April 9, 1963 E. A. SCHMIDT 3,084,344

STAPLING MACHINE WITH REINFORCING TAPE DISPENSING MEANS

Filed Aug. 23, 1961 8 Sheets-Sheet 1

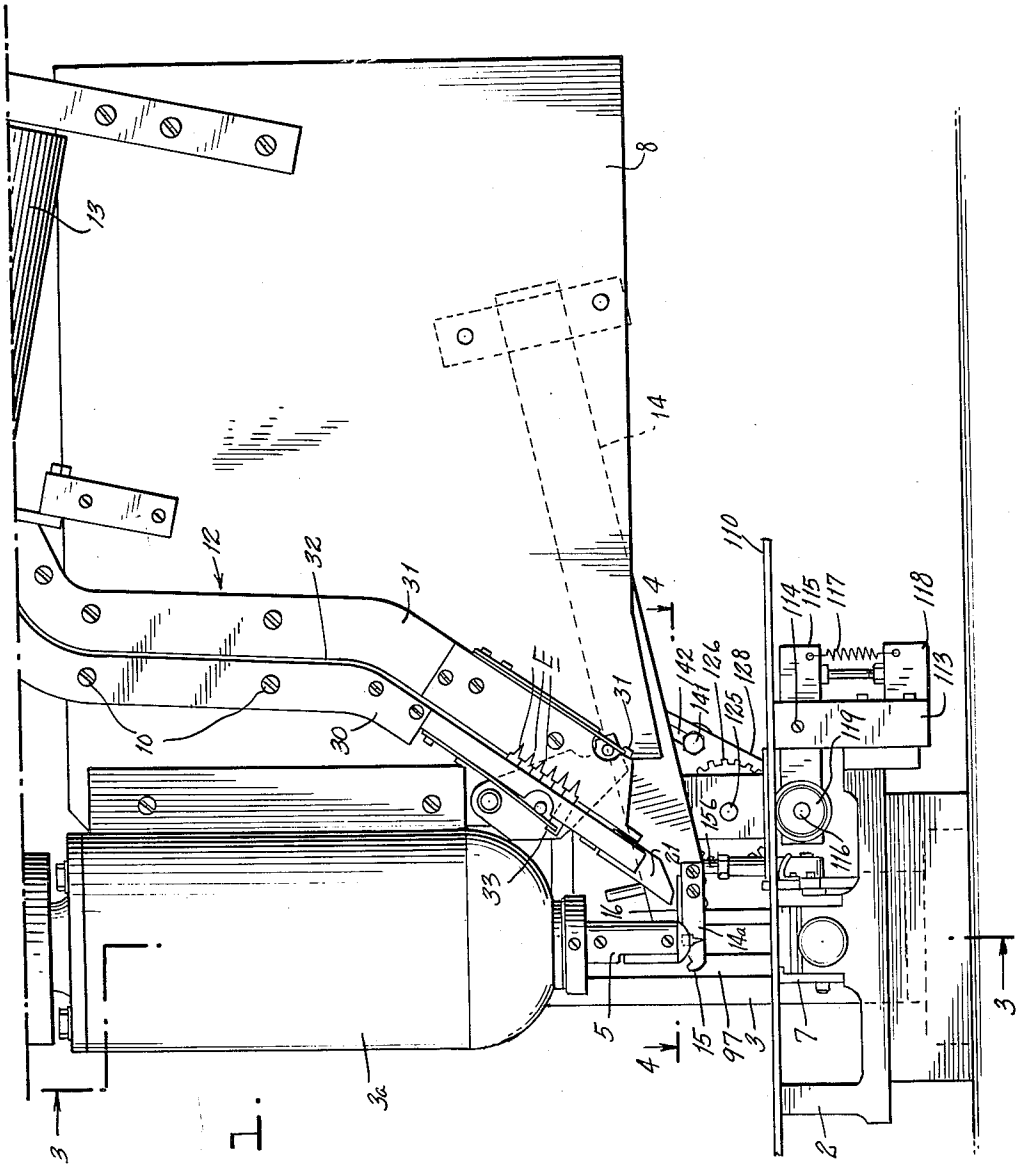

Fig. 1.

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Fig. 2.

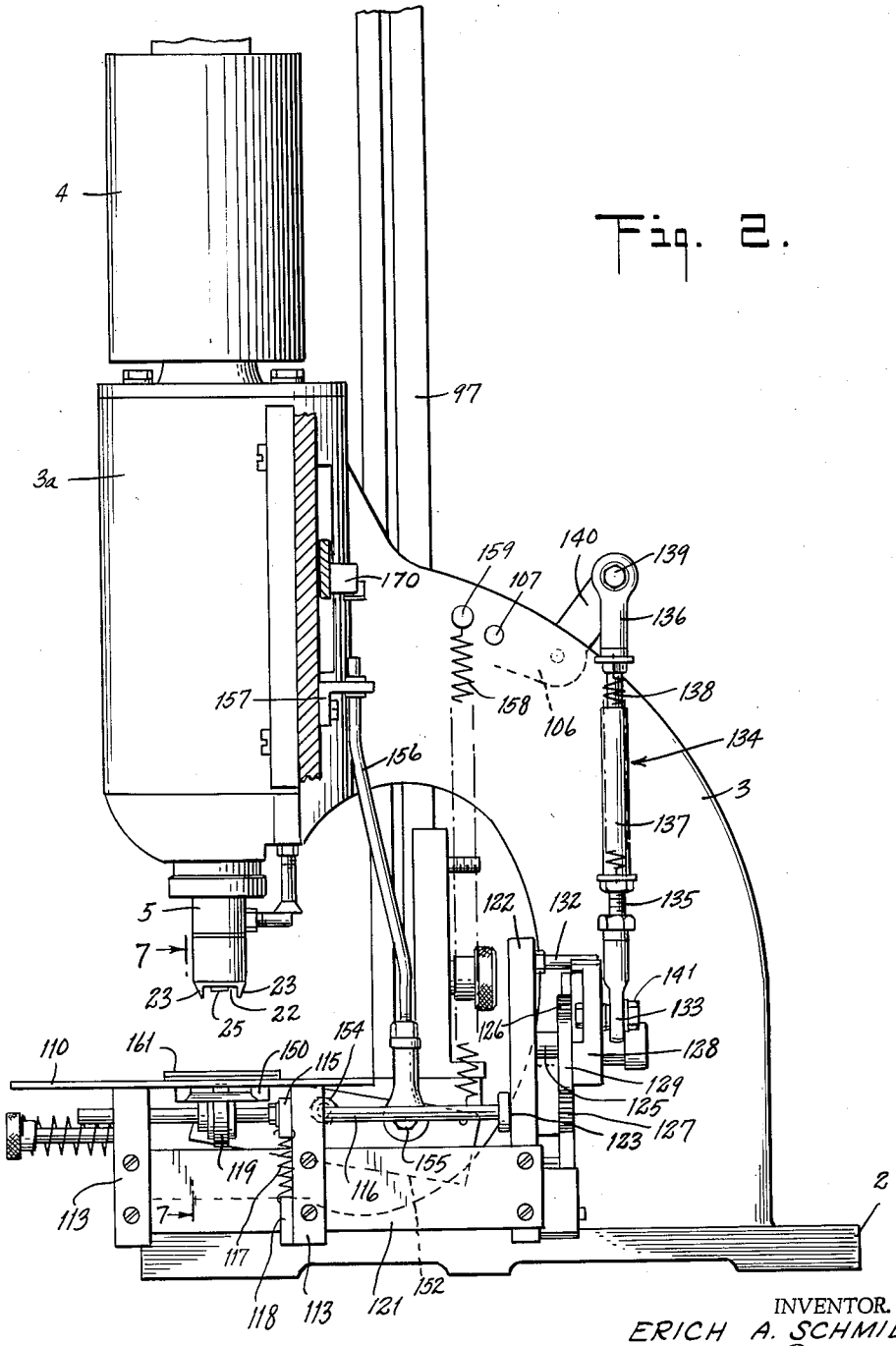

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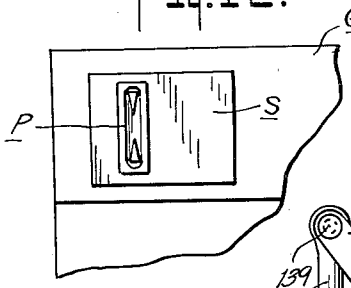
Fig. 11.

