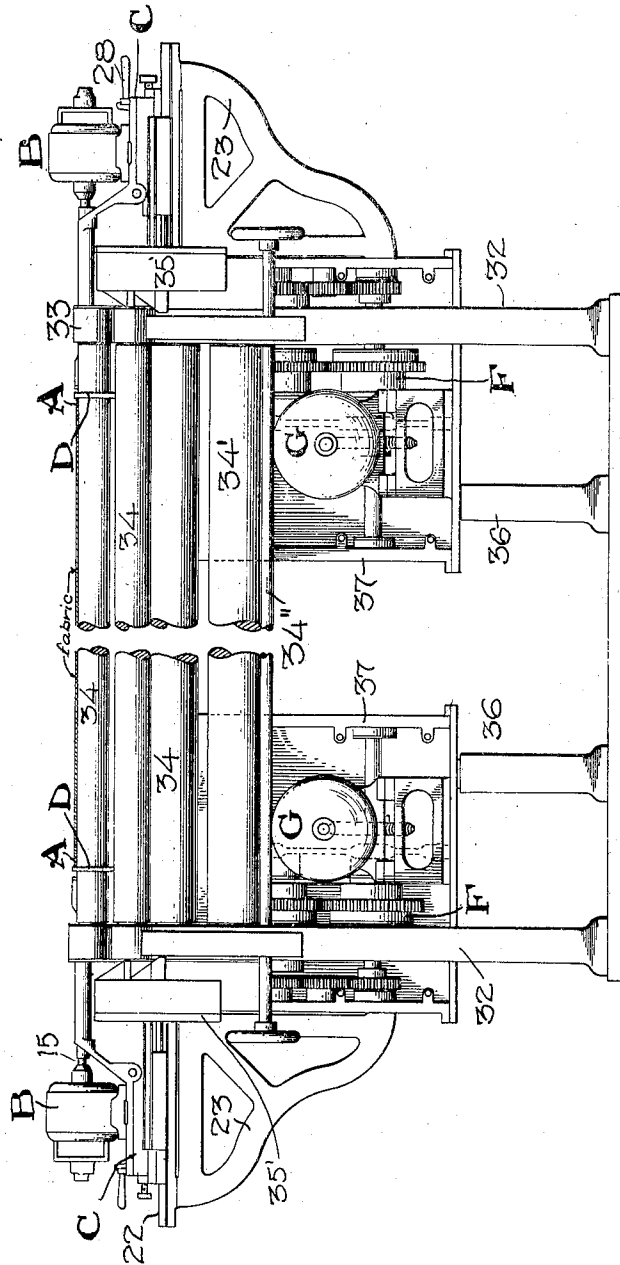


A. P. LEWIS.
SELVAGE TRIMMER.
APPLICATION FILED AUG. 30, 1916.

1,333,588.

Patented Mar. 9, 1920.
8 SHEETS—SHEET 1.

Fig. 1.



Witnesses
R. J. Trognier.

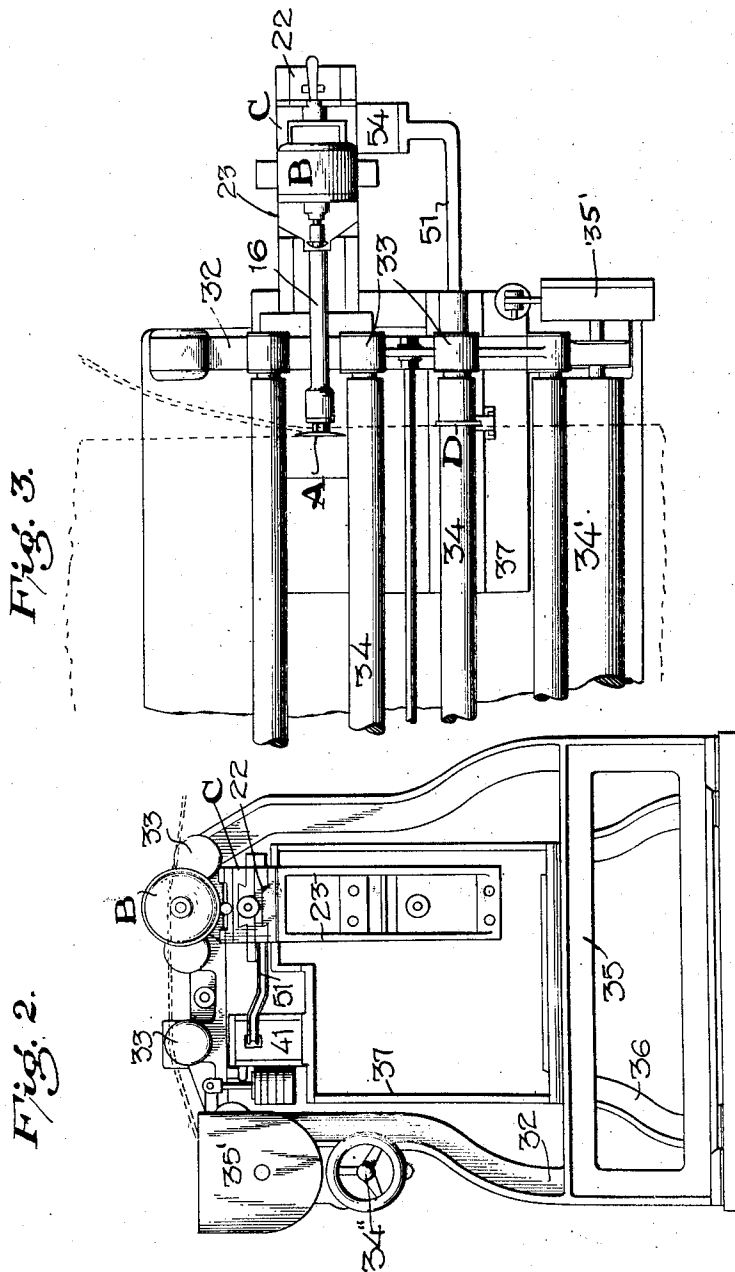
Inventor
Arthur P. Lewis.

C. L. Landon
Attorney

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8 SHEETS—SHEET 2.



Witnesses
R. J. Grognier

Inventor
Arthur P. Lewis.

By *C. L. Landon*
Attorney

1,333,588.

Patented Mar. 9, 1920.

8 SHEETS—SHEET 3.

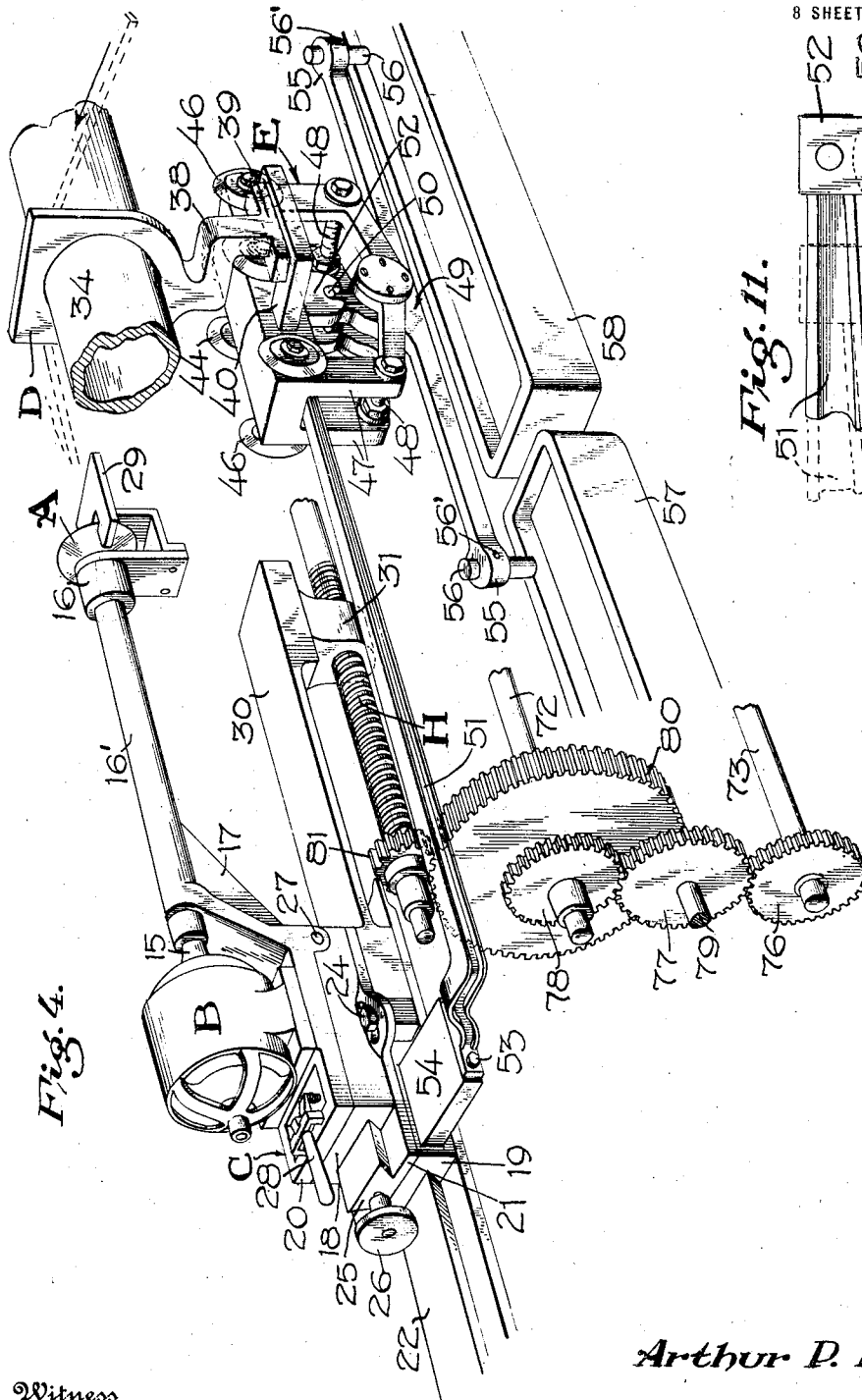
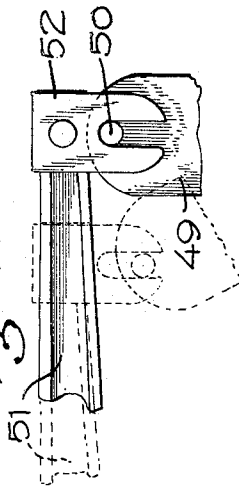


Fig. 4.

