Dec. 12, 1933. L. ROSEMAN 1,939,464

AUTOMATIC STOP MECHANISM FOR SEWING MACHINES

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Fig. 1

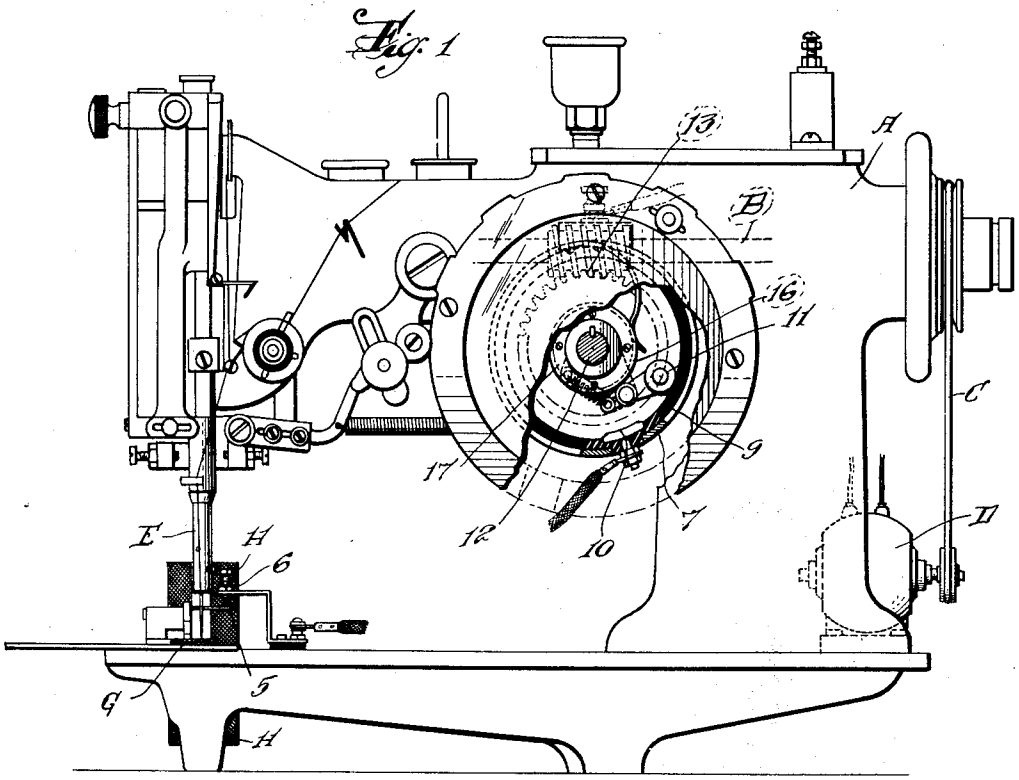


Fig. 2

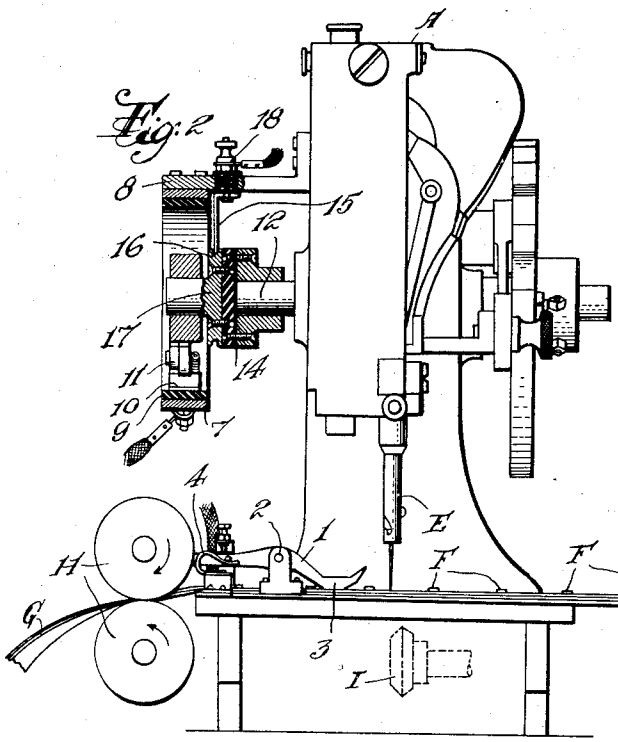
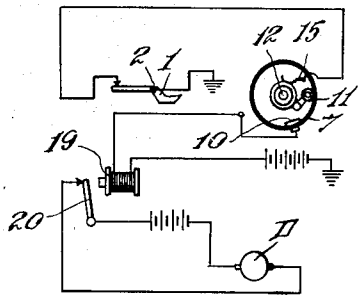


Fig. 3



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Dec. 12, 1933. L. ROSEMAN 1,939,464

