Nov. 26, 1940. G. E. RYAN 2,223,241

STAPLE STRIP MANUFACTURE

Filed May 31, 1939 3 Sheets-Sheet 1

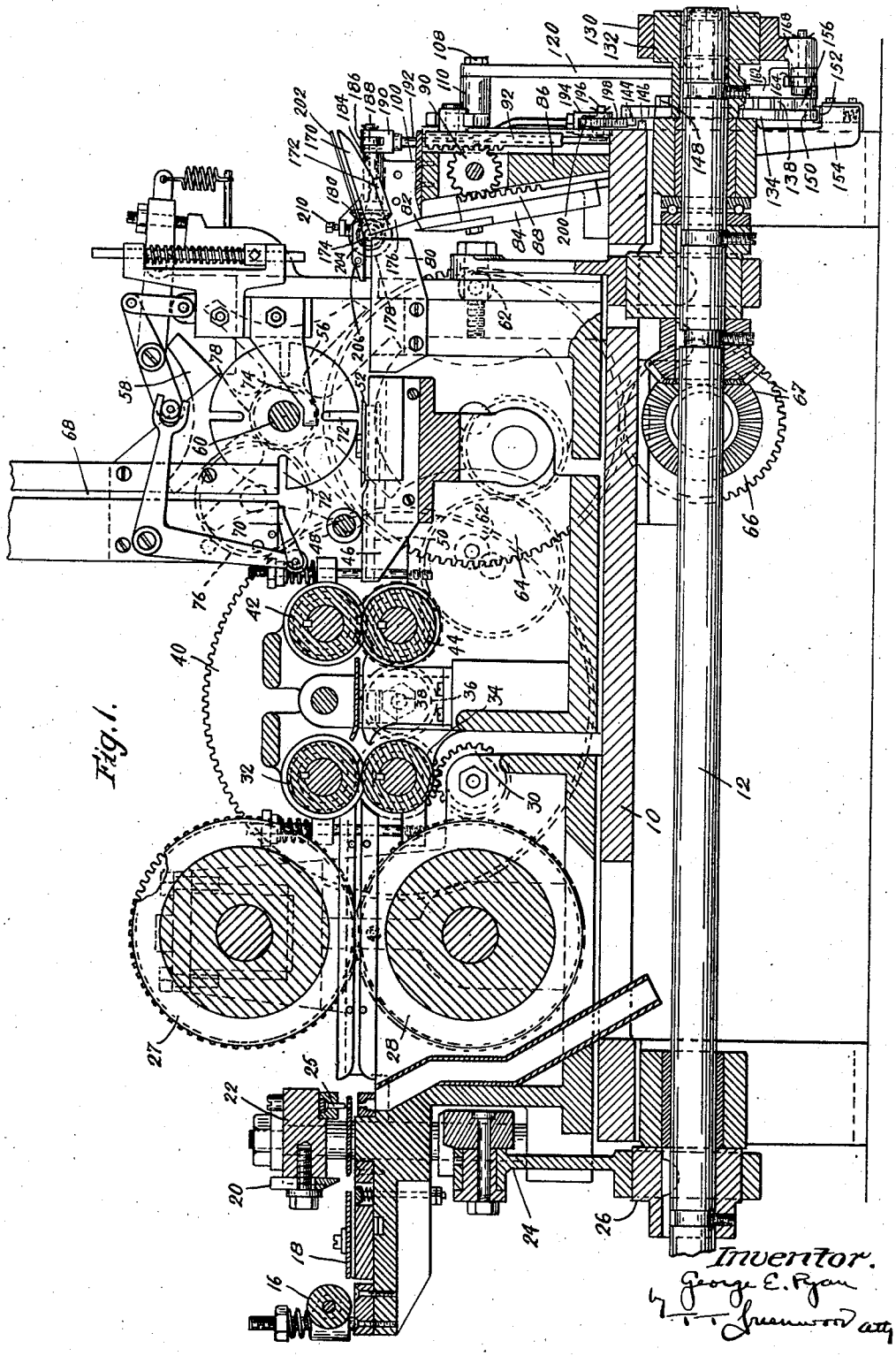


Fig. 1.

Inventor.
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by T. T. Greenwood Atty

