

**May 4, 1965**

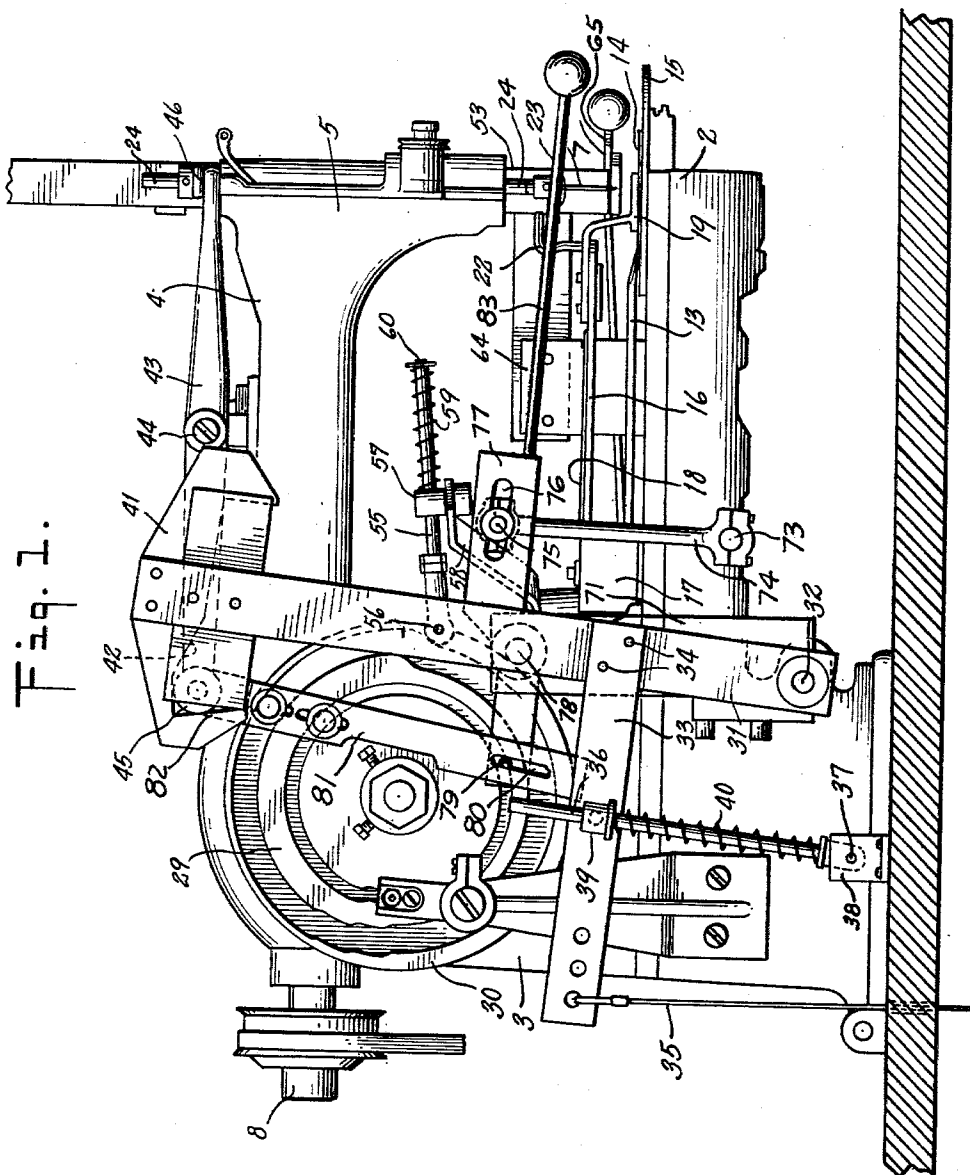
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**3,181,489**

# MECHANISM FOR SEWING FASTENER ELEMENTS

Filed Dec. 29, 1961

6 Sheets-Sheet 1



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MECHANISM FOR SEWING FASTENER ELEMENTS

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Fig. 1a.

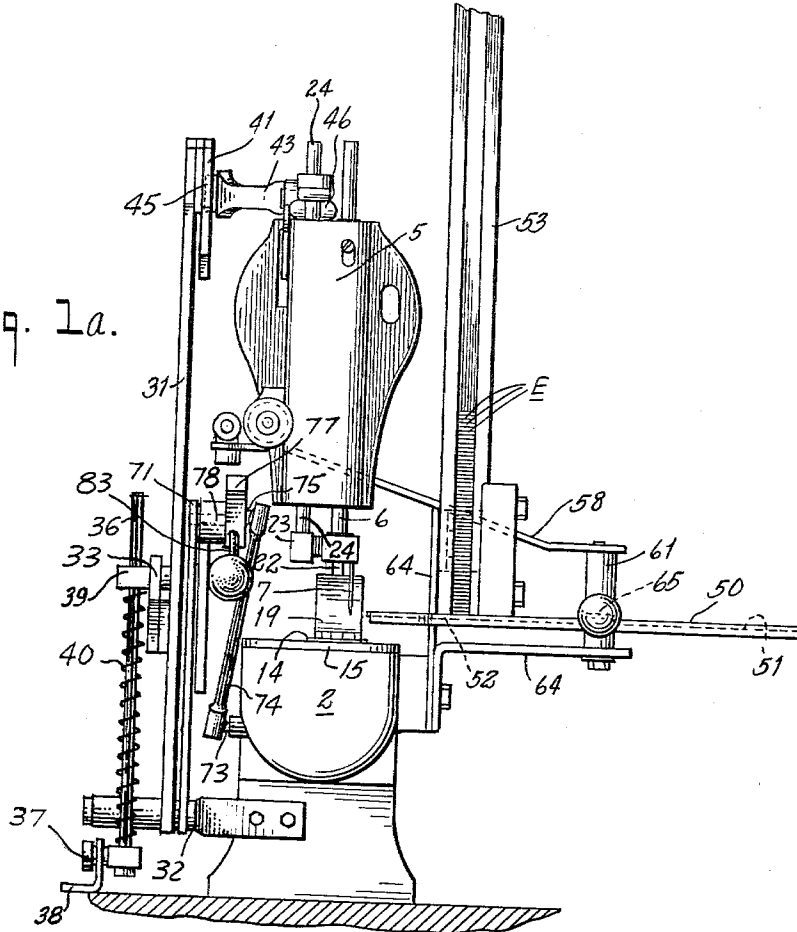
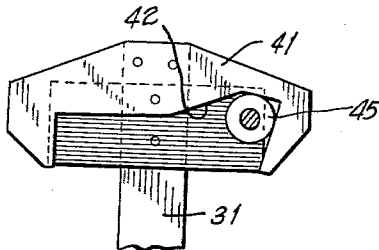


Fig. 1b.