Fig. 12.



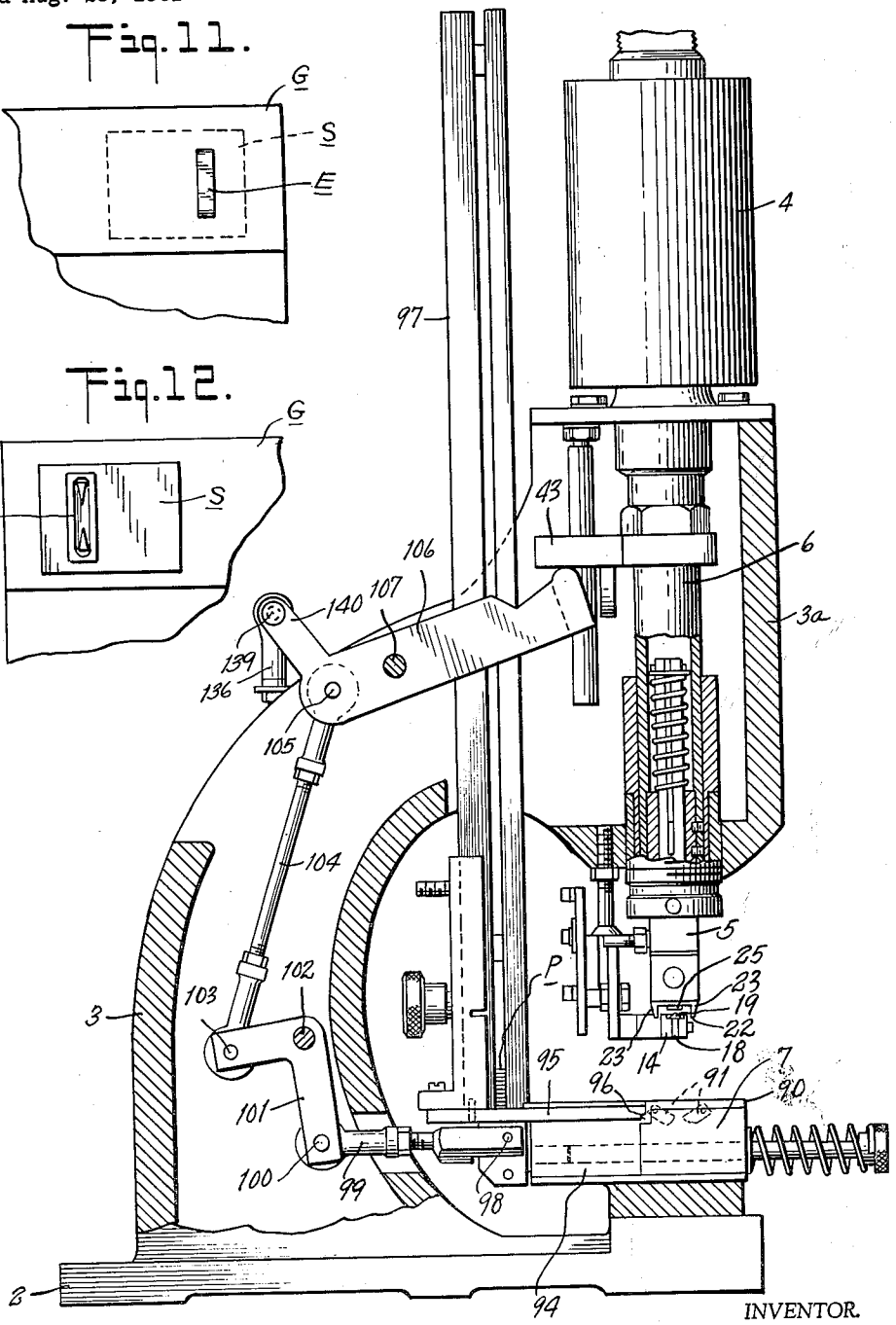


Fig. 3.

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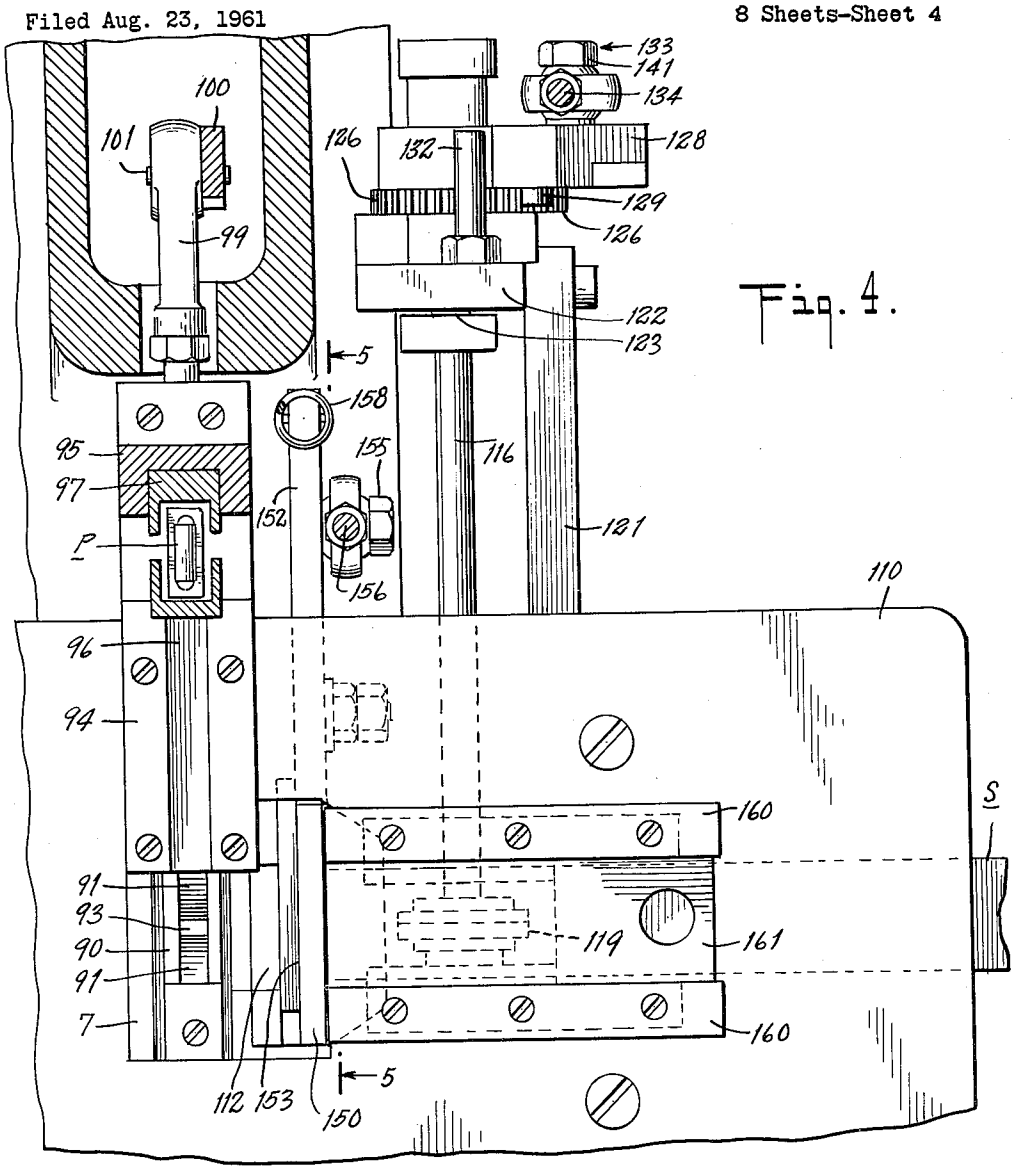

Fig. 4.