Fig. 11.



Witness
W. H. Prognier

Inventor
Arthur P. Lewis.

By

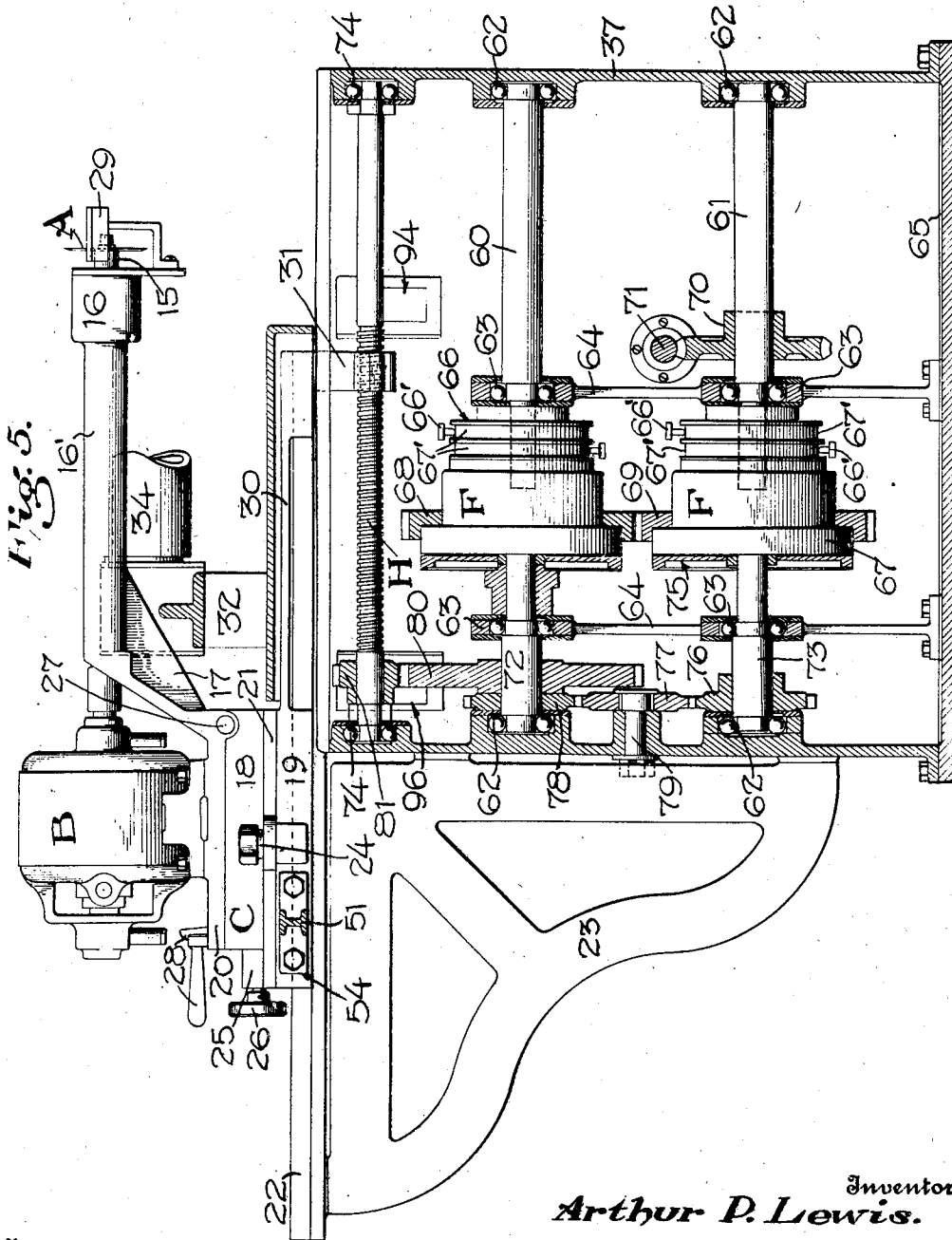
C. L. Landon

Attorney

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8 SHEETS—SHEET 4.



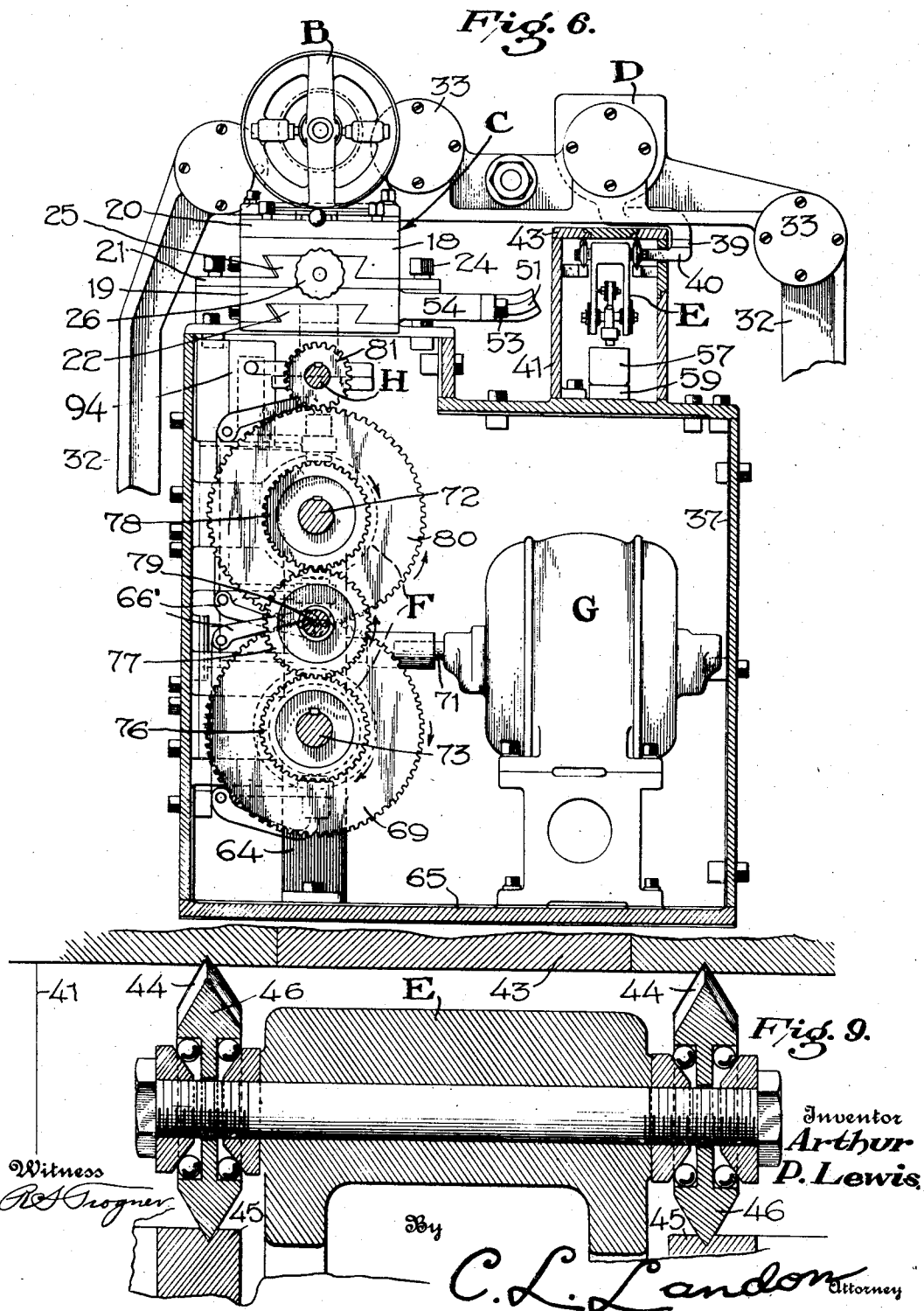
Witness
R. T. Crognier.

Inventor
Arthur P. Lewis.

By *C. L. Landon*
Attorney

1,333,588.

Patented Mar. 9, 1920.
8 SHEETS—SHEET 5.

