

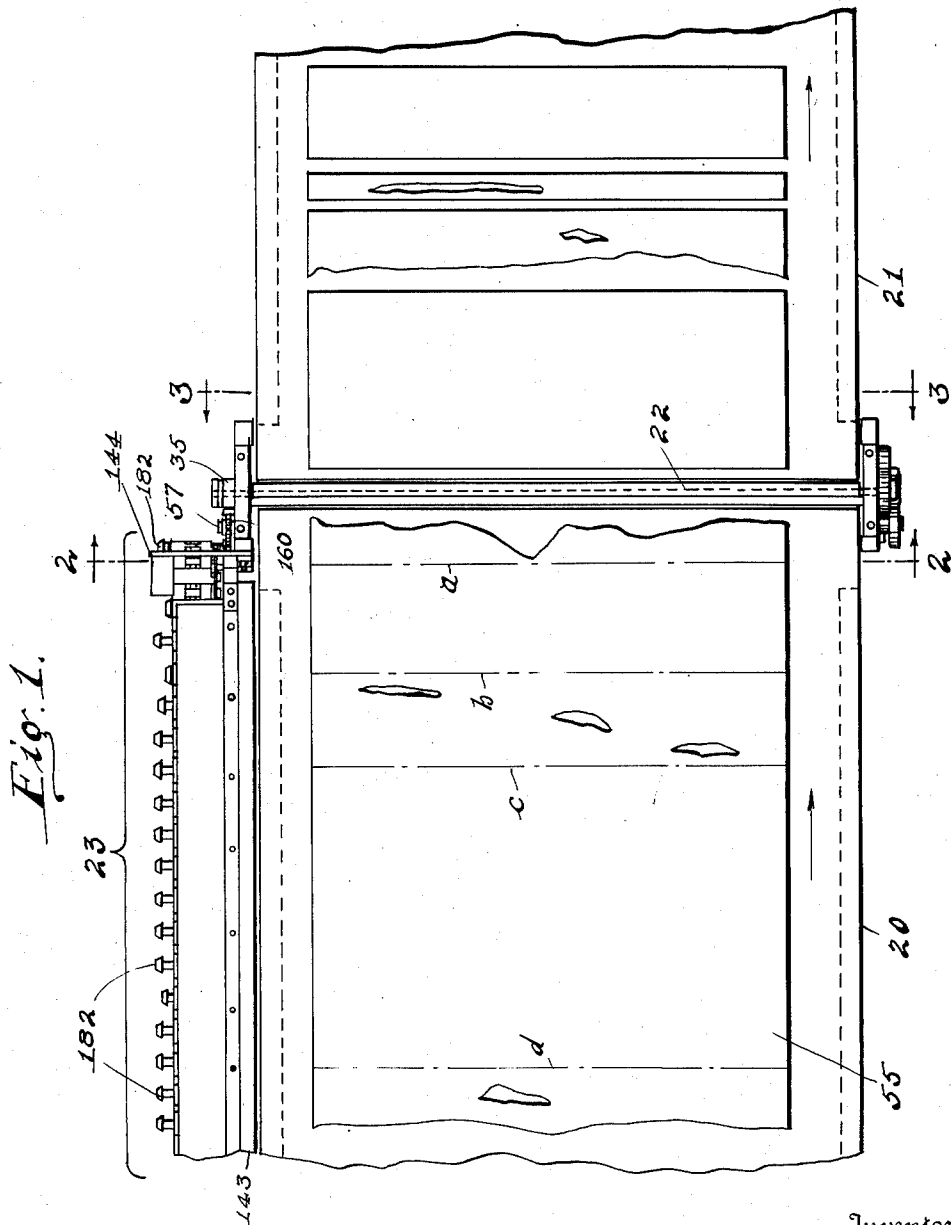
Sept. 9, 1952

E. PEDRON
VENEER TRIMMER

2,609,874

Filed June 12, 1947

7 Sheets-Sheet 1



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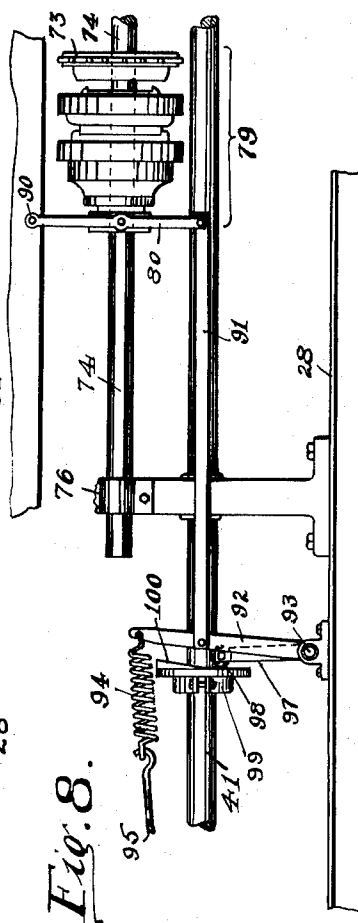
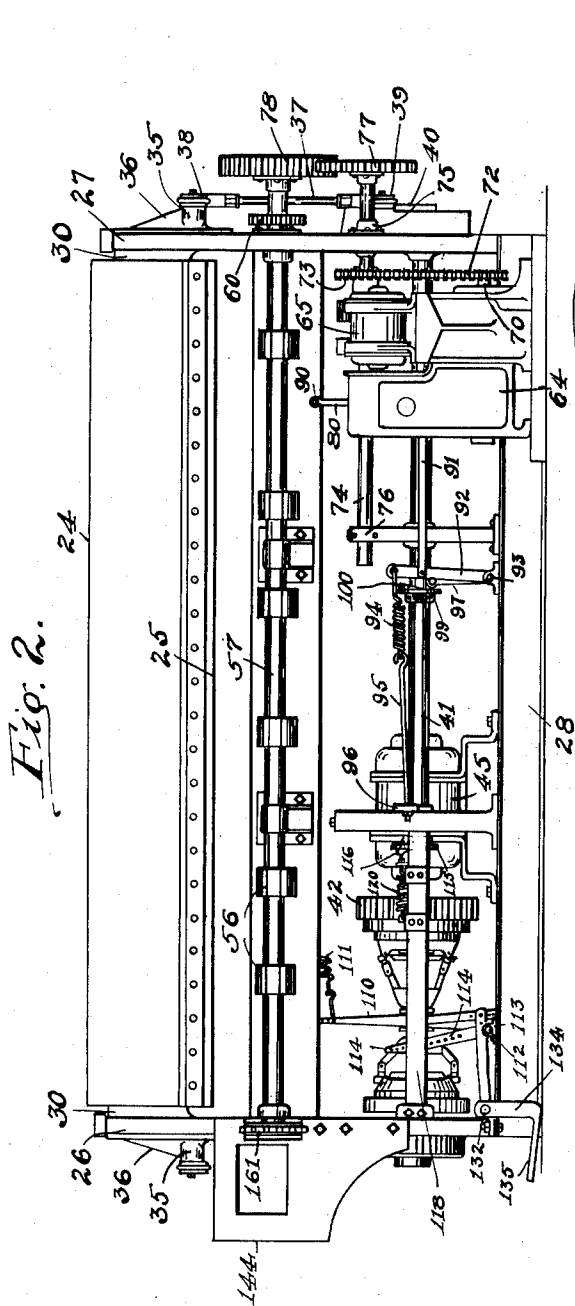
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7 Sheets-Sheet 2