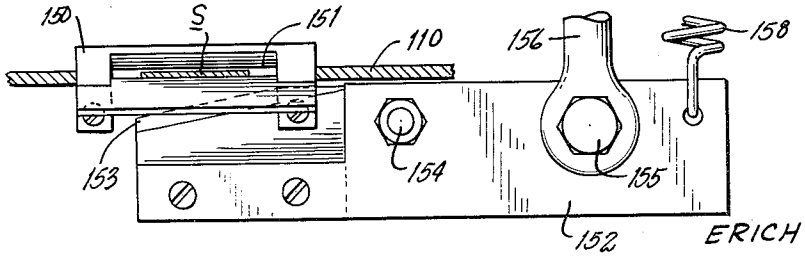

Fig. 5.

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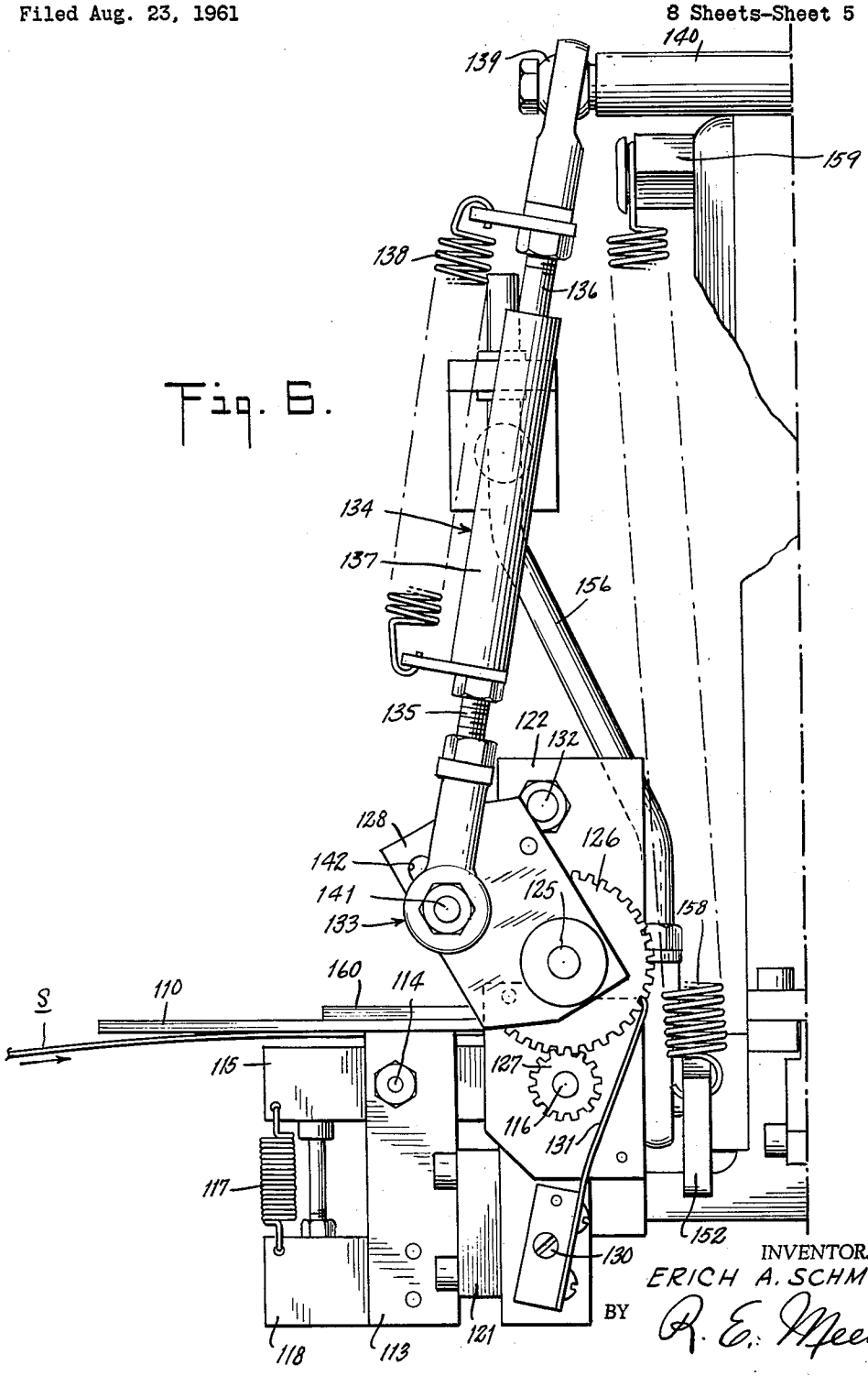
Fig. 6.



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STAPLING MACHINE WITH REINFORCING TAPE DISPENSING MEANS

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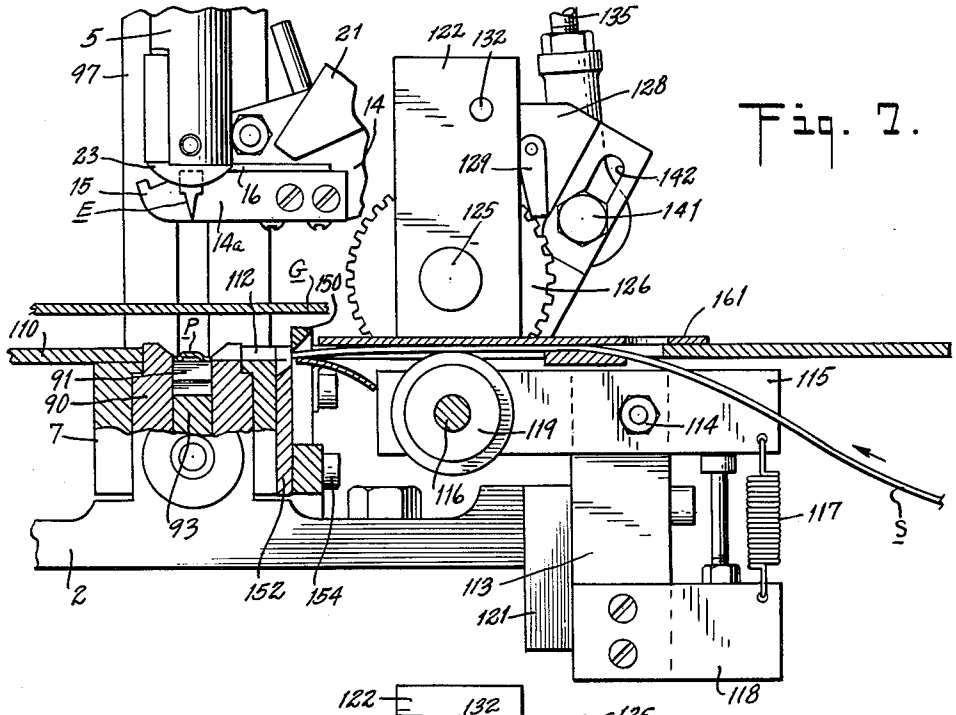

Fig. 7.