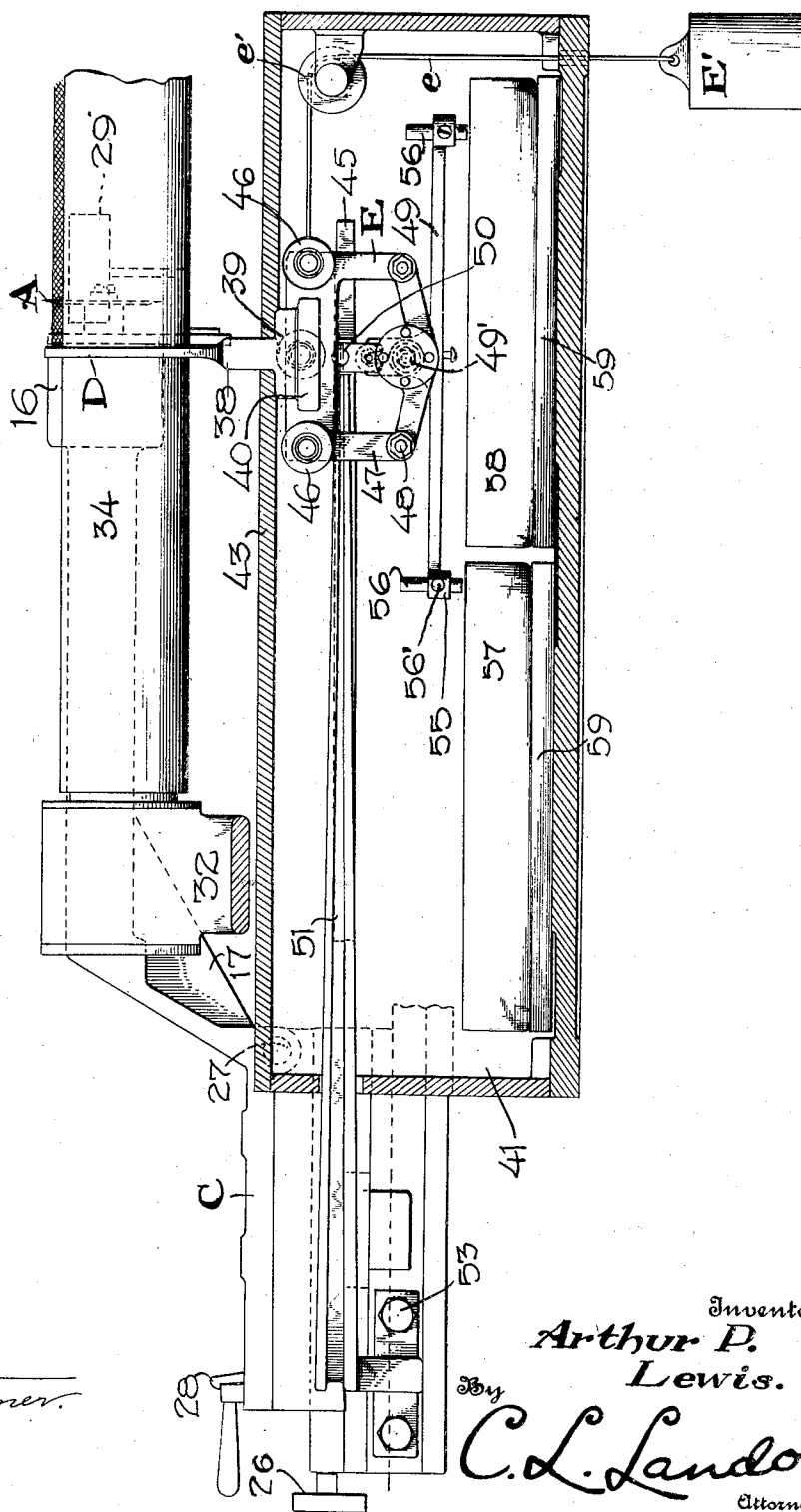


1,333,588.

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APPLICATION FILED AUG. 30, 1916.

Patented Mar. 9, 1920.
8 SHEETS—SHEET 6.

Fig. 7.



Witnesses
R. A. Prognier.

Inventor
Arthur P. Lewis.
By
C. L. Landon
Attorney

A. P. LEWIS.
SELVAGE TRIMMER.
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1,333,588.

Patented Mar. 9, 1920.
8 SHEETS—SHEET 7.

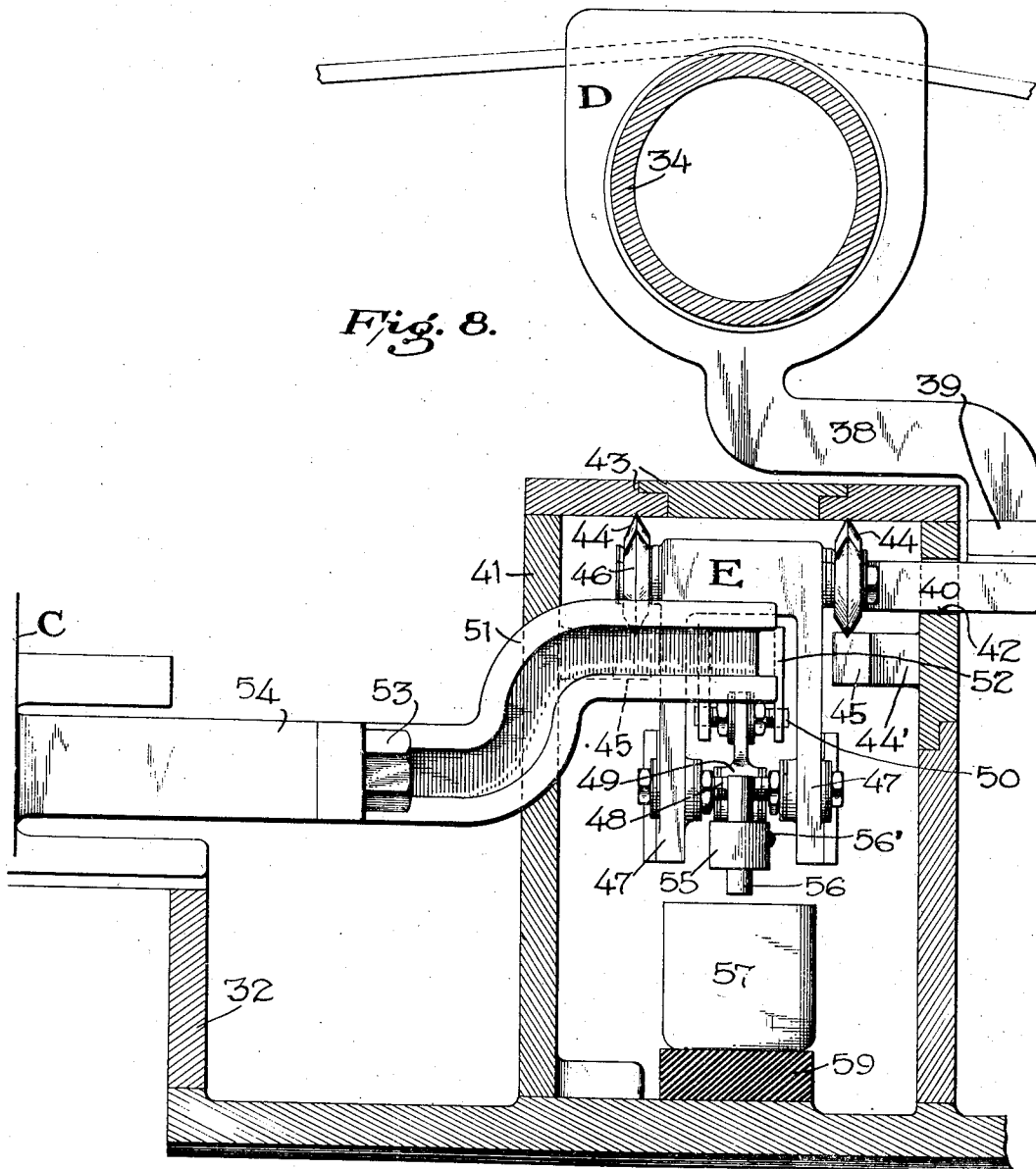


Fig. 8.

Witnesses
A. J. Crognier.

Inventor.
Arthur P. Lewis.

By *C. L. Landon*
Attorney

1,333,588.

Patented Mar. 9, 1920.

8 SHEETS—SHEET 8.

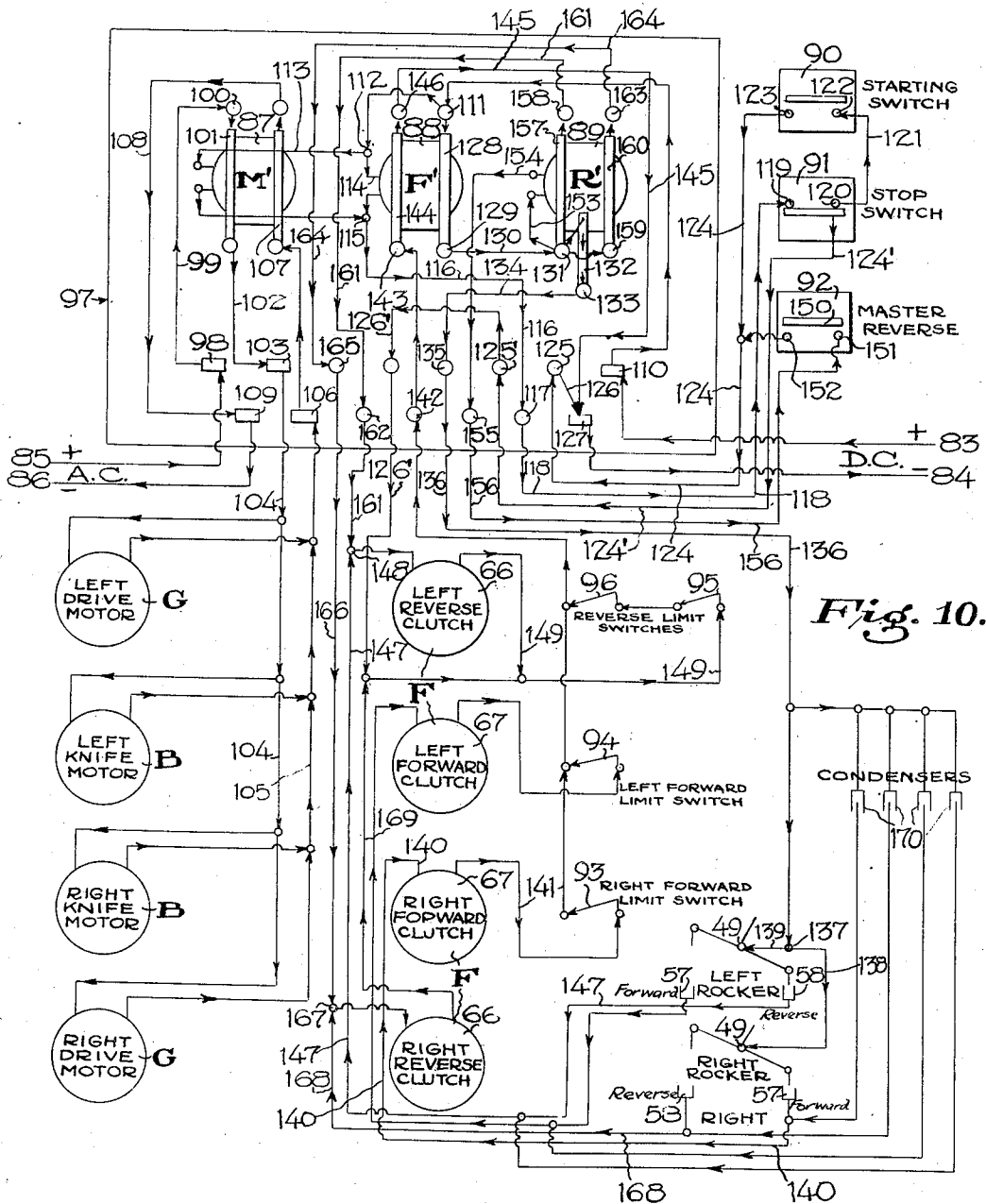


Fig. 10.