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STAPLE STRIP MANUFACTURE

Filed May 31, 1939 3 Sheets-Sheet 2

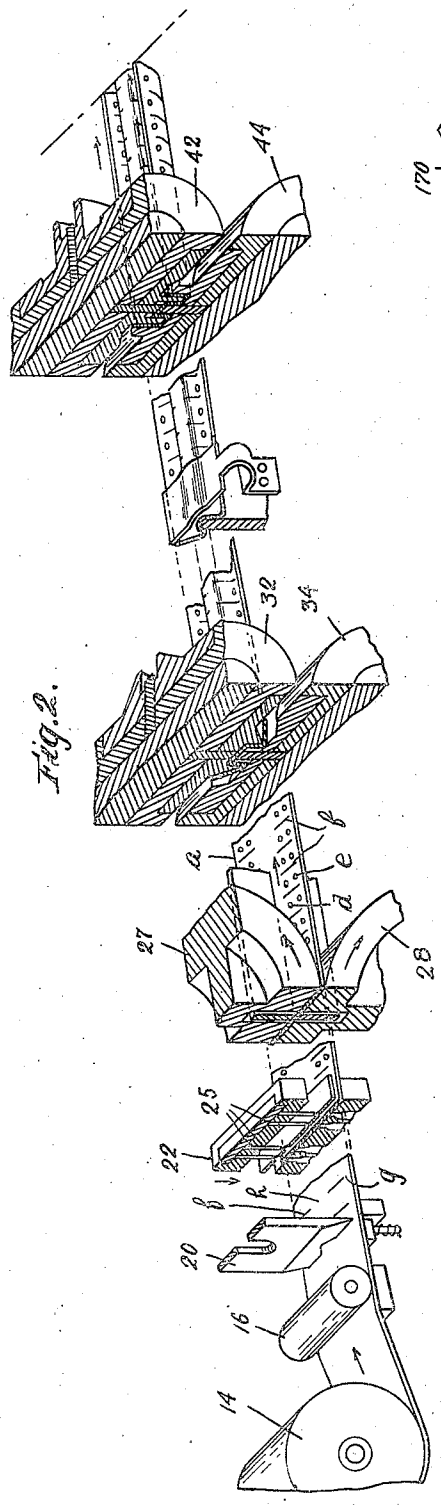


Fig. 2.

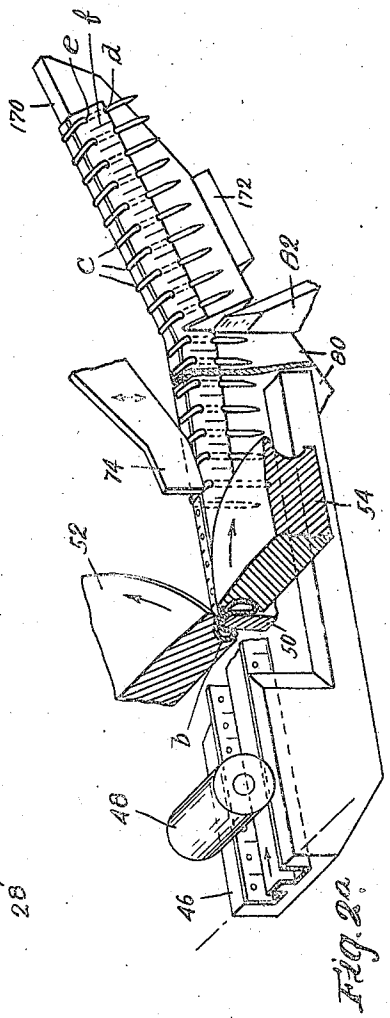


Fig. 2a.

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Nov. 26, 1940. G. E. RYAN 2,223,241

STAPLE STRIP MANUFACTURE

Filed May 31, 1939 3 Sheets-Sheet 3

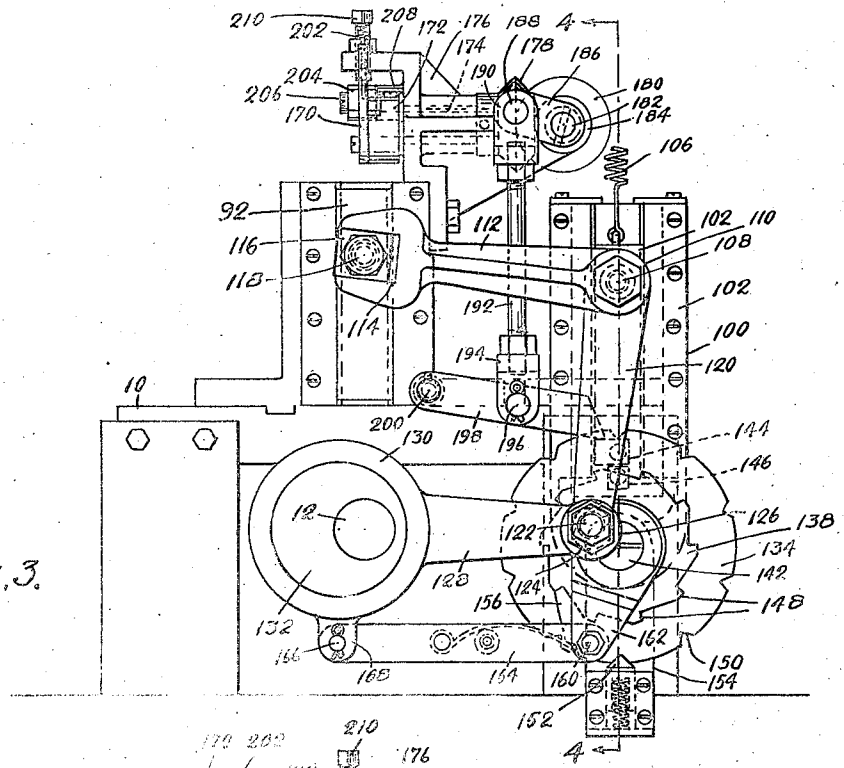


Fig. 3.