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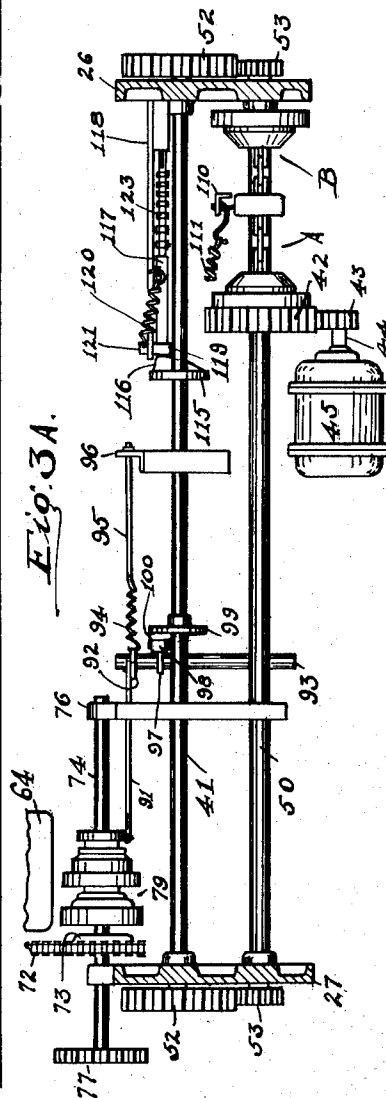
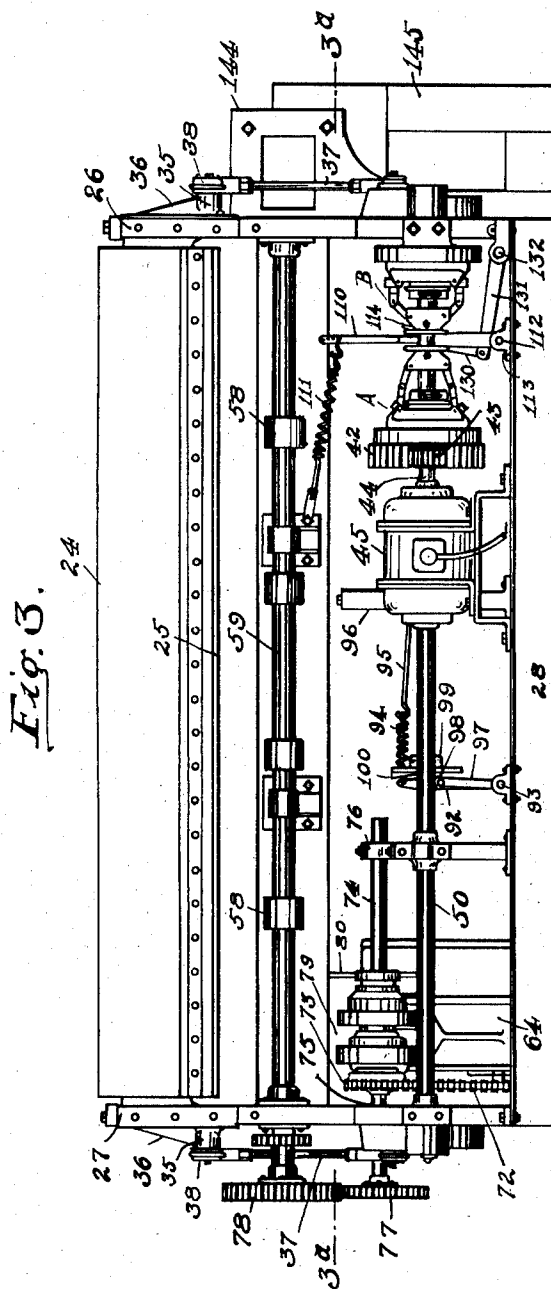
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7 Sheets-Sheet 3



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2,609,874

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7 Sheets-Sheet 4

Fig. 5.

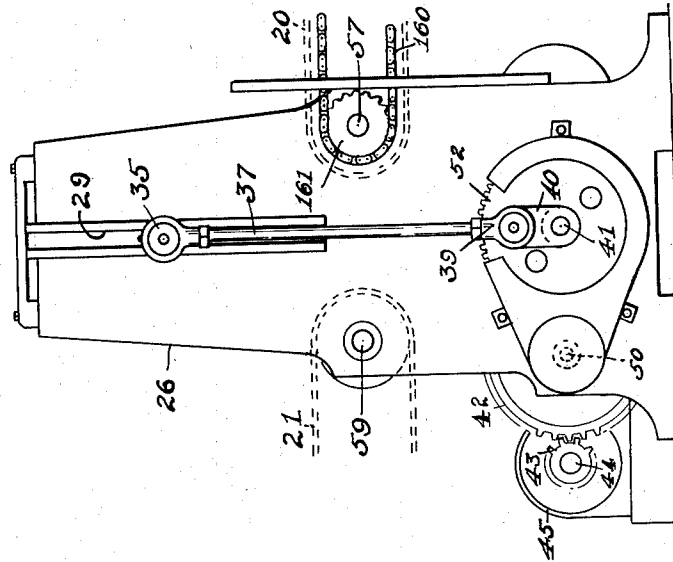
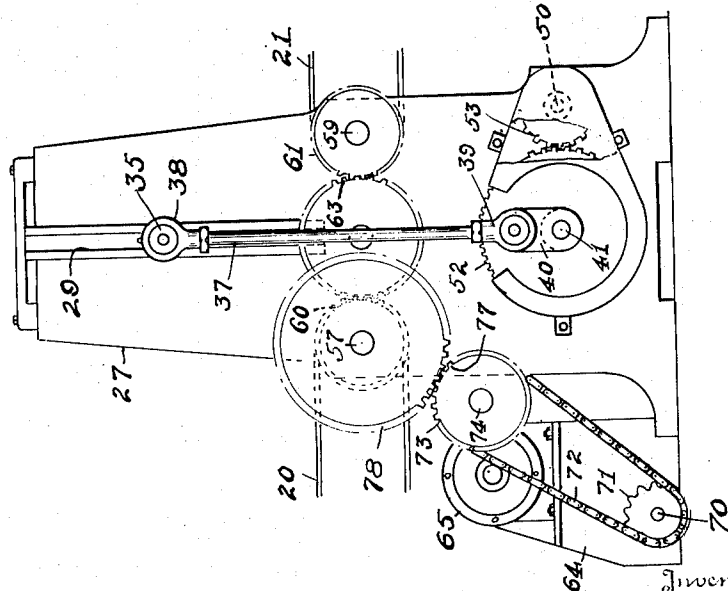


Fig. 4.



