistons 58 are movable in both directions just far enough to substantially close the openings 57 and said pistons thus limit the amount of oscillation of the shaft 37. From the time the piston starts to move in one direction and throughout the greater portion of the piston stroke the oil will by-pass freely through the openings 57 between the inner cylinder 55 and the chamber 56 and will offer little resistance to the movement of the piston. As the piston nears the end of its stroke the area of the openings 57 through which the oil in front of the piston must escape is rapidly decreased and this builds up a uniformly increasing pressure against the piston which brings the piston and parts connected therewith to a gradual rather than an abrupt stop. Thus efficient shock absorbing means is provided which makes possible high speed operation of the machine without damage to the machine.

The two arms of each lever 36, i. e. the parts of said lever that extend in opposite directions from the shaft 37, function as independent levers, the parts that extend in a generally upward direction being supported by the links 39 and the parts that extend in a generally downward direction supporting the knife 20.

The means for controlling operation of the pneumatic cylinder 42 is hereinafter described.

The control devices are best shown in Figs. 6 to 11 inclusive. These control devices comprise supporting means, such as a table 60 supporting an upright frame member 61. Preferably the frame member 61 is a rectangular metal frame secured to the table 60 and fixedly supported by truss braces 61'. Also preferably said frame member 61 has a central panel 62 of insulating material secured therein. The panel 62 is provided with a central opening 63 of circular shape within which a circular rotor is rotatively disposed. This rotor is preferably made up of a disc 64, a peripheral ring 65 and a flat face ring 66 a'1 secured together to provide an annular pocket 67 in the peripheral portion of the circular rotor.

The face disc 64 has a hub 64' that is fixedly secured to a shaft 68. The shaft 68 is journaled in bearings 69. Frame means 70 mounted on the table 60 supports the bearings 69.

A non-rotatable disc 71 has a tubular hub portion 72 that is slidably and freely mounted on an end portion of the shaft 68. The peripheral portion of the non-rotatable disc 71 is positioned within the annular pocket 67 formed by parts 64, 65 and 66 of the rotor. The non-rotatable disc 71 is adapted to be moved a limited distance longitudinally of shaft 68 for the purpose of retracting certain contact pins 73, as hereinafter explained.

The disc 64 and face ring 66 of the rotor carry a plurality of the contact pins 73. These contact pins 73 are arranged in a circular path and are slidably supported by the disc 64 and ring 66 so that selected contact pins 73 may be pro-

jected outwardly from the ring 66 beyond the other pins to cause said outwardly projecting pins to close electrical circuits as hereinafter explained as the rotor rotates. Each contact pin 73 is provided with a fixed collar 74 that is positioned between the face disc 64 and the non-rotatable disc 71. The collars 74 on all of the contact pins 73 overhang the peripheral portion of the non-rotatable disc 71 so that when said non-rotatable disc 71 is moved to the right from the position in which it is shown in Fig. 9, it will move to the right all contact pins that previously have been projected to the left into the path of certain electrical contact devices hereinafter described.

In the particular machine herein disclosed it has been found desirable to provide sixty-eight of the contact pins 73 and to space these pins equal distances apart. It will be understood, however, that the number and spacing of these contact pins 73 may be varied.

A plurality of contact bars 75, 76, 77 and 78 are positioned outwardly from the periphery of the rotor 64, 65, 66 and supported by the upright frame means 62 in spaced and electrically insulated relation from each other. Each of these contact bars carries a contact member 79 that is adjustable on its bar and each contact member 79 carries a spring brush 80 that extends toward the center of the rotor and is positioned so that it will be engaged by any outwardly projected contact pin 73 that passes it. Contact pins 73 that are retracted into the position shown in Figs. 7 and 9 will not contact the spring brushes 80 as said pins pass said brushes. However, if any of said contact pins are moved outwardly into the position shown by broken lines 73' in Fig. 11, they will be in a position to contact the brushes 80 as the rotor member rotates. The contact bars 75, 76, 77 and 78 are insulated from each other and from the upright frame 61 as they are secured to the panel 62 of insulating material. The circuits connected with these contact bars are shown in Fig. 6 and hereinafter described.

Preferably the brushes 80 are formed of helically coiled wire although obviously they may be made of resilient flat metal if desired.

The non-rotatable disc 71 is urged to the left, Fig. 9, against the rotor member 66, by two tension springs 81, Figs. 7 and 9, positioned on opposite sides of the hub 72 and each having one end connected with the hub 72 and the other end connected with a fixed cross bar 82. The cross bar 82 is supported by an upright post 83 that is rigid with the table 60.