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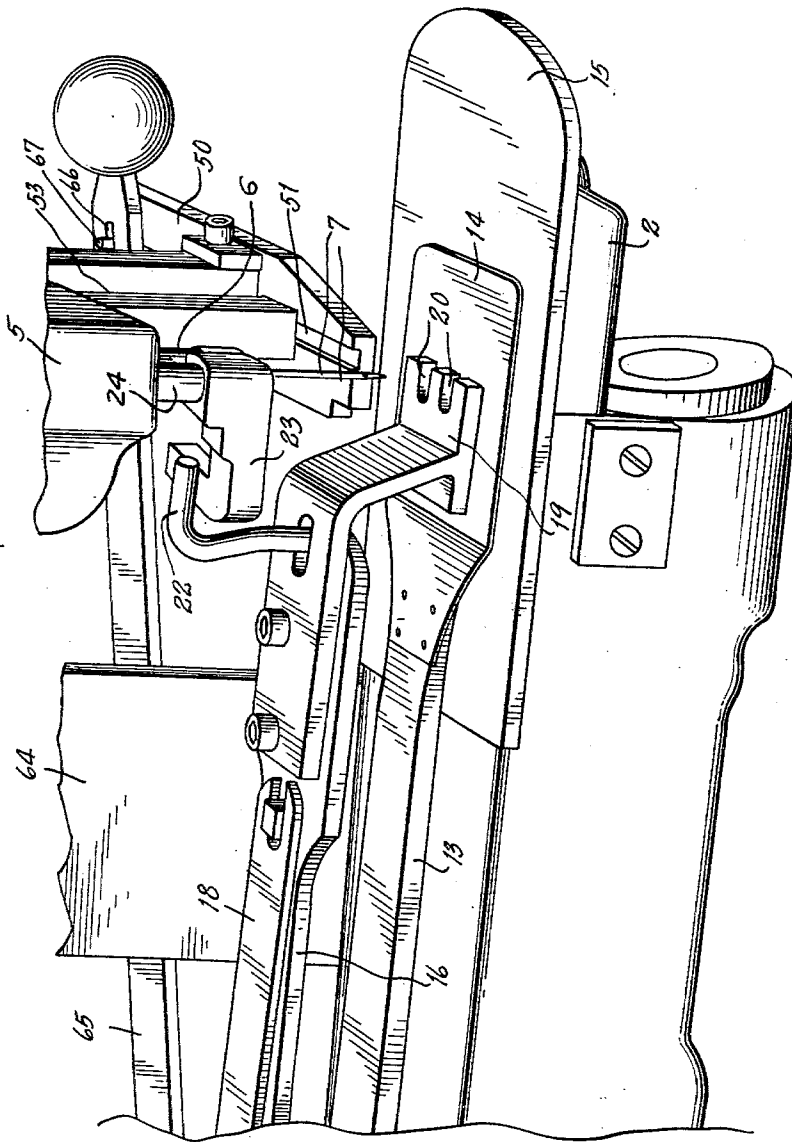
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MECHANISM FOR SEWING FASTENER ELEMENTS

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Fig. 2.



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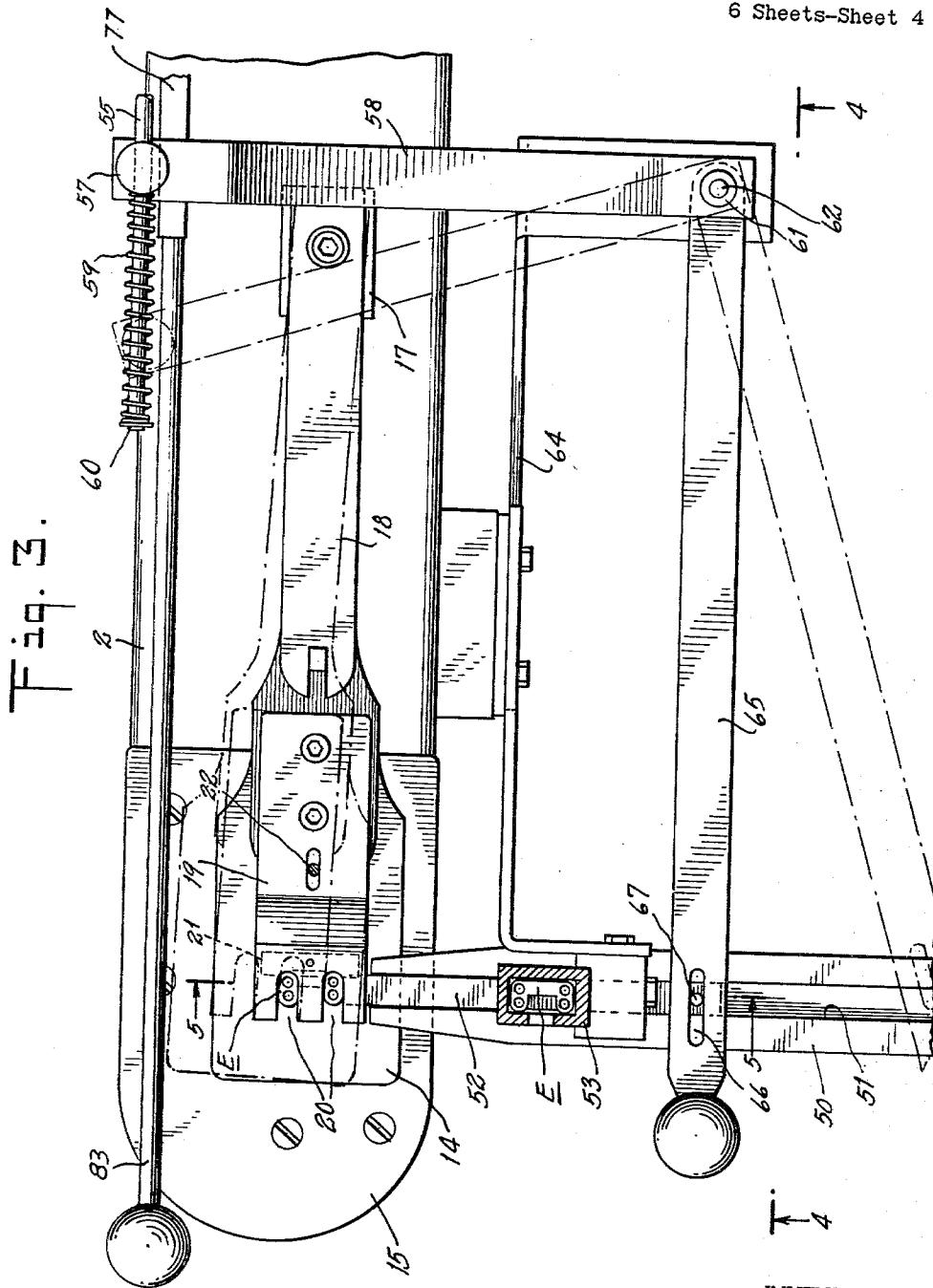
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MECHANISM FOR SEWING FASTENER ELEMENTS