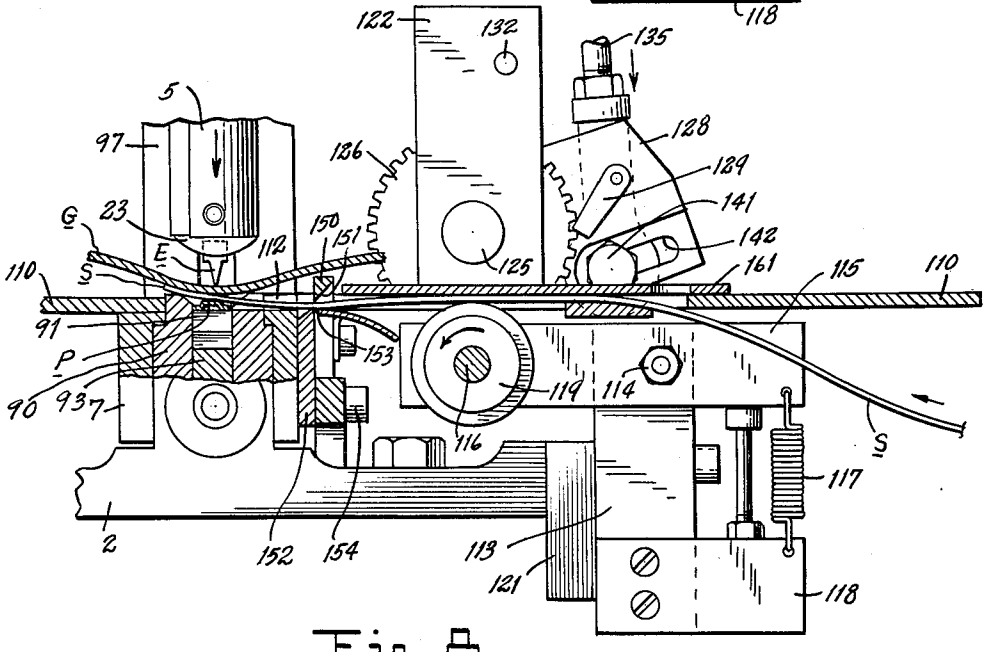

Fig. 8.

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Fig. 9.

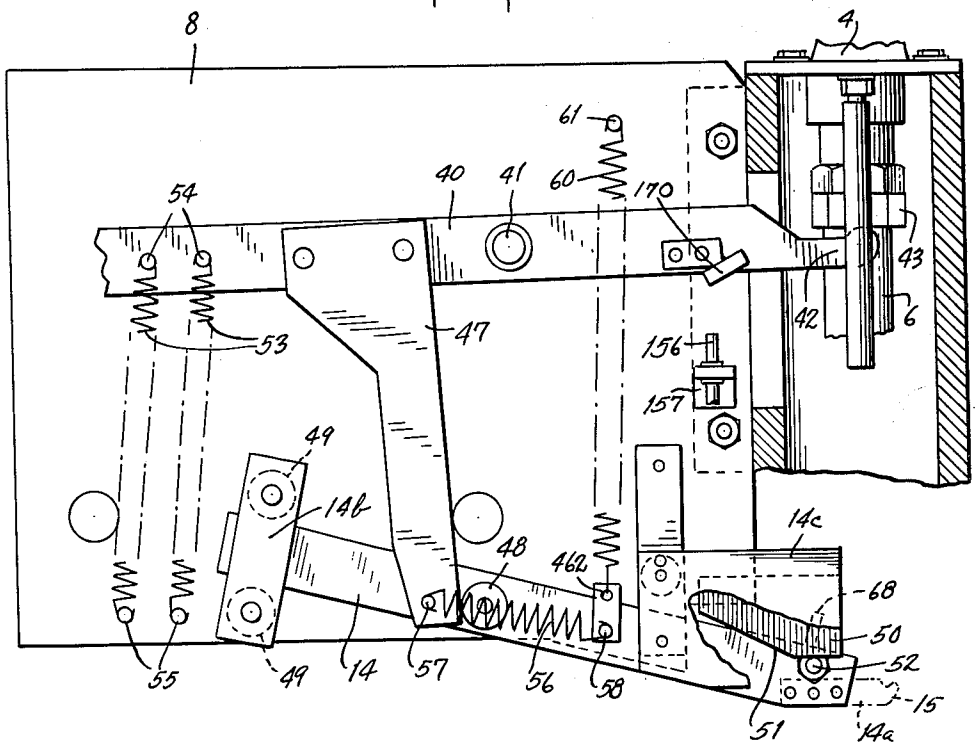

Fig. 10.