Inventor
Arthur P. Lewis.

Witnesses
R. J. Trognier.

By C. L. Landon
Attorney

UNITED STATES PATENT OFFICE.

ARTHUR P. LEWIS, OF AKRON, OHIO, ASSIGNOR TO THE GOODYEAR TIRE & RUBBER COMPANY, OF AKRON, OHIO, A CORPORATION OF OHIO.

SELVAGE-TRIMMER.

1,333,588.

Specification of Letters Patent.

Patented Mar. 9, 1920.

Application filed August 30, 1916. Serial No. 117,680.

To all whom it may concern:

Be it known that I, ARTHUR P. LEWIS, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Selvage-Trimmers, of which the following is a specification.

My present invention relates to a machine organized to trim selvage edges from a moving fabric strip, and contemplates, as its principal object, the provision of a trimming mechanism operable upon the meandering edge, or edges, of a fabric strip to sever the selvage strands or cords therefrom and to a uniform width, regardless of any sinuities of the fabric edge which result either from irregularities of sidewise movement compounded with the forward movement of the passing fabric strip, or from undulations inherent in the edge of the strip, and thus to avoid the production of an undue amount of waste fabric, such as would result were the knives set in fixed cutting position.

In a more specific rehearsal, the essential object of the invention has been to provide a trimming mechanism, which includes knives transversely shiftable with respect to the untrimmed fabric, and guide means arranged to engage the meandering edges of the fabric for lateral shifting in accordance with the undulations of such edges. Additional mechanism is proposed that will so copulate each knife with one of the guides that all fabric-imparted movement of the guides may be positively transmitted to respective knives to effect corresponding and equal changes in their position.

Objects of only lesser importance than the foregoing reside in the mounting of each knife for manual pre-adjustment with respect to the controlling guides therefor, to vary the width of the trimmed selvage edge; the mounting and arrangement of driving means for each knife to form a group of elements therewith capable of movement with the knife as a unit in accordance with the automatic control of respective knives; the incorporation into the mounting of each knife and its driving means of instrumentalities permitting the disengagement of the knife from the fabric without altering or affecting in any way the relations or connections between the main instrumentalities of operation; and the provision of means in-

sureing a continuous positive contact between the guides and opposite fabric edges.

The above and additional objects of a similar nature, which will be hereinafter more specifically treated, may be accomplished by such means as are illustrated in the accompanying drawings, described in the following specification and then more particularly pointed out in the claims which are appended hereto and form a part of this application.

With reference to the drawings, wherein there has been illustrated a preferred embodiment of the invention as it is reduced to practice, and throughout the several views of which, similar reference numbers designate corresponding parts:

Figure 1 is a front elevation of the machine, looking in the direction of the fabric movement;

Fig. 2 is a side elevation of the machine, looking in the direction of the training mechanism movement;

Fig. 3 is a fragmentary plan view of one side of the machine;

Fig. 4 is a perspective showing the relation of each trimming knife to its fabric guide, and the interposed mechanism effecting coördination of movement in these elements;

Fig. 5 is an enlarged view of one side of the machine shown in Fig. 1, parts of the view being in section;

Fig. 6 is a cross-sectional view taken through the mechanism of Fig. 5;

Fig. 7 is a detail illustrating the guide-control governing the shifting of the trimming knives;

Fig. 8 is a cross-sectional view of Fig. 6 on an enlarged scale;

Fig. 9 is a cross-section taken through the carriage mounting of Fig. 6;

Fig. 10 is a diagrammatical illustration of the electrical operating apparatus and the controlling circuits therefor, as employed in the present embodiment of the invention; and

Fig. 11 is a detail view of the rocker arm fulcrum.

The selvage trimming mechanism of the present invention is constituted as a machine which may be situated at any convenient point along the path of the fabric to be trimmed. A broad outline of the main ele-

ments herein organized to form the present preferred embodiment of my trimming machine includes knives A, of the rotary type, adapted to be driven by independent motors 5 B which, with the knives, are mounted upon platform carriages C arranged for independent shifting transversely to the fabric which is to be trimmed; guides D in contact with the passing fabric edge and shiftable 10 thereby in correspondence with the sinuosities thereof; carriages E, which are independently operable by changes in the relation between their respective knife carriages and guides to exercise an automatic selective control of the various electrical circuits controlling the operation of the knife shifting mechanisms; groups of clutch connections F 15 which regulate movement of the opposite knife carriages C in both directions transverse to the fabric as the mentioned electrical circuits are variously closed; and the separate motor units G for the continuous drive of clutch elements in each group F to operate therethrough the actual shifting element H of each knife carriage in answer to 25 the circuit control means E.

The elements named in the foregoing outline of the invention are grouped as shown in Figs. 1 to 4, inclusive, and each is now 30 to be described in detail, reference being directed primarily to Figs. 4, 5, and 6 as advantageously illustrative of the group of elements, A, B and C.

The trimming knives A are of the circular, 35 rotary type, as has been mentioned, and each is mounted upon the extremity of a motor shaft 15 which is projected at right angles into the path of the moving fabric. Each shaft 15 is direct-driven from its motor B, 40 and is journaled in an annular, and thrust, bearing 16 supported at the extremity of a tube 16' inclosing the shaft and having an integral angular support connection 17 with its carriage C.

45 This carriage is composed of base elements 18 and 19, each of which is fitted with a top slab, these latter being respectively designated 20 and 21. The lower base element 19 slidably supports the entire carriage upon a dove-tail rib 22 formed upon 50 the upper face of a fixed bracket 23, which is supported in lateral projection from each main side-frame of the machine structure. The top slab 21 may be arcuately adjusted 55 upon this base element 19, to which it is secured by fastening studs 24 engaging in arcuate slots as shown. Angular horizontal adjustment is thus secured to the trimming knives, in respect to the adjacent fabric edge. 60

Linear horizontal adjustment for the trimming elements is secured by mounting the upper base element 18 upon a dove-tail rib 25 formed upon the lower top slab 21,

such adjustment being manually control- 65 lable by the traveling screw 26, the specific arrangement of which it has not been thought necessary to illustrate. The top slab 20 is hingedly mounted upon its base 70 element 18 through the medium of the pivot rod 27, which thus allows for depression of each knife from engagement with the fabric. Latch means 28, which may consist of any preferred association of a spring pressed 75 catch with a keeper or any equivalent thereof are provided to normally prevent the carriage part 20 from moving about the hinge 27 connecting it to its lower part 18, although the catch may be readily released by proper manipulation of the obvious sort. 80

At the outer extremity of each tube sleeve 16' there may be supported a shelf 29 which partially incloses the knife in order that 85 the fabric edge may be consistently fed to the latter, accordingly eliminating the necessity for any vertical linear adjustment of the knives.

Projecting forward from the lower carriage 19, in parallelism to the knife shaft 15 in its normal position of operation is an 90 arm 30 from the extremity of which there depends a bracket 31 having operating connections with the carriage shifting element H to be later described.

The construction of the trimming mechanism *per se* having now been set forth, there 95 will be next explained the arrangement of the groups of trimming elements with respect to the machine as a whole.

The side frames 32 of the machine structure, as shown in Figs. 1, 2 and 3, rest upon 100 a suitable base or bed-plate and are each formed with a number of integral bearing sleeves 33. Corresponding bearings of the opposite side frames are in transverse alignment across the fabric for the support of a plurality of rolls 34 over which the fabric 105 passes in traveling through the trimming machine. Horizontal ledges or webs 35 (Fig 2) connect the front and rear parts of each side frame and upon these and intermediate auxiliary frames 36 are supported the housings or casings 37, one at each side 110 of the machine, as illustrated in Fig. 1.

Projecting laterally from the end of each 115 casing is a bracket 23 upon which the knife carriage C is slid, the knives A being projected upon their shafts 15 between a pair of adjacent rolls 34 in the manner shown to advantage in Fig. 3. The casings 37 are 120 adapted to contain the mechanism interposed between the trimming knives A and the fabric guides D for copulation of the corresponding knives and guides.

The guides D (see Figs. 4, 6, 7 and 8), are 125 preferably in the substantially rectangular plate form shown and are centrally apertured for clearance in longitudinal move-

ment upon one of the rolls 34. They project above the roll to provide a sufficient surface for contact with the fabric edge. Integrally dependent from each of the guides D is an angular arm 38, the horizontal portion of which terminates in an inverted T-shaped extremity 39 which is secured upon the central portion of an arm 40 extended from the body of the carriage E.