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6 Sheets-Sheet 4



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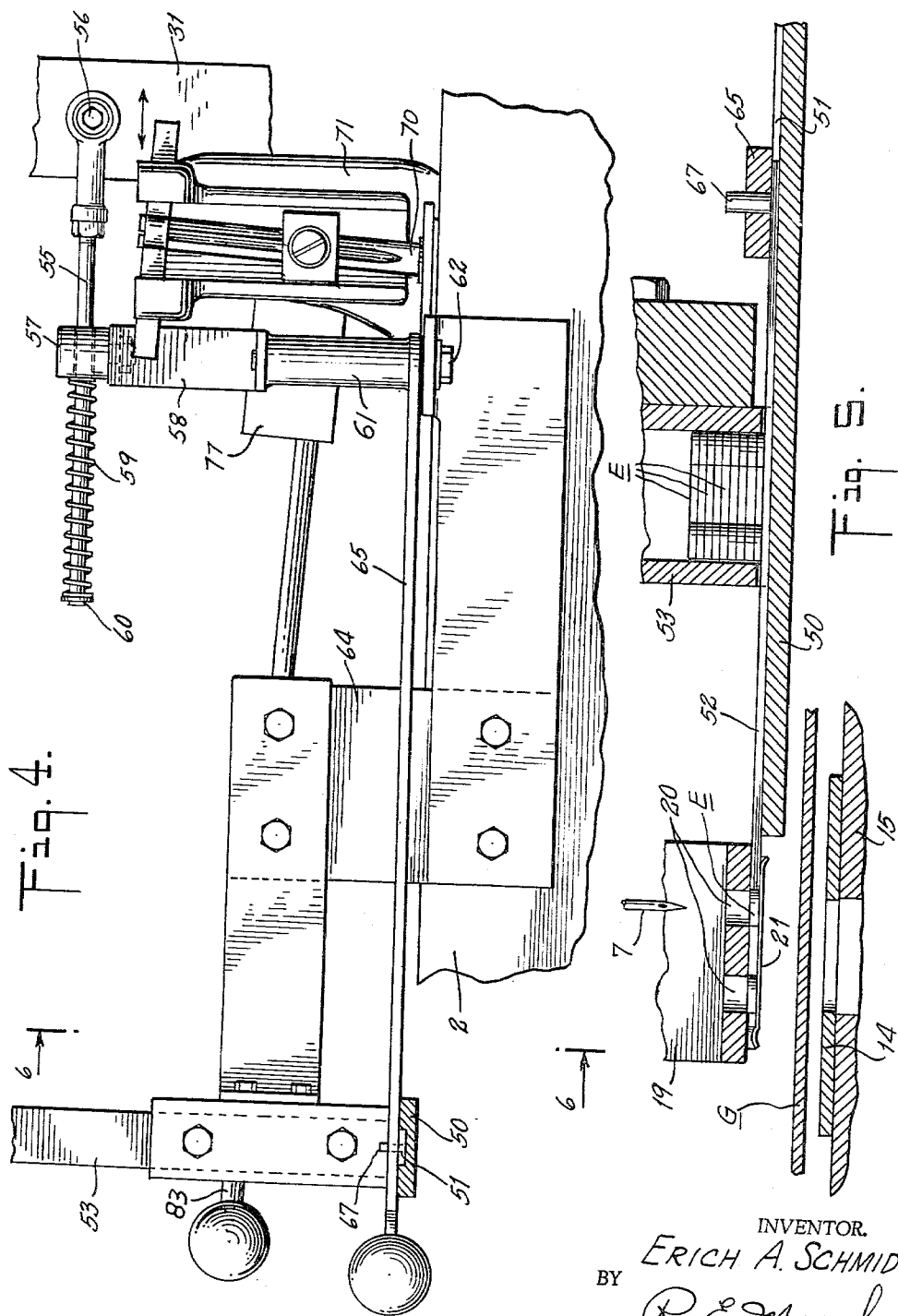
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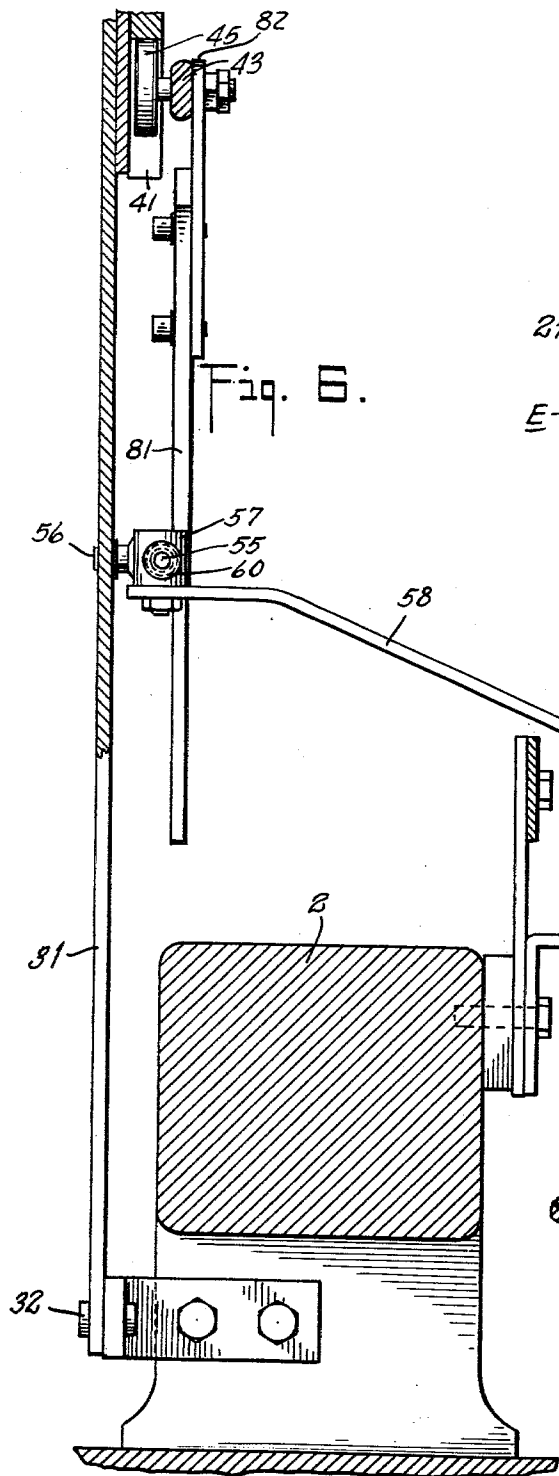