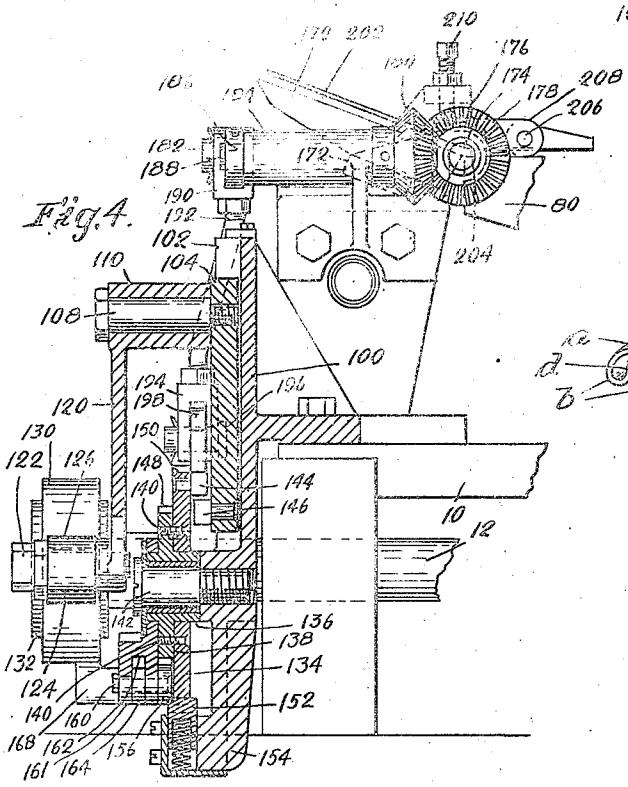


Fig. 4.

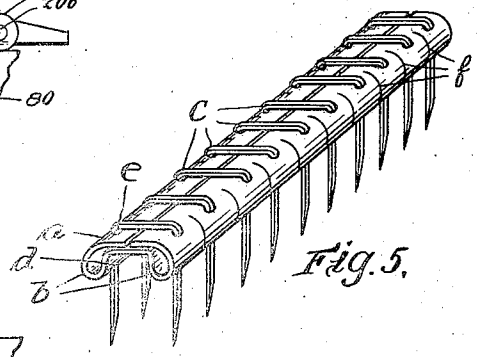


Fig. 5.

Inventor.
George E. Ryan
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Patented Nov. 26, 1940

2,223,241

UNITED STATES PATENT OFFICE

2,223,241

STAPLE STRIP MANUFACTURE

George E. Ryan, Fitchburg, Mass., assignor to Superior Manufacturing Company, Fitchburg, Mass., a corporation of Massachusetts

Application May 31, 1939, Serial No. 276,640

33 Claims. (Cl. 59—77)

This invention relates to the manufacture of insulated or saddle, staples, and particularly to the manufacture of a staple strip comprising a strip having a predetermined number of saddle staples weakly connected together in line so that individual staples can be broken off the strip for use.

A saddle staple comprises a U-shaped metal staple having a folded strip or saddle of insulating material, such as fibre, in the base of the metal staple for the purpose of preventing the metal staple from cutting through the insulation of electrically conducting wires that the staple secures to a support and also to prevent the staples from exerting a harmful pressure on the insulation.

In my prior patent No. 1,933,152, dated October 31, 1933, I have disclosed a machine for automatically making individual saddle staples. In this machine a long strip or web of fibre of indefinite length is successively acted upon to slit and perforate it and to fold it into U-shape and to receive metal staples in the perforations. The machine is arranged to sever the folded fibre strip at the slits and between the successive metal staples to form individual saddle staples.

It is an object of the present invention to arrange the machine for the production of staple strips, each strip containing a predetermined number of weakly connected saddle staples.

A further object of the invention is the provision of mechanism, which can be adapted as an attachment to the machine of said patent or substituted for analogous mechanism thereof, for severing the long continuous staple bearing fibre strip or web into sections each containing a predetermined number of staples.

A further object is generally to improve the construction and operation of staple making machines and methods.

Fig. 1 is a vertical section taken through the longitudinal axis of a staple making machine embodying the present invention.

Figs. 2 and 2*a* are successive views, partly diagrammatic, of the various elements of the machine of Fig. 1, arranged for forming staple strips.

Fig. 3 is an end view of the machine of Fig. 1 and illustrating the severing mechanism of the present invention.

Fig. 4 is a section taken along line **4**—**4** of Fig. 3.

Fig. 5 is a perspective view of a staple strip which is the product of the machine of the present invention.

