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MACHINE FOR SEVERING SELECTED MULTIPLES OF FABRIC STRIP LENGTHS

Filed Oct. 23, 1950 6 Sheets-Sheet 1

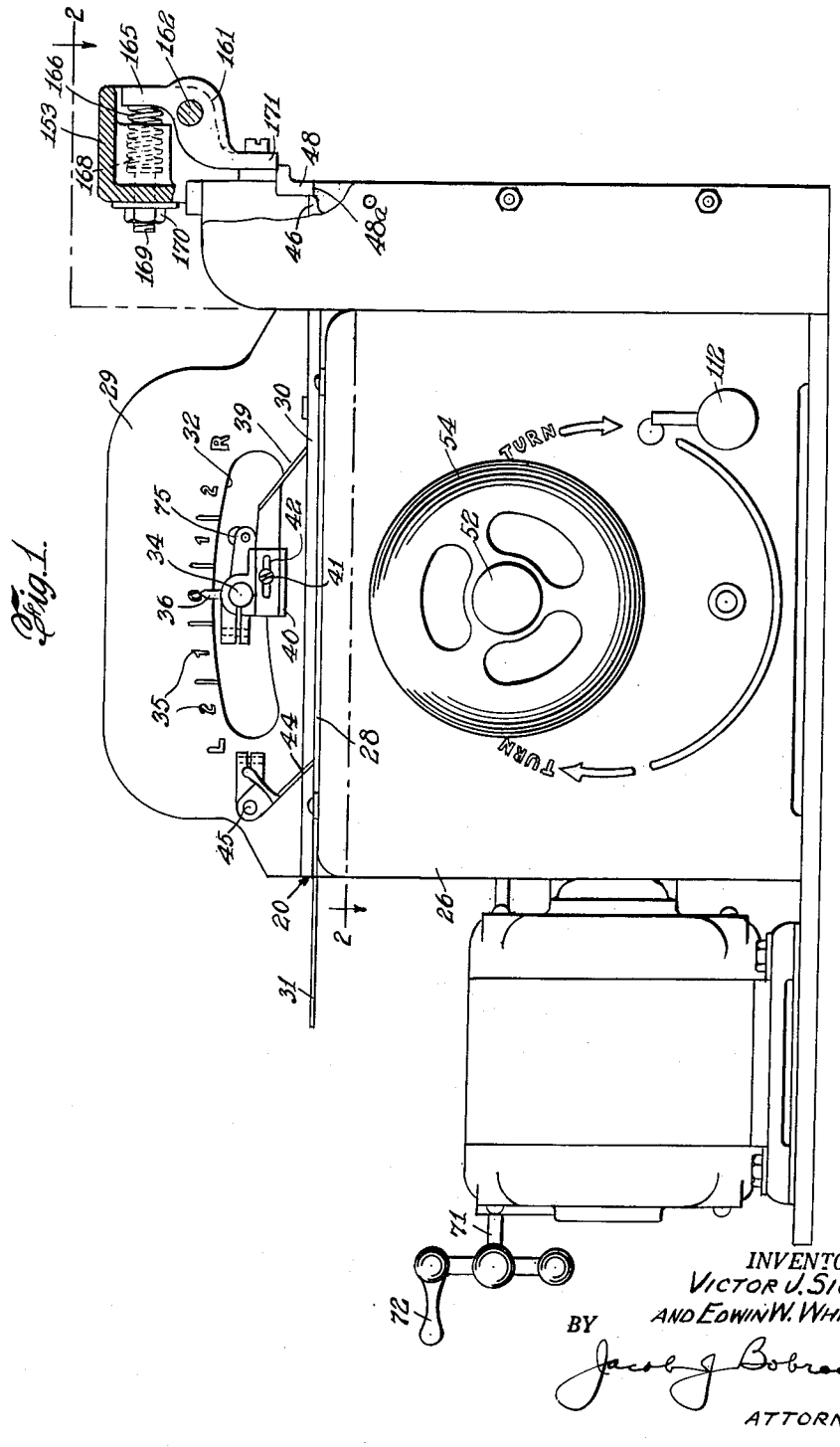


Fig. 1.

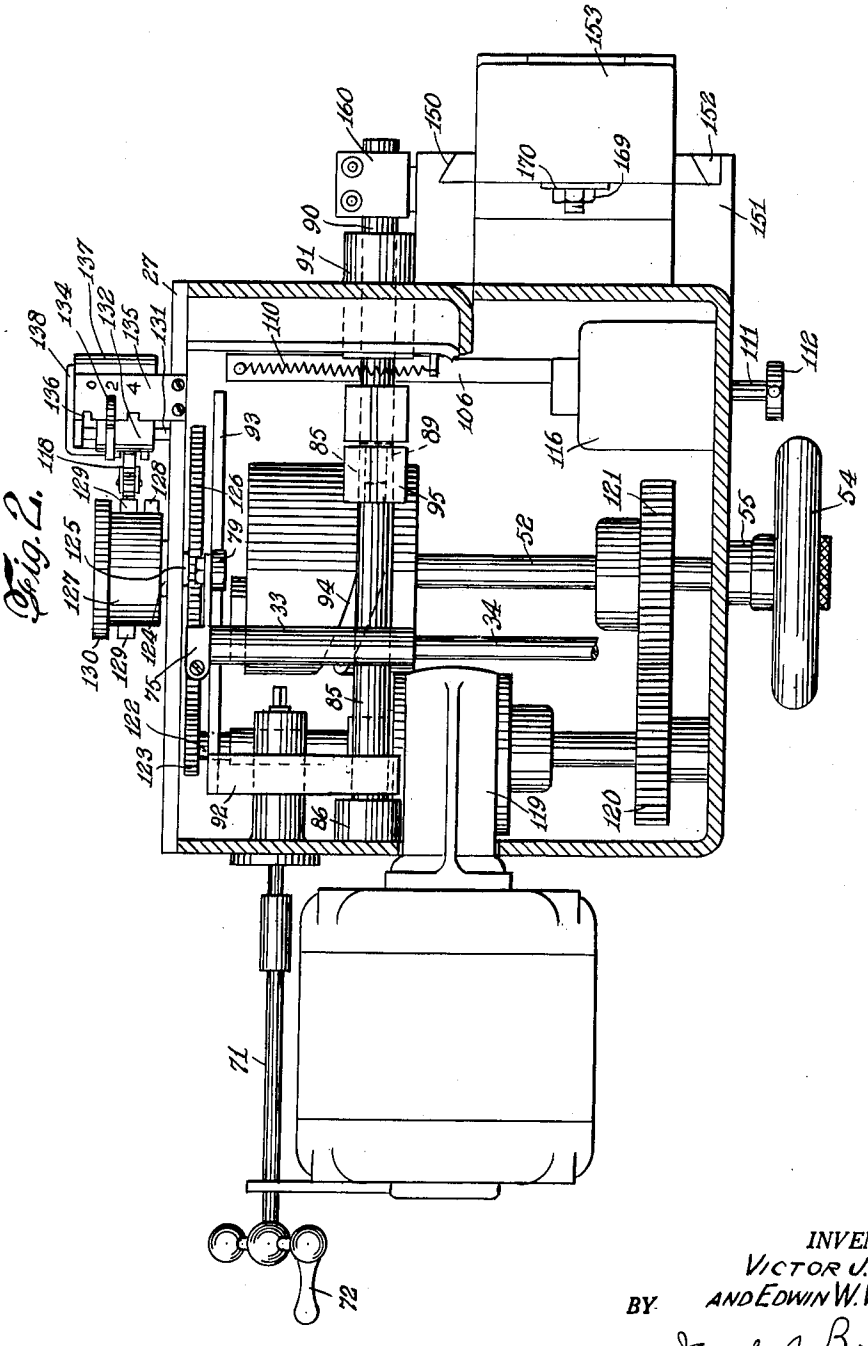
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Fig. 2.