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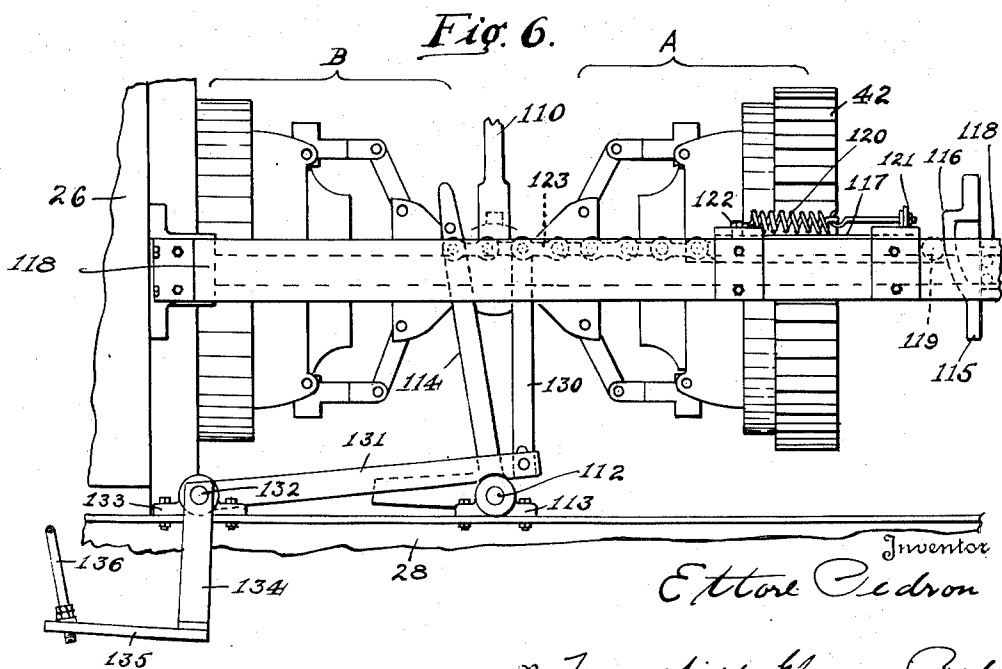
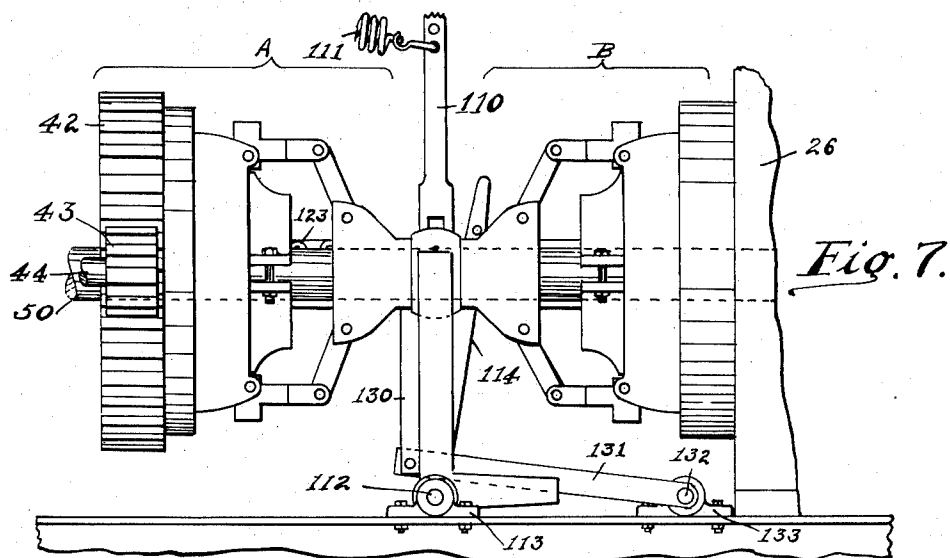
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7 Sheets-Sheet 5



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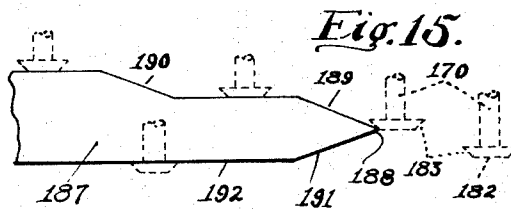
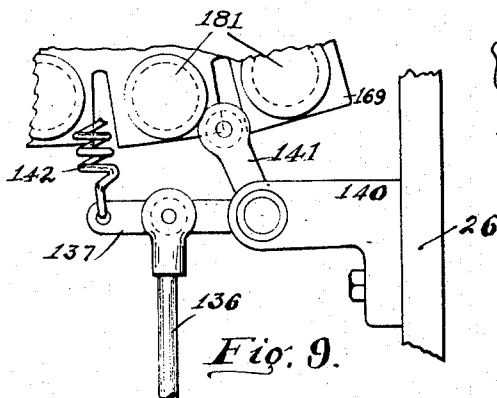
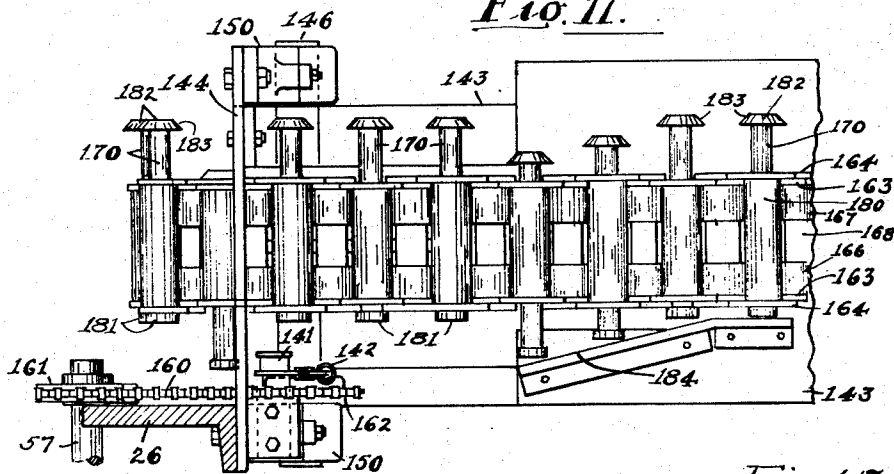
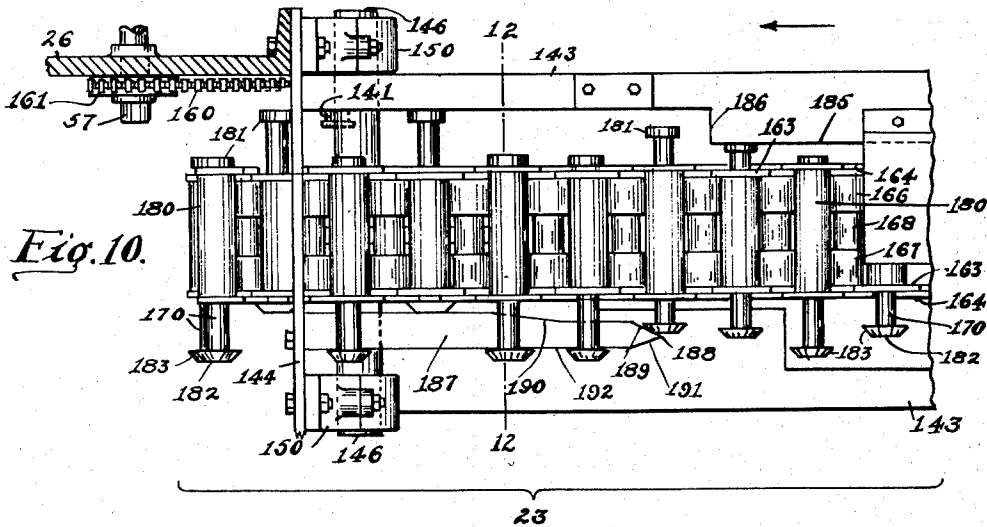
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7 Sheets-Sheet 6