Fig. 7.

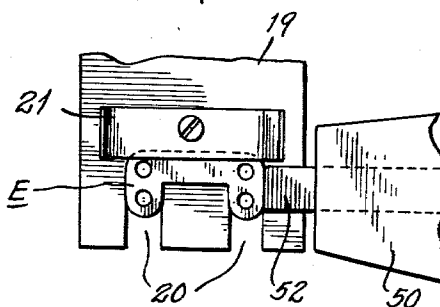
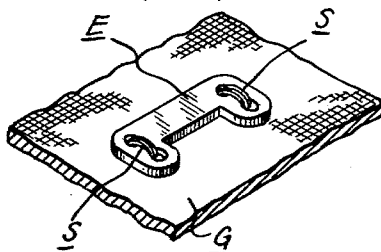


Fig. 8.



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## 3,181,489 MECHANISM FOR SEWING FASTENER ELEMENTS

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Filed Dec. 29, 1961, Ser. No. 163,100  
7 Claims. (Cl. 112—113)

This invention relates to sewing machines of the type having reciprocating stitch-forming mechanism and a work-holder with means for producing longitudinal jogging movement between them to effect the formation of so-called "tacks" or groups of stitches and, more particularly, to mechanism incorporated therewith for automatically feeding fastener elements, such as garment-hooks or eyes, to a fastener element holding means for sewing them to garment parts or other articles.

Accordingly, it is the general object of the present invention to provide mechanism for a sewing machine which automatically feeds garment hooks or eyes to a fastener element holding member and which will hold the hook or eyes in stitch-receiving position while the hooks and eyes are being stitched to the garment part or other article.

It is another object of the invention to provide such mechanism which is simple and inexpensive to incorporate with a conventional sewing machine and at the same time effective and efficient in its use.

It is a further object of this invention to provide such mechanism which is substantially automatic in its operation requiring a minimum amount of attention from the sewing machine operator and eliminating the individual handling of the hooks or eyes by the operator during the sewing operation.

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 conventional sewing machine having the improved fastener element feeding mechanism in accordance with the present invention incorporated therewith,

FIG. 1a is a side elevational view of the sewing machine and associated mechanism as shown in FIG. 1,

FIG. 1b is a detail plan view of the inner side of the cam for actuating the clamping foot and work-supporting plate,

FIG. 2 is an enlarged perspective view of the sewing and fastener element attaching mechanism,

FIG. 3 is an enlarged plan view of the sewing and fastener element feeding and attaching mechanism,

FIG. 4 is a sectional view taken on line 4—4 of FIG. 3,

FIG. 5 is a sectional view taken on line 5—5 of FIG. 3,

FIG. 6 is a sectional view taken on line 6—6 of FIG. 4,

FIG. 7 is an enlarged bottom view of the outer end of the fastener element holding bar showing a fastener element therein in readiness for attachment to the garment part, and

FIG. 8 is an enlarged perspective fragmentary view of a garment part showing a fastener element sewn thereto by use of the mechanism of the present invention.

Referring more particularly to the drawings, the improved fastener element feeding mechanism of the present invention is shown incorporated with a conventional flat button sewing machine of the Singer type which will not

be described in detail as the construction and operation of such a machine is well known to those skilled in the art. A machine of such type is shown in the U.S. patent to Horton, No. 1,051,998, dated February 4, 1913. Referring more particularly to FIGS. 1 and 2, such a machine comprises generally a flat base or bed plate 2 upon which there is mounted a standard 3 supporting a horizontally extending bracket-arm 4 which terminates in a hollow head 5 wherein the needle-bar 6 carrying a needle 7 is journaled for reciprocation.

The main shaft 8 is journaled in the bracket-arm 4 and provided at its forward end with the usual take-up cam cylinder having a crank-pin connected by means of a pitman with a lateral stud upon the needle-bar 6. The needle 7 cooperates with a shuttle in the base in a well known manner to form stitches and secure a fastener element E to a garment part G.