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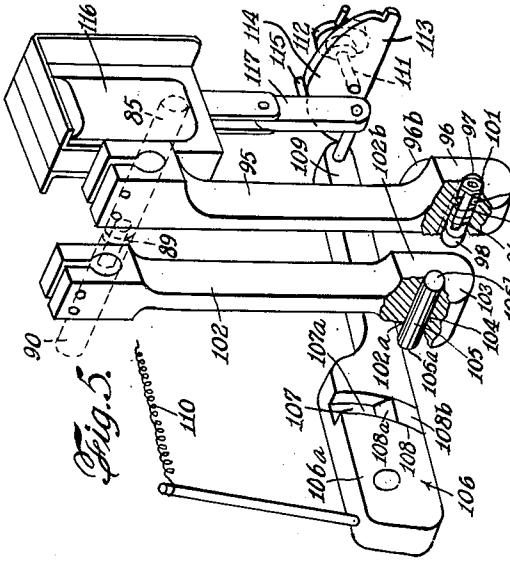


Fig. 5.

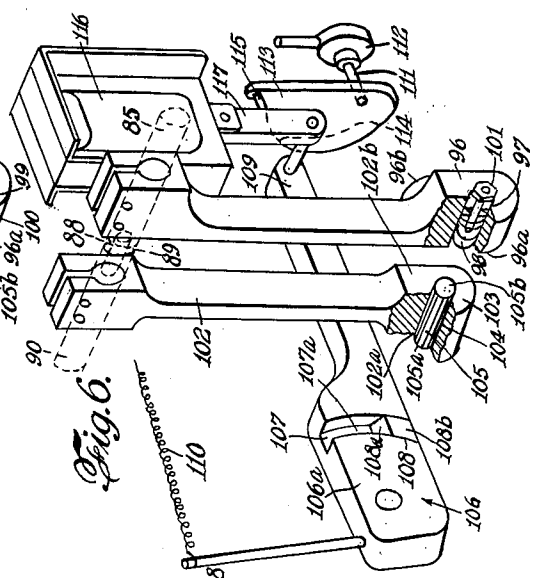


Fig. 6.

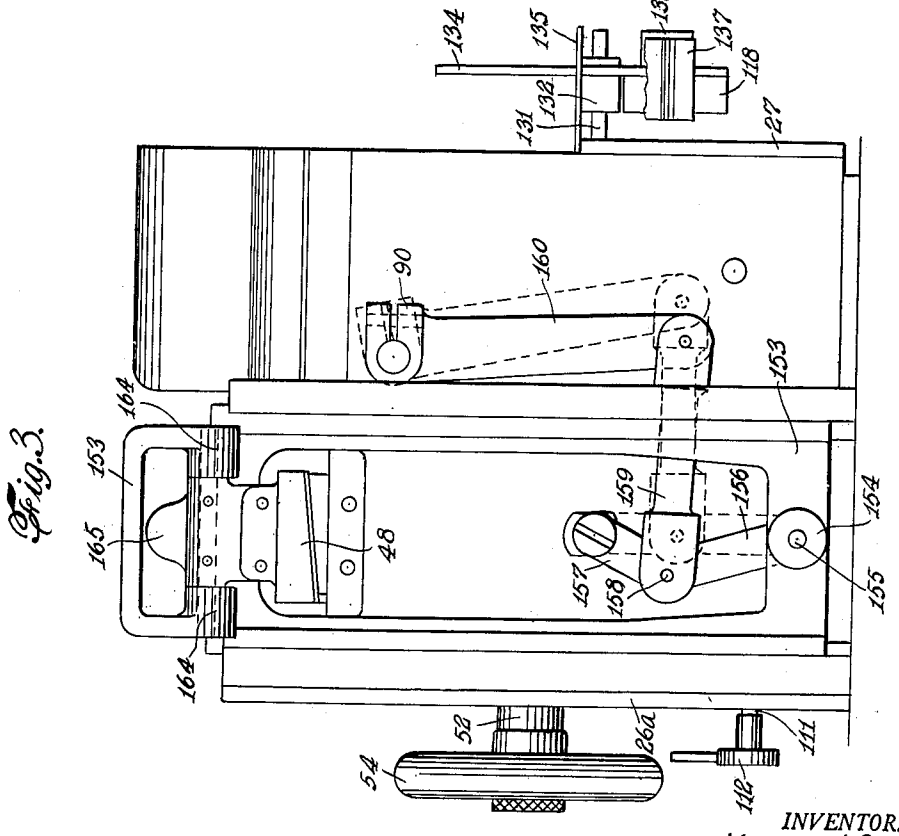


Fig. 3.