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Fig. 12.

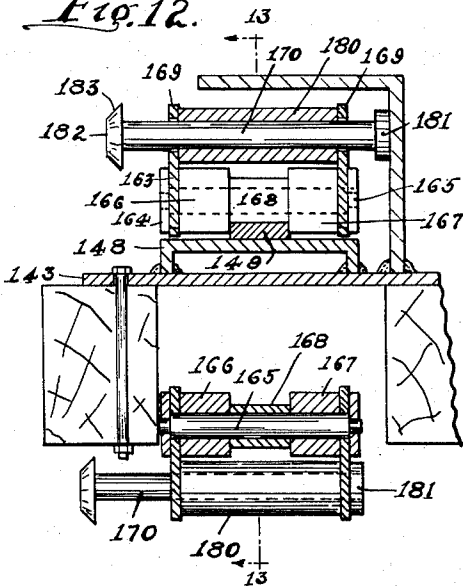


Fig. 13.

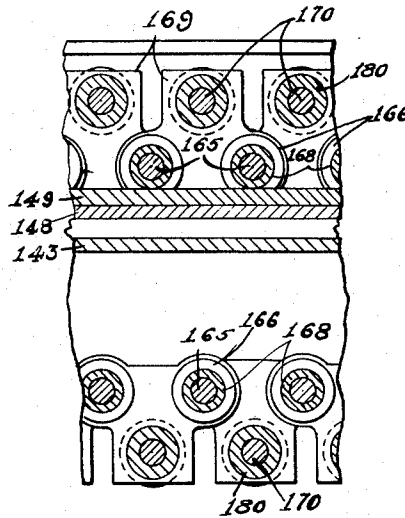
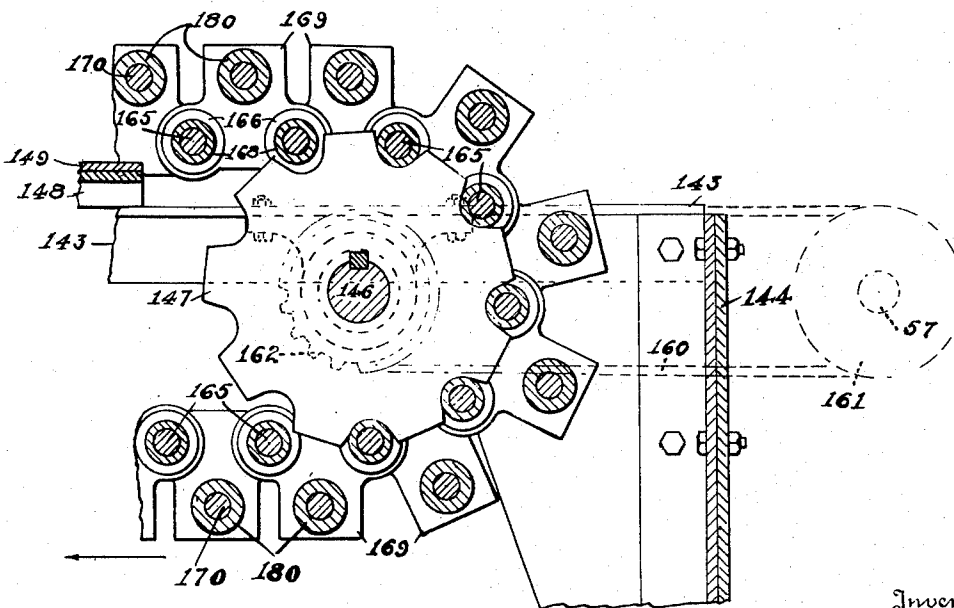


Fig. 14.



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UNITED STATES PATENT OFFICE

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VENEER TRIMMER

Ettore Pedron, Eugene, Oreg.

Application June 12, 1947, Serial No. 754,157

13 Claims. (Cl. 164—49)

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My invention relates to machine tools, particularly machines for trimming and slitting sheets of veneer, and an object thereof is to provide a machine tool adapted to present sheets of veneer to and carry them away from a reciprocating cutter by means of conveyors located at opposite sides of the cutter and timing the movement of said parts relatively to each other together with a universal control mechanism.

Another object of my invention is to provide a machine tool of the character indicated comprising a driving mechanism for reciprocating the cutter, a separate drive for operating the conveyors, a controlling mechanism which interrupts the movement of the conveyors during the reciprocation of the trimming knife, and means for selectively operating said last mentioned mechanism.

A further object of my invention is to provide in a veneer trimmer, a control mechanism comprising an endless chain supporting a plurality of transversely movable push rods, selectively adjustable for tripping a prime mover, which actuates the clutch in the mechanism operating the trimming cutter and simultaneously disconnects the clutch operating the conveyors.

A still further object of my invention is to provide a machine tool of the character mentioned wherein the conveyor operating clutch is automatically reconnected, after the cutter has completed its operation so that the conveyors are operated continuously until another push pin trips the prime mover again.

To these and other ends my invention comprises further improvements and advantages as will be further described in the accompanying specification, the novel features thereof being set forth in the appended claims.

In the drawings:

Figure 1 is a fragmentary top plan view of the veneer trimmer constructed in accordance with my invention.

Figure 2 is an elevational front view of the veneer trimmer, taken on the line 2—2 of Fig. 1 the feeding conveyor being omitted.

Figure 3 is an elevational rear view of the veneer trimmer, taken on the line 3—3 of Fig. 1, the conveyor for taking away the trimmed sheets being omitted.

Figure 3A is a sectional view taken on the line 3a—3a of Fig. 3 showing in plan the disposition of the clutch mechanism for operating the reciprocating cutter and the conveyors, together with the cam shaft.