This carriage is mounted within a suitable casing 41 formed along one side with an elongated aperture 42 (see Fig. 8) through which the arm 40 passes for exterior attachment to the guide arm 39. The top plates 43 of this carriage casing are formed with grooves which receive the knife-edged peripheries of a pair of guide wheels 44 which are supported centrally of the carriage to project above the top thereof. To each wall of the casing 41 there is secured a number of projecting arms 44' which support rails 45, also having grooves to receive the knife-edged peripheries of the guide wheels 46, which are mounted upon suitable trunnions projecting from the ends of the carriage E and in the same vertical planes of the central wheels 44. The end wheels 46, however, do not project above the top of the carriage E to the same extent as do the center guide wheels 44, so that a double track-way is provided for the carriage E which permits it to be freely shifted longitudinally within the casing with no risk of displacement from its trackway and with no liability of binding between the various guide wheels and opposite parts of the track-way. Movement of this controller carriage is purely lateral and free from oscillation, besides being so substantially free from friction, owing to the ball-bearing mountings shown in Fig. 9, as to be extremely sensitive, and thus responsive to even slight changes in the interrelation of the knife and guide parts.

A weight E' (Fig. 7) is suspended from a flexible element *e* which is attached at its other end to the controller carriage and intermediately trained over the pulley *e'* so that the gravitational force of the weight is translated into a horizontal force which acts to insure a positive contact between the guides and the fabric edges.

The carriage E is provided with dependent skeleton side plates 47, the corresponding extremities of which are connected by any suitable attaching means 48. Centrally these side frames are connected by a trunnion 49' upon which is supported for oscillation a T-shaped member 49. The stem of the T is relatively short and it occupies an inverted position upon its mounting trunnion 49'. At its upper extremity, it is transfixed by the pin 50 which serves as a pivotal point for the loose connection of the member 49 to an arm 51, through the medium of

the plates 52 dependent from the extremity of the arm 51 and slotted to rest upon the pin 50 (Fig. 11). This arm projects longitudinally through the carriage casing 41 and is then bent at right angles thereto for suitable connections denoted by the numeral 53 with a bracket 54 jutting out from the adjacent side of the motor and knife carriage C.

The T-shaped member 49 embodies the selective control which governs the direction of movement of the trimming knives in accordance with the direction in which the guides are actuated. Each extremity of the inverted T head is enlarged to provide a supporting sleeve 55 for a contact pin 56 which is adjustably maintained within its sleeve through the medium of the set screw 56' or equivalent securing member. Supported within the housing 41 are a pair of mercury tanks 57 and 58 placed in alignment directly below the carriage E and mounted upon insulating pedestals 59. The placing of these tanks in respective electrical circuits will later be discussed in connection with the wiring diagram of Fig. 10.

Attention is now directed to the disclosures of Figs. 5 and 6 for a description of the clutch connections F and of the drive mechanism interposed therebetween and each driven element H to determine the actual movement of the corresponding knife carriage C. All of this mechanism is contained within the appropriate housing or casing 37 mounted at the side of the machine below the rolls 34 over which the fabric passes.

In each casing there is mounted, in superposed relation a pair of clutch shafts 60 and 61 each having one extremity journaled in a ball-bearing socket 62 which is incorporated into one end of the housing, and each shaft also having an intermediate support within the ball-bearing mountings 63 which are carried by the standards 64 erected upon the casing floor 65. The shaft 60 supports the magnetic clutch member 66 at the unsocketed extremity and the shaft 61 similarly mounts the magnetic clutch member 67. These magnetic clutches are of a type well-known to the electrician and are provided with the usual brushes 66', pivotally mounted by the casing back wall, and brush rings 67'. Equal gears 68 and 69 are respectively carried by these clutches and in an intermeshing relation.

The shaft 61 also has keyed thereon the worm wheel 70, which is engaged with the worm shaft 71 forming a part of the drive shaft of a motor G, arranged in the corresponding casing 37. In alignment with the shaft 60, and similarly supported by ball-bearing sockets 62 and 63, respectively incorporated into the casing wall and carried by the intermediate supporting standard 64,

is the drive shaft 72. A counterpart of the shaft 72, but one alined, instead, with the lower clutch shaft 61, is numbered 73.

Superposed above both of the clutch shafts and their alined drive shafts is the worm drive element H which has its shaft extremities journaled in opposite ends of the casing 37, in ball-bearing sockets 74. It is upon the worm H that the bracket 31 of the knife carriage arm 30 is operatively threaded, the direction of revolution of the worm determining the direction in which the knife carriage is to be shifted transversely to the fabric.

Without going into the electrical connections determining the actuation of the separate clutch members 66 and 67, at the present time, the operation of the mechanical parts is now to be set forth. The motor G is relied upon to continuously drive the shaft 61 through the worm arrangements 70—71. This results in a rotation of the shaft 60 at an equal speed but in a reverse direction, owing to the intermeshing relation between the equal gears 68 and 69. By connecting the drive member H in operable relation with one or the other of these two shafts, it is possible to move the knife carriage in either direction transversely to the passing fabric. Presuming that the motor G imparts a clockwise movement (Fig. 6) to the lower shaft 61, there will first be set forth the manner in which this shaft movement is utilized to press the knife carriage forward, or in a direction approaching the fabric, in correspondence to the initial movement of the guide in the same direction.

In this situation, the magnetic clutch 67 is energized by a dipping of the left-hand contact 56 (Fig. 7) into the mercury trough 57 in the manner which will be fully discussed following an explanation of the electrical wiring diagram. The energization of this magnetic clutch serves to draw the opposite clutch member 75 into mating relation therewith, thus determining a clockwise movement for the shaft 73. This shaft motion is directly transmitted to the superposed shaft 72 through the train of gears 76, 77 and 78, the center one of which is an idler mounted upon a stub shaft 79 between the shafts 72 and 73 which respectively carry the terminal gears of the train. A drive gear 80 is carried by the shaft 72 and is thus rotated in the clockwise direction of the shaft 61 to drive the element H, through the pinion 81, in the counter-clockwise direction of Fig. 6 which results in an advancing movement of the carriage C along its bracket track-way 22 toward the fabric edge at the right of Fig. 4.

Energization, on the other hand, of the magnetic clutch 66, which is continuously

driven in a counter-clockwise direction by the motor G, through the gears 68 and 69, serves to bring the clutch member 82 into mating relation therewith, thus turning the shaft 72 and the gear 80 in a counter-clockwise direction, and consequently the gear 81 clockwise or, in an opposite direction to that determined by an energization of the clutch 67. The driving element H is then reversely rotated to retract the carriage C from the fabric edge.

In the foregoing there has been set forth the means of a mechanical nature which this invention proposes and upon which it relies to effect movement of the knife carriage in either direction in accordance with the energization of the various magnetic clutches over which the carriage E exercises an automatically selective control in accordance with the fabric-induced movement of the guide D. The electrical connections and arrangements which tie the clutches and their controlling elements into the selective circuits mentioned are now to be set forth.

Referring to Fig. 10 the direct-current trunk lines are indicated by the numerals 83 and 84 and include, in their various circuit ramifications, all of the operating mechanism with the exception of the pairs of driving motors G and knife motors B, all of which lie in the alternating-current circuit whose trunk lines are indicated by numerals 85 and 86. Three solenoid plate switches 87, 88 and 89 are sublettered M', F' and R' respectively since they are interposed into the circuit of the motors, into the forward clutch circuits and into the reverse clutch circuits respectively. In addition to these switches there is employed a starting switch 90, a stop switch 91 and a master reverse switch 92, while limit switches 93 and 94 mechanically terminate movement of the knife carriages in a forward direction *i. e.* toward the fabric edges, in the same manner that limit switches 95 and 96 terminate the reverse movement of the knife carriages in retraction from the fabric edges. The limit switches are of the usual normally-closed type which interpose a circuit opening button in the path of the moving element to be checked; here, the carriage bracket 31, Fig. 5.

The alternating-current lead 85 may be considered as a positive line of the motor circuit and enters the diagram from some suitable source, not illustrated, being attached to the board 97, which serves to mount the switches 87—88—89 in some convenient position upon or adjacent the machine, by the contact plate 98. From this plate, the positive alternating-current lead travels over the line 99 to the pole 100 of the motor switch 87. When this switch is energized, which takes place in the manner

to be later described in connection with the starting switch, the positive lead passes over the switch blade 101; thence along the line 102 to the contact plate 103, from whence it is taken off the board 97 on the line 104 and serves to connect each of the four motors B and G in parallel. The returning line 105 of the circuit carries back to the contact plate 106 of the base board, thence through the opposite blade 107 of the solenoid motor switch and returns, when this switch is closed, to the negative trunk line 86 by way of the line 108 and the contact plate 109.

The circuit energizing the two solenoids of switches 87 and 88 is now to be traced, starting from the positive direct-current trunk line 83, which attaches to the board at the contact plate 110 from a suitable source of difference of potential. From the contact 110 this lead continues to the pole 111 of the solenoid switch 88; thence it is led to the binding post 112 from which branch out the wires 113 and 114 which place the cores of the solenoid switches 87 and 88 in parallel so that they may be simultaneously energized by a closing of the starting switch 90. At the binding post 115, the core wires in parallel are united to continue along the line 116 to the contact post 117 at which point this main circuit lead quits the board 97 and advances along the wire 118 to one pole 119 of the stop switch 91. This switch is normally closed to bridge the gap between this pole and the opposite pole 120, from which latter the line continues along the wire 121 to the pole 122 of the starting switch 90, which is but momentarily closed to place the machine in operation. From the second pole 123 of the starting switch, the circuit proceeds along the line 124 back to the board 97 to a connection on the contact post 125, leading thence along the line 126 to the contact plate 127. From this plate the lead completes its circuit out along the negative line 84.

It must now be explained that the starting switch 90, being of the normally open type, serves but to complete the circuit through the coils of the switches 87 and 88 at the moment of starting. Upon release of the starting switch and the consequent breaking of the starting circuit above pointed out, a maintaining circuit is established from the positive trunk 83 through the coils of the switches 87 and 88 to the normally closed stop switch and from thence back along the line 124' to the contact 125' on the board 97. Leaving the board along the line 126', the circuit includes the two reverse limit switches 95 and 96 and returns along the path 142—143—144—146—145 (to be set forth later in full) to the contact 127 carrying out along the negative trunk 84. This maintaining circuit, once broken, can

only be reestablished by a prior closing of the starting switch.