Means are provided for moving the non-rotatable disc 71 to the right as respects the showing in Fig. 9, to retract all contact pins 73 that previously have been projected outwardly into the path of the contact springs 80. This means comprises an upper cam lever 84 fulcrumed on a pivot 85 and having its upper end portion positioned in engagement with the end of the tubular hub member 72 of the disc 71. A double acting cam 86 on a reciprocable cam shaft 87 is positioned to engage with a roller or sleeve 88 on the cam lever 84 and is adapted to move the upper end portion of the lever 84 and the non-rotatable disc 71 to the right as respects the showing in Fig. 9. The cam shaft 87 is supported for longitudinal movement in bearings 89 and extends into a pneumatic cylinder 90. A piston 91 shown by dotted lines in Figs. 7 and 8 is secured to the cam shaft 87 within the pneumatic cylinder 90 and the cam shaft 87 is adapted to be longitudinally

moved by the admission of air under pressure to the cylinder 90 as hereinafter explained. Two resilient bumper members 92 are provided on the cam shaft 90 and are adapted to bump against a bearing member 89 to cushion and arrest movement of the cam shaft 89 in both directions.

Each time the cam shaft 87 is moved longitudinally from one position to another the non-rotatable disc 71 will be moved first to the right as respects the showing in Fig. 9 and then to the left. The means for operating the piston 91 is hereinafter described.

The upright cam lever 84 may limit movement of the disc 71 to the left, as respects the showing in Fig. 9, so that the peripheral portion of the disc 71 will not be subject to wear by the rotating member 66.

The means for moving selected pins 73 into an operative or contacting position, i. e. to the left as respects the showing in Fig. 9, so that said pins will contact the spring contact members 80 as the rotor member rotates preferably comprises an arm 93 secured to a longitudinally movable bar or shaft 94 and having an end portion 95 adapted, when in the position shown by full lines in Figs. 10 and 11, to overlap the ends of one or more of the pins 73. The shaft 94 is movable reciprocally with the disc 71, as hereinafter explained.

Preferably the arm 93 is urged upwardly against a stop member 96, Figs. 10 and 11, by a tension spring 97. This yieldingly supports the arm 93 in such a manner that said arm will easily be depressed out of the way of pins 73 that come in contact with the top edge of said arm.

The shaft 94 is supported for longitudinal and rotary movement in bearing members 98 and is provided with a grooved collar 99 that is engaged by a lever 100 which is fulcrumed on a pivot 101 and is adapted, when oscillated, to longitudinally move said shaft 94. Means for moving the lever 100 to move the arm 93 in timed relation with the movement of the disc 71 is provided. This lever moving means is arranged to operate at the time the pin setting disc 71 is being reciprocally moved to insure proper setting of all of the pins 73.

This lever moving means comprises a downwardly extending arm 102 rigidly connected with the tubular hub portion 72 of the disc 71 and engaging with the lever arm 100. When the disc 71 is moved to the right, Fig. 9, far enough to fully retract all pins 73 that are not already retracted the arm 93 will be moved clear of the path of the pins 73 into a position as shown in Fig. 11. When this occurs the spring 97 will lift the arm 93 until it engages the stop 96, in which position the end portion 95 of said arm 93 will be opposite the ends of some of said pins as shown by broken lines in Fig. 10 and by full lines in Fig. 11. As the disc 71 moves back to the left, Fig. 9, the arm 93 will be moved to the left with it and at least one of the pins 73 will be moved to the left into contacting position by the end portion 95 of said arm 93.

Due to the shape of the arm 93—95 said arm will ordinarily move two or three of the pins 73 out into contacting position each time it is operated and I have illustrated by broken lines 73' in Fig. 11, the positions which two of these pins will occupy when they are moved outwardly into contacting position as respects the contact members 80.

It will not make any difference if more than one pin 73 is thus moved into contacting posi-

tion because if several adjacent pins 73 are thus moved into alignment with the contact brushes 80 it will be the leading pin 73 that will first engage a predetermined contact brush and the successive pins may maintain this circuit closed a little longer but will not affect the operation of the machine.

The supply of compressed air to the pneumatic cylinder 90 is governed by an electrically controlled air valve 106 that is connected by two conduits 107 and 108 with the cylinder 90 and by another conduit 109 with a source of supply of air under pressure. The supply of electric current to a double acting solenoid 105 of the electrically controlled valve 106 is governed by means hereinafter described and shown diagrammatically in Fig. 6.