Figures 4 and 5 are elevational end views of

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the right and left hand ends respectively of the machine shown in Fig. 2.

Figures 6 and 7 are enlarged detail front and rear views respectively of the clutch mechanism for operating the trimming knife showing its actuating devices.

Figure 8 is a detail view of the clutch for operating the two conveyors, the motor and transmission drive therefor being omitted.

Figure 9 is a fragmentary view of the prime mover for the tripping mechanism for operating the clutches.

Figure 10 is a top plan view of a portion of the control mechanism for operating the underlying tripper shown in Fig. 9.

Figure 11 is an underneath view of the control mechanism illustrated in Fig. 10 as seen when looking upwardly at its parts.

Figure 12 is a vertical cross sectional view of the control mechanism illustrated in Figures 10 and 11 taken on the line 12—12 of Fig. 10.

Figure 13 is a sectional view taken on the line 13—13 of Fig. 12.

Figure 14 is a sectional view which is a continuation of the right hand end of Fig. 13, illustrating the sprocket carrying the end of the control mechanism where it cooperates with the clutch tripping device shown in Fig. 9, and

Figure 15 is a plan view of the feeler or push pin setter, illustrating diagrammatically its co-operative action with push pins operated in various positions.

Similar reference numerals, in the several figures, indicate similar parts.

A veneer trimmer embodying my invention comprises generally a conveyor for feeding the work pieces to a vertically reciprocating knife blade or cutter, a second conveyor for carrying away the trimmed pieces and cuttings, and suitable driving mechanism for synchronizing their movement, together with means for controlling the intermittent reciprocation of the knife and conveyor which may be manipulated by an operator standing at the side of the machine and observing the untrimmed sheets of veneer as they are advanced toward the cutter.

A machine embodying the subject matter of my invention consists of certain main parts, such as a veneer feeding conveyor 20, a removing conveyor 21 (Fig. 1), a trimming cutter, generally designated 22, a manually operated control mechanism generally indicated by 23, together with suitable sources of power and driving connections.

Cutter mounting and operating mechanism

The trimming cutter 22 comprises a vertically reciprocating knife head 24, carrying on its lower edge a trimming blade 25, and guided at its ends in the vertical frame pieces 26 and 27. The latter comprise the ends of the frame of the machine and are connected to the base thereof composed of channel beams 28 to which they are bolted.

The end frames are centrally slotted at their upper ends and provided with vertical guideways 29 in which the glide blocks 30 on the ends of the knife head travel. Each of these blocks has an outwardly extending hub 35 which is reinforced by a rib 36. Reciprocatory movement of the knife is effected by pitman rods 37 connected at their upper ends to journal boxes 38 carried by the hubs and at their lower ends by similar boxes 39 to studs on short crank arms 40 splined on the extremities of a shaft 41 which projects through the two end pieces of the frame. This shaft also constitutes a cam shaft as it carries two cams which control the relatively timed operation of the cutter and the conveyors.

Rotary movement is imparted to shaft 41 through a clutch mechanism carried on a shaft 50 which is parallel to shaft 41. This clutch is shown at the right hand end of Fig. 3 and in detail in Figs. 6 and 7, and comprises a freely rotating driving gear 42 operated by a pinion 43 on the armature shaft 44 of a motor 45. The shafts 41 and 50 are geared together on the outer sides of the end frames 26 and 27, said gears being shown as spur gears 52 on shaft 41 and intermeshing pinions 53 on shaft 50.

The clutch mechanism cooperating with the drive gear 42 is actuated in step with the conveyor drive mechanism as a result of the manual setting of the control devices 23 actuated by the operator.

The conveyors and their driving devices

The feeding conveyor 20 may be constructed in any conventional manner and comprises an endless belt adapted to receive unfinished sheets of veneer 55 and transport them to the cutter. This belt is tautly trained over an outer set of rollers (not shown) and a plurality of short rollers 56 rigidly mounted on a shaft 57 extending between and rotatably journaled in the two end frames adjacent their front edges (Fig. 2).

The removing conveyor 21 likewise consists of an endless belt tautly trained over a plurality of short inner rollers 58 and an outer roller (not shown), the inner rollers being rigidly mounted on a shaft 59 rotatably journaled in the two end frames 26 and 27 adjacent their rear edges (Fig. 3).

The two belt shafts 57 and 59 are arranged so that their axes are located in the same horizontal plane and in a position so that the upper surfaces of the two endless belts are located approximately at a level of the point of engaging the cutting edge of the trimming knife 25 with the veneer sheets.

The end of shaft 57 extending beyond the right end frame 27 carries spur gear 60 and similarly located on the extremity of shaft 59 is a spur gear 61. Meshing with said gears is an intermediate gear 63 carried on a stud shaft 64 mounted on the frame 27 centrally between the two conveyor shafts.

A separate source of power is employed for operating the conveyors in conjunction with a

clutch mechanism which is designed to be thrown out of action when the cutting knife 25 is operated. To this end I mount in front of the right hand end of the frame, as shown in Fig. 2, a transmission gear unit 64 driven by a motor 65. Power from this unit is delivered from a shaft 70 carrying a sprocket 71, through a link chain 72 to a sprocket 73 on a jack shaft 74. The latter is journaled at one end in a bearing 75 on frame piece 27 and at its other end is a bearing 76. At its outer end shaft 74 also carries a gear 77 (Figs. 2 and 3) which transmits motion to a gear wheel 78 on shaft 57 thus imparting movement to the two conveyors.

The clutch mechanism which drives the conveyors is assembled on the shaft 74. It is generally indicated by 79 (Fig. 8) and comprises in part the aforementioned sprocket 73 which is mounted for free rotary movement on the shaft 74 and is locked thereto when the clutch is shifted in one direction, as will be understood, the medium for effecting this operation being a shifting lever 80 which is actuated through the instrumentality of the control mechanism and operated in harmony with the clutch mechanism which causes the trimming knife to be tripped, as previously described.

Clutch operating devices

To simultaneously operate the two clutches an interconnected shifting mechanism is provided.

To shift the conveyor clutch 79 the lever 80 which is pivoted thereto at its center is connected at its upper end, as indicated at 90, to the machine frame and at the lower end to an operating bar 91. The latter is connected to a lever 92 pivotally mounted at 93 on the front channel beam 28 (see Fig. 8) and is normally retracted, to cause the clutch 79 to be opened or disengaged, by a helical spring 94 which is given the desired normal tension by connecting it to a rod 95 adjustably mounted in a bracket 96 on the frame (Fig. 2), thus opening the conveyor clutch 79, its disengagement from the sprocket 73 causing the conveyors to be halted. This stoppage of movement occurs simultaneously with the downward movement of the knife 25.