The staple strip which is the product of the present invention, as illustrated in Fig. 5, comprises a straight strip *a* of fibre sheet or equivalent insulating material reflexed longitudinally upon itself to provide a structure that is U-shaped in cross section and has channeled depending legs *b* which are hollow and are formed by inwardy bending the side edges of the strip. The strip carries a plurality of metal staples *c*, herein shown as ten in number, passing at equally spaced intervals through the strip. The strip is provided with sets of staple-receiving perforations *d* and *e* located in the hollow legs of the staple base. The strip is also provided with weakened portions *f* formed by slitting the strip so that the saddles of the consecutive staples are weakly connected, thereby permitting the staples to be detached readily from each other for use.

The machine for forming such a strip is illustrated in Figs. 1 through 4. The machine includes a bed plate **10** which carries the various elements of the machine. A drive shaft **12** is suitably supported beneath the bed plate and extends longitudinally thereof and operates the various elements on the bed plate.

The fibre sheet, in the form of a strip or web of long length, is fed from a suitably supported roll **14** and passes into the left hand end of the machine under a guide roll **16** and thence under a hold-down plate **18** to a slitting knife **20**. Said knife is carried by a head **22** which is vertically reciprocated by means including an eccentric strap **24** driven by an eccentric **26** fixed to and rotatable with the drive shaft **12**. The slitting knife is so shaped as to form a pair of slits *f* in alignment transversely of the length of the sheet, the slits subsequently forming the lines of severance between the consecutive staples of the staple strips of Fig. 5. The slits lie entirely within the opposite side edges of the fibre strip or web and leave regions *g* and *h* where the portions of the web on opposite sides of the slits are connected.

The web thence passes to perforating mechanism including pins **25** which form a pair of perforations *d* and *e* in each side portion of the web between the consecutive slits. These pairs of perforations ultimately receive the legs of a staple. The perforating pins are carried by the head **22** and are reciprocable therewith.

The web further advances in between the bite or pinch of a cooperating pair of upper and lower driving rolls **27** and **28** which are geared together for conjoint rotation. The lower roll drives the

upper roll and the lower roll is driven by a pinion gear 30.

The web is advanced from the driving rolls in between a pair of upper and lower forming rolls 32 and 34 which are sectional and so arranged as to form an inverted channel in the middle part of the web, as illustrated in Fig. 2. Said rolls are geared together for conjoint rotation. The lower roll 34 drives the upper roll and is driven by a pinion gear 36 journalled on a stud shaft 38 and fixed to and rotating with a large spur gear 40.

The partly folded strip is thence further advanced into the action of a second pair of forming rolls 42 and 44, which, as illustrated in Fig. 2, turn the edge portions of the strip upwardly to form two upright channels on opposite sides of the middle inverted channel. The rolls 42 and 44 are geared for conjoint rotation, the lower roll 44 being driven by the aforesaid gear 36.

The folded web thence advances further through a guideway 46 under a hold-down roll 48 and onto a rail or track 50 that is located in the middle channel of the web. Horizontally disposed forming rolls 52 and 54 rotatable about parallel vertical axes, see Fig. 2*a*, engage the upstanding side edges of the web and fold them over upon the middle portion of the web to form the legs *b*. Said rolls 52, 54 may be idler rolls or can be rotated positively.

The completely folded web thence passes while on said rail or track 50 to staple driving mechanism including a slotted staple carrying disc 56 which is located above the rail 50 close to the rolls 52, 54 and is rotated through a step by step Geneva motion, including a Geneva wheel 58 fixed to the supporting shaft 60 for the disc 56. The Geneva wheel is rotated in a step by step manner by a pair of diametrically opposed rolls 62 carried by a gear 64 driven by a gear 66 and other gearing 67 from the drive shaft 12. Metal staples are fed downwardly by gravity along the guideway 68 and are pushed by a pusher 70 into the successive staple slots 72 of the disc 56 and are advanced by the disc 56 into a vertical inserting position where they are driven into the successive pairs of perforations *d* and *e* by the reciprocating hammer or driving member 74.

The gear 40 is rotated through an idler gear 76 by a gear 78 fixed to the shaft 60 of the Geneva wheel so that said gear 40 and the feed rolls 27, 28 are advanced in an intermittent manner. The web is thus stationary during the slitting, perforating and staple driving operations.

The stapled web thence advances onto a stationary rail or track 80 and into position to be engaged and successive endmost parts of the web severed from the body of the web by a severing knife 82. Said knife is carried by a slide 84 that is generally vertically reciprocable in a guideway of a bracket 86 carried by the bed plate 10, the guideway being inclined somewhat toward the left. The slide has a rack 88 which engages with an idler gear 90 journalled in the bracket, said gear meshing with the rack of a vertically moving slide 92 reciprocable in a suitable guideway in the end face of the bracket 86. The arrangement of the parts is such that the knife severs the web along the line of the slits *f* between predetermined staples.