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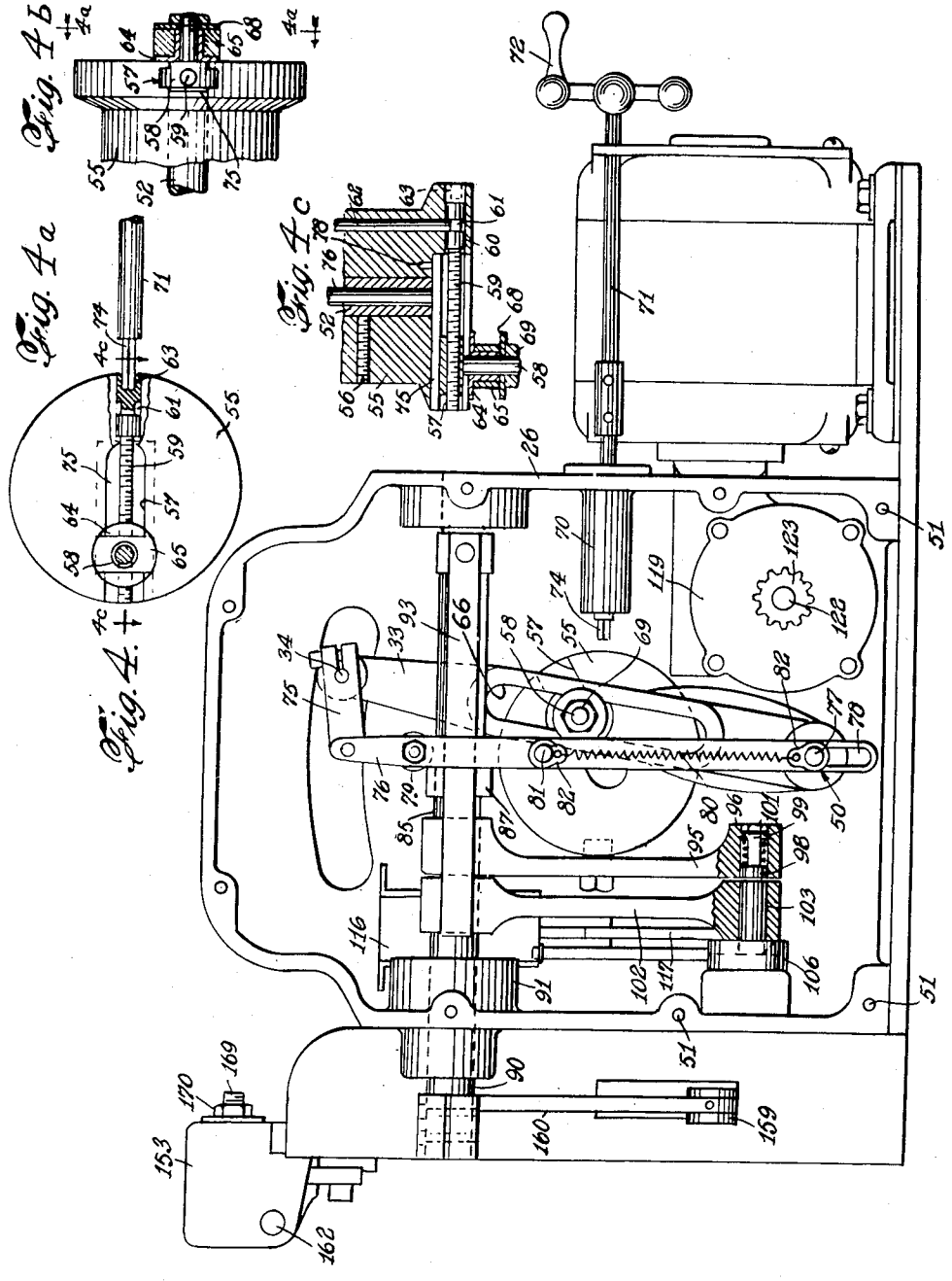


Fig. 4b

Fig. 4a

Fig. 4c

Fig. 4

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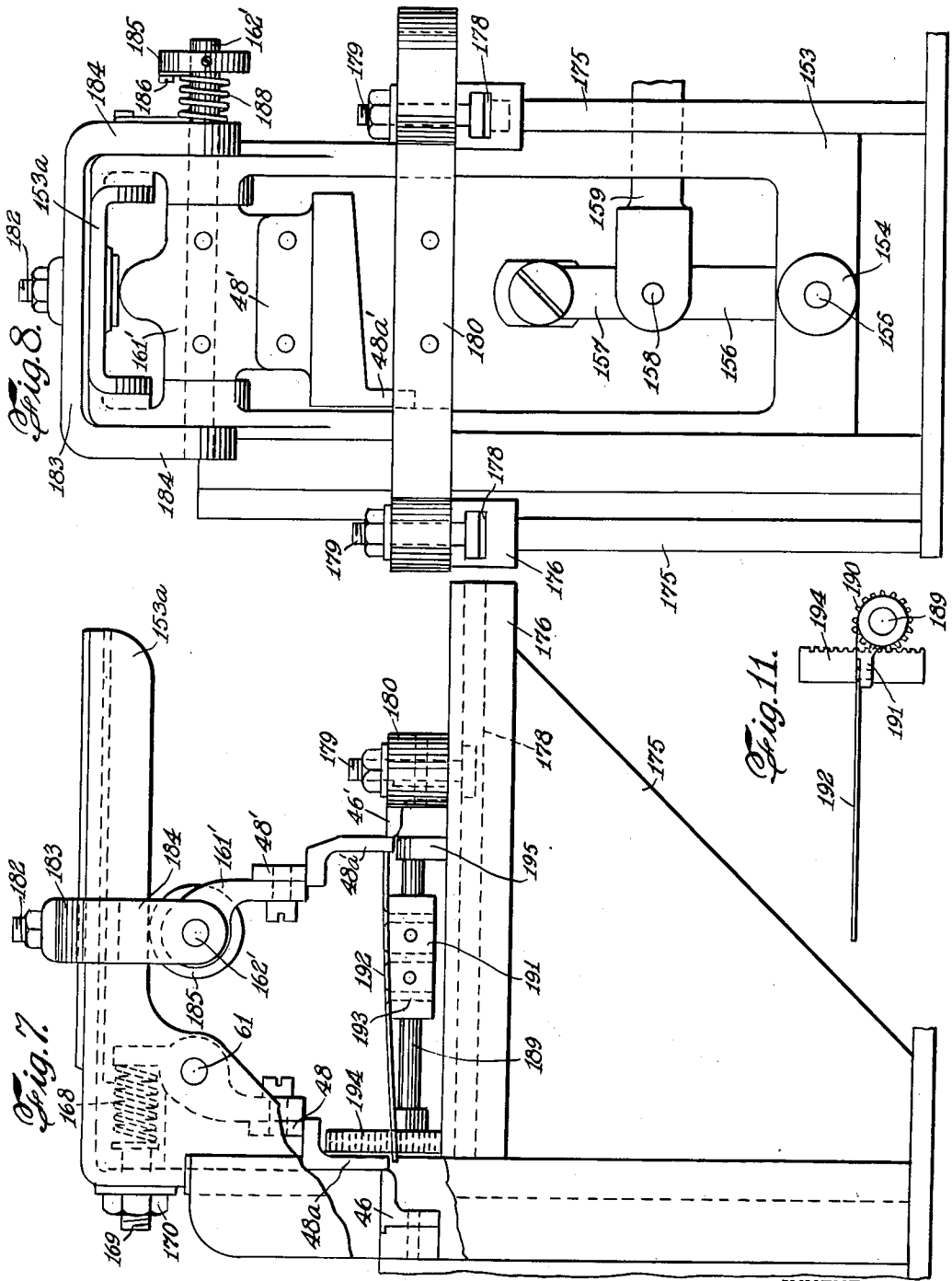