A double acting solenoid 104 is connected with the valve 50 by which the operation of the clipper is controlled.

In the operation of the control means for this clipper the operator is preferably positioned on the opposite side of the veneer conveyor 26, Fig. 3, from the control device and just far enough ahead of the clipper to enable him to get a good view of the veneer that is approaching the clipper.

From this position the operator controls the clipper by the use of a plurality of electric switches 110, 111, 112, 113 and 114 see Fig. 6, which may be of the push button type.

As the peeled veneer comes from the log it will usually be of varying quality, with portions that are suitable for use and other portions that must be cut out and discarded because they have pitch pockets, knots or the like which render them defective.

If the veneer that is passing under the knife at a particular time is free from defective portions that have to be discarded then the operator will close one of the switches 111, 112, 113 or 114 and the machine will operate automatically to cut at intervals of twenty-four, thirty, thirty-four or forty-eight inches respectively depending on which width of strip is desired. Usually pieces will be cut to forty-eight inch width when the veneer permits. An experienced operator is able to judge very accurately as respects the number and the width of pieces of good veneer to be obtained from a run of veneer between two defects. For instance, he may be able to cut one forty-eight inch piece and one twenty-four inch piece or one forty-eight inch and one thirty-six inch piece or he may find it necessary to cut a piece of less than twenty-four inches in which instance he operates the switch 110 just before the defect comes under the knife.

By use of the switch 110 it is possible to cut pieces of very narrow widths for instance an operator may salvage a six inch strip of good material that lies between two defects in the stock.

The switches herein shown will operate the parts with which they are connected when they are moved from open to closed position but obviously circuits could be provided which would operate upon the opening of switches.

The valves 50 and 106 are preferably of similar construction, as shown in Fig. 6. Each of said valves has a main cylinder 119 connected with an air intake port 116, an air exhaust port 115 and with two ports 117 and 118 that communicate with the pneumatic cylinders 44 and 90. Each valve 50 and 106 has a piston rod 120 provided with two spaced apart pistons 121 and

122 and connected with the double acting solenoid 104 or 105 by which the valve is operated. The double acting solenoids are of conventional type in which the cores or plungers thereof are moved first in one direction and then in the opposite direction in response to successive closings of the circuits connected with the coils of said solenoids. The switches 110 to 114 inclusive are preferably of a self opening type so that the circuits controlled by one of these switches will be broken as soon as the operator releases the switch.

In Fig. 6, 123 and 124 indicate electrical conductors that are connected with a source of supply of electric current. 125 to 131 inclusive indicate other conductors and 132 indicates a brush member that completes a circuit through the rotor 64-65-66 to the contact members 73.

The rotor 64-65-66 is driven from the same means that drives the feed for the veneer so that the speed of the rotor is always synchronized with the speed of movement of the veneer. The rotor driving means herein disclosed, see Figs. 2, 3 and 7, comprises a sprocket wheel 135 connected by a link belt 136 with another sprocket wheel 137 on a shaft 138. A roller or wheel 139 on shaft 138 is positioned so that the veneer runs under it and drives both the shaft 138 and the shaft 68 that carries the rotor. Arms 140 may support the shaft 138 so that it is afforded a limited vertical movement and the frame member 16 may have a slot 141 therein for clearance of this shaft, see Fig. 7.

The switch 110 provides a manual control by which the operator can clip the veneer at any desired location. When this switch is closed a circuit is completed to the solenoid from source of supply conductor 124 along conductor 131, through switch 110, along conductor 125, through the solenoid 104 and along conductor 130 to source of supply conductor 123. At this same time a circuit will be completed through the solenoid 105, and the disc 71 and arm 93 will be reciprocally moved to replace any pin members 73 that have been in contacting position as respects the contact members 80 and to put a new pin out into contacting position. It will be noted that, at each clipping stroke of the knife, all previously set contact members are moved back into neutral positions and a new contact member 73 is moved out into contacting position. Thus after each clipping operation a contact member 23 is moved into a contacting position at the same or a starting position on the contact rotor. Each contact member 73 thus set or moved outwardly at the starting position will successively make electrical contact with the brushes 80 as it moves around with the rotor, provided the said contact member 73 is allowed to remain in a set or contacting position. However an operation of the clipper knife will always be accompanied by operations that will retract all previously set contact members and set a new contact member.

If none of the switches 111, 112, 113 or 114 is closed a contact pin 73 may make electrical contact with any or all of the brushes 80 without operating the machine. Thus when manually controlled operation is desired for narrow and random width cuts only the switch 110 will be used and the knife will be stroked each time the circuit that is controlled by this switch is closed.