AUTOMATIC STOP MECHANISM FOR SEWING MACHINES

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Fig. 4

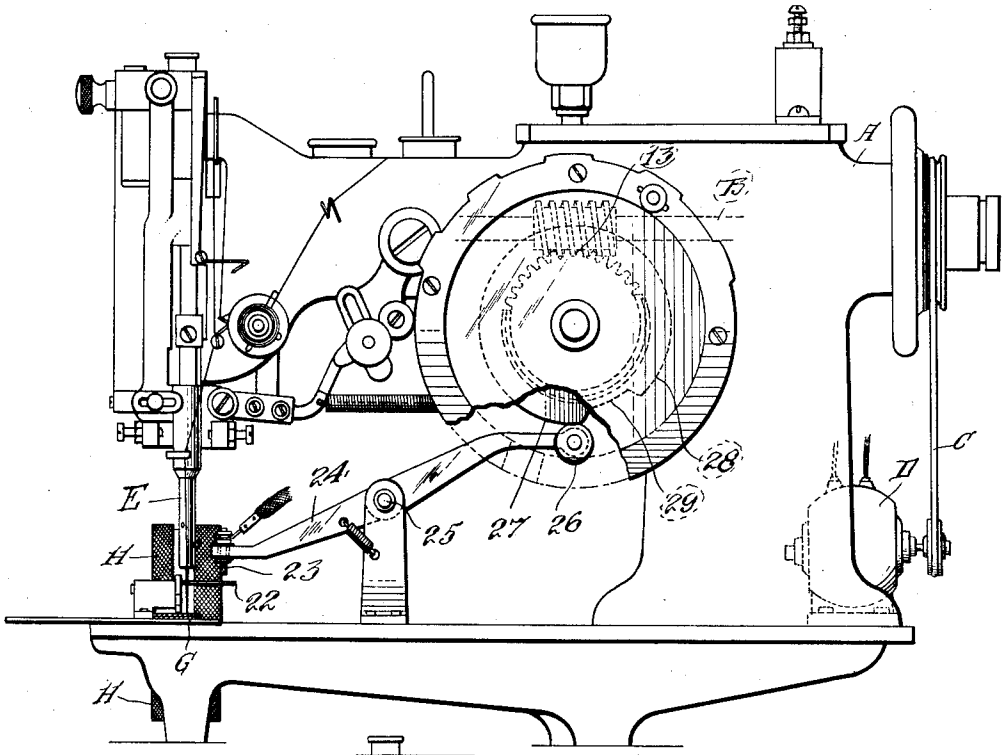
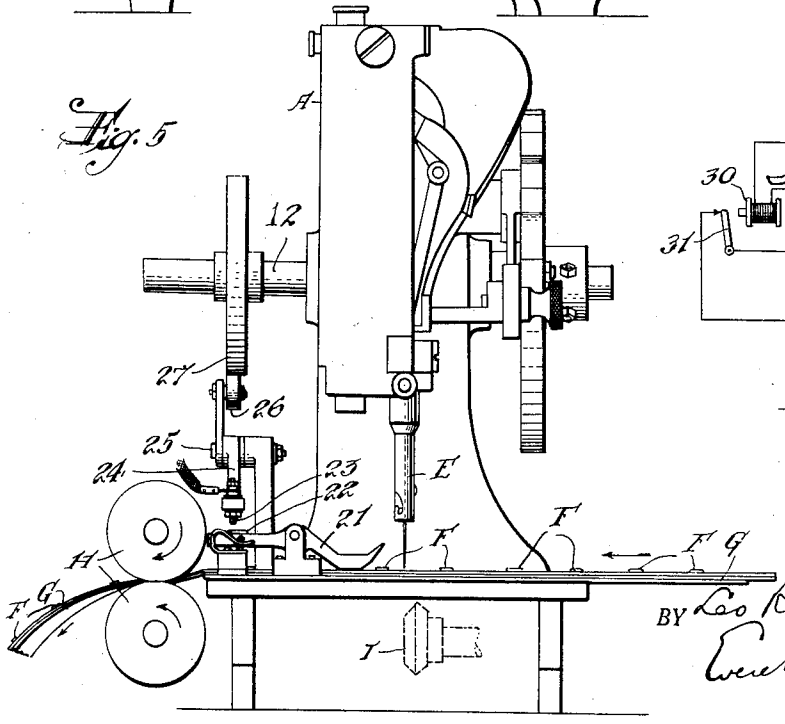


Fig. 5



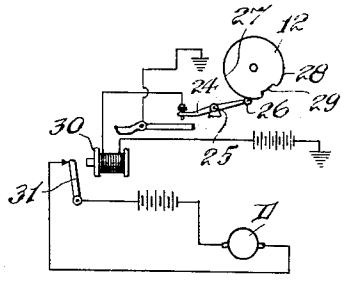


Fig. 6

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Dec. 12, 1933. L. ROSEMAN 1,939,464

AUTOMATIC STOP MECHANISM FOR SEWING MACHINES

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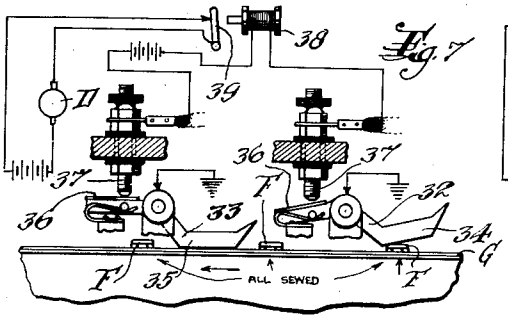