For the purpose of this disclosure, the relative jogging or stitch positioning movements between the stitch forming mechanism and the fastener element holding member obtained by vibrating the fastener element holding member substantially in a manner as shown in the aforementioned patent. The work holder of this type comprises a lower member in the form of a work supporting bar 13 mounted for movement over the bed 2. To the forward end of this bar 13 is secured a work-supporting plate 14 which rests upon the foot-like throat-plate 15 of the machine and is adapted to slide freely thereover. With this work-holder, there is provided a fastener element holding member which includes an upper member or bar 16 pivotally supported at its rear end by a bracket 17 and pressed toward the bar 13 by means of the usual leaf-spring 18, as more clearly shown in FIGS. 1, 2, 3 and 5 of the drawings.

On the forward end of this upper bar 16, there is positioned a clamping foot 19 having a pair of open ended slots 20 in the extreme outer end thereof for receiving the needle 7. On the underside of this foot 19 adjacent the inner ends of the slots 20, there is positioned a spring clip-like member 21 for receiving and holding a fastener element E while it is being stitched to the garment part. There is also carried by this upper bar 16 adjacent the inner end of the clamping foot 19, a finger-like member 22, the free end of which cooperates with an outwardly projecting lifting member 23 carried by a vertical reciprocable bar 24 positioned in the head 5 parallel to the needle-bar 6.

The work supporting bar 13 is suitably secured at one end thereof to the bed plate 2 of the machine both for longitudinal and lateral movement thereover. On the inner end of this work supporting bar 13 there is mounted a cam roller (not shown) which cooperates with a cam race (not shown) on the inner side of the cam-wheel 30. This cam wheel upon rotation thereof is adapted to impart a lateral and longitudinal jogging motion to the work supporting bar 13 together with the fastener element holding bar 16 mounted thereon in a manner similar to that shown and described in the aforementioned patent and for a purpose hereinafter to be described.

According to the present invention, there is provided a vertically extending oscillating lever-like member 31 having one end thereof pivotally connected to the base of the machine, as at 32. There is provided a horizontal arm 33 having one end thereof secured to the lever-like member, as at 34. There is attached to the free end of this arm 33, a treadle-chain 35 with the opposite end of this treadle-chain attached to a treadle (not shown).

Intermediate the length of this arm 33, there is positioned a rod-like member 36 having the lower end thereof pivotally attached, as at 37, to a fixed bracket member 38. The upper end of this rod-like member 36 is slidably mounted in a bearing member 39 carried by the arm 33.

There is positioned around this rod-like member 36, a compression coil spring 40.

On the upper end of the oscillating lever-like member 31, there is secured a cam member 41 having a cam-groove 42 arranged in the inner side thereof. On top of the horizontal bracket-arm 4 of the machine, there is mounted an elongated yoke-like lever 43 which is pivotally attached to this bracket-arm 4 intermediate the length thereof, as at 44. On one end of this lever 43, there is mounted a cam-roller or follower 45 which is positioned in the cam-groove 42 of the cam member 41. The opposite end of this lever 43 is connected to the upper end of the vertical reciprocable bar 24, as at 46.

To one side of the needle 7 and opposite the ends of the bar 13 and foot 19, there is positioned an elongated longitudinally disposed guide member 50 having a longitudinally extending rectangular shaped channel 51 in the upper side thereof. The inner end of this guide member 50 terminates adjacent the clamping foot 19 directly opposite the spring-like clip member 21 carried thereby, as more clearly shown in FIGS. 3, 5 and 7 of the drawings. There is positioned in this channel 51 for reciprocable movement therein, an elongated feed bar 52.

Above this guide member 50 there is mounted vertically, an elongated magazine 53 substantially rectangular shaped in cross section for holding a supply of fastener elements E positioned one on top of the other, as shown in FIGS. 1a, 3 and 5. The lower end of this magazine is open and communicates with the channel 51 in the guide member 50 and the fastener elements E move successively from the magazine to the channel by the force of gravity.

Now referring more particularly to FIGS. 1, 3, 4, and 6 of the drawings, there is provided a rod-like lever 55 having one end thereof pivotally connected to the oscillating lever-like member 31 intermediate the length thereof, as at 56. The opposite end of this rod-like lever 55 is slidably connected to an oscillating bearing member 57 mounted on the outer end of a crank lever 58. On the outer end of this rod-like lever 55 there is positioned therearound, a compression coil spring 59 having one end abutting a stop member 60 and with the opposite end abutting the side of the bearing member 57.

As more clearly shown in FIGS. 3, 4 and 6, there is positioned on the opposite end of the crank lever 58, a sleeve-like bearing member 61 through which a bolt 62 extends for securing it to a bracket 64 attached to one side of the machine. There is provided another lever 65 having one end thereof secured to this sleeve-like bearing 61. In the opposite end of this lever 65, there is provided a slotted opening 66 into and through which a pin 67 extends which pin is mounted in the outer end portion of the elongated feed bar 52 in the channel 51 of the guide member 50.

For the purpose of illustration, in connection with the use of my improved feeding mechanism, there is shown a fastener element E, as more clearly shown in FIGS. 7 and 8 of the drawings, which is the eye element of a hook and eye assembly for use primarily on waistbands and the like of men's and women's trousers and skirts. Such a fastener element consists of a flat plate-like member having two pairs of holes therein with one pair arranged at each end through which the stitches pass to stitch the element to a garment part or other article. To sew such an element, it will be understood that the element and garment part necessarily will have to be moved or jogged relative to the needle 7 in order that a group of anchoring stitches pass through the holes and around that portion of body of the element positioned between each respective pair of holes in the form of a tacking operation. Such jogging movement of the fastener element relative to the needle in a sewing machine is well known to those skilled in the art.