Fig. 8.

Fig. 11.

Fig. 7.

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Fig. 12.

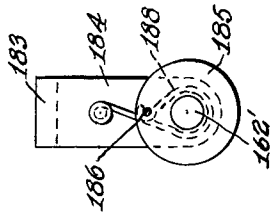


Fig. 9.

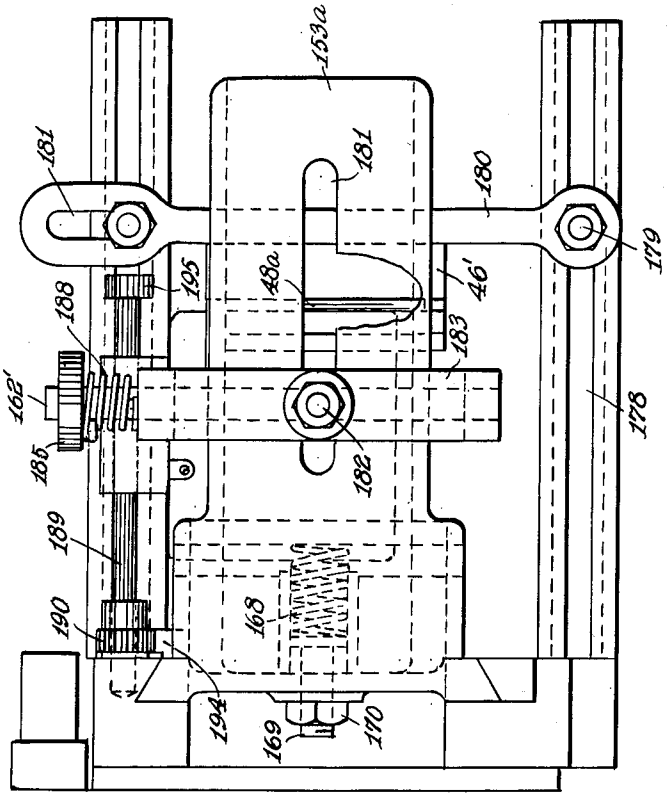
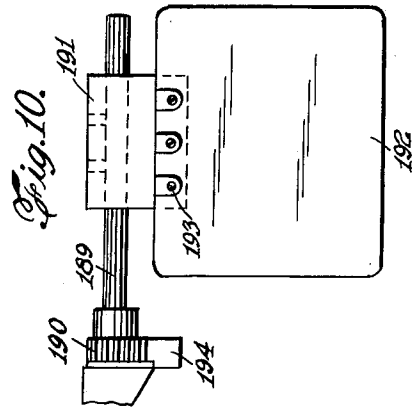


Fig. 10.



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MACHINE FOR SEVERING SELECTED MULTIPLES OF FABRIC STRIP LENGTHS

Victor J. Sigoda, Great Neck, and Edwin W. Whitman, Richmond Hill, N. Y.

Application October 23, 1950, Serial No. 191,548

10 Claims. (Cl. 164—48)

This invention relates to cutting machines, more particularly to machines which feed measured lengths of strip material to a cutting means which is actuated in timed relation to the feeding means to cut off that part of the strip which has been fed through the cutting means.

This case is a continuation-in-part of pending application Serial No. 48,565, filed September 10, 1948, now Patent No. 2,683,600. It has been a primary object to provide an improvement in the feeding mechanism of the several versions of the machine shown and described therein, whereby much longer strips may be cut off accurately.

In that case it has been shown that the length of the cut off strip is determined by the measuring stroke of a feed arm which is oscillated by an eccentric stud. The amount of eccentricity determines the length of the measuring stroke, and the range of cut-off lengths available therefore is limited by the maximum amount of eccentricity available in the machine as built.

In many cases, it is desirable to cut off strip lengths greatly exceeding this range. There is provided by the present invention a novel mechanism whereby multiples of any given length within the range mentioned may be readily obtained without modification of the machine. By way of illustration, the instant machine is shown as being capable only of multiplications of one, two and four times any selected range. From the principles hereinafter described, it will be seen however, that any other desired multiples may be readily obtained. It is therefore a principal object to provide a machine having a wider range of measuring strokes while retaining the advantages of the compact arrangement of the machine disclosed in the pending application.

It is a further object to provide means whereby any of the multiples available may be simply selected at will.

Other objects and advantages of the invention will in part appear and in part will be obvious from the following description of the presently preferred embodiments of the invention, taken in conjunction with the drawings, in which:

Fig. 1 is a front elevation of the machine, showing a single cut-off means.

Fig. 2 is a plan view corresponding to Fig. 1, partly in section, taken on line 2—2 of Fig. 1 showing the internal organization of the machine,

Fig. 3 is an end elevation corresponding to Fig. 1, showing in broken line the position of the cutter actuating links when the mating cutters are engaged.

Fig. 4 is a rear elevation corresponding to Fig. 1, with the back cover and the multiple selector mechanism carried thereby removed,

Fig. 4*a* is a detailed elevation showing the means for adjusting the stroke of the strip feeder,

Fig. 4*b* is a side elevation of the parts shown in Fig. 4*a* as seen from the left of that figure,

Fig. 4*c* is a central sectional view taken on line 4*c*—4*c* of Fig. 4*a*.