Fig. 7

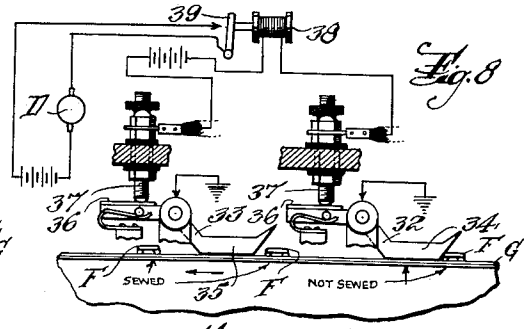


Fig. 8

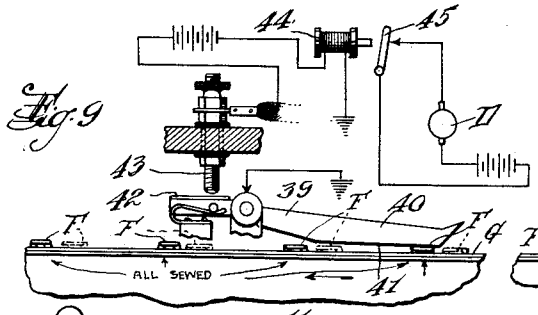


Fig. 9

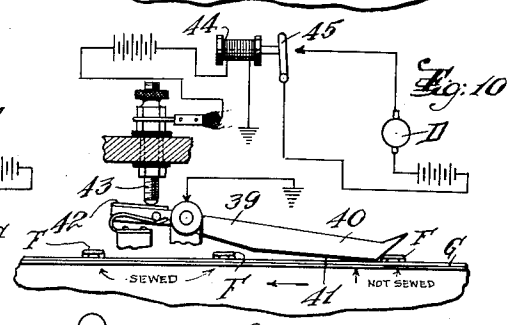


Fig. 10

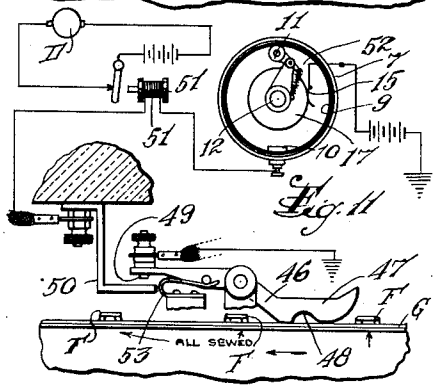


Fig. 11

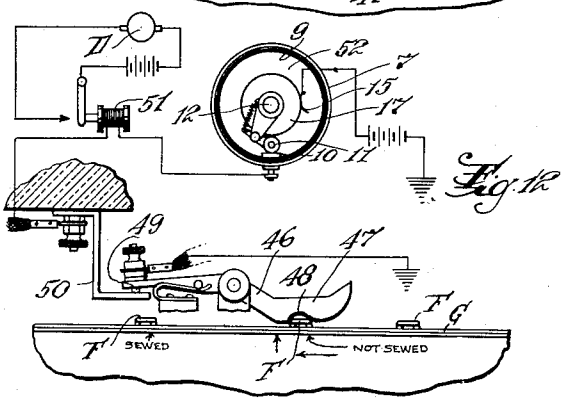


Fig. 12

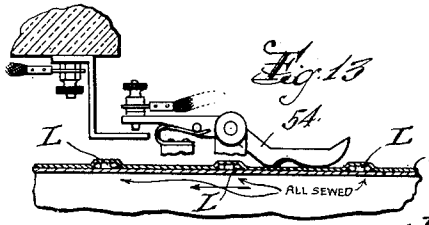


Fig. 13

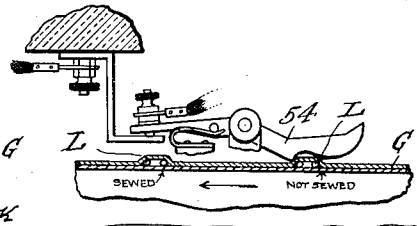


Fig. 14

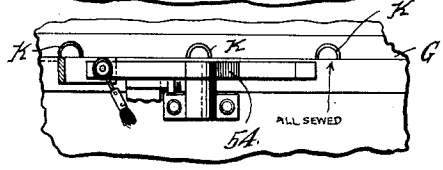


Fig. 15

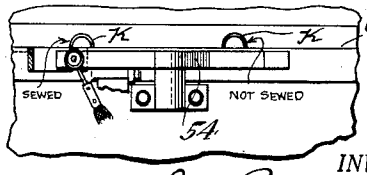


Fig. 16

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Dec. 12, 1933. L. ROSEMAN 1,939,464