Now the mechanism for moving laterally the work supporting bar 13 and the bar 16 together with the clamping foot 19 carried thereby will be described. It will be

understood that the inner end of the work supporting bar 13 is attached to the lower end of a vertical shaft 70 which is suitably journaled in a bracket 71 mounted on the base 2 of the machine. On the underside of the base 2, there is mounted a longitudinally extending oscillating shaft (not shown) having one end thereof geared to the vertical shaft 70 below the bracket 71 for oscillating this shaft 70. Intermediate the length of this longitudinally extending shaft, there is mounted thereon a lateral crank arm 73 having the outer end thereof pivotally connected to the lower end of a pitman 74. The upper end of this pitman 74 is pivotally connected to a pin 75 positioned in a slotted opening 76 in one end of a crank arm 77. This crank arm 77 is pivotally attached intermediate its length to a stud shaft 78 arranged on the upper end of the bracket 71. On the opposite end of this crank-arm 77, there is positioned a pin 79 which extends through a slot 80 arranged in the lower end of an upright arm 81. The opposite end of upright arm 81 is pivotally attached to the inner end of the lever 43, as at 82, opposite the cam-roller 45. There is mounted on the side of this upright arm 81, a roller stud which is disposed in the cam groove in the cam wheel 30. The rocking of the crank-arm transmits lateral motion to the member 16 through the pitman arm 74 and the oscillating shaft (not shown) in the base of the machine affording a universal joint connection so as to permit the free longitudinal as well as lateral movement of the member 16 in a manner well known to those skilled in the art. There is provided an elongated handle member 83 having one end thereof connected to the end of this crank-arm 77 for manually actuating the lateral jogging movement of the work supporting bar 13 in a manner and for a purpose hereinafter to be described.

While the present fastener element feeding mechanism has been designed and is illustrated in connection for feeding the eye element of a hook and eye fastener assembly, it will be understood that the mechanism may be conveniently modified for feeding most any fastener element of this type regardless of size or shape.

#### Operation

Having described the construction of my improved fastener element feeding mechanism, it functions in the following manner. It will be assumed that a garment part G or other article is in readiness to be positioned on the work-supporting plate 14 for stitching a fastener element E thereto and that the sewing machine is in readiness for operation.

The treadle connected to the treadle-chain 35 is manually actuated by the machine operator whereby the oscillating lever-like member 31 together with the cam member 41 carried thereby is moved to the left, as shown in FIG. 1, about its pivotal connection at 32. In so doing, it will be seen that in the initial movement, the inner end of the elongated lever 43 is moved downwardly about its pivotal connection 44 due to the cooperation of the cam-roller 45 arranged on the end of the lever 43 with the cam-groove 42 in the cam member 41. As a result of such movement, the opposite or outer end of this lever 43 will move upwardly which will in turn move the presser foot bar 24 upwardly together with the projecting member 23 carried thereby. When the presser foot bar 24 moves upwardly, it will be seen that the projecting member 23 carried thereby contacts the finger-like member 22 mounted on the bar 16 thereby lifting the outer end of this bar together with the clamping foot 19 arranged therewith from its position of rest on the work-supporting plate 14 so that the space between the under side of this clamping foot 19 and the spring clip-like member 21 is in alignment with the end of the feed bar 52, as more clearly shown in FIGS. 3 and 5 of the drawings, and in position for receiving a fastener element E from the end of the channel 51 in the guide member 50.

As the oscillating lever-like member 31 together with the cam member 41 carried thereby continues to move



to the left, as shown in FIG. 1, the rod-like lever 55 will also be moved to the left due to its pivotal connection therewith at 56. In such movement, the stop member 60 arranged on the end of this rod-like lever 55 will eventually through spring 59 build up sufficient force against the oscillating bearing member 57 arranged on the outer end of the crank lever 58 to move it to the left about its pivotal connection 61, 62. This crank lever 58 in turn will move the elongated lever 65 to which it is connected forwardly, as shown in FIG. 3. As a result, the feed bar 52 in the channel 51 of the guide member 50 is moved forwardly due to its connection at 67 with the lever 65. In such movement, this feed bar 52 will strike a fastener element E at the lower open end of magazine 53 in the channel 51 and move it toward the clamping foot 19 and to position in the space between the under side thereof and the spring-clip 21 whereby it is held securely in position on the clamping foot. The garment part G is then positioned on the work-supporting plate 14 in under the clamping foot 19 in readiness for sewing.

After the fastener element E has been nested in position in the end of the bar 16, the treadle is released by the operator thereby permitting the oscillating lever 31 together with the cam member 41 carried thereby to return to its retracted position and to move to the right as shown in FIG. 1, due to the action of coil spring 40 on the rod 36. In such movement, it will be seen that the feed bar 52 will be moved rearwardly in the channel 51 in the guide member 50 to its retracted position through the action of the lever 65, the crank lever 58 and the rod-like lever 55. As the oscillating lever-like member 31 continues its movement to the right, the presser foot bar 24 will move upwardly due to the action of the elongated lever 43 and the cam roller 45 on the end thereof in cooperation with the cam-groove 42 in the cam member 41 thereby permitting the clamping foot 19 together with the fastener element E positioned therein to move to position on top of the garment part G in readiness for sewing due to the action of the spring 18.

The machine is then started in the usual and well known manner for a pre-determined number of stitch-forming operations. It will be understood that as the needle 7 reciprocates in one of the slots 20 the fastener element holding bar 16 and the work-supporting bar 13 are subjected to a longitudinal jogging movement so that the needle 7 moves through the respective pairs of holes alternately in one side of the fastener element E in the clamping foot 19 so as to stitch one side of the fastener element to the garment part by means of a bar tack, as shown in FIG. 8 of the drawings.

After one sewing or tacking operation has been completed, the work supporting bar 13 together with the bar 16 and the clamping foot 19 carried thereby is moved or jogged laterally so as to position the other slot 20 and the other two holes in the fastener element E opposite the needle so as to tack the other side of the fastener element to the garment part G. This is accomplished by the operator by moving the handle 83 downwardly. In such movement of this handle 83, the work supporting bar 13 will be shifted to the left, as shown in FIG. 3, so as to position the right hand slot 20 in the clamping foot 19 opposite the needle 7 in readiness for sewing. This movement of the work supporting bar 13 is accomplished through the action of the longitudinally extending shaft in the base, the shaft 70, the pitman 74, and the crank-arm 77. The other side of the fastener element E is then stitched to the garment part G with the stitches passing through the respective pair of holes alternately, as before, so as to stitch that side of the fastener element E to the garment part. After this tacking or sewing operation has been completed, the handle member 83 is moved upwardly so as to shift the work supporting bar 13 together with the clamping foot carried thereby to the right and to its initial position in readiness for the re-

ceiving and sewing of another fastener element to a garment part.