The pivotal point 93 of the adjusting lever 92 is one end of a transverse shaft which also carries a shorter operating lever 97 extending upwardly at one side of shaft 41 and carries at its upper end a roller 98. On the shaft 41 a segmental cam disk 99 is adjustably secured. It is provided with a lateral offset portion 100 which is adapted to engage the roller 98 and cause the levers 91 and 92 to be rocked to the right (Fig. 8) against the force of spring 94, thus closing the conveyor clutch 79, into engagement with the sprocket 73 causing the conveyors to be driven. This action occurs simultaneously with the arresting of knife 25 in elevated position as described hereafter.

The knife clutch mechanism is in reality a double clutch comprising dual elements A and B, one for intermittently rotating shaft 41 to reciprocate the knife, the other acting as a brake for checking its rotation and arresting the knife in its elevated position after each reciprocation. These elements are alternately actuated by a shifting lever 110 (Figs. 6 and 7) normally impelled by a spring 111 in a direction to hold the continuously driven drum gear 42 in unlocked position and to drive the driven shaft 50, and through it, the cam shaft 59. The spring 111 is connected at one end to the upper end of lever

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110 and at its other end to the frame of the machine. Lever 110 is connected at its lower end to a transverse shaft 112 journaled in bearings 113 on the base 28 of the frame. Also attached to this shaft is an upwardly, angularly disposed arm 114 which is normally held in the position shown in Figs. 6 and 7 by a disc cam 115 on shaft 41 having a lateral high point 116 which operates through a form of displaceable connection to hold said arms 114 and 110 in neutral position against the tension of spring 111 which operates on arm 110. The displaceable connection comprises a sliding block 117 supported in a horizontal guideway in a rail 118, of the machine frame, having a laterally extending roller 119 bearing against the face of cam 115 and held in engagement therewith by a coil spring 120 connected at one end to a stud 121 on the frame and at the other end to a projection 122 on the block. A link chain 123 lies in said guideway and connects the block 117 to the lever 114. The chain is stiff enough so that when the block is displaced by the high point of the cam to move the lever (toward the left in Fig. 6) and likewise is strong enough to move the lever in the opposite direction under the influence of spring 120 when the roller is released by the cam. The importance of the jointed connection formed by the chain links will presently appear.

Coordinating the operation of the two clutches

When the high point of cam 115 releases lever 114 the spring 111 actuates the shifting lever 110 to connect the driven gear 42 to shaft 50 thus tripping the knife 25 and rotating the cam shaft 41 one turn, in synchronism therewith, through the gearing connections 52 and 53 at the two ends of these shafts. The rotation of shaft 41 causes cam 115 to disconnect the drive of shaft 41 and arrest it. At the same time cam 99 serves to connect the clutch drive of the two conveyors.

Actuation of the last above described parts is effected by the upward movement of a push rod 130 connected to one of the intermediate links of chain 123 which puts a kink in the chain and thus operates the lever 114. The push rod is moved upwardly by a lever arm 131 attached to a transverse rock shaft 132 journaled in bearings 133 on the machine base 28. An arm 134 extending downwardly from the end of shaft 132 has at its lower end a treadle 135 set at such an angle that when it is depressed the shaft 132 will be oscillated to lift the push rod 130 thus distorting the chain 123 and closing the knife clutch to effect a reciprocation of the knife.

Rocking the shaft 132 by depression of the treadle is accomplished by the control mechanism which is set to perform this operation by the operator and in practice it is actuated by a trip attached to the upper end of a connecting rod 136, which reaches upwardly from the treadle (Fig. 6) to the horizontal arm 137 of a bell crank lever (Fig. 9) pivoted to a bracket 140 on the end frame piece 26. The other end 141 of this lever projects upwardly in position to be actuated, when engaged by said control mechanism, against a spring 142 the tension of which is sufficient to hold the treadle in its normal elevated position.

The control mechanism

Veneer sheets as they are peeled from a log contain imperfections, such as knot holes, cracks, and the like. These sheets as they are fed to the conveyor 20 also have irregular ends, somewhat as depicted in Fig. 1. In order therefore

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that these sheets may be trimmed and the imperfections removed with as little waste of stock as possible, as well as to provide for cutting the sheets into stock sizes, I have devised a master control mechanism so located that the operator may conveniently spot the points at which the lines of severance should be made during the movement of the sheets. This mechanism further comprises a travelling unit at one side of the conveyor 20 moving in unison therewith and comprising a succession of tripping elements in the form of plungers which the operator may set as desired to effect the automatic tripping of the knife as the selected portions of a veneer sheet reach a point directly below the knife.

To the aforementioned ends I locate at the front side of the conveyor 20 a longitudinally extending narrow table 143, over and around which there travels a specially constructed link chain carrying plungers which the operator may push into position to eventually operate the trip 141 during the travel of said chain. The length of the table, the chain and the multiplicity of the plungers is such that the operator may set as many of the plungers as desired at opposite points on a veneer sheet where he may elect to place the lines of severance.

The table 143 is supported at its end adjacent the tripping element on a laterally extending bracket 144 bolted to the edge of the frame piece 26 and at its distant end on legs 145 (Fig. 3) and beneath said ends are sprockets for carrying the chain of which, the one at the inner end of the table, is shown in Fig. 14 mounted on a shaft 146 and indicated by 147. On the table there is a low platform 148 along which the upper course of the chain slides and thereon is a central guide 149 cooperating with the chain to prevent its lateral displacement. The table also carries other parts for completing the setting of the plungers in tripping position and thereafter restoring them to their normal inoperative positions.

The shaft 146 is carried in bearings 150, on bracket 144, and the control mechanism is driven in unison with the travel of conveyor 20 by a drive chain 160 trained over a sprocket 161 on the conveyor shaft 57 and a sprocket 162 on shaft 146, as shown by dotted lines in Fig. 14; also see Fig. 11.

Referring to Figs. 10 to 14 it will be seen that the chain of the control mechanism is composed of inner and outer links 163—164 having overlapping ears and those forming the two sides of the chain being spaced well apart and connected by journalling their ears on the ends of studs or pins 165. The latter carry spaced bushings 166—167 and central rollers 168. The latter roll along the longitudinal guide 149 on the table while said bushings engage the edge of the guide to prevent lateral displacement of the chain. Each of the aforesaid chain links has an outwardly extending perforated finger 169, the exposed corresponding links carrying a push rod or plunger 170 surrounded by a sleeve 180 which also serves to space the link fingers.

On their inner ends i. e. the ends adjacent conveyor 20, they are provided with circular heads 181 in the form of discs of appreciable thickness and on their opposite ends with circular knobs 182, the outer corners of which are beveled or chamfered, as indicated at 183. As shown in Figs. 10 and 11 the push rods are considerably longer than the width of the chain. In their normal position they are in a retracted position with the knobs extending outwardly from the

near side of the chain, at which the operator stands, so that the heads 181 are retracted, or in an inoperative position against the inner side of the chain.

In order to return rods which have been manually set in an operative position I provide on the underside of the table (Fig. 11) an inclined cam surface 184 with which such heads engage during the travel of the chain after they have functioned to operate the tripping device 141 (Fig. 9). Thus as the lower course of the chain passes around the distant end of the table onto the top of the table, each push rod is in its normal inoperative position.