AUTOMATIC STOP MECHANISM FOR SEWING MACHINES

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Fig. 17

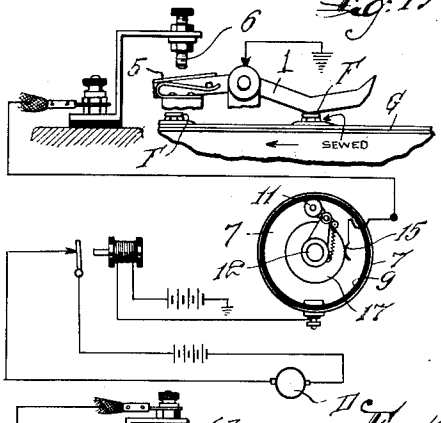


Fig. 18

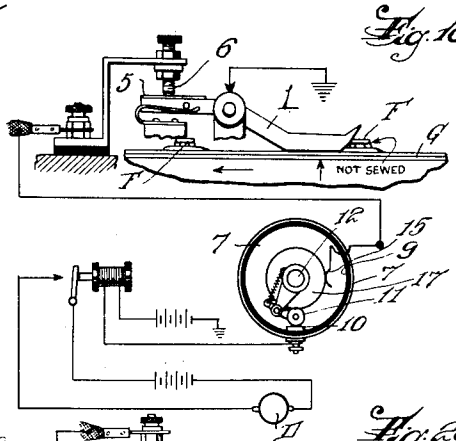


Fig. 19

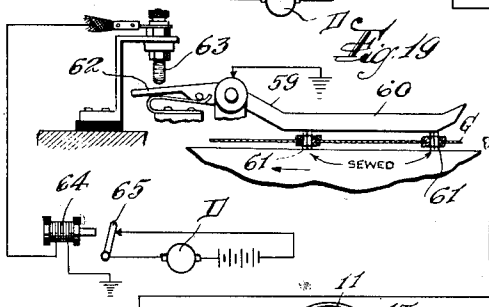


Fig. 20

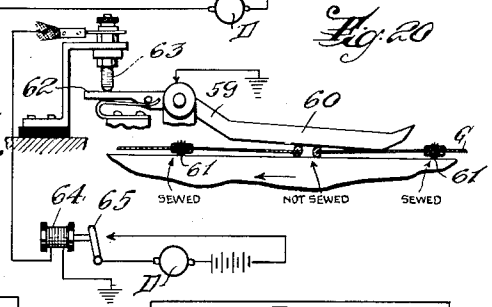


Fig. 21

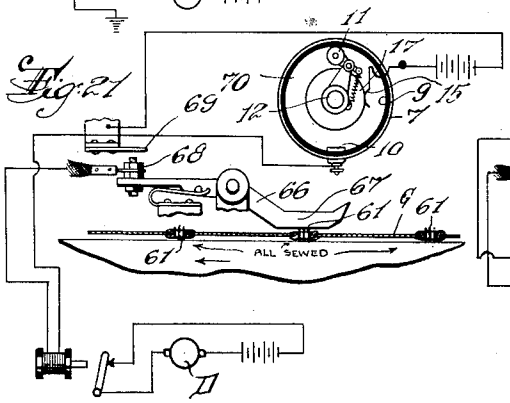


Fig. 22

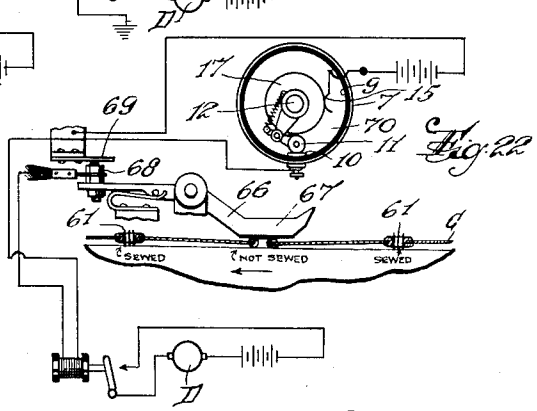


Fig. 23

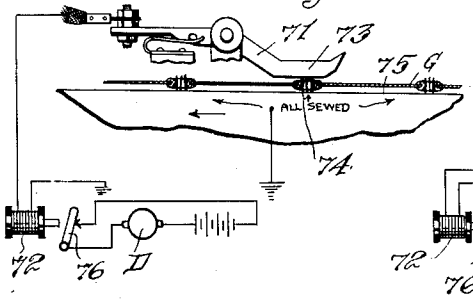
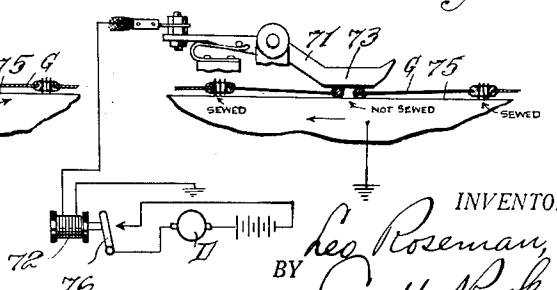


Fig. 24



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Patented Dec. 12, 1933 1,939,464

UNITED STATES PATENT OFFICE

1,939,464

AUTOMATIC STOP MECHANISM FOR SEWING MACHINES

Leo Roseman, Newark, N. J.

Application June 26, 1931. Serial No. 547,039

19 Claims. (Cl. 112—2)

This invention relates generally to machines for operating upon material having objects protruding therefrom in spaced relation, and more specifically to sewing machines for sewing fastener elements, such as hooks or eyes, upon fabric, including novel and improved mechanism for automatically actuating a signal or for stopping such a sewing machine when the thread breaks, or when the supply of thread on the bobbin of the sewing machine becomes exhausted, or when any fastener element is not properly or sufficiently sewed to the fabric, or when a fastener element is misplaced from its proper position or entirely missing. The invention is also intended for use wherever it may be desired to provide mechanism controlled in accordance with the presence or absence, or accuracy of location or attachment, of spaced projections or protruding objects on material being operated upon by a machine.

Another object of the invention is to provide an automatic mechanism of the character described including a member disposed in the path of movement of the projections or protruding objects as the work passes through the machine so that said member is actuated in accordance with the presence or absence, or the accuracy of location or attachment of the projections or objects, whereby a signal is actuated or the machine is stopped, or an electric circuit is closed or opened, when any of said projections or objects is misplaced or missing or is insufficiently attached to the work.

A further object is to provide in mechanism of this character a spring or gravity actuated member in the path of movement of the projections or objects to be engaged directly or indirectly by the projections or objects and actuated in one direction against the spring or gravitational influence by the objects which are properly located and attached to the work, and actuated in the other direction by the spring tension which is insufficient to overcome the resistance to movement of the properly attached projections or objects past said member, but which will prevent the passage of improperly attached projections or objects, so as to cause actuation of the signal or stopping of the machine, etc. upon the approach of the improperly attached projection or object or when an object is misplaced.