Fig. 5 is a detail view in exploded perspective, showing

the clutch elements for actuating the movable cutter, the parts being shown in their respective positions when the clutch elements are disengaged and the movable cutter is non-operating,

Fig. 6 is a view similar to Fig. 5, showing the clutch elements when engaged to operate the movable cutter,

Fig. 7 is a front elevation of a double cutter version corresponding in a general way with Fig. 1, but showing only that part of the machine and the cutter elements necessary for comprehension of this particular version,

Fig. 8 is an end elevation corresponding to Fig. 7,

Fig. 9 is a plan view corresponding to Fig. 7,

Fig. 10 is a plan view of the table positioned between the double cutters which supports the strip as it is fed between cutting strokes,

Fig. 11 is an end elevation corresponding to Fig. 10, showing the rack and pinion which causes the table to swing down out of the way as the cuts are being made, and

Fig. 12 is a detail view showing the tensioning arrangement for the second movable cutter.

The general organization of a strip cutter of the invention, so far as its external parts are concerned, may be seen in Fig. 1. The apparatus has a housing **20** with a lower box-shaped part **26**, the upper front surface of which forms a horizontal platform **28**, behind which is an upper housing part **29**. On the platform **28** is a guide **30** for the strip material **31** which is to be cut. In the front face of the upper part **29** is an arcuate slot **32** through which extends the forward end of a feeder arm **33** which carries a feeder shaft **34** rotatable in the arm. The face of housing part **29** bears marks **35** which, in conjunction with a pointer **36**, may be used to measure the extent of the feeding stroke. On the end of shaft **34** is a feed finger **39** carried in a support **40** clamped to shaft **34**, the finger being adjustable in the clamp **40** by means of a screw **41** operating in the slot **42**. Preferably a spring-actuated back check **44**, which continuously bears against the strip **31**, is mounted on a fixed support **45**. Adjacent the end of guide **30** is a cutter consisting of a ledger blade **46** and a movable blade **48**.

The embodiments of the invention shown in the drawings have vertically reciprocating cutter blades, although in other forms, the movable blade of the cutter could rotate continuously as shown in said pending case.

Referring to Fig. 4, the feeder arm **33**, which is preferably a casting, is pivotally supported at **50** on a fixed shaft in the lower part **26** of the housing. The entire housing is open at the back until after assembly of the parts when it may be closed by a plate **27** attached by screws inserted in the lugs **51**. Rotatably mounted centrally in the lower casting part **26** is a drive shaft **52** to the front end of which is attached a hand wheel **54**. Fixed on shaft **52** forwardly of the feeder arm **33** is a rotatable member **55**, secured to shaft **52** by means of a set screw.

As best shown in Figs. 4*a*, 4*b* and 4*c*, extending part way across the rear face of member **55** is an undercut slot **57** in which slides a shouldered or T-head stud **58** which is tapped to receive a rotatable screw **59** by which the position of stud **58** in slot **57** can be adjusted. The head of screw **59** is rotatably mounted in a bore in the unslotted portion **60** of member **55** and has a circumferential recess **61** into which extends a pin **62** which holds the screw in place. The outer end of the head of the screw is provided with a tool-receiving socket **63**.

The adjustable stud **58** carries a flanged sleeve **64** on which rotates a bearing block **65** which fits the elongated slot **66** in feeder arm **33**. A washer **68** bears against the end of sleeve **64** and is held in place by a nut **69**. It will be seen that as member **55** rotates, stud **58** being eccentric, feeder arm **33** will be oscillated about its pivot **50**, the extent of the oscillation being determined by the degree of eccentricity of the stud **58** with relation to the center

of member 55. This will cause the upper end of feeder arm 33 and shaft 34 carried thereby to move in an arcuate path longitudinally of the strip of material 31 which is to be cut.

The position of stud 58 is adjusted by means of a rotating tool permanently mounted in a boss 70 in the wall of casing part 26. Through this boss extends a shaft 71 on the outer end of which is a crank 72 and on the inner end of which is a wrench portion 74 shaped to fit the opening 63 in the head of screw 59. Within the boss 70 a spring (not shown) is adapted to hold the shaft 71 in the position illustrated, out of engagement with screw 59. To effect an adjustment of stud 58, member 55 is rotated until the head of screw 59 is in alinement with wrench part 74. It will be noted that at this time feeder arm 33 is at one end of its stroke. By means of crank 72 the rotating tool is then inserted in the tool-receiving end of screw 59. Then the screw is rotated to move the stud 58 to the desired position. The extent of the stroke to which the feeding arm 33 is thus adjusted may be judged by observing the position of pointer 36 relative to the markings 35 on the face of the housing part 29 (see Fig. 1). It will be understood that once the desired adjustment has been effected, the wrench part 74 will be withdrawn from socket 63 in screw 59, leaving member 55 free to rotate to oscillate feeder arm 33.

To effect feeding of the strip material 31 mechanism is provided which depresses feed finger 39 against the strip as it moves toward the cutter and lifts it away from the strip as it moves in the opposite direction on its return stroke. This movement is effected by limited rotation of the shaft 34 which carries the feed finger. To effect this rotation in the embodiments shown which are generally similar to the version shown in Figs. 12–15 of said pending case, the rear end of shaft 34 carries a lever arm 75, which is connected to the upper end of a link 76. The link extends downwardly around a pin 77 concentric with the pivot 50 of the feeder arm, and is provided with a slot 78 so that it is free to slide on the pin 77. Rotatably mounted on link 76 is a roller 79 which rides along the top of a rock bar 93. Link 76 is normally urged downwardly by a spring 80 attached to the link at 81 and to the pin 77 by means of fasteners 82.

Operating shaft 85 extends transversely of the housing, journal bearings being provided for one end in boss 86 in one wall and at its midsection in boss 87 extending rearwardly from the front wall. Shaft 85 has a journal bore 88 in which is received the reduced end 89 of cutter operating shaft 90, the other end of which is supported in boss 91 and extends through the wall of the housing on that side. Shaft 85 is therefore suitably mounted and supported for oscillation, which is effected by means of cam member 55, which has a groove 94 which controls arm 95 fixed on shaft 85.

Member 55 may be rotated either by manipulation of hand wheel 54 or by an operating means such as speed reducer motor 119 and a train of spur gears 120 and 121, the latter being fixed on shaft 52. Appropriate selection of the proper gear ratios will provide any desired operating speed of the machine.

