

W. W. SCOTT.
FABRIC GUIDING DEVICE FOR SEWING MACHINES.
APPLICATION FILED JULY 11, 1918.

1,399,406.

Patented Dec. 6, 1921.

3 SHEETS—SHEET 1.

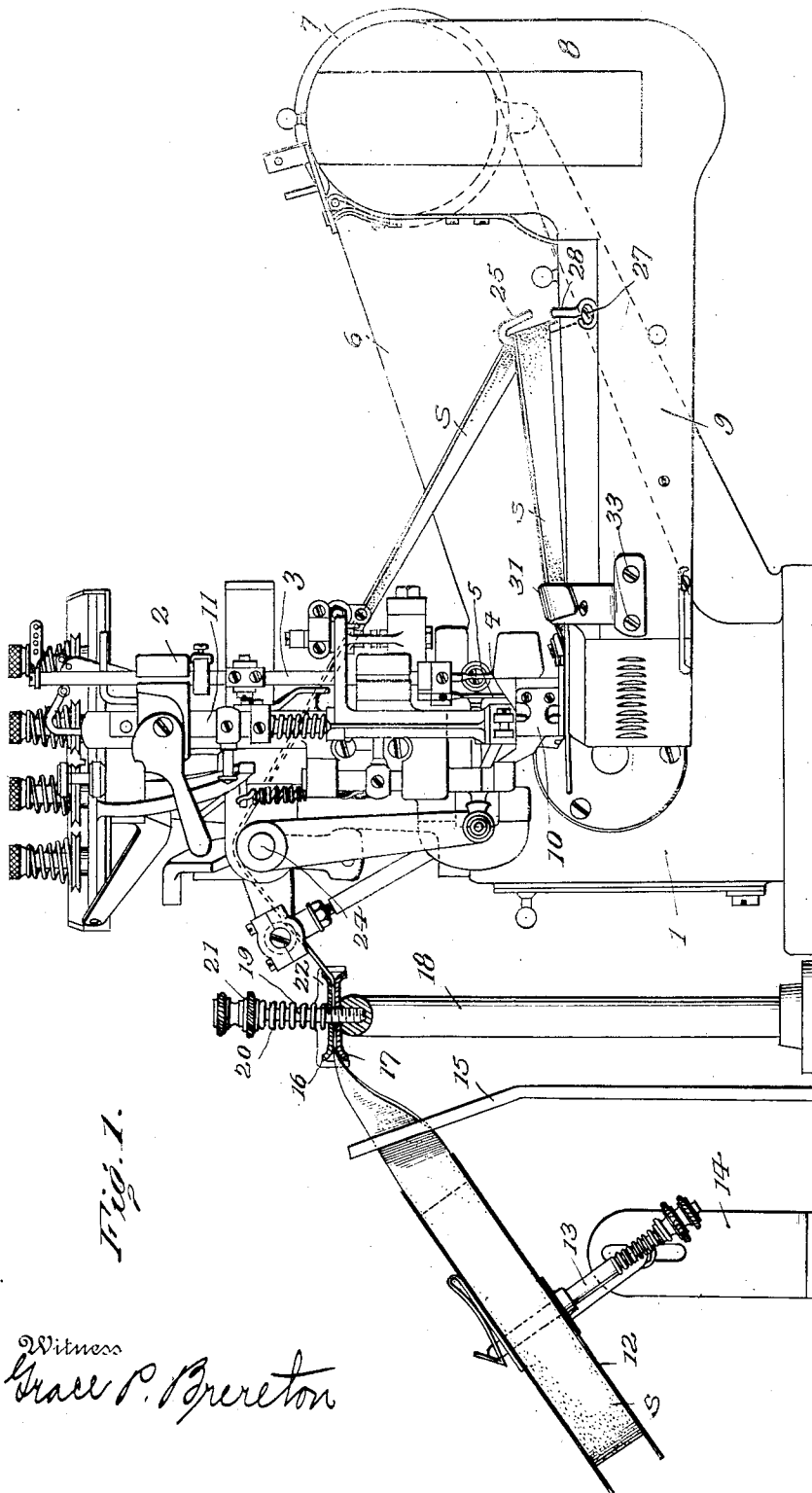


Fig. 1.

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Fig. 2.