If, after a cut has been made and a contact pin 73 pushed out, the switch 111 is promptly closed and held closed the circuit will be completed through conductor 126 to the contact brush

80 on the segment 75 and when the outwardly protruding contact pin 73 makes electrical contact with this brush the circuits through both solenoids 104 and 105 will be closed and the machine operated. This will clip a piece of veneer of predetermined width depending on the distance of the contact brush 80 from the location at which the pin 73 is pushed out. As long as the switch 111 is held down the machine will continue to cut pieces of veneer of this predetermined width.

Similarly if one of the switches 112, 113 or 114 is held closed a circuit will be completed through the conductor 127, 128, or 129 to the contact brush on the segment 76, 77 or 78 and the machine will clip at a different predetermined width.

The location at which a contact pin 73 is moved out into contacting position may be regarded as a starting location in measuring the width of a cut and the distance from this starting position of the energized contact brush 80 through which the circuit is to be completed will determine the width of cut.

The members 79 are adjustable on the segments 75, 76, 77 and 78 to provide for varying the widths of cut. Applicant has found it advantageous to control the clipping of all widths up to twenty-four inches with the switch 110 and to adjust the several contact brushes 80 so that the machine will clip at twenty-four, thirty, thirty-six and forty-eight inches in response to the closing of the respective switches 111, 112, 113 and 114. Thus the operator will use the switch 110 to cut out defective portions in the veneer and to salvage usable portions of from a few inches wide up to about twenty-four inches wide and will use the switches 111, 112, 113 and 114 to cut to predetermined standardized widths the veneer which has no objectionable defects.

The foregoing description and accompanying drawings disclose a preferred embodiment of my invention but it will be understood that changes in the same may be made within the scope and spirit of the following claims.

I claim:

1. In a veneer clipper, veneer feeding means; a knife movable to cut veneer; pneumatic knife moving means connected with said knife; electric circuit means controlling the operation of said knife moving means; driven circuit control means for said electric circuit means synchronized with the veneer feeding means; and manual circuit control means interconnected with said driven circuit control means predetermining the time of operation of said driven circuit control means.

2. In a veneer clipper, veneer feeding means; a knife movable to cut veneer; knife moving means connected with said knife; electric circuit means controlling the operation of said knife moving means; driven circuit control means for said electric circuit means synchronized with the veneer feeding means operable to cut strips of veneer of predetermined uniform widths; manual circuit control means interconnected with said driven circuit control means providing selectivity of different uniform widths of cut; and other manual circuit control means dominant over said driven circuit control means providing independent control of said knife moving means for random widths of cut.

3. Control means for a clipper that is provided with feeding means for feeding sheet material therethrough, comprising a rotatively mounted rotor member; drive means for said rotor mem-

ber synchronized with said material feeding means; a plurality of contact members carried by said rotor member and each movable between a retracted position and a contacting position; means operable synchronously with the clipper for moving a contact member into contacting position and for retracting previously set contact members at each cutting operation of the clipper; a plurality of contact brushes supported in relatively insulated relation and extending into the path traversed by contact members that are in contacting position; and circuit means connected with said brushes and said rotor and controlling the operation of said clipper.

4. Control means for a clipper that is provided with feeding means for feeding sheet material therethrough, comprising a rotatively mounted rotor member; drive means for said rotor synchronized with said material feeding means; a plurality of spaced apart contact pins supported by said rotor in a circular path and each movable between a retracted position and a contacting position; means operable synchronously with the clipper for moving a contact pin into contacting position and for retracting previously set contact pins at each cutting operation of the clipper; a plurality of contact brushes supported in relatively insulated spaced apart relation and extending into the path traversed by contact pins that are in contacting position; circuit means connected with said brushes and said rotor; and pneumatic clipper operating means controlled by said circuit means.

5. Control means for a clipper that is provided with feeding means for feeding sheet material therethrough, comprising a rotatively mounted rotor member; drive means for said rotor member synchronized with said material feeding means; a plurality of contact members carried by said rotor member and each movable between a retracted position and a contacting position; pneumatic means operable synchronously with the clipper for moving a contact pin into contacting position and for retracting previously set contact pins at each cutting operation of the clipper; a plurality of contact brushes supported in spaced apart relatively insulated relation and extending into the path traversed by contact pins that are in contacting position; pneumatic clipper operating means connected with said clipper and circuit means connected with said brushes and said rotor and controlling the operation of the pneumatic clipper operating means for said clipper and the pneumatic means for positioning said contact pins.