The machine as so far described is essentially the machine of my above identified patent. In the machine of said patent the knife 82 is reciprocated for each staple advance of the web and operates to sever the successive endmost staples from the web.

In accordance with the present invention the knife 82 is arranged to be idle while the web is advanced for several individual staple lengths and is adapted to be actuated only once for a predetermined number of staple advances thereby to sever the web into strips as illustrated in Fig. 5, each strip containing a predetermined number of staples. To this end the rack slide 92 that operates the knife is controlled by mechanism effective to reciprocate the rack but once for a predetermined number of operative cycles of the machine.

Said mechanism includes a bracket 100 fixed to the bed plate 10 at one side of the median line of the machine and having a vertically upstanding guideway 102 in which a slide 104 is reciprocable. A retractile spring 106 is or can be connected to the upper part of the slide 104 for the purpose mainly of counter-balancing the weight of the slide and the parts connected thereto, although the spring is not essential.

A shoulder screw 108 is screw-threaded in the upper part of said slide 104 and projects forwardly of the face thereof and forms a pivotal support for a bell crank lever 110. Said bell crank lever is provided with a generally horizontal arm 112 which extends over the front face of the knife-operating rack slide 92 and thereat is bifurcated and is provided with a slot 114 in which is slidably received a block 116 journalled on a shoulder screw 118 fixed to and projecting forwardly of the front face of the slide 92. With this arrangement as the arm 112 is swung vertically about the pivot 108 when said pivot is held from displacement the rack slide 92 is caused to be reciprocated thereby to effect the operation of the knife.

Said bell crank lever 110 is also provided with a generally vertical depending arm 120 having a screw 122 screw-threaded in and projecting from the lower portion of the front face thereof. An eccentric bushing 124 is received on said screw and is clamped thereby in any angularly adjusted setting thereof to the arm 120 by said screw. The small end 126 of an eccentric strap 128 is journalled on said bushing. The large end 130 of said eccentric strap surrounds an eccentric 132 fixed to and driven by the driving shaft 12.

With this arrangement when the pivot 108 for the bell crank lever is held stationary the rotation of the drive shaft effects the reciprocation of the knife. The eccentric bushing 124 permits small adjustments of the stroke of the knife to be made for the purpose of cutting surely through the saddle web.

The driving shaft 12 makes one complete revolution for each length of individual staple advance. Mechanism is herein provided to render the rotation of the drive shaft ineffective in operating the knife for a predetermined number of staple advances and then to condition the shaft for the operation of the knife. Said mechanism is arranged to control the reciprocation of the slide 104 that carries the bell crank lever 110. It will be apparent that if the slide 104 is fixed against movement the connecting rod will be effective in reciprocating the knife operating slide 92 and if the slide 104 is free for vertical movement the bell crank lever will operate as a simple arm fulcrumed on the slide 92 and the slide 92 will remain stationary while the slide 104 will be reciprocated. The control mechanism thus is arranged to lock the slide 104 against movement for one operative cycle of the

shaft 12 and then to release the slide and permit it to reciprocate freely for a predetermined number of other operative cycles of the shaft.

Said mechanism includes a control disc 134 overlapping the lower portion of the front face of the slide 104 under the pivot for the bell crank lever and received on the hub 136 of a ratchet wheel 138, said disc being fixed to the face of the ratchet wheel by screws 140. Said hub 136 is journalled on a shoulder screw 142 screw-threaded in a depending part of the bracket 100. Said disc 134 is provided with a projection or holding dog 144 which is fixed in said disc and projects from the rear face thereof toward the bell crank slide 104. Said slide is provided with a cooperating forwardly directed projection or dog 146 which underlies the dog 144. Thus when the disc dog 144 is above the slide dog 146 the slide is held from vertical movement and thus the bell crank is effective in securing reciprocation of the knife operating slide 92. When, however, the disc dog is out of the path of movement of the slide dog the slide is free to move vertically and the knife consequently is not operated.

The disc 134 is advanced in a step by step manner, one step for each complete rotation of the driving shaft 12 and is arranged to make a complete rotation in a predetermined number of cycles. The staple strip herein illustrated has ten staples and hence the disc 134 is advanced one-tenth of a revolution per cycle of operations and thereby effects the severing of the stapled web once in each ten cycles. The ratchet 138 is provided with a plurality of teeth 148, ten teeth herein being shown, and adapted to advance the disc one tooth for each cycle. The disc 134 is provided with a plurality of equi-angularly spaced notches 150 adapted to be engaged and entered removably by a spring pressed holding pin 152 carried by the depending part 154 of the bracket 100, thereby releasably to hold the disc in any position into which it is advanced by the ratchet 138.