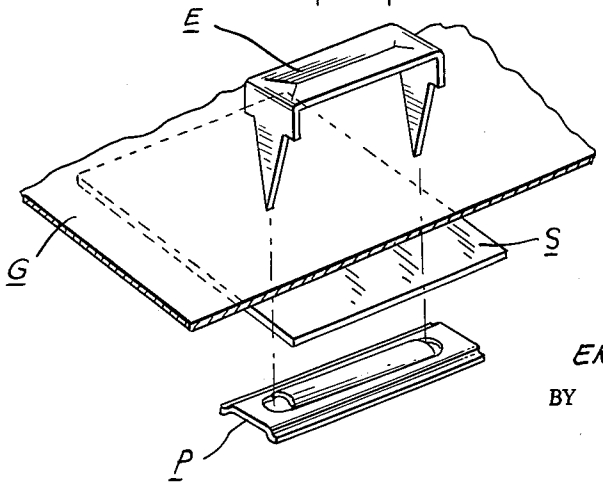

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Fig. 13

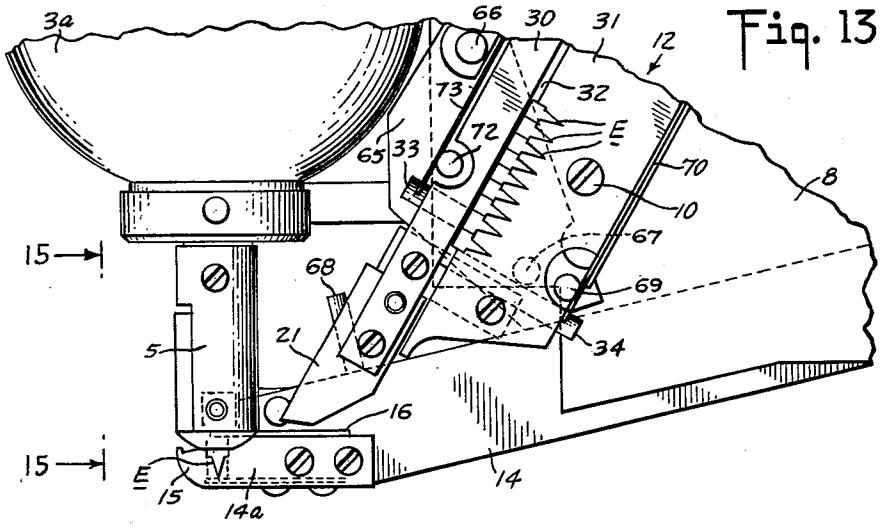


Fig. 14

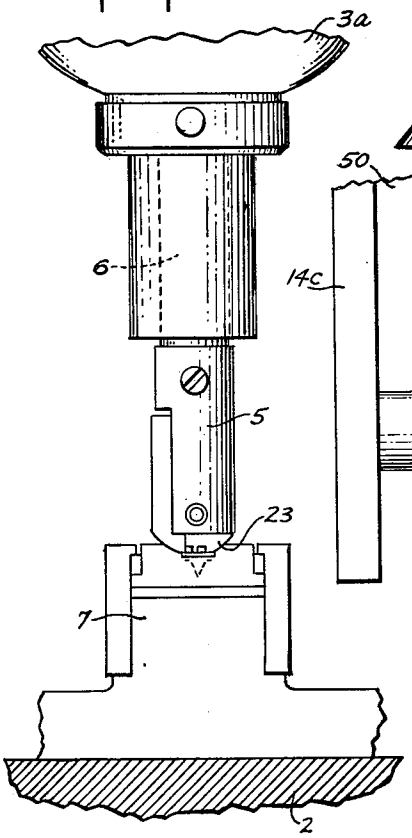
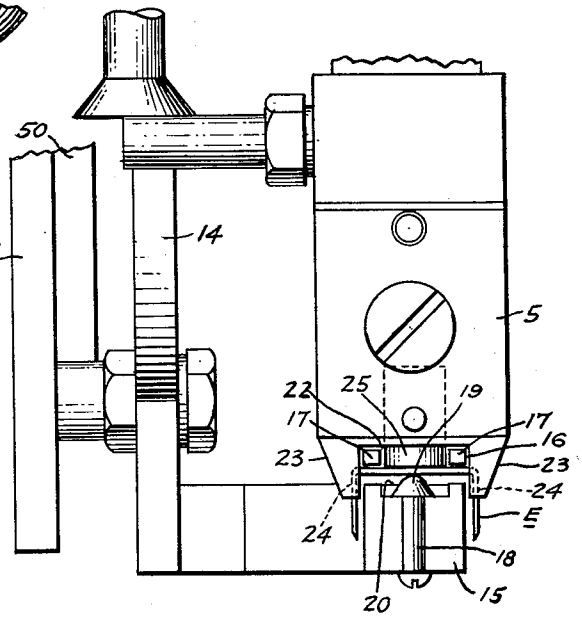


Fig. 15



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United States Patent Office

3,084,344

Patented Apr. 9, 1963

3,084,344
STAPLING MACHINE WITH REINFORCING TAPE DISPENSING MEANS

Erich A. Schmidt, Lexington, Ky., assignor of one-half to Universal Button Company, Lawrenceburg, Ky., a corporation of Kentucky

Filed Aug. 23, 1961, Ser. No. 133,485
7 Claims. (Cl. 1—121)

This invention relates to a stapling machine, especially of the type for applying so-called trouser hooks or eyes to garment parts, similar to the machine shown and described in my co-pending patent application Serial No. 104,111, filed April 19, 1961, now Patent No. 3,065,470, granted November 27, 1962, and more particularly, to mechanism incorporated herewith for automatically applying a strip of reinforcing material to the garment part simultaneously with the attaching of the eye or hook member parts thereto.

Accordingly, it is the general object of the present invention to provide a stapling machine wherein a strip of reinforcing material is cut from a continuous strip of reinforcing material and delivered automatically to the attaching station in the machine, wherein it is securely attached to the garment part by means of the eye or hook member parts as they are attached thereto.

It is another object of the invention to provide in combination with such a stapling machine a simple and inexpensive mechanism for delivering automatically strips of reinforcing material to the attaching station between the eye or hook member parts.

It is a further object of this invention to provide in combination with a stapling machine of the type described means for supplying a strip of reinforcing material to the attaching station which is efficient and effective in its use and at the same time mechanism which may be conveniently and inexpensively incorporated with existing equipment at a minimum expense.

Various other objects and advantages of this invention will be more apparent in the course of the following specification, and will be particularly pointed out in the appended claims.

In the accompanying drawings, there is shown for the purpose of illustration, an embodiment which my invention may assume in practice.

In these drawings:

FIG. 1 is a front elevational view of a stapling machine showing the improved mechanism in accordance with the present invention incorporated therewith,

FIG. 2 is a side elevational view of the machine as shown in FIG, 1,

FIG, 3 is a sectional view taken on line 3—3 of FIG, 1,

FIG. 4 is a sectional view taken on line 4—4 of FIG, 1,

FIG, 5 is an enlarged sectional view taken on line 5—5 of FIG. 4,

FIG. 6 is a side elevational view of the means for driving the reinforcing strip mechanism, as shown in FIG. 2,

FIG. 7 is a sectional view taken on line 7—7 of FIG. 2, showing the upper anvil in its retracted position,

FIG. 8 is a sectional view similar to FIG. 7, showing the upper anvil moving the eye fastener element toward attaching position and its retracted position,

FIG. 9 is a rear elevational view of the machine partly broken away, showing the mechanism for actuating the feed-in-arm for the pronged fastener element part,

FIG. 10 is an exploded perspective view, showing the pronged fastener element part, the garment part, the reinforcing strip, and the plate fastener element part,

FIG. 11 is a fragmentary plan view of the waistband of

of a garment, showing the eye member and reinforcing strip are attached thereto,

FIG. 12 is a fragmentary rear view of the waistband as shown in FIG. 9,

FIG. 13 is an enlarged front elevational view of the lower portion of the machine, as shown in FIG. 1, showing the feed arm in its protracted position,

FIG. 14 is an enlarged front elevational view of the movable and stationary anvils showing the former moving toward its protracted position, and

FIG. 15 is a view taken on line 15—15 of FIG. 13.

General Description of the Stapling Machine

The type of stapling machine with which the mechanism in accordance with the present invention is adapted to be incorporated is shown in my co-pending application, Serial Number 104,111, filed April 19, 1961, to which reference is made for a more complete description and operation. Such a machine comprises in general a base 2 which may be supported on a table or the like. This base extends upwardly so as to provide a hollow yoke portion 3 having a cylindrical front housing portion 3*a* arranged therewith on which there is mounted an air cylinder 4. On the lower end of the air cylinder piston rod 6, there is arranged an upper anvil 5 which is spring loaded so as to maintain the anvil in a retracted or rest position with the anvil 5 raised normally above the lower stationary anvil 7 positioned on the base 2, as shown in FIGS. 1, 2, 3 and 7 of the drawings.

There is provided a vertically extending plate member 8 which is attached, as at 9, to one side of the yoke portion 3 and extends outwardly to one side thereof. There is attached to one side of this plate member 8 by means of screws 10, a chute 12. At the upper end of this chute 12, there is mounted on the plate member 8, a suitable hopper 13 which may be driven or rotated in a suitable manner for delivering the pronged fastener element parts E to the chute 12 in a manner well known to those skilled in the art.

Adjacent the lower end of the chute 12 at the lower edge of this plate member 8, there is mounted for substantially horizontal reciprocating movement in suitable guide and supporting plate members, a feed arm 14 having a lower outwardly extending member 14*a* arranged on the end thereof which has preferably an inclined hook-shaped portion 15 on the extreme end. There is arranged with this lower outwardly extending member 14, an upper resilient member 16 having its outer end bifurcated.

As more clearly shown in FIGS. 3 and 13, of the drawings, there is carried by the lower outwardly extending transfer member 14*a* inwardly of the inclined hook portion 15 thereof, preferably a rivet member 18, so as to provide a beveled head portion 19 which is positioned centrally of the transfer member 14*a* and disposed in the space, between this lower member and the bifurcated end portion of the upper member 16.

There is also arranged adjacent the lower end of the chute 12 and directly opposite the members 14*a* and 16, a stationary member 21 in the form of a guide plate which is also suitably attached to the lower inner end of the rail cover 30 and which cooperates with the members 14*a* and 16 in a manner hereinafter to be described.

As more clearly shown in FIGS. 2 and 3 of the drawings, there is arranged in the lower end of the upper or reciprocating anvil 5, a transversely extending slot 22 so as to provide a pair of opposed side encompassing walls 23. Each of these side encompassing walls 23 has a vertically extending guide groove arranged therein which are disposed directly opposite one another for receiving

the prongs of fastener element E in a manner hereinafter to be described. In the anvil 5, directly above the transverse slot 22 and extending thereinto, there is mounted a permanent magnet 25 for holding a fastener element E in the slot on the lower end of the anvil.