The main circuits have thus been disclosed and it now remains to tie the various magnetic clutches, limit switches and rocker arms into the direct current circuit initiated from the trunk lines 83—84. Assuming that the inverted-T rockers 49 are in the position illustrated in Fig. 10, the circuit there-through to their respective clutches is initiated along the lead 83 in the direction of the arrows to contact plate 110, to the pole 111 of the switch 88 thence, since the switch has been energized by closing of the main direct-current circuit and the establishment of the maintaining circuit just described, through the blade 128 to the pole 129, along the wire 130 to the pole 131 of the switch 89. This last switch differs from the other two solenoid plate switches 87 and 88 in that an additional contact arm 132 projects from the base plate and serves to connect poles 131 and 133, when the core of the switch has not been energized. Energization of the switch 89, in the manner to be later described, removes the bridge between these two contacts and closes the two upper arms on their respective contacts in the manner well-known to the art. From the contact 133 the circuit leads along the wire 134 to the binding post 135 from whence it quits the board 97 along the line 136 to the point 137. At this latter point the two rocker arms 49 are set into the circuit, in parallel, by connections 138 and 139. The continuing lines of each rocker will be separately discussed, reference being first directed to a continuation from the right rocker 49.

This rocker has been tipped about its central trunnion 49' until one of the contacts 56 has been dipped into its mercury tank 57 related to the corresponding forward clutch 67. Continuing from the tank 57 the circuit may be traced along the line 140 to the right forward clutch 67, continuing from thence along the line 141 through the right forward limit switch 93 and thence back to a contact post 142 carried by the board 97, beyond which the line is carried to the binding post 143 of the switch 88, across the blade 144 of this switch and on to the return line 145 through the closed contact between switch pole 146 and the mentioned line. The return line 145 leads directly to the contact plate 127 which ties this clutch circuit back upon the negative trunk line 84.

Returning to the point 137 from which lines were described as branching out to place the two rockers 49 in parallel there may now be traced the circuit through the reverse clutch of the left rocker. This left rocker has been so tipped about its pivoting trunnions that one of its contacts 56 enters the mercury tank 58 from which the reverse

circuit continues along the line 147, in the direction of the arrows, until reaching a binding post 148, passing thence through the left reverse magnetic clutch 66; along the line 149; through both limit switches 95 and 96 to return to the board at the contact 142 from which it passes through the switch 88 and out along the negative trunk line 84 in the manner already described. The circuit inclusive of the right reverse switch and the left forward switch which are similarly actuated when both rocker arms are shifted from the position illustrated in Fig. 10 may be traced in a similar manner to that just completed and it is not thought necessary to repeat this operation. The pairs of reverse clutches and forward clutches F F are simply placed in parallel in the same circuit. It, accordingly, remains but to describe the action and circuit of the master reverse clutch 92.

This switch is employed because of the utilization of the weights E' which normally cause each carriage E to move in its forward direction, that is against the fabric edges, as is necessary to insure a continuous and positive contact between the guides D and the selvage edges of the fabric. When however, the fabric length has been run through the trimming mechanism of my invention and is thus no longer interposed between the opposite guides D, in separation thereof, it is apparent that were no check interposed upon the electrical arrangements that the knife carriages would be forced inwardly to their limits of forward movement. It is therefore the object of this master reverse switch to provide reverse movements for the knife carriages regardless of the positions of the rocker arms 49.

The reversing switch 89 is energized by the passage of the current along the line 83, when the bar 150 of the switch 92 has been moved to close the gap between its poles 151 and 152. When this has taken place the current is to be traced along the lead 83 to the contact plate 110; thence to the pole 111 of the switch 88; across the switch blade 128; and along the line 130 to the contact 131. A lead 153 from this latter contact energizes the core of the switch 89 and returns thence along the line 154 to the contact post 155, at which point it quits the board 97 on the line 156, which connects to the master reverse switch pole 151. Crossing the bar 150 of this switch to the pole 152, and from thence back upon the line 124, the circuit is to be traced to the board contact 125, quitting thence along the passage already described to the negative trunk line 84. With the energization of the switch 89, the blade 132 is tripped to break connections between the two contact points 131 and 133, so that the current passing from the positive trunk 84 through the blade 128 of the switch 88 and thence to the contact 131, is led along the blade 157 of the switch 89 to the pole 158, and of course putting the rocker arms 49 out of the control circuit. Tripping of the switch part 132 in addition to destroying the bridge between the contacts 131 and 133 also bridges the contacts 131 and 159 at the same time, so that the blade 160 of the reverse switch 89 is placed in parallel with the opposite blade 157.

From the pole 158 of the first mentioned blade of this switch there continues the line 161 which leaves the board at the binding post 162 and connects to the binding post 148 of the left reverse clutch. Similarly the current passes along the switch blade 160, is led to the contact 163 and from thence along the line 164 in the direction of the arrow to the binding post 165 at which latter point it quits the board 97 and connects directly along the line 166 to the binding post 167. At this latter post there also connects the line 168 from the reverse mercury tank 58 of the right rocker 49 so that both wires 167 and 168 lead through the right reverse clutch and continue therefrom along the line 169 back onto the line 149, in common with the lines 147 and 161. The return of the wire 149 through the reverse limit switches and back along the negative trunk line 84 has already been described.

It is therefore apparent that the closing of the master reverse switch permits the operation of both of the reverse magnetic clutches 66 regardless of the position of the rocker arms 49 so that the pull of the weights E' does not operate to force the knife carriages C to their forward limit of movement when the fabric strip has been withdrawn from the machine; or if the knife carriages have been allowed to narrow the distance between them to the minimum, they may readily be returned to their normal placement, to make way for the insertion of a new fabric strip, by simply closing the switch 92.

Condensers 170 are grouped in parallel from the rocker arm lead 136 and the respective wires 140, 147, 168, 169 continuing from the separate rocker arm mercury cups, to effect their usual function of spark absorption.

In summing up the operation of the machine in use attention is directed principally to Figs. 4 and 7, the description of one group of elements being deemed sufficient. The fabric in passing over the roll 34 in the direction indicated by the arrow in the former figure is engaged by the guide D through the constant gravitational action of the weight E'. Edge sinuosities of the fabric which force the guide D along the roll 34 toward the left, in either of these figures produces a rolling movement of the carriage E in the same direction. Since the pivot pin 50 of the inverted-T rocker arm is held

stationary by the motor carriage arm 51, it will be apparent that this movement of the carriage E will be exerted upon the central trunnion 49' of the rocker arm 49, causing the latter to move through a small arc in a clock-wise direction thus dipping the right hand contact 56 into the mercury tank 58. As described in connection with the wiring diagram of Fig. 10, this particular mercury tank is interposed in the reverse circuit for the knife carriage, so that immersion of the contact pin in the tank will serve to energize the reverse clutch 66 of the particular knife carriage illustrated, resulting in an actuation of the shifting element H to retract the carriage from the fabric edge.

The time factor has been so calculated with reference to the arrangement of the knife carriage and the guide of each group at different points along the path of the passing strip that the time consumed, after the first impulse given the guide D by the edge sinuosity of the fabric, in closing the reverse circuit and overcoming the inertia of the machine is sufficient to allow the edge irregularity to arrive at the knife A, when the latter reaches its shifted position. Thus, the knife will be in a position exactly similar, upon the arrival of the particular actuating undulation of fabric thereat, as was the guide D after passage of the undulation thereby. This corresponding shifting of guide and knife is a continuous process which trims the selvage to a constant width.

The knife carriage does not progress further than a position corresponding to that of the shifted guide since the latter, when once shifted, maintains the trunnion 49' as the pivot point about which the contact rocker arm may oscillate (through a counter-clockwise arc, in this case) as the carriage arm 51 is retracted. In this manner, arrival of the knife carriage at the position determined by the guide's own place, breaks the controlling circuit which commands the carriage movement, by bringing the arm 49 to the horizontal position illustrated.

Supposing now that, immediately after the passage of the edge irregularity past the guide, the fabric edge again resumes its normal position (which will be to the right of the guide position achieved by the shifting movement); the weight E' will then return the guide D to its normal position of contact with the fabric edge. The knife carriage, however, having remained in its shifted position, holds the pin 50 stationary to effect the required pivotal movement of the rocker 49 in accordance with the returning movement of the guide, so that the left hand contact pin is immersed in its mercury tank 57 thus closing the circuit through the forward clutch 67 and actuating the drive element H oppositely to its movement of rotation first described, in order to advance

the knife carriage in correspondence to the advance of the guide D due to the action of the weight E'.

It will thus be seen that the movement of the guide, and of the accompanying controller carriage E, relative to the knife carriage and its rocker arm 51 operates to close respective circuits through the appropriate clutch mechanisms in such a manner that an exact correspondence of position, with respect to particular undulations or irregularities of the fabric edge is always achieved between the knife and its advance guide. In like manner, movement of the knife carriage relative to the guide D operates to break the respective circuits of the controlling clutch mechanisms, when the knife has attained the same position with respect to any particular sinuosity of the fabric edge which was previously occupied by the guide.

To render the machine of this invention operative with true uniformity, the fabric is always fed over the rolls 34 under tension. This may be accomplished in any desirable manner, such as by placing the machine structure carrying the selvage trimming mechanism between spaced calendars which engage the fabric on each side of the selvage trimmer. Whenever the end of the roll of fabric is reached and it is freed from the aft calendar, the tension on the fabric over the rolls 34 is lost and it is necessary that means be provided upon the trimming machine itself to engage the fabric in order to insure the same amount of tension at the end of the fabric roll which was accorded to the fabric already trimmed. For this purpose there is provided a large roll 34' which is actuatable by a cam shaft 34'' for swinging up against the foremost roll 34. The fabric is thereupon clamped between these two rolls and by use of a suitable tension mechanism 35', connected to the roll 34', the proper tension may be maintained throughout the entire run of any roll of fabric, even after the end of the roll has issued from the aft calendar. Normally the fabric always passes between the foremost roll 34 and the shiftable tension roll 34', yet is not clamped therebetween until necessary to maintain the tension on the fabric, in the manner above set forth.