Shaft 85 also carries a rearwardly extending arm 92, to the end of which is affixed transversely extending rock bar 93. When rock bar 93 is in the position shown in Fig. 4, spring 80, acting through link 76, lever arm 75 and shaft 34, will rotate shaft 34 to hold feed finger 39 in feeding position. When cam 55 acts through arm 95 and operating connections which will subsequently be described to move cutter 48 into cutting position, shaft 85 is rotated and rock bar 93 is raised. Acting through roller 79 against the tension of spring 80, this rotates shaft 34 to lift the feed finger 39 away from the strip. Cam groove 94 is so shaped relative to the position of the stud 58 which is carried on the cam and moves the feeder arm

33 that the lifting of the feed finger takes place simultaneously with the beginning of the return stroke of the feeder arm. Before the beginning of the feeding stroke, the cutter 48 is raised and the rock bar 93 is lowered, bringing the feed finger again into contact with the strip to be fed.

Desirable variations in the form of the feed finger to operate with a wide variety of common strip materials are detailed in the said pending application, as is the operation of the feeding mechanism.

It will be apparent in connection with the various versions described in said pending application, that it would be possible to provide a cam member 55 and selected gearing which would allow multiple feed strokes for each operation of the cutting means. However, once such provision were made, it would not be possible to obtain a different operating ratio without replacing either the cam 55 or the gear train. This would obviously be highly undesirable and would unduly restrict the versatility of the machine. In the versions shown in said pending case, the cutter means is operated after each feed stroke, and the cutting stroke and the feed stroke are interdependent.

One way to obtain multiples of the adjusted feed stroke would be to operate the feed mechanism indepndently of the cutting mechanism. It would thus be possible to operate the feed finger any number of times before operating the cutting mechanism. In such an arrangement, it would only be necessary to count off the desired number of feed strokes and then actuate the cutting means.

This is accomplished as follows. As mentioned previously, the cutter operating shaft of the pending application has been separated into two shafts 85 and 90. Shaft 85 is continuously oscillated from the groove 94 of cam member 55. However, since the reduced end 89 of shaft 90 is a free fit in the journal bore 88 of shaft 85, shaft 90 does not oscillate with shaft 85.

It may be caused to oscillate with it however by means of a clutch arrangement which will now be described.

Arm 95 depending from shaft 85 has a lower extension 96, provided with a transverse bore 97 parallel to shaft 85, in which a headed member 98 is received. Bore 97 is divided into two sections by wall 99 which is drilled for clearance around the threaded shank of member 98. Coil spring 100 surrounds that portion of the shank seen to the left of wall 99 in Fig. 4, and nut 101 is fastened on the end of the shank seen on the other side of wall 99. The head of member 98 is normally flush with side face 96*a* of arm 95 because of the tension exerted by spring 100 under the head. Horizontally extending flanged portion 96*b* of face 96*a* serves a purpose which will presently become apparent.

Attached to shaft 90 closely adjacent to arm 95, is a similar arm 102, whose lower extension 103, has a similar transverse bore 104, in which pin 105 may move freely. Pin 105 has a length substantially greater than the length of bore 104, and hence may extend past either side face 102*a* or 102*b*. Normally end 105*a* extends past face 102*a* into a vertically disposed arcuate slot 107 of pivotally mounted arm 106, whose side face 106*a* is closely adjacent to face 102*a*. At such time, as faces 102*b* and 96*a* are closely adjacent, end 105*b* will be flush with face 102*b* and in abutment with face 96*a*.

During one particular portion of the oscillation of arm 95 end 105*b* will be in alinement with the head of member 98, but will normally be prevented from entering into bore 97 by the tension of spring 100 under the head of member 98. At all other times, end 105*b* will be in abutment with face 96*a*, and at one extreme of the oscillatory stroke, with some portion of the flange face 96*b*.

The lower end of slot 107 is blocked off by an inserted segment 108 having a sloping face 108*a* connecting bottom surface 107*a* of slot 107 with the top surface 108*b* of segment 108 which is flush with arm face 106*a*. It can be seen that as it is sought to raise end 109 of arm

106 to the position shown in Fig. 6, pin end 105*a* will first ride along slot bottom surface 107*a* and then along slope 108*a* until surface 108*b* is reached. Pin end 105*b* will then project past side face 102*b* and into bore 97, compressing spring 100. Arms 95 and 102 will then be locked together for common oscillation, moving shaft 90 in unison with shaft 85, thereby operating cutter 48.

However, arm end 109 cannot be raised until that particular portion of the oscillatory stroke of arm 95 when bore 97 is in line with pin end 105*b*. Once locked together, arms 95 and 102 cannot be unlocked, even if arm end 109 is lowered to the position shown in Fig. 5, until the end of the cutting stroke, as pin end 105*a* will remain in contact with some portion of side face 106*a* until pin 105 comes into alinement with slot 107, when it will be ejected from bore 97 by spring 100, pin end 105*a* then being again accommodated in slot 107.

These provisions ensure that cutter 48 will only be operated in the desired relation to the completion of the last feed stroke, and that the cutter actuation will continue for the complete cutting stroke.

Arm end 109 may be raised manually by some suitable means as shown, or electrically by actuation of a solenoid to hold it in the raised position for the required length of time.

The manual means is of advantage when it is desired to adjust the machine with the power off by manipulating hand wheel 54. This means is made up of a shaft 111 journalled in the front wall 26*a* of the housing carrying externally, a knob 112, and internally, a cam 113 having an off center lobe 114 in contact with pin 115 carried by link 117 which is connected to arm end 109. When knob 112 is turned, arm end 109 will be raised to the position shown in Fig. 6 against the tension of spring 110 which will tend to return it to the normal position shown in Fig. 5.

The electrical means for raising arm end 109 makes it possible to actuate the cutting means after completion of any desired multiple of the feed stroke by keying the solenoid from some feed stroke counting device. A solenoid 116 is mounted within the housing and is connected by link 117 with arm end 109. Whenever a circuit connecting the solenoid winding to a source of electrical power is closed, as by actuation of switch 118, arm end 109 will be raised, initiating a cutting stroke.

A preferred method of operating solenoid 116 so that cutter 48 is actuated in accordance with any selected multiple of the feed stroke is illustrated and will now be described.

Speed reducer motor 119 is provided with shaft extension 122 opposite that on which gear 120 is carried, and a pinion gear 123 is secured thereto. Bearing 124 is provided in back plate 27 for gear shaft 125 which has secured thereto a large spur gear 126 which is in mesh with gear 123. Shaft 125 carries at its external end circular member 127 provided with counting projections 128, 129 and 130. The gear ratio illustrated provides a reduction of four to one, and hence for each rotation of shaft 85, member 127 will turn only one quarter of a revolution. Projection 128 occurs only once. Projections 129 occur twice being spaced 180 degrees apart. Projections 130 could consist of four separate projections spaced ninety degrees apart, but it is found that a continuous, circular projection as shown is just as effective, and more desirable.