Said ratchet 138 is adapted to be advanced by a pawl 156 pivotally mounted on a pin 160 of an oscillating arm 162 journalled on the hub 136 of the ratchet. A connecting rod 164 is received between the bifurcations 161 and is pivotally connected with the pin 160. The other end of said connecting rod is pivotally connected by a pin 166 with an outstanding ear 168 of the large end 130 of the eccentric strap 128. Thus as the eccentric strap is oscillated by the drive shaft 12 the connecting rod is also reciprocated to oscillate the arm 162 and effect the step by step advance of the ratchet.

In connection with the severing of the staple strips from the end of the web it has been found desirable to assist the severing action by bending the end part of the web upwardly to spread apart the web along the line of severance, as illustrated in Fig. 2*a*. For this purpose the stapled web passes from the stationary rail or track 80 to an oscillatable or tiltable rail or track 170 which is in line with said rail 80 and is on the right hand side of the knife. The left hand end of said rail 170 is fixed to an arm 172, see especially Fig. 3, that in turn is fixed to the end of a short shaft 174 journalled in a bracket 176 fixed to the upper part of the knife carrying bracket 86. Said shaft 174 has a miter gear 178 fixed thereto which is in mesh with a similar miter gear 180 fixed to the end of a shaft 182 journalled in a boss 184 of said bracket 176. An arm 186 is fixed to the end of said shaft and the free end of said arm is pivoted on a pin 188 carried by a yoke 190 secured to the upper end of a vertically extending rod or link 192. The lower end of said rod has a yoke 194 that is pivotally connected by a pin 196 with an intermediate part of a lever 198 pivoted by a pin 200 to a foot of the knife slide support 86. Said lever 198 extends forwardly from said pivot and the free end thereof overlies the path of movement of the dog 144 of the disc 134. When said dog is away from said lever the end of the lever assumes some low position wherein the top of the rail 170 is in line with the top of the rail 80 and in the line of web advance so that the staple web can advance in a straight line onto said rail 170. When, however, said dog 144 has been advanced in a counter-clockwise direction into position to overlie the dog 146 of the slide 104 and thereby hold the slide from vertical movement to effect the severing operation, said dog 144 has been effective to raise the lever 198 into the position as illustrated in Fig. 3 and thereby effect the tilting of the rail 170 into a position as illustrated in Fig. 4. This position of the rail 170 causes the staple web to be spread apart at a slit *f* where the strip is to be severed from the web as illustrated in Fig. 2*a* and facilitates the severing action. A hold-down member such as a wire 202 fixed to the rail carrying arm 172 closely overlies the top of the rail and the staple web thereon and prevents displacement of the severed strip that may otherwise occur due to the oscillations of the rail.

With the arrangement described the rail is tilted upwardly every tenth cycle of the machine and is held in elevated position during the operation of the knife. The staple strip on the rail 80 behind the severing region is held down onto the rail against the displacing action of the tiltable rail 170 on the strip by a hold-down lever 204 closely overlying the top of the staple web and pivoted at 206 to a rearward extension 208 of said bracket 176 and underlying an adjustable stop screw 210 of said bracket 176 so that the position of the hold-down lever is determined. The hold-down lever also supports the staple web against upward displacement due to the severing action of the knife.

I claim:

1. The method of making saddle staple strips which comprises forming an insulating web into saddle shape, inserting a series of staples into the formed web and then severing the successive endmost lengths of the web between successive staples, each length containing a predetermined plural number of staples.

2. The method of making saddle staple strips which comprises forming an insulating web into saddle shape with staples in the web, advancing the web a predetermined plural number of staples and then severing the web between successive staples remote from the end of the web.

3. The method of making saddle staple strips which comprises partially severing a web transversely between successive saddle sections, inserting staples in the successive sections and then severing an endmost section containing a plurality of saddle staple sections from the web at a partially severed part thereof.

4. The method of making saddle staple strips which comprises partially severing a web transversely between successive saddle sections of the web, inserting staples in said web, and then completely severing the web between selected sections remote a plural number of sections from the end

of the web providing a staple strip containing a plurality of staples.

5. The method of making saddle staple strips which comprises forming a web of indefinite length progressively into saddle shape, inserting staples distributed along a portion of the length thereof, and severing the web between selected staples remote a plural number of sections from the end thereof to provide a staple strip containing a plurality of connected saddle staples.

6. In the method of making saddle staples which consists in forming an insulating web into saddle shape and inserting staples therein distributed along the length thereof and wherein the web has weakened sections between the staples, that improvement which comprises severing the staple web between staples a predetermined plural number of staples distant from the end of the web thereby providing a staple strip containing a predetermined plural number of saddle staples.

7. The method of forming saddle staple strips which consists in advancing a web, perforating the web at repeated intervals along the length thereof, slitting the web between perforations, forming the perforated slit web into saddle shape and inserting staples in the perforations thereof, and then severing a staple strip from the web along predetermined slit lines a predetermined number of staples remote from the end of the web, thereby providing a staple strip containing a predetermined plural number of weakly connected saddle staples.