The operation of one or more of the push rods is preferably partly manual and partly automatic. Along the inner edge of the upper face of the table top and extending from its far end in the direction of the travel of the chain is a stop plate having an edge 185 extending parallel to the chain and spaced therefrom a distance of approximately one-half the full lengthwise movement of the push pins. This allows for their tentative setting by the operator as he observes the veneer sheet on conveyor 20, leaving the knobs 182 in a position to be easily grasped to retract a pin should occasion indicate the desirability of altering an initial clipping adjustment for any reason. Beyond the terminal point 186 of edge 185 of the stop plate and on the forward side of the table top is a feeler which serves to either complete the inward movement of rods previously pushed into engagement with the stop plate or to engage behind the knobs 182 of those pins which have not been operated or which through accident may have been only partially displaced and to hold them in an inoperative position during further movement of the chain. This feeler is in the form of a cam plate 187 having a pointed end 188 located in position to engage the beveled edge 183 of a push pin when its inner end or head 181 which has been moving along the guide 135, passes the end 186 of said stop plate. The inner inclined surface 189 moves such pin inwardly and its continued travel brings it into engagement with a second inclined surface 190 which completes the inward movement of such pin or pins and positions their heads 181 in the plane of the trip arm 141 to rock the bell crank lever 137—141 on its pivot and cause the rod 136 to actuate the pedal 135. The cam plate or feeler 187 also has an inclined surface 191 diverging outwardly from point 188 and a straight edge 192. Consequently any knob 182 which has not been fully projected by the operator is engaged on its inner side and is retracted by the inclined surface 191, in which position it is held by surface 192 as the chain continues to move forward.

The operation of the machine will be readily understood. Veneer strips or ribbons as they are peeled from the log in the peeler lathe travel along transport tables which are of considerable length where they may be held for storage or from which they may be delivered directly onto the conveyor 20. In Fig. 1, I have shown a portion 55 of such a ribbon which, for purposes of illustration, has an irregular forward edge which would require the end of the sheet to be trimmed along the dot and dash line *a*. In the body of the sheet are depicted several irregularities which would require second and third cuts of the sheet to be made along the lines *b* and *c*. For commercial purposes the ribbons are cut into standard sizes, a small sheet being repre-

mented by the distance between the lines *a* and *b*, and a larger sheet as extending from the line *c* to line *d*.

The conveyor 20 and the control mechanism 23 travel synchronously and the operator selects and actuates the plungers necessary to effect cuts along the several lines he may select some of which have been arbitrarily indicated for the purposes of illustration. In Fig. 1 certain of these push buttons 182 are shown in the operated position. As these successively reach the point 188 of the feeler cam plate 187 (Figs. 10 and 15) they are projected inwardly thus placing their operating heads 181 into a path which causes them, as the chain on which they are carried, passes around the sprocket bearing wheel 147, to engage the upwardly projecting arm 141 of the tripping mechanism causing its displacement. This action occurs as frequently as a push button head 181 comes into contact with the trip lever. Thereafter the continued movement of the chain on its lower flight beneath the table brings the operating heads 181 into contact with the inclined surface 184 (Fig. 11), on the underside of the table, by means of which the previously actuated plungers are pushed outwardly to restore them to their normal position in readiness for subsequent actuation.

Movement of the trip 141 has effected, through the operation of its associated bell crank lever 137 the depression of the rod 136, which transmits movement to the rock shaft 132 to elevate the rod 130. Upward movement of the latter puts a kink in the chain 123, the end of which, being held taut by the spring 120 causes the arm 114 to rock the shaft 112 and throw the shifting lever 110 in a direction to engage the clutch mechanism A with the motor driven drum gear 42. The latter being then locked to the shaft 50 rotates the crank arms 49 on its extremities causing the pitman 37 to reciprocate the trimming cutter. This rotation of the shaft 50 simultaneously rotates the cam shaft 41 through the gears 52 and 53. After a plunger head 181 of the control mechanism 23 passes over the tripping lever 141 the previously described parts which have been set in operation thereby are retracted and as this action occurs very quickly the chain 123 is restored to its normal position in its guideway. Consequently as the cam 115 on shaft 41 completes its cycle of movement levers 114 and 110 effect a disconnection of clutch A and permit clutch B to arrest the knife blade in its retracted or uppermost position.

Simultaneously with the throwing of the knife clutch A into operation and at the commencement of rotation of the cam shaft 41 the cam 99 thereon displaces the lever 97 (Fig. 8) thus rocking the shaft 93 whereupon lever 92 transmits motion through rod 91 and lever 80 to disconnect the conveyor clutch drive 79. This halts the movement of the feeding and take-away conveyors 20 and 21 and also the push button control mechanism 23 until the completion of the cutting stroke of knife 25. These parts are actuated through the train of gearing connections between the jack shaft 74 and the conveyor shafts 57 and 59.

The resumption of operation of the several conveyors occurs after the cutting knife 25 has moved upwardly out of the path of the trimmed edge of a sheet since at that time the high point 100 of cam 99 has engaged lever 97 and pivoted

it against the pull of the spring 94 to throw the conveyor clutch 79 into operative position.

I claim:

1. In a veneer sheet trimmer, the combination with a frame, a vertically movable knife thereon, a movable endless conveyor for feeding sheets to the knife, an endless link belt at one side of the conveyor movable with the conveyor, separate power sources for driving the conveyor and belt and for reciprocating the knife, the first comprising a normally engaged clutch and the second comprising a normally disengaged clutch, interconnections for reversing the disposition of said clutches, a tripping means located in juxtaposition to said belt for actuating said interconnections, of laterally adjustable selectors spaced on the belt and manually adjustable into set positions with respect to predetermined cutting lines on the transported veneer sheet serving to engage and to operate the tripping devices to effect the temporary halting of the conveyor and belt and to reciprocate the knife in accordance with the presentation of a selected line of severance of the sheet beneath the knife.

2. In a veneer sheet trimmer, the combination with a frame, a vertically movable knife thereon and an endless conveyor conveying veneer sheets to the knife, of two separate continuously operating power sources one comprising a normally connected clutch for driving the conveyor and the other comprising a normally disengaged clutch for reciprocating the knife, devices yieldingly maintaining said clutches in said described positions, interconnections between the clutches for reversing their normal positions to arrest the conveyor and cause the reciprocation of the knife, and tripping mechanism comprising a belt movable with said conveyor for actuating the interconnections.

3. In a veneer sheet trimmer, the combination with a frame, a vertically movable knife thereon and an endless conveyor conveying veneer sheets to the knife, of two separate continuously operating power sources one comprising a normally connected clutch for driving the conveyor and the other comprising a normally disengaged clutch for reciprocating the knife, devices yieldingly maintaining said clutches in said described positions, interconnections between the clutches for reversing their normal positions to arrest the conveyor and cause the reciprocation of the knife, and tripping mechanism for actuating the interconnections, and a pair of cams rotated in unison with the reciprocation of the knife serving to restore said clutches to their normal positions upon completion of the knife's stroke.