6. Control means for a clipper that is provided with feed means for feeding sheet material therethrough, comprising a table; an upright frame carried by said table and having a circular opening therein; a contact carrying rotor supported for rotation within said opening; a plurality of contact pins carried by said rotor and each movable between a retracted position and a contacting position; a plurality of contact segments supported by said frame around said opening and in relatively insulated relation; a contact brush adjustably connected with each of said contact segments and extending into the path of movement traversed by said contact pins when said contact pins are in contacting position; circuit means connected with said brushes and said rotor and controlling the operation of said clipper; and drive means for said rotor synchronized with said material feeding means.

7. Control means for a clipper that is provided

with feeding means for feeding sheet material therethrough, comprising a table; an upright frame carried by said table and having a circular opening therein; a rotor member supported for rotation within said opening; drive means for said rotor synchronized with said material feeding means; a plurality of contact pins supported by said rotor in a circular path and each movable between a retracted position and a contacting position; means operable synchronously with the clipper for moving a contact pin into contacting position and for retracting previously set contact pins at each cutting operation of the clipper; a plurality of contact segments supported by said frame around said opening and in relatively insulated relation; a contact brush adjustably connected with each of said contact segments and extending into the path traversed by contact pins that are in contacting position; and circuit means connected with said brushes and said rotor and controlling the operation of said clipper.

8. In a veneer clipper, a floating shaft; two sets of levers rigid with said floating shaft and extending in opposite directions therefrom; shaft supporting links each having one end portion pivotally connected with a lever of the set that extend in one direction from said shaft; fixed pivot means pivotally supporting the other end portion of each shaft supporting link; knife carrying links each having one end portion connected with a lever of the set that extends in the opposite direction; said shaft supporting links and said knife carrying links extending in generally opposite directions from said shaft; other link means connected with said floating shaft limiting movement of said floating shaft in directions generally transverse to the plane of said shaft supporting links and said knife carrying links; knife means connected with the outer end portions of said knife carrying links and reciprocable by oscillation of said floating shaft; shaft oscillating means including a reciprocable piston rod; and a shaft oscillating lever secured to said shaft and pivotally connected with said piston rod, said shaft oscillating lever being positioned so that when said shaft oscillating lever and said shaft and said two sets of levers are moved in one direction by a stroke of said reciprocable piston rod the pivotal connections of said two sets of levers with their respective links will be moved from one side to the other of a center line that is substantially common to said fixed pivot means, said shaft and the pivots that connect said knife carrying links and said knife to thereby impart a complete downward and upward stroke to said knife at each stroke of said piston rod.

9. In a veneer clipper, a die member; horizontal veneer supporting means substantially flush with said die member; veneer moving means adapted to move veneer across said veneer supporting means and said die member; a reciprocable knife positioned above said die member and movable toward and away from said die member; link means connected with said knife and extending sidewise and upwardly therefrom; pivot means positioned above said veneer and spaced sidewise from said knife in the direction from which the veneer is approaching and supporting the outer end portion of said link means, said link means guiding said knife in an arcuate path as it is moved toward and away from the die member and imparting to said knife as said knife withdraws from the veneer a component of movement coinciding with the direction of movement of the veneer and boosting the several pieces of veneer forward.

10. In a veneer clipper, a die member; a knife reciprocally supported above said die member for movement toward and away from the die member; pneumatic knife reciprocating means connected with said knife; and hydraulic shock absorber means operatively connected with said knife and said knife reciprocating means providing a gradually increasing shock absorbing resistance tending to arrest movement of said knife and said knife reciprocating means at the end of each cycle of operation.

11. In a veneer clipper, a die member; a knife reciprocally supported above said die member for movement toward and away from the die member; intermittently movable oscillatory crank means connected with said knife adapted to reciprocate said knife at each movement thereof; and hydraulic shock absorber means connected with said crank means to absorb the shock at the end of each reciprocation of the knife, said shock absorber means comprising a cylinder; a reciprocable piston therein; a piston rod connecting the piston and the crank means; a fluid chamber of larger size than said cylinder surrounding the cylinder; fluid in the chamber substantially submerging the cylinder; and a fluid passageway in the walls of the cylinder extending substantially throughout the length of stroke of the piston, the medial portion of said passageway being of relatively large area and said passageway converging gradually toward both ends whereby fluid resistance to the movement of the piston will increase as said piston moves in either direction from its mid position.

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