Further objects are to provide automatic mechanism of the character described including a novel and improved combination of such members and electrical circuit control mechanism for actuating a signal or stopping the machine, etc.; to provide a novel and improved combination of a plurality of such members and circuit control mechanisms actuated thereby, whereby said members and circuit control mechanisms are normally asynchronously operated when the projections or objects are in proper position or properly attached to the work, to prevent complete closing of the electrical circuit, said circuit control mechanisms being actuated at the same time so as to completely close the circuit when an object is misplaced or missing, or improperly attached to the work, so as to actuate the signal or stop the machine; and to obtain other advantages and results as will be brought out by the following description.

For the purpose of illustrating the principles of the invention, I have shown it in connection with a known type of sewing machine for sewing fastener elements, such as hooks or eyes upon fabric tapes, and I have shown the invention embodied in means for automatically stopping the sewing machine when any of said fastener elements is missing or misplaced or improperly sewed to the tape, but it should be understood that the invention may be embodied in other machines and in other details of construction without departing from the spirit or scope of the invention.

Referring to the drawings in which corresponding and like parts are designated throughout the several views by the same reference characters,

Figure 1 is a side elevation of a sewing machine embodying an automatic stop mechanism constructed in accordance with the invention, portions being broken away for clearness in illustration.

Figure 2 is an end elevation of the sewing machine, showing a portion of the circuit control mechanism in vertical section.

Figures 3, 17 and 18 are schematic illustrations of the automatic stop mechanism.

Figures 4 and 5 are views similar to Figures 1 and 2 respectively, showing a modified form of the invention.

Figure 6 is a view similar to Figure 3 showing the automatic stop mechanism illustrated in Figures 4 and 5, and

Figures 7 to 16 and 19 to 24 inclusive are schematic views of modifications of the invention.

Specifically describing the embodiment of the invention illustrated in Figures 1 to 3 inclusive, the reference character A designates the frame of a sewing machine which has the usual drive

shaft B which is shown as driven through a belt and pulley connection C from an electric motor D. The machine includes a needle bar E of known construction which is actuated by the usual drive mechanism. The machine is in general similar to that shown in my Patent No. 1,742,221, to which reference may be had for a more detailed description.

The machine is shown for sewing hook or eye fastener elements F upon a fabric tape G, the method of sewing and construction of the tape being well known in the art. The tape or work is fed beneath the needle bar past the sewing point by feed rollers H of known construction such as is shown in my above-mentioned patent.

In accordance with the invention, automatic mechanism is provided for controlling the power transmitter of the sewing machine, for example for stopping the motor D and thereby the needle bar E, when the thread breaks, or when the supply of thread upon the bobbin is exhausted, or when the fastener elements are not properly stitched upon the tape, or when any of the fastener elements is misplaced or entirely missing. For this purpose I have shown a feeler 1 pivotally mounted intermediate its ends at 2 on the bed of the machine, and having a finger 3 normally influenced toward the tape G beyond the sewing point, into the path of movement of the fastener elements F, by a spring 4 engaging the other end of the feeler. The feeler carries a contact spring 5 at the end opposite the finger 3, and said contact spring cooperates with a contact screw 6, mounted upon the bed of the machine and insulated therefrom. The spring 4 normally influences the feeler so as to maintain engagement between the contact spring 5 and the contact screw 6, but when a properly sewed fastener element engages the finger 3, the feeler is actuated to disengage the contact spring 5 and screw 6. The spring tension exerted by the spring 4 is such as to overcome the resistance of an improperly sewed fastener element so that when a fastener element which is not sewed or is insufficiently sewed upon the tape reaches the finger 3, the feeler resists further movement of said fastener element and the tape continues to move beneath the feeler, and relatively to the fastener element, and accordingly the contact spring 5 and screw 6 remain in engagement so as to cause stopping of the machine as hereinafter described. The relation of the spring strip 5 to the finger 3 and the screw 6, and the relative strength of the spring contact 5 and the spring 4, are such that the finger 3 may be moved upwardly a considerable distance without breaking the contact 5, 6 so that a partially sewed fastener element which might have sufficient strength to partially raise the finger but not enough strength to completely raise it, will fail to break the contact 5, 6 and will thereby cause stopping of the machine.

Cooperating with the switch 5, 6 is a timer switch generally of known construction and including a casing 7 mounted on the frame of the machine as by a bracket 8 and having an insulated ring 9 thereon. A contact block 10 is arranged at one point on the inner surface of the insulating ring 9 to be engaged by a contact roller 11 mounted on a shaft 12 connected by worm and worm wheel gearing 13 to the drive shaft B of the machine through an insulating coupling 14. This contact roller 11 is connected in an electrical circuit by a follower spring 15 riding in a groove 16 in a disc 17 upon which the roller is mounted, said follower spring being mounted upon and insulated from the bracket 8 and having a binding post 18.

The timer switch and the switch 5, 6 are related to each other and to the proper predetermined spacing of the fastener elements F on the tape G so that the roller 11 is rotated by the shaft 12 in regular cycles and engages the contact block 10 asynchronously with the engagement of the contact spring 5 and screw 6 when the fastener elements are properly spaced and sewed upon the fabric tape. In other words, when the switch 5, 6 is closed, the switch 10, 11 is opened and vice versa; and in accordance with the invention the sewing machine is stopped only when both switches are closed at the same time.