While in the foregoing there has thus been disclosed the preferred embodiment of my invention, as now known to me, I desire to emphasize the fact that later embodiments of the invention may be subject to such alterations as are to be considered properly within the scope of the invention here set forth, as defined in the appended claims.

What I claim is:

1. A device for trimming the selvage from a moving strip of fabric embodying a shiftably-mounted knife, mechanism for shifting

the position of said knife, a shiftable carriage, means on said carriage positioned wholly to one side of the strip of fabric adapted to contact with the edge of the moving fabric, means to constantly maintain said carriage in position to effect said contacting engagement, means connecting said carriage with the knife-shifting mechanism whereby any movement of the former produces a corresponding movement of the knife.

2. A device for trimming the selvage from a moving strip of fabric embodying a shiftable-mounted knife, mechanism for shifting the position of said knife, a shiftable carriage-carrying means positioned wholly to one side of said strip and normally held in contacting engagement with the edge of the fabric and arranged to be moved by its engagement with the uneven portions thereof, means connecting the carriage with the knife-shifting mechanism possessing the function of shifting the knife whenever the position of the carriage changes.

3. A device for trimming the selvage from a moving strip of fabric embodying a trimming knife, a shiftable carriage for supporting said knife, means for shifting said carriage, a second carriage provided with mechanism adapted to engage the edge of a moving strip of fabric and be correspondingly shifted by the unevennesses thereof, said means positioned to one side of said strip of fabric, means connecting said carriages whereby any change of position of the carriage-engaging edge of the fabric produces a corresponding change of position of the knife-carrying carriage.

4. A device for trimming the selvage from a moving strip of fabric involving a trimming knife, a shiftable carriage for said knife, mechanism adapted to shift said carriage, a second carriage shiftable mounted and provided with means engaging the side edge of the moving fabric and shifted in position by its engagement with the uneven portions thereof positioned to one side of and means connecting said second carriage with the mechanism for operating the knife-carrying carriage, said means having the function of inducing a change of position of the latter to correspond with each change of position of the carriage having engagement with the edge of the fabric.

5. A selvage trimmer adapted to trim the selvage from a moving strip of fabric comprising, a trimming tool, a motor for operating said trimming tool, a shiftable carriage to support said motor, mechanism to reciprocate said carriage, a second carriage provided with means engaging the edge of the strip of fabric and shifted by its engagement with the uneven portions thereof, two independent connecting means connecting with said carriage and the mechanism

for operating the first carriage, one of which is operable when the second carriage is shifted in one direction, said reciprocating means adapted to be alternated for the connection of said second carriage to produce corresponding changes of position of the knife-carrying carriage.

6. A selvage trimmer adapted to trim the selvage from a moving strip of fabric comprising a trimming tool, means for operating said trimming tool, a shiftable carriage to support said means, mechanism to shift said carriage in opposite directions, means having engagement with the edge of the moving strip of fabric and adapted to induce operation of the mechanism for shifting the tool-carrying carriage.

7. A selvage trimmer adapted to trim the selvage from a moving strip of fabric comprising, a trimming tool, means for operating said trimming tool, a shiftable carriage to support said operating means, mechanism to reciprocate said carriage in one direction and mechanism for shifting said carriage in the opposite direction, means having engagement with the edge of the strip of moving fabric and shifted by its engagement with the uneven portions thereof, an electrical circuit-breaker operated by last-named means when the position thereof is changed, electrical circuits connecting said circuit-breaker with the mechanisms for shifting said carriage, said electric circuits when closed by said circuit breaker due to the movement of the fabric-engaging means inducing operation of either of the carriage-shifting mechanisms.

8. In a machine organized to trim selvage edges from a moving strip of fabric; knives; carriages mounting the knives in proximity to the untrimmed selvage edges of the fabric and slidable in the approximately horizontal plane of the fabric; and means to move the carriages transversely to the moving fabric strip in exact correspondence to the sinuosities of the passing fabric edges.

9. In a machine organized to trim selvage edges from a moving strip of fabric; knives; carriages mounting the knives in proximity to the untrimmed selvage edges of the fabric and slidable in the approximately horizontal plane of the fabric; and guides in contact with the fabric to positively control shifting of the knife carriages transversely to the moving fabric strip in correspondence to the sinuosities of the passing selvage edge.

10. In a machine organized to trim selvage edges from a moving strip of fabric; trimming elements; carriages mounting said elements in proximity to the passing fabric edges; guide carriages shiftable by the passage of the untrimmed selvage edges; and electrical instrumentalities controlling movements of the element-mounting car-

riages in both directions transverse to the fabric, said electrical instrumentalities being selectively governed by the shifting of the guide carriages.

5 11. In a machine organized to trim selvage edges from a moving strip of fabric; trimming elements; carriages mounting the trimming elements for movement transverse to the fabric; guides shiftable by the mean-
10 dering passage of the fabric; carriages capable of displacement in accordance with the movement of said guides; and means copulating the first mentioned carriages and said guide carriages to transmit motion of
15 the latter to the former.

12. In a machine organized to trim selvage edges from a moving strip of fabric; trimming elements mounted for independent movement transverse to the path of the fabric; guides in contact with the untrimmed
20 selvage edges of the fabric and movable thereby in accordance with the sinuosities thereof; and means normally unconnected with the trimming elements and operable to
25 transmit the movement of said guides to respective trimming elements.

13. In a machine organized to trim selvage edges from a moving strip of fabric; slidable trimming elements mounted for independent movement transverse to the path
30 of the fabric; guides arranged in contact with opposite selvage edges of the fabric and movable in accordance with the undulations thereof; and means copulating the
35 guides and the trimming elements to effect sliding movements of the latter in parallelism to those of their respective guides, in the same direction and to the same degree.

14. In a machine organized to trim selvage edges from a moving strip of fabric; trimming elements mounted for independent movement transverse to the path of the fabric; guides in contact with the un-
40 trimmed selvage edges of the fabric and shiftable in accordance with lateral irregularities of travel thereof and normally disconnected from the elements; means insuring a positive contact of the guides with
45 the edges; and mechanisms copulating the trimming elements with respective guides for corresponding displacement with respect to the fabric.

15. In a machine organized to trim selvage edges from a moving strip of fabric; trimming knives; slidable carriages mounting said trimming knives in proximity to the untrimmed selvage edges of the fabric
50 and for independent movement transverse thereto; guides in contact with the untrimmed selvage edges of the fabric and movable thereby in accordance with the sinuosities thereof; and means to transmit the movement of said guides to respective
60 trimming knife carriages.

65 16. In a machine organized to trim sel-

vage edges from a moving strip of fabric; trimming knives; slidable carriages mounting said trimming knives in proximity to the untrimmed selvage edges of the fabric and for independent movement transverse
70 thereto; guides arranged in contact with the opposite selvage edges of the fabric and movable in accordance with the undulations thereof; and means copulating the guides and the trimming knife carriages to effect
75 sliding movement of the latter in parallelism to those of their respective guides, in the same direction and to the same degree.

17. In a machine organized to trim selvage edges from a moving strip of fabric; trimming knives; slidable carriages mounting said trimming knives in proximity to the untrimmed selvage edges of the fabric and for independent movement transverse
80 thereto; guides in contact with the untrimmed selvage edges of the fabric and shiftable in accordance with the lateral irregularities of travel thereof; means insuring a positive contact of the guides with the edges; and mechanisms copulating the
85 trimming knife carriages with respective guides for corresponding displacement with respect to the fabric.

18. In a machine organized to trim selvage edges from a moving strip of fabric; trimming knives; carriages mounting the knives on opposite sides of the fabric in proximity to the untrimmed selvage edges thereof; means adapting the carriages for both vertical and horizontal movement with
100 respect to the selvage edges; guides in contact with the untrimmed selvage edges of the fabric and movable thereby in accordance with the sinuosities thereof and normally disconnected from the elements; and
105 means connectible with the carriages for transmitting the movement of said guides to respective trimming knife carriages.

19. In a machine organized to trim selvage edges from a moving strip of fabric; trimming knives; slidable carriages mounting the knives on opposite sides of the fabric in proximity to the untrimmed selvage edges thereof; means adapting the carriages for both vertical and horizontal
110 movement with respect to the selvage edges; guides arranged in contact with opposite selvage edges of the fabric and movable in accordance with the undulations thereof; and means copulating the guides and the
115 trimming knife carriages to effect sliding movements of the latter in parallelism to those of their respective guides, in the same direction and to the same degree.

20. In a machine organized to trim selvage edges from a moving strip of fabric; trimming knives; slidable carriages mounting the knives on opposite sides of the fabric in proximity to the untrimmed selvage edges thereof; means adapting the carriages for
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both vertical and horizontal movement with respect to the selvage edges; guides in contact with the untrimmed selvage edges of the fabric and shiftable in accordance with the lateral irregularities of travel thereof; means insuring a positive contact of the guides with the edges; and mechanisms copulating the trimming knife carriages with respective guides for corresponding displacement with respect to the fabric.

21. In a machine organized to trim selvage edges from a moving strip of fabric; trimming knives; composite carriages mounting the knives in proximity to the passing selvage edges of the fabric; base elements composing each of said composite carriages, the elements of each carriage being arranged for adjusting movements independent of each other and for sliding movements as a whole; guides in contact with the untrimmed selvage edges of the fabric and movable thereby in accordance with the sinuosities thereof; and means to transmit the movement of said guides to respective trimming knife carriages.

22. In a machine organized to trim selvage edges from a moving strip of fabric; trimming elements; a carriage mounting each of said elements in proximity to one of the selvage edges of the passing fabric strip, each carriage including a slidable element; an element adjustable upon the slidable element, and a third element hingedly connecting the trimming element mounting to said adjustable element; guides in contact with the untrimmed selvage edges of the fabric and movable thereby in accordance with the sinuosities thereof; and means to transmit the movement of said guides to respective trimming element carriages as opposed units.