As member 127 rotates, projection 128 can be in position to actuate switch 118 once in each rotation of member 127, which corresponds to once for each four rotations of shaft 85 and as feeder arm 33 operates in unison therewith, once for each four feed strokes, after which the cutting means will be automatically actuated by the closing of switch 118.

During this same rotation of member 127, projections 129 can be in position to close switch 118 twice, or once

for each two feed strokes. Projection 130, if made up of four separate projections could be in position to close switch 118 once for each feed stroke, and if in the preferred form of a continuous projection, as shown, would keep switch 118 continuously closed, resulting in arms 95 and 102 being continuously locked together and causing the machine to operate at the same feed to cutter stroke ratio as the versions described in the pending application. This effect could be more economically obtained, without keeping solenoid 116 energized and holding switch 118 closed, by turning knob 112 to cause cam 113 to hold arm end 109 in raised position, and thus projection 130 may be omitted completely.

The gear ratios and the number of projections on member 127 have been selected to provide for multiples of one, two and four times any selected measured length within the range to which the stroke of the feeder arm may be adjusted. Other gear ratios and other numbers of projections may be selected to provide for a single cutter operation after any other desired multiple of the feed stroke.

Selection of the desired multiple is accomplished here by shifting the position of switch 118 so that it may be actuated by the particularly desired projection 128, 129 or 130. It will be noted that the projections are adjacent to each other on the periphery of member 127, and all that is required is that switch 118 be shifted parallel to the shaft 125 until it is in line with the desired projection.

Shaft 131 projects rearwardly from back cover plate 27, and slidably supports a bushing 132 which is affixed to an upright indexing arm 134 which carries switch 118. Also extending rearwardly from wall 27 is an index bracket 135 having a series of notches 136 each marked to indicate the particular multiple of the feed stroke there available. Index arm 134 engages any of the said notches, at which time switch 118 is properly positioned so that it may be actuated by the particular projection required to provide the desired multiple. To prevent disengagement of arm 134 from any selected notch, leaf spring 137, which depends from index bracket 135, bears on the back end of bracket 138 which is also attached to arm 134.

The operation of cutter 48 differs materially from the various forms of reciprocating and rotary cutters shown in the pending application. It operates on a "guillotine" principle as the movable blade 48 moves downwardly between guides in a straight line motion. The cutting mechanisms and their operating means described hereinafter are the subject matter of a divisional application Serial No. 334,004, filed January 29, 1953.

Secured to one end of housing 26, is a vertical guide 150, having a dovetail slot extending longitudinally. Spaced therefrom, is a similar guide, 151, having only a portion of a dovetail slot, which is completed by gib 152, tightening of which permits the usual take-up for clearance adjustment, wear, etc.

Cutter carrier 153 is an O shaped frame, preferably a casting, having complementary dovetailed, vertically extending edges which are received within the vertical guides 150, and 151, 152. At its lower end, it is provided centrally with a thickened boss 154, which receives a drive pin 155, connecting frame 153 with one link 156 of a toggle arrangement which reciprocates carrier 153.

A second toggle link 157 is pivotally mounted on the end wall of housing 26. Links 156 and 157 are pivotally joined by pin 158, which connects both with a third drive link 159 capable of generally horizontal movement, which it obtains from a downwardly depending arm 160, secured to shaft 90, and which is accordingly reciprocated whenever clutch members 95 and 102 are locked together.

Oscillation of shaft 90 therefore causes toggle links 156 and 157 to alternately assume the position shown

in Fig. 3, in which the broken lines show the arrangement of the toggle links which causes carrier 153 to descend to its lowest position during the course of which the cutting stroke of movable cutter 48 takes place, and in which the solid lines show the arrangement of the toggle links which causes carrier 153 to return to its uppermost position, when the cutters will be separated so that the feed mechanism can pass the strip material therebetween during the measuring operation.

Cutter 48 is carried on a member 161 pivotally mounted on the upper end of carrier 153 on a transverse shaft 162 which is received by bosses 164. Member 161 has an upwardly extending lug 165 against which a spring 166 bears to provide resilient engagement of the cutting edges. Spring 166 is received within a socket 168 in the upper end of carrier 153, the back end of socket 168 being threaded to retain a spring tension adjusting screw 169, which carries locknut 170.

Member 161 has a downwardly extending arm 171 to which cutter 48 is secured. Arm 171 and lug 165 are not in the same vertical plane, arm 171 being disposed on one side of the axis of shaft 162 inwardly toward the stationary cutter 46, and lug 165 being disposed on the other side of the axis of shaft 162. It will be noted that this mounting of the cutter 48 tends to rotate it about the axis of shaft 162 so that it would normally pass beyond the cutting edge of stationary blade 46 except that cutter 48 has a downwardly extending projection 48a which is always in contact with one part of the lower shearing edge 46, to prevent such rotation and overriding of the shear edges. However, this mounting of the movable cutter 48 ensures that as the strip material is engaged between the shear blades for cutting, the blades are brought into closer engagement by the resistance of the material and not separated thereby, thus providing a clean cutting action.

When it is desired to utilize the machine to make two cuts for each cutting stroke, the version shown in Figs. 7–12, is employed. In this version two movable cutters are actuated by the engagement of clutch elements 95 and 102.

For this purpose an extension is provided which carries a second ledger blade 46'. This extension is made up of two triangularly shaped supporting plates 175 bolted to vertical guides 150 and 151, each of which carries a horizontally disposed bar 176 having an internal T-slot or similar groove 178, in which T-head bolts 179 may be employed to adjustably fasten cross bar 180 to which second ledger blade 46' is secured at any desired distance from the first ledger blade. Cross bar 180 is provided with elongated slot 181 at one end so that bar 180 may be disposed at any desired angle to the first ledger blade, in which case, the T-bolts 179 would be disposed at different distances from the first ledger blade in the T-slots.

The second movable cutter is also adjustably supported so that it may be positioned at any desired distance from the first pair of cutters and so that it may be disposed at a like angle with its ledger blade. For this purpose, carrier frame 153 is provided with a horizontally disposed extension 153a having a longitudinally extending slot 181 in which flat head bolt 182 may be fastened to secure U-shaped cutter carrying bracket 183, at the desired distance from the first pair of cutters. Bracket 183 carries a second transverse shaft 162' supporting a second movable cutter carrier 161' to which second movable cutter 48' is secured.