It will be understood that when the crank-arm 77 is moved initially the pin 79 carried thereby will move to the end of the slot 80 in the lower end of the upright arm 81 so as to lock the cam-roller 45 and oscillating lever-like member 31 against movement whereby accidental feeding is prevented of a fastener element E to the clamping foot 19 when it has been shifted to the left. That is to say, a fastener element cannot be fed to the clamping foot 19 when it is positioned for the second sewing operation. This completes one cycle of operation of the machine and the fastener element feeding mechanism.

As a result of my invention, it will be seen that there is provided simple and inexpensive mechanism for feeding automatically fastener elements or members successively to position opposite the needles of a sewing machine where they are held firmly and securely in position while they are being sewn to a garment part or other article. It will be seen further that the activation of the fastener element holding means and the delivering of the fastener elements successively thereto are in timed relation so that the fastener element holding means is positioned opposite the fastener delivery means and in alignment therewith at the proper time for receiving the fastener elements, both of these members to be activated by a common means, namely, the oscillation lever-like member 31 which is one of the most important aspects of the invention.

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.

What I claim as my invention is:

1. In combination with a sewing machine having stitch mechanism arranged therewith including a reciprocating needle,

a movable fastener element holding member having one end thereof pivotally attached to said machine, fastener holding means mounted on one end thereof which is positioned below said needle and in which a fastener element is adapted to be disposed, means arranged to one side of said holding member for delivering fastener elements successively to a point spaced from said holding member, means of transferring fastener elements successively from said point of delivery to the fastener holding means on said holding member,

means actuated simultaneously with said last mentioned means for actuating said transfer means,

a treadle-actuated oscillating lever having one end thereof pivotally attached to the sewing machine,

a cam member mounted on the opposite free end of said oscillating member,

a horizontal lever mounted on said machine and pivotally connected thereto intermediate the length thereof,

a cam follower mounted on one end of said horizontal lever which cooperates with said cam member,

a vertically extending lifting bar mounted on said machine having an outwardly projecting member carried thereby adjacent the lower end thereof,

and finger-like means carried by said fastener element holding member adjacent the free end thereof which cooperates with said projecting member to lift the free end of said fastener element holding member so as to position the fastener holding means carried thereby in alignment with said transfer means.

2. In combination with a sewing machine having stitch mechanism arranged therewith including a reciprocating needle,

a movable fastener element holding member having one end thereof pivotally attached to said machine, fastener holding means mounted on the opposite free end thereof which is positioned below said needle and in which a fastener element is adapted to be disposed, 5  
means for delivering fastener elements successively to a point in said channel at a spaced distance from said holding member,  
an elongated guide member disposed to one side of said holding means having a longitudinally extending channel arranged therein into which the fastener elements are adapted to be positioned by said delivery means, 10  
a reciprocable feed bar positioned in said channel for moving fastener elements successively therealong from the point of delivery,  
means for moving said holding member so as to position the fastener element holding means carried thereby in alignment with said guide member for receiving successively said elements therefrom, 20  
means actuated simultaneously with said last mentioned means for actuating said feed bar,  
a treadle-actuated oscillating lever-like member having one end thereof pivotally attached to the sewing machine, 25  
a rod-like member having one end thereof pivotally connected to said oscillating lever-like member intermediate the length thereof,  
and lever means interconnecting said rod-like member with the end of the feed bar in the channel of said guide member for moving the fastener elements along said channel. 30

3. In combination with a sewing machine having stitch mechanism arranged therewith including a reciprocating needle, 35  
a movable fastener element holding member having one end thereof pivotally attached to said machine, means mounted on the opposite free end thereof which is positioned below said needle and in which a fastener element is adapted to be disposed, 40  
means for delivering fastener elements successively to a point in said channel at a spaced distance from said holding member,  
an elongated guide member positioned to one side of said holding means having a longitudinally extending channel arranged therein into which the fastener elements are adapted to be positioned by said delivery means, 45  
a reciprocable feed bar positioned in said channel for moving fastener elements successively therealong from the point of delivery,  
means for moving said holding member so as to position the fastener element holding means carried thereby in alignment with said channel for receiving successively said elements therefrom, 50  
an oscillating lever-like member having one end thereof pivotally attached to the sewing machine,  
means for actuating the same, 60  
a cam member mounted on the opposite free end of said oscillating member,  
a horizontal lever mounted on said machine and pivotally connected thereto intermediate the length thereof, 65  
a cam follower mounted on one end of said horizontal lever which cooperates with said cam member,  
a vertically extending lifting bar mounted on said machine having an outwardly projecting member carried thereby adjacent the lower end thereof, 70  
finger-like means carried by said fastener element holding member adjacent the free end thereof which cooperates with said projecting member to lift the free end of said fastener element holding member,  
a rod-like member having one end thereof pivotally 75

connected to said oscillating lever intermediate the length thereof,  
a crank lever having one end pivotally connected to said rod-like member with the opposite end journaled on said machine so as to be pivotally connected thereto,  
and an elongated lever having one end securely connected to said arm-like member,  
the opposite end of said bar-like member being pivotally connected to one end of said feed bar positioned in the channel of said guide member for reciprocating the same therein to move the fastener elements successively therealong into engagement with the fastener holding means in the free end of said fastener holding member.