23. In a machine organized to trim selvage edges from a moving strip of fabric; trimming knives mounted for movement transverse to the untrimmed selvage edges of the passing fabric strip; guides shiftable by the meandering fabric edges in advance of the knives; mechanical and electrical instrumentalities controlling the shifting of respective knives; and carriages loosely interposed between the guides and corresponding knives to exercise a selective control over said electrical and mechanical instrumentalities in determining an independent displacement of the knives corresponding to the shifting of said guides.

24. In a machine organized to trim selvage edges from a moving strip of fabric; trimming knives mounted for movement transverse to the untrimmed selvage edges of the passing fabric strip; guides shiftable by the meandering fabric edges in advance of the knives; mechanical and electrical instrumentalities controlling the shifting of

the respective knives; carriages loosely interposed between the guides and respective knives to exercise a selective control over said electrical and mechanical instrumentalities; and means mounting the carriages for rolling movement free from oscillation.

25. In a machine organized to trim selvage edges from a moving strip of fabric, a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; guides responsive to the edge sinuosities of the passing fabric; a carriage movable with the guide; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means interposed between the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guides.

26. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element, mechanism selectively operable to shift the element in opposite directions transverse to the fabric; guides in contact with the untrimmed selvage edge of the passing fabric and shiftable by the lateral irregularities thereof; a carriage movable with the guide; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means interposed between the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guides.

27. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; guides in contact with the untrimmed selvage edge of the passing fabric and shiftable by the lateral irregularities thereof; a carriage movable with the guide; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means pivotally connected to both the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guides.

28. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; guides in contact with the untrimmed selvage edge of the passing fabric and shiftable by the lat-

eral irregularities thereof; a carriage movable with the guide; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and a rocker arm oscillatable by movement of the guide carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guides.

29. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; guides in contact with the untrimmed selvage edge of the passing fabric and shiftable by the lateral irregularities thereof; a carriage movable with the guide; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and a rocker arm pivoted on the guide carriage and loosely connected to the trimming element for oscillation by movement of the carriage relative to the element to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guides.

30. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide, means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be consistently shifted by lateral irregularities thereof; a carriage movable with the guide; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means interposed between the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

31. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be consistently shifted by lateral irregularities thereof; a carriage movable with the guide; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means pivotally connected to both the trimming element and the guide carriage to control the energization of

independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guides.

32. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide; means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be consistently shifted by the lateral irregularities thereof; a carriage movable with the guide; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and a rocker arm oscillatable by movement of the guide carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

33. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide; means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be consistently shifted by lateral irregularities thereof; a carriage movable with the guide; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; a rocker arm pivoted on the guide carriage and loosely connected to the trimming element for oscillation by movement of the guide carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guide.

34. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the elements in opposite directions transverse to the fabric; guides responsive to the edge sinuosities of the passing fabric; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means interposed between the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guides.

35. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively

operable to shift the elements in opposite directions transverse to the fabric; guides responsive to the edge sinuosities of the passing fabric; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guides.

36. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the elements in opposite directions transverse to the fabric; guides responsive to the edge sinuosities of the passing fabric; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and a rocker arm oscillatable by movement of the guide carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guides.

37. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the elements in opposite directions transverse to the fabric; guides responsive to the edge sinuosities of the passing fabric; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and a rocker arm pivoted on the guide carriage and loosely connected to the trimming element for oscillation by movement of the carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guides.

38. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite direction transverse to the fabric; guides responsive to the edge sinuosities of the passing fabric; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means interposed between the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guides.

39. In a machine organized to trim selvage edges from a moving strip of fabric;

a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; guides responsive to the edge sinuosities of the passing fabric; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means pivotally connected to both the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guides.

40. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; guides responsive to the edge sinuosities of the passing fabric; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and a rocker arm oscillatable by movement of the guide carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guides.

41. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; guides responsive to the edge sinuosities of the passing fabric; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and a rocker arm pivoted on the guide carriage and loosely connected to the trimming element for oscillation by movement of the carriage relative to the element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guides.

42. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide responsive to the edge sinuosities of the passing fabric; a carriage movable with the guide; electric circuits controlling the operation of the selective shifting mechanisms for the element; and means pivotally connected to both the trimming element and the guide carriage to control the energization of independent circuits for actuation of the

selective mechanism, in imparting movement to the trimming element similar to that of the guide.

43. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide responsive to the edge sinuositities of the passing fabric; a carriage movable with the guide; electric circuits controlling the operation of the selective shifting mechanisms for the element; and a rocker arm operable by movement of the guide carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

44. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide responsive to the edge sinuositities of the passing fabric; a carriage movable with the guide; electric circuits controlling the operation of the selective shifting mechanisms for the element; and a rocker arm pivoted on the guide carriage and loosely connected to the trimming element for oscillation by movement of the carriage relative to the element to control the energization of independent circuits for actuation of the selective mechanisms in imparting movement to the trimming element similar to that of the guide.

45. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide in contact with the untrimmed selvage edge of the passing fabric and shiftable by the lateral irregularities thereof; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means interposed between the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guide.

46. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide; means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be shifted by lateral irregularities thereof; a carriage mounting the guide for movement

transverse to the fabric edge; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means interposed between the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guide.

47. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide in contact with the untrimmed selvage edge of the passing fabric and shiftable by the lateral irregularities thereof; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means interposed between the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guide.

48. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide; means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be shifted by lateral irregularities thereof; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the energization of the selective shifting mechanisms for the trimming element; and means interposed between the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guide.

49. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide in contact with the untrimmed selvage edge of the passing fabric and shiftable by lateral irregularities thereof; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the operation of the selective shifting mechanisms for the trimming element; and means pivotally connected to both the trimming elements and guide carriage to control the energization of independent circuits for actuation of the selec-

tive mechanisms, in imparting movement to the trimming element similar to that of the guide.

50. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide in contact with the untrimmed selvage edge of the passing fabric and shiftable by lateral irregularities thereof; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the operation of the selective shifting mechanisms for the trimming element; and a rocker arm oscillatable by movement of the guide carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

51. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide in contact with the untrimmed selvage edge of the passing fabric and shiftable by lateral irregularities thereof; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the operation of the selective shifting mechanisms for the trimming element; and a rocker arm pivoted on the guide carriage and loosely connected to the trimming element for oscillation by movement of the carriage relative to the element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

52. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide; means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be shifted by the lateral irregularities of the selvage edge; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the operation of the selective shifting mechanisms for the trimming elements; and means pivotally connected to both the trimming element and guide carriages for controlling the energization of independent circuits for actuation of the selective mechanisms, in imparting movement to the trimming element similar to that of the guide.

53. In a machine organized to trim selvage edges from a moving strip of fabric, a trimming element; mechanisms selectively

operable to shift the element in opposite directions transverse to the fabric; a guide; means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be shifted by the lateral irregularities of the selvage edge; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the operation of the selective shifting mechanisms for the trimming elements; and a rocker arm oscillatable by movement of the guide carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

54. In a machine organized to trim selvage edges from a strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; a guide, means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be shifted by the lateral irregularities of the selvage edge; a carriage mounting the guide for movement transverse to the fabric edge; electric circuits controlling the operation of the selective shifting mechanisms for the trimming elements; and a rocker arm pivoted on the guide carriage and loosely connected to the trimming element for oscillation by movement of the carriage relative to the element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

55. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; guides in contact with the untrimmed selvage edge of the passing fabric and shiftable by the lateral irregularities thereof; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the operation of the selective shifting mechanism for the trimming element; and means pivotally connected to both the trimming element and the guide carriage to control the energization of independent circuits for actuation of the selective mechanism in imparting movement to the trimming elements similar to that of the guides.

56. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; guides in contact with the untrimmed selvage edge of the passing fabric and shiftable by the lateral irregularities thereof; a carriage sup-

porting the guide and having a rolling movement free from oscillation; electric circuits controlling the operation of the selective shifting mechanism for the trimming element; and a rocker arm oscillatable by movement of the guide carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guides.

57. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanisms selectively operable to shift the element in opposite directions transverse to the fabric; guides in contact with the untrimmed selvage edge of the passing fabric and shiftable by the lateral irregularities thereof; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the operation of the selective shifting mechanism for the trimming element; and a rocker arm pivoted on the guide carriage and loosely connected to the trimming element for oscillation by movement of the carriage relative to the element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

58. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanism selectively operable to shift the element in opposite directions transverse to the fabric; a guide; means insuring a positive contact of the guide against the untrimmed selvage edges of the fabric whereby the guide may be shifted by lateral irregularities of the selvage edge; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the operation of the selective shifting mechanism for the trimming element; and means pivotally connected to both the trimming elements and guide carriage to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

59. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanism selectively operable to shift the element in opposite directions transverse to the fabric; a guide; means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be shifted by lateral irregularities of the selvage edge; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the operation of the selective shifting mechanism for the trimming element; and a rocker arm oscillatable by movement of the guide carriage relative to the trimming element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

60. In a machine organized to trim selvage edges from a moving strip of fabric; a trimming element; mechanism selectively operable to shift the element in opposite directions transverse to the fabric; a guide; means insuring a positive contact of the guide against the untrimmed selvage edge of the fabric whereby the guide may be shifted by lateral irregularities of the selvage edge; a carriage supporting the guide and having a rolling movement free from oscillation; electric circuits controlling the operation of the selective shifting mechanism for the trimming element; and a rocker arm pivoted on the guide carriage and loosely connected to the trimming element for oscillation by movement of the carriage relative to the element to control the energization of independent circuits for actuation of the selective mechanism, in imparting movement to the trimming element similar to that of the guide.

In testimony whereof I have signed my name in the presence of two subscribing witnesses.

ARTHUR P. LEWIS.

Witnesses:

C. V. P. NEWBOLD,
H. J. GINTHER.