To provide proper tension on second movable cutter 48', shaft 162' extends through arm 184 of bracket 183, and as best seen in Fig. 12, carries a locking collar 185 having a pin 186 engaging one end of a torsion spring 188, the other end of which is secured to bracket arm 184.

The spring is arranged to cause blade 48' to rotate into engagement with ledger blade 46', being prevented from overriding the latter by means of downwardly projecting extension 48a'.

To support the strip material as it passes through the first pair of cutters to get into position at the second cutting station, a pivotally supported platform is provided. Shaft 189 is journaled between vertical guide 150 and bearing 195 and has secured to it a pinion 190 adjacent to guide 150, and spaced therefrom, a platform supporting bracket 191 adjustably mounted thereon. The top supporting surface of bracket 191 is milled with a slight incline so that when platform 192 is secured thereto by screws 193, the top surface of platform 192 inclines upwardly toward the second pair of cutters to ensure that the leading cut edge of the strip will pass over ledger blade 46' to its proper position. This slight incline is provided to counteract the usual tendency of certain strip materials to curl downwardly which might prevent the strip from passing over the edge of the ledger blade 46' and thus result in faulty cutting. Various size platforms may be provided to take care of different positionings of the second pair of cutters away from the first pair.

It is desirable that the platform 192 support the strip only while it is being fed, and that it be out of the way when the cutting action has been completed so that the cut off strip may fall from the machine into an appropriate receptacle. To ensure that the platform will retract when the cutters descend, carrier 153 has secured to it a rack 194 which is in mesh with pinion 190, which causes shaft 189 to rotate downwardly as carrier 153 descends on the cutting stroke, thus pitching the platform 192 downwardly and taking away the support for the cut off strip, which can then fall into its receptacle or be taken by a stacker if that is desired.

While the presently preferred embodiments have been described in detail for the purpose of illustration, it is to be understood that the invention is not to be limited to the details of construction shown and described, but is to be construed broadly within the spirit and scope of the appended claims.

What is claimed is:

1. In apparatus for feeding and severing lengths of strip material having a support to guide and direct the strip, cutting mechanism positioned adjacent one end of said guide, operating means for the cutting mechanism, and reciprocating means for engaging and feeding selected lengths of strip on the forward stroke and disengaging the strip on the return stroke: means for actuating the operating means for the cutting mechanism only after a selected number of strip lengths have been fed, said actuating means comprising a continuously moving member, a member connected with the cutting mechanism operating means for actuating it when said second mentioned member is moved, and means for connecting said members to actuate the cutting mechanism operating means including a solenoid, mechanism actuated thereby for engaging said members, a switch, and a circuit connecting said solenoid through said switch with a source of electrical power, and means associated with the strip feeding means arranged to actuate said switch only after the selected number of strip lengths have been fed.

2. Apparatus according to claim 1, wherein the mechanism effecting engagement of said members includes a shiftable member capable of locking said members into engagement for a stroke, and means operated by energization of said solenoid to cause said shiftable member to be moved into position to lock said members into engagement.

3. Apparatus according to claim 2, wherein the means operated by the energization of said solenoid includes a pivotally mounted arm operatively connected to said solenoid, said arm having a surface capable of causing said shiftable member to be moved into position to lock said members into engagement when the position of said arm is changed.

4. Apparatus according to claim 3, which includes external manual means to change the position of said arm independently of the energization of said solenoid.

5. In apparatus of the character described having a guide to support and direct strip material, severing mechanism positioned adjacent one end of the guide and operating means therefor, the improvement comprising reciprocating means for engaging and feeding a selected length of strip on the forward stroke and for disengaging the strip on the return stroke, means for actuating the operating means for the cutting mechanism only after a selected number of lengths of strip have been fed, said actuating means comprising a continuously moving member associated with the reciprocating feed means, a member connected with the cutting mechanism operating means for actuating it when said member is moved, electrically actuated clutch means for connecting said members to actuate the cutting mechanism operating means, and selective means associated with the strip feed means to energize said electrically actuated clutch means only after a selected number of strip lengths has been fed.

6. Apparatus according to claim 5 in which the means for selectively operating the clutch means after a predetermined number of strip lengths have been fed comprises a rotating member, and a shiftable switch selectively actuated therefrom to energize said electrical clutch means.

7. Apparatus according to claim 6 in which the rotating member has a period of rotation in fixed proportion to the operating cycle of the reciprocating strip feeding means, and in which said rotating member carries a series of switch actuating means, any of which may be selected to initiate an operating stroke after a predetermined number of strip feeding cycles.

8. Apparatus according to claim 6 in which the severing mechanism operating means comprises a rotating cam for operating said strip feeding means and an electrically actuated clutch mechanism operatively connected to said cam and arranged to be selectively engaged to operate the severing means, and means to operate said clutch mechanism after a selected number of strip lengths have been fed, comprising a rotating member having a period of rotation bearing a fixed relationship to the period of rotation of said cam, a series of projections carried by said rotating member, a switch for operating the clutch mechanism shiftable with respect to said projections, said

projections being so arranged that said switch may be actuated by selected projections when the switch is shifted, and means to hold the switch in any selected, shifted position, whereby the switch can be actuated to initiate a single severing stroke for a selected multiple of the feed stroke of the strip feeding means.

9. Apparatus according to claim 6 in which the severing mechanism operating means comprises a rotating cam for operating said strip feeding means and an electrically actuated clutch mechanism operatively connected to said cam and arranged to be selectively engaged to operate the severing means, and means to operate said clutch mechanism after a selected number of strip lengths have been fed, comprising a rotating member arranged to make one rotation for multiple rotations of said cam, a switch to close a circuit to operate the electrically actuated clutch mechanism, said rotating member being provided with a series of numerically related switch operating means, said switch being mounted so that it may be selectively positioned whereby it may be actuated a predetermined number of times in relation to the advancement of a related number of strip feed cycles.

10. In apparatus of the character described having a guide to support and direct strip material, reciprocating means for engaging and feeding a selected length of strip on the forward stroke only, severing mechanism positioned adjacent one end of said guide, said severing mechanism comprising a stationary blade, a vertically reciprocating frame member, and a mating shear blade carried thereby, operating means therefor including a cam, an arm associated with the reciprocating feed means continuously oscillated therefrom, toggle links for reciprocating said frame member, a member connected with said toggle links whereby said frame may be alternately raised and lowered, electrically actuated clutch means operatively connecting said oscillating arm and said member and means for actuating said clutch means after a predetermined number of strip lengths have been fed.

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