4. In a veneer sheet trimmer, the combination with a frame, a vertically movable knife thereon and an endless conveyor conveying veneer sheets to the knife, of two separate continuously operating power sources, one comprising a normally connected clutch for driving the conveyor and the other comprising a normally disengaged clutch for reciprocating the knife, devices yieldingly maintaining said clutches in said described positions, interconnections between the clutches for reversing their normal positions, a tripping mechanism for actuating the interconnections, and a pair of cams cooperating with the interconnections and rotated in unison with the reciprocation of the knife, one of said cams acting to arrest the movement of the conveyor upon descent of the knife and the other serving to arrest the knife upon its retraction and the completion of its stroke.

5. In a veneer sheet trimmer, the combination with a frame, a vertically movable knife thereon and an endless conveyor, conveying veneer sheets to the knife, of two separate continuously operating power sources one comprising a normally connected clutch for driving the conveyor and the other comprising a normally disengaged clutch for reciprocating the knife, devices yieldingly maintaining said clutches in said described positions, shiftable interconnections between the clutches for reversing their normal positions having a flexible intermediate portion, and a tripping mechanism comprising a belt movable with said conveyor operating against said flexible portion to actuate said interconnections.

6. In a veneer sheet trimmer, the combination with a frame, a vertically movable knife thereon and an endless conveyor conveying veneer sheets to the knife, of two separate continuously operating power sources one comprising a normally connected clutch for driving the conveyor and the other comprising a normally disengaged clutch for reciprocating the knife, separate shifting levers for said clutches, interconnections controlling the simultaneous movement of said levers comprising a horizontally guided link chain, and a tripping mechanism comprising a belt movable with said conveyor arranged to displace said chain vertically to effect actuation of the clutch levers.

7. In a veneer sheet trimmer, the combination with a frame, a vertically movable knife thereon and an endless conveyor conveying veneer sheets to the knife, of two separate continuously operating power sources one comprising a normally connected clutch for driving the conveyor and the other comprising a normally disengaged clutch for reciprocating the knife, a spring operating on the lever of the normally engaged clutch controlling the conveyor to disconnect it, another spring operating on the lever of the normally disengaged clutch to connect it and reciprocate the knife, a pair of cams rotated in unison with the reciprocation of the knife having high points acting to hold said levers against the tension of their respective springs, and a tripping mechanism acting in conjunction with the lever of the knife-controlling-clutch and its cam to effect a single cycle of movement of the knife.

8. In a veneer sheet trimmer, the combination with a frame, a vertically movable knife thereon and an endless conveyor conveying the veneer sheets to the knife, of two separate continuously operating power sources one comprising a normally connected clutch for driving the conveyor and the other comprising a normally disengaged clutch for reciprocating the knife, a pair of cams driven synchronously with the reciprocation of the knife each having a high point, levers for operating said clutches, throw arms connected to the levers and shifted by said cams, one throw arm acting to connect the normally disengaged clutch, the second arm and its cam simultaneously acting to disconnect the other clutch to arrest the movement of the conveyor, and a tripping mechanism for actuating the first mentioned lever to start the reciprocation of the knife and the rotation of said cams.

9. In a veneer sheet trimmer, the combination with a frame, a vertically movable knife thereon and an endless conveyor conveying veneer sheets to the knife, a power source for reciprocating the knife comprising a clutch driven shaft, a normally disengaged clutch thereon, and a cam shaft geared to the driven shaft, a second source of

power comprising a normally engaged clutch for driving the conveyor, a cam on the cam shaft serving to disengage the last mentioned clutch to arrest the conveyor upon rotation of the cam shaft, a lever for actuating the first mentioned clutch, a second cam on the cam shaft, a slide block operated by the second cam having a link connection guided on the frame and connected to said lever, and serving to hold it in an inoperative position and a tripping mechanism acting on the link connection to actuate said lever and cause its clutch to effect a cycle of operation of the knife.

10. In a veneer sheet trimmer having a frame, a reciprocating knife thereon and a conveyor for feeding sheets to the knife, a source of power for driving the knife and moving the conveyor; the improvement comprising means for controlling the movements of said knife and conveyor alternately and trip devices for actuating said controlling means, said means including an endless link belt driven synchronously with the conveyor composed of spaced side links, a table top underlying the upper course of the belt between the side links, push pins carried by the latter and normally operable laterally to position their inner ends for engagement with said tripping devices, a cam surface located beneath the table for engagement with said inner ends of operated pins to move them outwardly following their actuation of the tripping devices.

11. In a veneer sheet trimmer having a frame, a reciprocating knife thereon and a conveyor for feeding sheets to the knife, a source of power for driving the knife and moving the conveyor; the improvement comprising means for controlling the movements of said knife and conveyor alternately and trip devices for actuating said controlling means, said means including a table paralleling one side of the conveyor, an endless link belt guided thereon and movable synchronously with the conveyor, spaced push pins adjustable manually of the belt in a direction toward the conveyor to position their inner ends in operative alinement with the tripping devices, heads on the outer ends of the pins and a cam surface on the table cooperating with said heads to hold pins previously positioned in their operative position during the continued movement of the belt, and means located beneath the table for restoring such operated pins to their normal position on the belt following their engagement with the tripping devices.

12. In a veneer sheet trimmer having a frame, a reciprocating knife thereon and a conveyor for feeding sheets to the knife, a source of power for

driving the knife and moving the conveyor; the improvement comprising means for controlling the movements of said knife and said conveyor alternately and trip devices for actuating said controlling means, said means including a long narrow table paralleling one side of the conveyor, an endless link belt driven synchronously with the conveyor and looped around the table ends, pins movable transversely of the belt having knobs on their outer ends, a stop on the side of the table for limiting the initial lateral adjustment of the pins during part of their movement along the table and cam surfaces on the other side of the table, beyond the end of the stop bar, cooperating with the knobs of the pins to complete the full lateral movement of such adjusted pins into operative alinement with the trip devices and also serving to hold in retracted position other non-actuated pins.

13. In a veneer sheet trimmer having a frame, a reciprocating knife thereon and a conveyor for feeding sheets to the knife, a source of power for driving the knife and moving the conveyor, the improvement comprising means for controlling the movements of said knife and said conveyor alternately and trip devices for actuating said controlling means comprising a lever arm yieldingly held in operative position, said means including a table at one side of the conveyor, a sprocket journaled thereon above said arm and rotating synchronously with the conveyor, a link belt looped around the table and driven by the sprocket, spaced pins adjustable laterally manually to position one of their ends in alinement with the lever arm to actuate it as they pass around the sprocket and an inclined surface on the table beyond the sprocket engaged successively by said ends of the pins to restore the latter to their normal retracted position on the belt.

ETTORE PEDRON.

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