4. In combination with a sewing machine having stitch forming mechanism including reciprocating needle, a reciprocable elongated fastener holding member having one end thereof pivotally attached to the machine, 5  
means carried by said holding member adjacent the free end thereof for receiving and holding a fastener element adapted to be attached to an article,  
an elongated guide member extending laterally to one side of said needle and the free end of said fastener element holding member, 10  
said elongated guide member having a longitudinally extending channel positioned therein,  
a vertically arranged magazine positioned above said elongated guide member having an opening in the bottom thereof communicating with the channel in said guide member in which a supply of fastener elements is adapted to be disposed one on top of the other with the fastener elements adapted to pass successively by means of gravity into said channel, 15  
an elongated reciprocable feed bar positioned in said channel for moving the fastener elements from the point of delivery thereinto and therealong to said fastener element holding member,  
means for moving said fastener holding member so as to position the fastener holding means carried thereby in alignment with said channel, 20  
means for producing longitudinal jogging movements of said fastener holding member relative to said needle,  
said needle adapted to attach a fastener element to an article by means of stitching while the fastener element is held firmly by said fastener element holding means, 25  
an oscillating lever-like member having one end thereof pivotally attached to the sewing machine,  
means for actuating the same,  
a cam member mounted on the opposite free end of said oscillating member, 30  
a horizontal lever mounted on said machine and pivotally connected thereto intermediate the length thereof,  
a cam follower mounted on one end of said horizontal lever which cooperates with said cam member, 35  
a vertically extending lifting bar mounted on said machine having an outwardly projecting member carried thereby adjacent the lower end thereof,  
a finger-like member carried by said fastener element holding member adjacent the free end thereof which cooperates with said projecting member to lift the free end of said fastener element holding member, 40  
a rod-like member having one end thereof pivotally connected to said oscillating lever-like member intermediate the length thereof,  
a crank lever having one end pivotally connected to said rod-like member with the opposite end journaled on said machine so as to be pivotally connected thereto, 45  
and an elongated lever having one end securely connected to said arm-like member, 50

the opposite end of said bar-like member being pivotally connected to one end of said feed bar member positioned in the channel of said guide member for reciprocating the same therein to move the fastener elements successively therealong into engagement with the fastener element holding means in the free end of said fastener holding member.

5. In combination with a sewing machine having stitch forming mechanism arranged therewith including a reciprocating needle,

reciprocable fabric supporting means positioned below said needle,

movable fastener holding means positioned adjacent said needle,

means for producing relative jogging movements of said reciprocating needle and the fabric supporting means,

an elongated guide member positioned to one side of said needle and said fastener element holding means, said guide member having a channel arranged therein, a feed bar positioned in said channel for reciprocable movement therein,

means mounted opposite said guide member for holding a supply of fastener elements which are adapted to be delivered therefrom successively into said channel,

means for actuating said fastener holding means relative to said guide member so as to be in position to receive a fastener element therefrom,

means responsive to the movement of said last mentioned means for reciprocating said feed bar so as to move the fastener elements successively along said channel to position them in the end of said fastener element holding means,

a treadle-actuated oscillating lever having one end thereof pivotally attached to the sewing machine, a cam member mounted on the opposite free end of said oscillating member,

a horizontal lever mounted on said machine and pivotally connected thereto intermediate the length thereof,

a cam follower mounted on one end of said horizontal lever which cooperates with said cam member,

a vertically extending lifting bar mounted on said machine having an outwardly projecting member carried thereby adjacent the lower end thereof,

and means carried by said fastener element holding means which cooperates with said projecting member so as to move said fastener element holding means into position to receive a fastener element from said guide member and the channel therein.

6. In combination with a sewing machine having stitch forming mechanism arranged therewith including a reciprocating needle,

reciprocable fabric supporting means positioned below said needle,

movable fastener holding means positioned adjacent said needle,

means for producing relative jogging movements of said reciprocating needle and the fabric supporting means,

an elongated guide member positioned to one side of said needle and said fastener element holding means, said guide member having a channel arranged therein, a feed bar positioned in said channel for reciprocable movement therein,

means mounted opposite said guide member for holding a supply of fastener elements which are adapted to be delivered therefrom successively into said channel,

means for actuating said fastener holding means relative to said guide member so as to be in position to receive a fastener element therefrom,

means responsive to the movement of said last mentioned means for reciprocating said feed bar so as

to move the fastener elements successively along said channel to position them in the end of said fastener element holding means,

a treadle-actuated oscillating lever-like member having one end thereof pivotally attached to the sewing machine,

a rod-like member having one end thereof pivotally connected to said oscillating lever-like member intermediate the length thereof,

means interconnecting said rod-like member with the end of the feed-bar in the channel of said guide member for moving the fastener elements along said channel.

7. In combination with a sewing machine having stitch forming mechanism arranged therewith including a reciprocating needle,

reciprocable fabric supporting means positioned below said needle,

movable fastener holding means positioned adjacent said needle,

means for producing relative jogging movements of said reciprocating needle and the fabric supporting means,

an elongated guide member positioned to one side of said needle and said fastener element holding means, said guide member having a channel arranged therein, a feed bar positioned in said channel for reciprocable movement therein,

means mounted opposite said guide member for holding a supply of fastener elements which are adapted to be delivered therefrom successively into said channel,

means for actuating said fastener holding means relative to said guide member so as to be in position to receive a fastener element therefrom,

means responsive to the movement of said last mentioned means for reciprocating said feed bar so as to move the fastener elements successively along said channel to position them in the end of said fastener element holding means,

an oscillating lever-like member having one end thereof pivotally attached to the sewing machine,

means for actuating the same,

a cam member mounted on the opposite free end of said oscillating member,

a horizontal lever mounted on said machine and pivotally connected thereto intermediate the length thereof,

a cam follower mounted on one end of said horizontal lever which cooperates with said cam member,

a vertically extending lifting bar mounted on said machine having an outwardly projecting member carried thereby adjacent the lower end thereof,

finger-like means carried by said fastener element holding means which cooperates with said projecting member to lift so as to move said fastener element holding means into position to receive a fastener and a rod-like member having one end thereof pivotally connected to said oscillating lever intermediate the length thereof,

a crank lever having one end pivotally connected to said rod-like member with opposite end journaled on said machine so as to be pivotally connected thereto,

and an elongated lever having one end securely connected to said arm-like member,

the opposite end of said bar-like member being pivotally connected to one end of said bar-like member, said feed bar positioned in the channel of said guide member for reciprocating the same therein to move the fastener elements successively therealong into engagement with the fastener holding means.

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