Referring now more particularly to FIG. 1, the fastener chute 12 is arranged in a generally vertical position with the upper and lower portion thereof being inclined. The lower inclined portion of this chute consists of a guide feed rail 31 and rail cover 30 which are spaced apart so as to provide a space 32 therebetween. A plurality of fastener elements E are normally retained in this space and straddle the rail 31 and are adapted to move therealong when the machine is in operation.

Intermediate the length of the lower inclined portion of this chute 12, there is positioned a fastener feeding escapement mechanism. This escapement mechanism includes an upper stop pin 33 and a lower stop pin 34 for the purpose of controlling the movement of the fastener elements E down the chute whereby they move by the force of gravity, as explained in my previously mentioned co-pending application.

Detailed Description of Actuating Mechanism

On the rear side of the vertical plate member 8, there is arranged the driving mechanism for actuating the various parts of the stapling machine which mechanism is more clearly shown in FIG. 9 of the drawings. Such mechanism includes a horizontally extending lever member 40 pivotally attached to the plate 8, centrally thereof, as at 41. One end 42 of this lever extends into the cylindrical housing 3*a* in under and in contact with a member 43 securely affixed to the piston rod 6 of the air cylinder 4.

Intermediate the length of this lever 40 there is securely attached thereto, as at 46, a downwardly extending camming member 47 one side of which cooperates with a cam roller 48 arranged on the feed-arm 14 to actuate the same. The outer end of the arm 14 is positioned between a pair of guide rollers 49 positioned between the guide plate member 14*b* and the side of the plate 8. The opposite end of this arm 14 is free and is positioned between the guide plate member 14*c* and the rear side of the plate 8. There is also securely arranged between this guide plate member 14*c* and the plate 8, a cam plate member 50 having a lower cam edge portion 51. There is mounted in the arm 14 adjacent the lower end thereof, a cam roller 52 which cooperates with this cam edge 51 to guide the lower tongue member 14*a* attached to the arm 14 in its reciprocable movement so as to position the same correctly relative to the anvils 5 and 7.

There is provided a pair of springs 53 having one end thereof attached to the lever 40, as at 54, with the opposite ends attached to the plate 8, as at 55, for biasing the lever 8 about its pivotal connection at 41, so as to maintain the end 42 of the lever in contact with the member 43 on the piston rod 6. There is also provided a spring 56 having one end attached to the lower end of the camming member 47, as at 57, with the opposite end of this spring being attached to the arm 14, as at 58, so as to bias the edge of the camming member 47 against the cam roller 48 and to return the same and maintain the arm 14 in its retracted or normal position. There is provided still another spring 60 having one end attached to the plate 8, as at 61, and with the opposite end attached to the feed arm 14, as at 62, for biasing the cam roller 52 against the lower cam edge 51 of the cam guide plate 50.

Plate Fastener Element Feeding Mechanism

The stationary anvil 7 may be of the conventional type employed in this type of stapling machine. The anvil 7 illustrated in the present instance, as more clearly shown in FIGS. 3, 4, 7 and 8 is mounted on the base 2 and consists of a movable member 90, having a pair of opposed members 91 with one end of each pivotally attached thereto with the opposite ends of these members resting on a stationary base plate 93.

Rearwardly of this anvil 7, there is arranged on the base 2, a guide block 94 having a slide feed member 95 arranged therein. On the upper side of this guide block 94, there is arranged a longitudinally extending channel 96 which communicates with the anvil 7. Adjacent the rear end of this guide block 94, there is mounted thereon a vertically extending magazine 97 in which the plate fastener element parts P are disposed and which communicates with the channel 96 in the guide block 94 for delivering the plate fastener element parts P thereto by the force of gravity.

As more clearly shown in FIG. 3, there is pivotally connected, as at 98, to the rear end of the slide member 95, a link member 99, having the opposite end pivotally connected, as at 100, to one end of a bell crank member 101 positioned within the yoke portion 3 of the base 2. This bell crank member 101 is pivotally attached, as at 102, centrally thereof to the portion 3 and the opposite end is pivotally attached, as at 103, to one end of a link member 104. The opposite end of this link member is pivotally attached, as at 105, to one end of a movable member 106 which in turn is pivotally attached, as at 107, to the portion 3. The opposite side of this movable member 106 is disposed in under the member 43 on the piston rod 6 to be actuated thereby for delivering the plate fastener element part P through the linkage just described from the lower end of the magazine 97 to the anvil 7 by the movement of the slide member 95 for attachment.

Reinforcing Strip Feed and Cutting Mechanism

Now the mechanism of the present invention will be described. There is positioned above the base 2 and the lower anvil 7, a relatively thin plate, table top member 110 having a rectangular shaped opening 112 therein which is positioned opposite the upper anvil 5, the lower anvil 7, and the end of the slide member 95. This table top is preferably supported by the lower anvil 7 and a pair of bracket members 113 arranged on the base 2 of the stapling machine.

There is pivotally mounted as at 114, on the side of one of the bracket members 113, a movable lever member 115 in which a transversely extending rotatable shaft 116 is journalled adjacent the inner end thereof. To the outer end of this member 115, there is attached one end of a tension coil spring 117 having the other end attached to a bracket 118 carried by this one bracket 113. On this shaft 116, there is securely fixed a feed roller 119 for delivering the continuous strip S of reinforcing material into the machine and in under the table top 110 and across the opening 112 therein. It is the purpose of this coil spring 117 to bias the roller 119 toward and against the under side to the table top 110. It will be understood that a pair of cooperating feed rollers may be used, if desired.

There is attached to the bracket members 113, as at 120, a rearwardly extending block member 121 having a vertically extending bracket member 122 arranged on the inner end thereof. The inner end of the shaft 116 is journalled, as at 123, therein.

On a stud shaft 125 mounted on this bracket member 122, there is arranged a rotatable ratchet gear 126 which meshes with a gear 127 securely fixed to the inner end of the shaft 116. On the end of this shaft 125, there is arranged a movable member 128 having a pawl member 129 arranged on the side thereof which cooperates with the ratchet-gear 126, as more clearly shown in FIGS. 7 and 8 of the drawings. There is mounted, as at 130, on the side of the bracket member 122, preferably a spring stop member 131 having its outer end cooperating with the gear 126. There is also carried by the bracket 122, an outwardly extending stop pin 132 which cooperates with the movable member 128 to maintain the same in a normal position.

There is also mounted on movable member 128, an outwardly extending stud member 133 to which one end of a telescopic link member 134 is pivotally attached. This telescopic link member 134 consists of two connecting end members 135 and 136 and a central coupling member 137. These two end members are held normally together preferably by means of a tension coil spring 138. The end member 136 is pivotally attached, as at 139, to an arm extension 140 of the member 106. The end member 135 is preferably attached at 133 to the member 128 by means of a movable stud bolt 141 arranged in a slot 142 in the member 128.

As more clearly shown in FIGS. 2, 4, 5, 7 and 8 of the drawings, there is arranged below the table top 110 and to one side of the opening 112 therein and forwardly of the feed roller 119, a stationary knife member 150 having a cutting edge 151 in under which the reinforcing strip S passes from the feed roller 119. There is provided a movable cutting knife member 152 having a cutting edge 153 which cooperates with the cutting edge 151 of the knife 150 to cut the continuous strip S transversely thereof. This movable knife 152 is pivotally attached, as at 154, to the side of guide block 94. The outer end of this knife member 152 is pivotally attached, as at 155, to the lower end of a vertically extending rod member 156.

There is mounted on the back side of this plate member 8, preferably a guide bracket 168 having an aperture therein through which the rod 156 extends for guiding the same in its vertical movement to actuate the movable knife member 152 upon movement of the lever 40.