The switch 5, 6 and the timer switch are connected in circuit as shown in Figures 3, 17 and 18 of the drawings to control an electromagnet 19 which in turn actuates a switch 20 connected in circuit with the motor D.

In operation of the mechanism the switch 20 is normally closed to cause operation of the motor D and consequently the sewing mechanism which includes the usual bobbin I. When the fastener elements F are properly located and properly sewed upon the tape G, the contact 5, 6 is closed while the finger 3 is disposed between the fastener elements and is opened when each fastener element passes beneath the finger as shown in Figure 17; and the timer switch 10, 11 is closed while the switch 5, 6 is open. Should an unsewed fastener element engage the finger 3, movement of the fastener element will be stopped, while the tape will continue to move, so that the finger 3 will remain in engagement with the tape, and the switch 5, 6 will remain closed for a period longer than the normal during which the timer switch 10, 11 will be closed; whereupon the electromagnet 19 will be energized so as to open the switch 20 and stop the motor, as shown in Figure 18. Similarly, should a fastener element be missing or misplaced on the tape, the switch 5, 6 will remain closed longer than the normal period, and the switch 20 will be opened in the same manner to stop the machine. Obviously, a breaking of the thread or the exhaustion of the supply of thread on the bobbin will result in a fastener element being insufficiently sewed or unsewed upon the tape, so that the machine will be stopped either upon breaking of the thread or exhaustion of the supply.

A modification of the invention is shown in Figures 4 to 6 inclusive and includes a feeler 21 identical in construction and arrangement with the feeler 1 and having a contact spring 22 corresponding to the contact spring 5. This contact spring cooperates with a contact screw 23 carried by and insulated from one end of a lever 24 pivotally mounted intermediate its ends at 25 on the bed of the machine and having a roller 26 at its other end which follows a cam 27 mounted on the shaft 12. This cam has the main portion 28 of its periphery concentric with the shaft and is provided with a cam notch 29 so that the lever 24 is periodically oscillated. The oscillation of the lever is timed with respect to the oscillation of the feeler 21 so that when the fastener elements F are properly located and sewed upon the tape G, the contacts 22, 23 remain in spaced relation and move simultaneously in the same direction. When an improperly sewed fastener element engages the feeler 21, the feeler is not actuated and remains stationary for a period longer than normal during which the contact screw 23 is brought into engagement with the

contact spring 22. A similar action takes place when a fastener element is misplaced or missing.

The contact spring 22 and screw 23 are connected in an electrical circuit with an electromagnet 30 as shown in Figure 6 of the drawings, and this electromagnet controls a switch 31 corresponding to the switch 20 shown in Figure 3. The operation of the mechanism is similar to that of the mechanism shown in Figures 1 to 3 inclusive, the switch 31 being normally closed to cause operation of the motor D and the magnet 30 being energized upon engagement of the contacts 22, 23 so as to open the switch 31 and stop the motor.

Another modification of the invention is schematically illustrated in Figures 7 and 8 of the drawings wherein are utilized two feelers 32 and 33 each substantially identical in construction with the feeler 1 and both being arranged beyond the sewing point. These feelers are spaced apart so that their fingers 34 and 35 are disposed in the path of movement of the fastener elements F, and each has a contact spring 36 cooperating with a contact screw 37, whereby the feelers are asynchronously actuated when the fastener elements are properly located and sewed to the tape, that is one contact 36, 37 is closed simultaneously with the opening of the other contact. When any fastener element is improperly sewed or unsewed upon the tape or is misplaced or missing, both contacts 36, 37 are closed at the same time as shown in Figure 8 of the drawings. These contacts are connected in circuit with an electromagnet 38 which controls a switch 39 connected in circuit with the motor D, and the operation of the apparatus is substantially the same as that hereinbefore described, the switch 39 being normally closed to cause operation of the motor and being automatically opened to stop the motor when both contacts 36, 37 are closed as the result of an improperly sewed, misplaced or missing fastener element.

In the form of the invention shown in Figures 9 and 10 of the drawings, one feeler 39 is utilized. The finger 40 of the feeler has an elongated surface 41 inclined away from the tape in the direction of movement thereof and of a length to span or engage simultaneously two properly spaced fastener elements F, as shown in Figure 9. The feeler also has a contact spring 42 cooperating with the contact screw 43, and the formation of the surface 41 is such that the contact 42, 43 is held open when the fastener elements are properly spaced and sewed. As one fastener element recedes from the surface 41, the forward end of said surface is brought into the path of movement of the next succeeding fastener element as shown in Figure 9, and should said fastener element be sewed, it will pass beneath the feeler finger 40 and maintain the contact 42, 43 open. However, should an unsewed fastener element approach the feeler finger, the fastener element will be stopped by the finger as shown in Figure 10 of the drawings, and the next preceding fastener element will pass from beneath the feeler finger so as to permit the feeler finger to drop to the tape and thereby close the contacts 42, 43 as shown in Figure 10. The contact screw 43 and the contact spring 42 are connected in a grounded circuit with an electromagnet 44 which controls a switch 45 in circuit with the motor D; and when the fastener elements are properly spaced and sewed, the switch 45 is held closed, while when a fastener element is unsewed or misplaced, the switch 45 is opened to stop the machine.