8. A machine for making saddle staple strips comprising means for progressively forming an insulating web into saddle shape, means for inserting a series of staples into the formed web distributed lengthwise thereof, and means for severing the web between staples located a predetermined plural number of staples remote from the end of the web thereby forming a staple strip containing a predetermined plural number of staples.

9. A machine for making saddle staple strips comprising means for forming a section of an insulating web into saddle shape having weakened zones spaced along the length of the web, means for inserting staples into said formed web between the weakened zones, and means for severing the web at a predetermined weakened zone a predetermined plural number of staples remote from the end of the web, thereby forming a saddle staple strip containing a predetermined plural number of weakly connected saddle staples.

10. A machine for forming saddle staple strips comprising means for advancing a web in a step by step manner, forming mechanism acting upon said web to form it into saddle shape, mechanism for inserting staples in the formed web distributed lengthwise of the web, and means operative following a predetermined multiple number of advancing steps of said web to sever the web between predetermined staples a predetermined multiple number of staples remote from the end of the web.

11. A machine for making saddle staple strips comprising means for advancing a web, forming means for shaping the web into saddle shape, means for inserting staples in said formed web distributed lengthwise of the web, and severing mechanism operative only after a predetermined number of staple inserting operations to effect the severing of the web between predetermined staples a predetermined plural number of staples inwardly from the end of the web to provide a staple strip containing a plurality of staples.

12. In a machine for making saddle staple strips having means for forming a web into saddle shape having weakened zones distributed lengthwise of the web and means for inserting staples in the formed web between weakened zones, the combination therewith of means operative only after a predetermined plurality of staples have been inserted in the web for severing the web at a predetermined weakened zone a predetermined multiple number of staples remote from the end of the web.

13. A machine for making saddle staple strips comprising means for forming repetitions of two pairs of aligned perforations in spaced relation in the opposite marginal portions and lengthwise of a web, means for partially severing the web between each two pairs of perforations, means for folding the web into saddle shape, means for inserting a staple in each two pairs of perforations of the folded web, and means operative only after a predetermined plurality of staples have been inserted in the web for completely severing the web along selected lines of partial severance thereof a predetermined multiple number of staples remote from the end thereof.

14. In a machine for making saddle staple strips, including means for advancing a continuous saddle web containing staples therein distributed lengthwise of the web, the combination therewith of web severing means operative only following a predetermined multiple number of operations of said web advancing means for effecting the severance of the web a predetermined plural number of staples remote from the end thereof, thereby providing a staple strip containing a plurality of staples.

15. In a machine for making saddle staples having means for advancing a long staple strip formed into saddle shape containing staples therein, the combination therewith of cutting means for severing the web, and means for effecting the operation of said cutting means following the advance of a predetermined multiple number of staples past said severing means.

16. In a machine for making saddle staple strips, a web cutter, means for advancing past said cutter a staple web containing a pluraltiy of staples, an operating member for said cutter movable through a cycle of movement for each staple advance of the web, and means responsive to a predetermined plural number of cycles of operation of said member for effecting the operation of said cutter to sever the web.

17. In a machine for making saddle staple strips, means for advancing a staple bearing saddle web, a web cutter, an operating member for said web cutter operating in accordance with the advance of the web, operative connections between said cutter and said operating member, and counting mechanism controlling said connections operative following only a predetermined number of operations of said operating member to condition said connections to effect a web cutting operation of said cutter by said operating member.

18. In a machine for making saddle staple strips, the combination of a reciprocating web cutter, an operating shaft, reciprocating means connecting said web cutter and operating shaft, and means controlling said reciprocating means requiring a plurality of operations of said operating shaft prior to the operation of said web cutter.

19. In a machine for making saddle staple strips, the combination of a web cutter, a drive shaft, counting mechanism controlled by said drive shaft, an operating mechanism connecting said drive shaft and said web cutter controlled by said counting mechanism and effective only following a plurality of operations of said drive shaft to effect operation of said web cutter.

20. In a machine for making saddle staple strips, reciprocable web cutting mechanism, an operating lever therefor having a movable pivotal support and a pivotal connection with said web cutting mechanism, means for reciprocating said lever, and means operative at times to free said lever pivot for movement and at other times for holding said lever pivot against movement.

21. In a machine for making saddle staple strips, the combination of reciprocable web cutting mechanism, an operating lever therefor having a pivotal support and also having a pivotal connection with said mechanism, means for reciprocating said lever, counting mechanism operated by said reciprocating means, and means controlled by said counting mechanism for at times holding said pivotal support against movement whereby to effect operation of said severing mechanism and for at times permitting movement of said lever support whereby to permit reciprocation of said lever about its pivotal connection with said web severing mechanism without effecting the operation of said mechanism.

22. In a machine for making insulated saddle strips, the combination of reciprocating web severing mechanism, an operating lever for said mechanism having a pivotal connection with said mechanism and also having a pivotal support capable of movement, means for reciprocating said lever, and counting mechanism having a releasable locking engagement with said movable lever pivot, and means for operating said counting mechanism in a step by step manner by said lever reciprocating means.