As more clearly shown in FIGS. 2 and 9 of the drawings, there is mounted on the member 40, a bracket member 170 which strikes and cooperates with the upper end of the rod member 156 to move the same downward upon movement of the member 40 whereby the movable knife 152 is actuated to cut the reinforcing strip S.

There is provided a tension coil spring 158 having one end attached to the outer end of the knife member 152 with the opposite end secured, as at 159, to the side of the yoke portion 3 of the stapling machine for maintaining and returning the movable knife 152 to its normal position.

On top of the table top 110, there is arranged in suitable guides 160 therein, preferably a slidable cover plate 161 for closing an opening which is positioned directly above the feed roller 119 and the cutting knives 150 and 152 and opposite the rectangular opening 112 for the purpose of gaining access to the feed roller and the knives for threading and positioning the continuous strip S initially into the mechanism.

Description of Operation

Having described the construction of the stapling machine and the reinforcing strip mechanism, it functions in the following manner. It will be understood that the initiation of each reciprocation of the feed-arm 14 for transferring the fastener elements E from the chute 12 to the stapling anvil 5 is timed to occur at about the same time that the anvil 5 starts its initial movement. The air cylinder 4 for reciprocating the movable anvil 5 towards the stationary anvil 7 is controlled by a manual air control valve (not shown) which may be positioned in any suitable location for convenient operation by the machine operator. Each time the manual control valve is manipulated to admit air to the air cylinder 4, the anvil 5 is moved towards the anvil 7 and at the end of the stroke of the piston rod 6, the air is discharged from the cylinder and the piston within the cylinder is automatically returned by an interior spring to again raise the anvil 5 and move it to its normal or retracted position above the anvil 7 as shown in FIGS. 1, 2, 5 and 7 of the drawings.

It will be understood that the feed arm 14, as shown in FIG. 9, is in its fully protracted position and that it has been moved to such position by the springs 53 which have been previously loaded through the action of the arm 47 in cooperation with the roller 48. When the air is admitted to the air cylinder 4, as above described, and the piston is moved to its protracted position, the lever 40, as shown in FIG. 3, is moved about its pivotal connection at 41 due to the cooperation of the end 42 of this lever with the member 43 carried by the piston rod 6 of the air cylinder. In such movement it will be seen that lever 40 will be moved in a clock-wise direction about its pivotal connection at 41 against the action of the springs 53. Also, in such movement it will be seen that the arm 47 carried by the lever 40 will also move in a clockwise direction or to the left thereby moving the feed arm 14 to the left and to its retracted position due to the action of spring 56, in readiness for the next feeding operation.

It will be understood that when the piston moves to its retracted position after the air has been expelled from the air cylinder, the lever 40 is moved in a counter-clockwise direction about its pivotal connecton 41 due to the action of the springs 53 which have been previously loaded. It will also be seen that the springs 53 tend to move the lever 40 about its pivotal connection at 41 in a counter-clockwise direction at all times so that the end 42 of this lever 40 is always maintained in contact with the member 43.

As the lever 40 together with the arm 47 carried thereby moves to the right or in a counter-clockwise direction, the arm 47 strikes the cam roller 48 carried by the member 14 thereby moving this member 14 to the right or to its protracted position to feed an element E to the anvil, due to the action of the springs 53 which have been previously loaded as hereinbefore described.

As the fastener elements E pass down the chute, it will be understood that the foremost element of the group lodged in the chute will be positioned against the upper stop pin 33, the end of which contacts this foremost element and arrests the flow and passage of the group of elements along the chute so as not to cause a jam at the lower end thereof and so as to permit escape of the foremost element one at a time from the group to a lower position in the chute. This escapement of the foremost element and movement of this stop pin 33 out of contact therewith is accomplished through the action of the jigger arm 65, the pin 72 carried thereby which contacts leaf spring 73 thereby moving the stop pin 33 upwardly. It will be understood that this jigger arm 65 is moved to the left, as shown in FIG. 5, due to the cooperation of pin 68 carried by the feed arm 14 with the pin 67 carried by the jigger arm 65 against the action of the spring 73.

The foremost fastener element E is thereby permitted to pass along the chute until it comes in contact with the lower stop pin 34 which also in one position extends into the path of the elements along the chute. The actuation of this stop pin 34 is also controlled by the jigger arm 65 through the action of pin 69 carried thereby which cooperates with leaf spring 70, the end of which is connected to the stop pin 34. This foremost fastener element is then permitted to move downwardly along the chute on the rail 31 after this lower stop pin 34 is moved to its retracted position due to the action of the jigger arm 65. It will be seen that this jigger arm 65 is actuated by the actuation pin 68 carried by the member 14 which cooperates with the pin 67 carried by the jigger arm 65 thereby moving the same about its pivotal connection at 66 against the action of the spring 70. After the foremost element is permitted to pass along the rail 31 by the retraction of the lower stop pin 34, it moves to a straddle position onto the hook portion 15 of the lower member 14*a*.

As the lever 40 moves in a counter-clockwise direction as previously described, the member 47 attached thereto is also moved to the right, as shown in FIG. 9, which in turn moves the member 14 to the right, as

shown, due to the cooperation of the right hand edge of this member 47 with the cam roller 48 carried by the member 14. As the member 14 moves to the left from its position, as shown in FIGS. 1 and 7, it carries with it the foremost element E which has been deposited on the hook-shaped member 15. In such movement the member 21 contacts the element E and moves it upwardly on this hook portion 15 and over the beveled head portion 19 of the rivet member 18 where it is held in position thereagainst by the upper spring tongue 16 so that the element is held firmly and securely until it is transferred by further movement of the member 14 to position under and opposite the movable anvil 5, as shown in FIGS. 1 and 7 of the drawings.

At about the same time, the anvil 5 is moved downwardly by the air cylinder 4, as hereinbefore described, over the fastener element E on the member 14*a* so that the side encompasing walls 23 of the anvil will straddle the member 14*a* with the prong portions of the fastener element E positioned in the grooves 24 of the anvil directly opposite the magnet 25 which holds the element on the end of the anvil, as shown in FIG. 9. After the fastener element is positioned in the anvil 5, the arm 14 moves to its retracted position and the fastener element is wiped off of the arm 14*a* and held solely by the anvil. It will be understood that the mechanism of the air cylinder and piston are timed so that the anvil will not be caused to move further in a downward direction until the end of the feed arm has been moved out from thereunder.

In further movement of the anvil 5 by the air cylinder 4 the fastener element E is moved downwardly thereby to a position opposite the reinforcing material S, the garment part P, and the lower stationary anvil 7 and in cooperation with the latter the prongs of eye or element E are forced through the reinforcing material S and the garment part P and attached to a rivet or backing plate P of the type shown in FIG. 10 of the drawings in a well known manner. It will be understood that the reinforcing strip S had been fed into position between the anvils on the previous cycle of the machine.

It will be understood that the member 14 in returning to its normal or retracted position actuates the escapement mechanism through the action of the member 68 carried thereby in cooperation with the pin 67 carried by the jigger arm 65, in a manner as hereinbefore described. After the element 15 has been attached as described, the anvil 5 is moved to its retracted position by the action of the loaded spring in the housing 3*a*.

The stationary anvil 7 may be of the conventional type employed in this type of stapling machine and constitutes no part of the present invention. However, for the purpose of illustration, as shown in FIG. 3, the anvil 7 shown includes a movable plate member 90, having a pair of opposed lever members 91 having one end of each pivotally attached thereto, as at 92, with opposite ends of these lever members resting on a stationary base plate 93.