Figures 11 and 12 show another modification of the invention in which one feeler 46 is utilized and has a finger 47 provided with a notch 48 on its under-surface. The feeler is also provided with a contact point 49 cooperating with a contact strip 50, and the contact point 49 and the strip 50 are connected in circuit with an electromagnet 51 and a timer switch 52 identical with that shown in Figure 3 of the drawings. When the fastener elements are properly located and stitched upon the tape, they enter the notch 48 but slip past and overcome the resistance of the feeler spring 53, but when the fastener elements are improperly stitched they are caught or held in the notch 48 by the resistance of the spring 53, as shown in Figure 12. During operation of the mechanism and while the fasteners are properly stitched and spaced the contacts 49 and 50 and the timer contacts are asynchronously opened and closed as hereinbefore described, but when a fastener element is caught in the notch 48, the contacts 49, 50 are held closed for a period longer than the normal during which the timer contacts are closed so as to complete the circuit and stop the machine.

Figures 13 to 16 inclusive show the same type of mechanism illustrated in Figures 11 and 12 used in connection with eye fastener elements K instead of hook fastener elements, and the eye fastener elements are covered by a strip of fabric L. The eyes form projections beneath the fabric L which engage the feelers, so that the feelers are indirectly actuated by the eyes instead of directly.

The invention is also adaptable for use with so-called eyeleted tape in which the fastener elements are in the form of eyelets, as shown in Figures 19 and 20. Here a single feeler 59 is utilized and has a finger 60 of a length to simultaneously engage and span the distance between two fastener elements, as shown in Figure 19. The stitching 61 passes through the eyelets and projects above the upper side thereof, and when all of the eyelets are properly located and stitched, the feeler contacts 62 and 63 are held out of engagement. However, when an unstitched eyelet passes beneath the feeler, the absence of the stitching permits the feeler finger to descend as shown in Figure 20 to close the contacts 62, 63; and a similar action takes place when an eyelet is missing or out of place. The contacts 62, 63 are connected in circuit with an electromagnet 64 which controls a switch 65 connected in circuit with the motor D, so that the motor is automatically stopped when an unstitched eyelet passes beneath the feeler finger, or when an eyelet is misplaced or missing.

Figures 21 and 22 show a somewhat similar construction wherein the feeler 66 has a finger 67 like that of the feeler 1, to engage only one eyelet at a time, and the feeler controls contacts 68, 69 which are connected in circuit with a timer 70. When the eyelets are properly located and stitched, the contacts 68, 69 are held out of engagement and the machine continues to run, but when an unstitched eyelet passes beneath the feeler, the contacts 68, 69 are closed for a period longer than normal during which the timer contacts are also closed so as to stop the machine as shown in Figure 22.

In all of the constructions hereinbefore described, the fastener element forms no part of the circuit, but it is possible to include the fastener element in the circuit to serve as one of the switches or contacts. Such a construction is

shown in Figures 23 and 24 where the feeler 71 is in general similar to the feeler 1 and is directly connected in circuit with an electromagnet 72. The feeler finger 73 is normally insulated from or held out of engagement with a stitched fastener element by the stitching 74 as shown in Figure 23. The surface 75 over which the eyelet of the fastener element passes is grounded or otherwise connected in the circuit as shown, and when the stitching is omitted, the fastener element is brought into direct contact with both the feeler finger 73 and the surface 75 so as to form a closed circuit through the electromagnet 72. This magnet controls a magnetic switch 76 which in turn controls the motor D so that when the eyelets are properly stitched the motor continues to run, but when an unstitched eyelet passes beneath the feeler finger, the motor is stopped.

While I have shown the relay switch 19, 20 as the electrical device to be operated and to stop the motor D, obviously any other desired device could be controlled as is the relay, for example an electromagnetic clutch; and such a clutch could be arranged between the motor D and the drive shaft of the sewing machine to control the operation of the machine instead of controlling the circuit of the motor D as shown.

Other modifications of the invention will readily occur to those skilled in the art, therefore I do not desire to be understood as limiting myself, except as required by the following claims construed in the light of the prior art.

Having thus described my invention, what I claim is:

1. The combination with a sewing machine including sewing mechanism for sewing spaced objects upon work, and means for moving the work with the objects thereon past the sewing point, of a feeler beyond the sewing point to engage said objects, and means controlled by said feeler to stop the machine when an insufficiently sewed object engages the feeler, said feeler engaging said objects in one relation when the objects are properly spaced and sewed and engaging the objects in another relation when the latter are insufficiently sewed.

2. The combination with a sewing machine including sewing mechanism for sewing spaced objects upon work and means for moving the work with the objects thereon past the sewing point, of a feeler beyond the sewing point normally yieldingly influenced into the path of said objects to engage them, said feeler being temporarily moved out of said path by properly sewed objects and resisting movement by and remaining in the path of insufficiently sewed objects, and means controlled by said feeler to stop said machine when an insufficiently sewed object engages said feeler.

3. The combination with a sewing machine including sewing mechanism for sewing spaced objects upon work and means for moving the work with the objects thereon past the sewing point, of means for stopping said machine including a plurality of relatively movable devices one of which is beyond the sewing point and is normally engaged by said objects, and means controlled by said devices to stop said machine when said devices reach a certain relation to each other, said devices being normally actuated out of said certain relation when the objects are properly sewed and reaching said certain relation when an object is insufficiently sewed.

4. The combination with a sewing machine including sewing mechanism for sewing spaced objects upon work and means for moving the work with the objects thereon past the sewing point, of means for producing a certain result including a plurality of relatively movable devices one of which is beyond the sewing point and is normally yieldingly influenced into the path of movement of said objects so as to be temporarily moved out of said path by properly sewed objects and resist movement by and remain in the path of insufficiently sewed objects, said devices cooperating when they reach a certain relation to cause said result to be produced and being actuated out of said certain relation when the objects are properly sewed and reaching said certain relation when an object is insufficiently sewed.