23. In a machine for making saddle staple strips, the combination of reciprocating web severing mechanism, a reciprocable slide, a lever having pivotal engagement with said web severing mechanism and having a pivotal support on said slide, means for reciprocating said locking mechanism, reciprocating means for said lever, and counting mechanism having an operative connection with said lever reciprocating means and a releasable locking engagement with said slide.

24. In a machine for making saddle staple strips, the combination of reciprocable web cutting mechanism, a reciprocable slide, a lever having a pivotal connection with said web severing mechanism for operating it and also having a pivotal support on said slide, means for reciprocating said lever, a locking member having an interlocking connection with said slide, and means operated by said lever reciprocating means for advancing said locking member into and out of locking relation with said slide.

25. In a machine for making saddle staple strips, the combination of reciprocable web cutting mechanism, a reciprocable slide, an operating lever for said mechanism having a pivotal connection therewith and also having a pivotal support on said slide, pawl and ratchet mechanism advanceable in a step by step manner in accordance with the movements of said lever, and interlocking connections between said pawl and ratchet mechanism and said slide operative at times to hold said slide against movement and at other times to free said slide for movement.

26. In a machine for making saddle staple strips, the combination of reciprocating web cutting mechanism, a reciprocable slide, an operating lever for said mechanism having a pivotal connection therewith and also a pivotal support on said slide, a drive shaft, a connecting rod connecting said drive shaft and said lever for reciprocating the latter, pawl and ratchet mechanism having means for locking said slide against movement, and means operated by said connecting member for advancing said pawl and ratchet mechanism to move it into and out of locking relation with said slide.

27. In a machine for making saddle staples, the combination of a track having a stationary section and a tiltable section along both of which a saddle staple web having weakened sections between successive staples is advanced, web severing mechanism including a web cutter movable into engagement with the web between the track sections for severing the web, and means for tilting said tiltable track section prior to the severance of the web.

28. In a machine for making saddle staple strips, the combination of a track having aligned stationary and tiltable sections, means for advancing a saddle staple web over the stationary track section onto the tiltable track section, means including a cutter operative on the web between said track sections for severing the endmost part of the web, and means responsive to the presence of a predetermined number of saddle staple sections of the web on said tiltable track section for tilting said section prior to the severance of the web.

29. In a machine for making saddle staple strips, the combination of a track having aligned stationary and tiltable sections, means for advancing a saddle staple web over the stationary track section onto the tiltable track section, means including a cutter operative on the web between said track sections for severing the endmost part of the web, and means responsive to the presence of a predetermined number of saddle staple sections of the web on said tiltable track section for tilting said section and effecting the operation of said web cutter.

30. In a machine for making saddle staple strips, the combination of a track having aligned stationary and tiltable sections, means for advancing a staple web on said sections, a web cutter operative on the web to sever an end thereof from the web between said sections when said tiltable section is tilted, a rotatable member, means for rotating said member in proportion to the advance of the web on said tiltable member, and means rendered effective following a predetermined rotational advance of said member for effecting the tilting of said tiltable member and also the operation of said cutting means.

31. In a machine for making saddle staple strips, the combination of a track having aligned stationary and tiltable sections over which a staple web is advanced, a web severing cutter operative between said sections to sever successive endmost lengths of the web, and means for effecting the conjoint tilting of said tiltable section and the operation of said cutter following only the presence on said tiltable section of a portion of the web having a plurality of staples therein.

32. In a machine for making saddle staple

strips, the combination of a track having aligned stationary and tiltable sections along which a staple web is advanced, a web cutter operative between said sections for severing the web, reciprocating mechanism for operating said cutter, an operating lever for said mechanism having a pivotal connection with said reciprocating mechanism, a reciprocable slide constituting a pivotal support for said lever, means for reciprocating said lever, a rotatable member having a part advanceable into and out of holding relation with said slide and operative at times to permit and at other times to prevent said slide from reciprocating, means for advancing said rotatable member in a progressive manner, and means controlled by said rotatable member effecting the timed tilting of said tiltable track section to tilt said section for the operation of said web cutter.

33. In a machine for making saddle staple strips, the combination of a track having aligned stationary and tiltable sections along which a staple web is passed, a web cutter operative between said sections for severing the web, reciprocating means for operating said cutter, a reciprocable slide, a cutter operating lever having a pivotal connection with said reciprocating means and also a pivotal support on said slide, a drive shaft, a connecting rod operated by said drive shaft and connected with said lever for reciprocating it, said reciprocable slide having a projecting dog, a rotatable member having a dog movable into and out of holding engagement with said slide dog for at times holding said slide from and for at other times releasing said slide for reciprocation, means operated by said drive shaft for advancing said rotatable member in a progressive manner, and tilting means for said track section including a lever having an operative connection with said tiltable section and disposed in the path of movement of the dog of said rotatable member to be raised thereby to effect the tilting of said section.

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