It will also be seen that when the piston rod 6 moves downwardly it moves the member 106 due to its cooperation with the arm 43 about its pivotal connection at 107, thereby moving the slide member 95 toward the lower anvil 7 due to the action of the linkage 104, 101 and 99 so as to move a plate fastener element P along the channel 96 in the guide block 94 from position at the lower end of the magazine 97 to position in the lower anvil 7 ready for attachment, as shown in FIGS. 7 and 8 of the drawings. It will be understood that the plate elements P are stacked one on top of the other in the magazine 97 and drop from the bottom thereof into the channel 96 by gravity.

It will be understood that as the piston rod 6 moves to its normal or rest position, as shown in FIGS. 1, 3 and 7 of the drawings, both the slide member 94 and the telescopic link member 134 return to their normal or rest positions due to the return movement of the member 106 so that the slide member 94 is in position to convey the next plate element P from position at the bottom of the magazine 97 to the anvil 7 to the machine for the next cycle of operation.

As the member 106 moves about its pivotal connection at 107, the telescopically arranged link member 134 is moved downwardly thereby rotating the plate-like member 128 on the shaft 125 together with the pawl 129 carried thereby which engages the teeth of the gear 126 thereby rotating the same which in turn rotates the gear 127 together with the shaft 116 to which the latter is secured. The feed roller 119 on this shaft 116 obviously rotates therewith so as to feed the continuous strip S into the machine and between the cutting knives 150 and 152 and across the opening 112 on the under side of the table top 110 and over the top of the lower anvil 7 and the plate element P positioned therein in readiness for the next cycle of operation.

The movable knife 152 is then actuated by the lever member 40 due to the downward movement of the member 156 and in cooperation with the stationary knife 150 cuts a length of reinforcing strip from the continuous strip. At approximately the same time, the prongs of the fastener element E penetrate the garment part G and the cut length of reinforcing strip S due to the continued movement of the upper anvil 5. The fastener element E finally passes through the plate fastener element P in the lower anvil 7 and in cooperation therewith securely rivets the four pieces together. It will be understood that the garment part G is positioned on the table top 110 manually by the machine operator who usually controls the actuation of the machine by a foot pedal in a customary manner. This completes one cycle of operation of the machine.

As a result of the present invention, it will be seen that there is provided a stapling machine in which the eye member parts are delivered automatically to the attaching station at the same time that a strip of reinforcing material is delivered thereto so that the eye member parts and a strip of reinforcing material are simultaneously attached to the garment part when the machine is actuated. Thus it will be seen that it is not necessary by the use of the machine of the present invention that a strip of reinforcing material be inserted manually in under the anvil and between the fastener parts by the operator when the eye member parts are attached to the garment, which is a decided advantage. That is to say, a strip of reinforcing material is cut from the continuous strip of material automatically and simultaneously attached with the eye member parts to the garment part.

While the present invention is shown in combination with a stapling machine for attaching eye member parts of a trouser hook and eye, it would be understood that it can be adapted for use with a hook attaching machine, which is very similar to the machine herein described, for attaching eye member parts.

While I have shown and described an embodiment which my invention may assume in practice, it will be understood that this embodiment is merely for the purpose of illustration and description, and that other forms may be devised within the scope of my invention as defined in the appended claims.

I claim:

1. In a machine of the class described having means for delivering a fastener element to an upper anvil at an attaching station which cooperates with a lower anvil for attaching the fastener element to a garment part or other article, means for feeding and delivering a continuous length of reinforcing strip into the machine between said upper and lower anvils at the attaching station including at least one roller, an oscillating knife positioned forwardly of said feeding means for cutting a length of reinforcing strip from said continuous strip adjacent the attaching station, said upper anvil adapted to cooperate with said lower anvil to attach the fastener element together with said cut length of reinforcing strip simultaneously to said garment part or other article.

2. In a machine of the class described, a table top having an opening arranged therein centrally thereof, a movable upper anvil arranged above said table top opposite the opening therein, means for delivering a pronged fastener element part to said upper anvil for attaching the same to a garment part or other article, a lower anvil arranged below said table top opposite the opening therein which is adapted to cooperate with said upper anvil, means for delivering a plate fastener element part to said lower anvil, means for feeding a continuous length of reinforcing strip into the machine so as to be disposed across the opening in said table top including at least one feed roller, means for biasing the feed roller toward the under side of the table top, a knife positioned forwardly of said feeding means adjacent said opening for cutting a length of reinforcing strip from said continuous strip, said pronged fastener element part adapted to penetrate said cut length of reinforcing strip and the garment part upon movement of said upper anvil into and through said opening toward said lower anvil and to cooperate with said plate fastener element part therein to attach both said fastener element parts and said cut length of reinforcing strip to said garment part simultaneously.

3. In a machine of the class described, a table top having an opening arranged therein centrally thereof, a movable upper anvil arranged above said table top opposite the opening therein, means for delivering a pronged fastener element part to said upper anvil for attaching the same to a garment part or other article, a lower anvil arranged below said table top opposite the opening therein which is adapted to cooperate with said upper anvil, means for delivering a plate fastener element part to said lower anvil, a transversely extending rotatable shaft arranged below said table top and the opening therein, a friction feed roller arranged on said shaft, said roller adapted to feed and deliver continuous strip of reinforcing material across said opening in under said table top, means for intermittently rotating said shaft together with the roller carried thereby, means arranged to one side of said opening for cutting lengths of reinforcing strip from said continuous strip as it passes therealong, said pronged fastener element part adapted to penetrate said cut length of reinforcing strip and the garment part upon movement of said upper anvil into and through said opening toward said lower anvil and to cooperate with said plate fastener element part therein to attach both said fastener element parts and said cut length of reinforcing strip to said garment part simultaneously.

4. The combination as defined in claim 3, including means for biasing the feed roller toward the under side of the table top.

5. In a machine of the class described, a table top having an opening arranged therein centrally thereof, a movable upper anvil arranged above said table top opposite the opening therein, means for delivering a pronged fastener element part to said upper anvil for attaching the same to a garment part or other article, a lower anvil arranged below said table top opposite the opening therein which is adapted to cooperate with said upper anvil, means for delivering a plate fastener element part to said lower anvil, means for feeding a continuous strip of reinforcing material into the machine and across the opening in said table top, a stationary knife arranged to one side of said opening below the path of the continuous strip thereacross, a movable knife arranged to one side of said last knife which cooperates with the same to cut lengths of reinforcing strip from said continuous strip, means for actuating said movable knife intermittently, said pronged fastener element part adapted to penetrate said cut length of reinforcing strip and the garment part upon movement of said upper anvil into and through said opening toward said lower anvil and to cooperate with said plate fastener element part therein to attach both said fastener element parts and said cut length of reinforcing strip to said garment part simultaneously.

6. In a machine of the class described, a table top having an opening arranged therein centrally thereof, a movable upper anvil arranged above said table top opposite the opening therein, means for delivering a pronged fastener element part to said upper anvil for attaching the same to a garment part or other article, a lower anvil arranged below said table top opposite the opening therein which is adapted to cooperate with said upper anvil, means for delivering a plate fastener element part to said lower anvil, a transversely extending rotatable shaft arranged below said table top and the opening therein, at least one friction feed roller arranged on said shaft opposite said opening, said roller adapted to feed and deliver continuous strip of reinforcing material across said opening in under said table top, means for intermittently rotating said shaft together with the roller carried thereby, a stationary knife arranged to one side of said opening below the path of the continuous strip thereacross, a movable knife arranged to one side of said last knife which cooperates with the same to cut lengths of reinforcing strip from said continuous strip, means for actuating said movable knife intermittently, said pronged fastener element part adapted to penetrate said cut length of reinforcing strip and the garment part upon movement of said upper anvil into and through said opening toward said lower anvil and to cooperate with said plate fastener element part therein to attach both said fastener element parts and said cut length of reinforcing strip to said garment part simultaneously.

7. The combination as defined in claim 6, including means for biasing the feed roller toward the under side of the table top.

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