5. The combination set forth in claim 3 wherein said means for the stopping of the machine is electrically operated, and said devices control the electric circuit of said means.

6. The combination set forth in claim 1 wherein said means controlled by the feeler is electrically operated, and said feeler controls the electric circuit thereof.

7. The combination set forth in claim 2 wherein said means controlled by the feeler is electrical and said feeler controls the electric circuit through said means.

8. The combination set forth in claim 3, wherein said means for stopping the machine is electrically operated, and each of said devices includes a switch in circuit with said means so that said switches are asynchronously opened and closed when said objects are properly sewed and both are closed at the same time when an object is insufficiently sewed to actuate said means to stop the machine.

9. The combination with a sewing machine including mechanism for sewing spaced objects upon work, and means for moving the work with the objects thereon past the sewing point, of mechanism for stopping said machine including a feeler normally yieldingly influenced into the path of movement of said objects and actuated out of said path by each said object passing beneath said feeler, and means operating in timed relation to the desired spacing of said objects, said feeler and said means operating asynchronously while said objects are properly spaced and cooperating to stop the machine upon failure of actuation of said feeler by an objects.

10. The combination with a sewing machine including mechanism for sewing spaced objects upon work, and means for moving the work with the objects thereon past the sewing point, of mechanism for stopping said machine including a feeler normally yieldingly influenced into the path of movement of said objects and actuated out of said path by each said object passing beneath said feeler, a switch actuated by said feeler and closed except when said feeler is actuated by an object, a second switch in circuit with the first switch and closed in timed relation to the desired spacing of said objects asynchronously with the first switch, and an electrical device in said circuit actuated only when both said switches are closed at the same time to stop said machine.

11. The combination set forth in claim 10 wherein said feeler is constructed to resist actuation by an insufficiently sewed object so that the switch actuated by said feeler remains closed when an insufficiently sewed object engages the feeler.

12. The combination set forth in claim 4, wherein said means for stopping the machine is

electrically operated, and each of said devices includes a switch in circuit with said means so that said switches are asynchronously opened and closed when said objects are properly sewed and both are closed at the same time when an object is insufficiently sewed to actuate said means to stop the machine.

13. The combination with a sewing machine including sewing mechanism for sewing spaced objects upon work, and means for moving the work with the objects thereon past the sewing point, of a feeler beyond the sewing point to engage said objects, and a device controlled by said feeler to produce a certain result when an insufficiently sewed object engages said feeler, said feeler engaging said objects in one relation when the objects are properly spaced and sewed and engaging the objects in another relation when the latter are insufficienty sewed.

14. The combination with a sewing machine including sewing mechanism for sewing spaced objects upon work, and means for moving the work with the objects thereon past the sewing point, of a feeler beyond the sewing point to engage said objects, said feeler engaging said objects in one relation when the objects are properly sewed and engaging the objects in another relation when the latter are insufficiently sewed, an electrical switch closed by said feeler when an insufficiently sewed object engages the feeler, and an electrical device for producing a certain result controlled by said switch.

15. The combination with a sewing machine for sewing spaced objects on work including sewing mechanism and means for moving the work past the sewing point, of a movable feeler in the path of movement of said objects and of a predetermined length to be engaged simultaneously by two adjacent properly spaced objects, and means controlled by said feeler to produce a certain result when said objects become improperly spaced.

16. The combination with a sewing machine for sewing spaced objects on work including sewing mechanism for making stitches over and projecting above the objects, and means for moving the work past the sewing point, of a feeler normally influenced into the path of movement of said objects beyond the sewing point and of a predetermined length to be engaged simultaneously by the projecting stitching of two properly spaced and sewed objects and moved out of said path thereby, and means controlled by said feeler to produce a certain result when said feeler is engaged solely by an insufficiently sewed object.

17. The combination with a sewing machine for sewing spaced electricity conducting objects on work including sewing mechanism for making stitches over and projecting above the objects, and means for moving the work past the sewing point, of a feeler normally influenced into the path of movement of said objects beyond the sewing point to be electrically insulated from said objects by said stitching, a conductor to be normally insulated by said stitching from said objects, and electrically operated means for producing a certain result connected in circuit with said feeler and said conductor and actuated when said feeler directly engages an unstitched object and said object directly contacts with said conductor.

18. The combination with a sewing machine including sewing mechanism for sewing spaced objects upon work and means for moving the work with the objects thereon past the sewing point, of a plurality of normally relatively movable devices one of which is continuously movable in regular cycles and the other of which is in the path of movement of said objects and actuated by each passing object, and means controlled by said devices for producing a certain result when said devices reach a certain relation to each other, said devices being normally actuated out of said certain relation and reaching said certain relation upon failure of actuation of the second-mentioned device by an object.

19. The combination with a sewing machine including sewing mechanism for sewing spaced objects upon work, and means for moving the work with the objects thereon past the sewing point, of means for producing a desired result including a plurality of relatively movable devices one of which is continuously movable in regular cycles and the other is yieldingly influenced into the path of movement of said objects beyond the sewing point to be engaged and actuated by each properly sewed and spaced object which engages the device, the second-mentioned device resisting actuation by insufficiently sewed objects, and means controlled by said devices for producing a certain result when said devices reach a certain relation to each other, said devices being normally actuated out of said certain relation and reaching said certain relation upon failure of actuation of the second-mentioned device by an object.

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