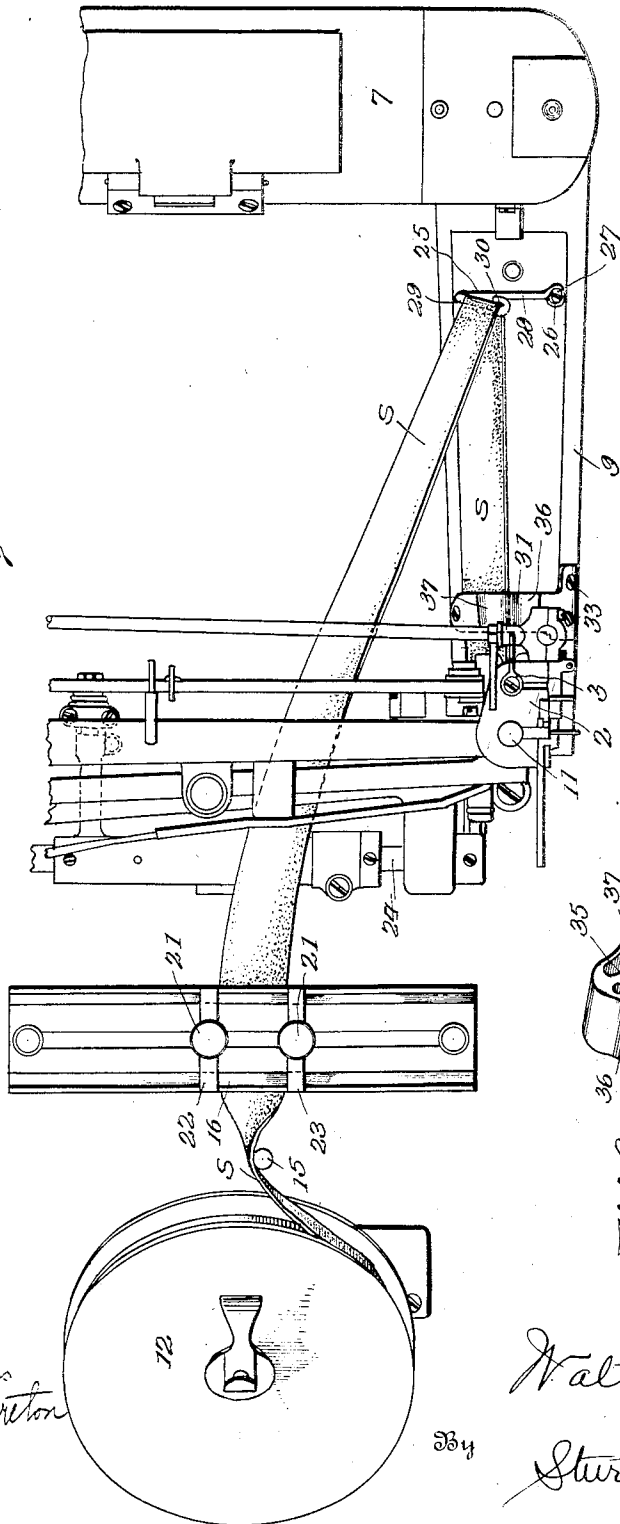


Fig. 4.

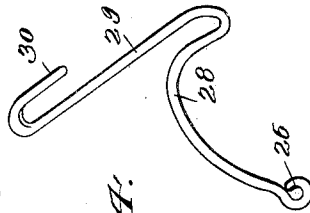
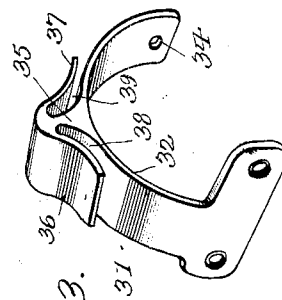


Fig. 3.



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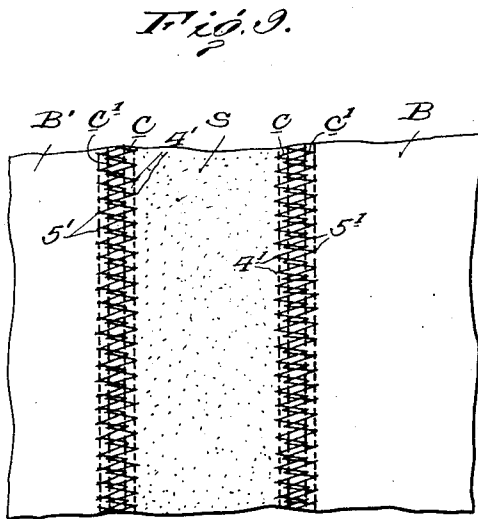
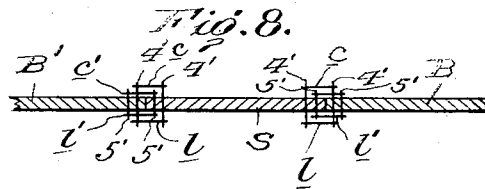
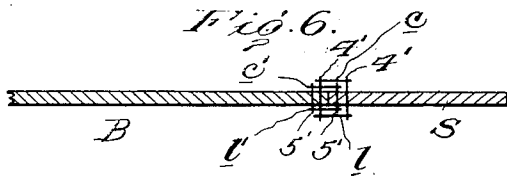
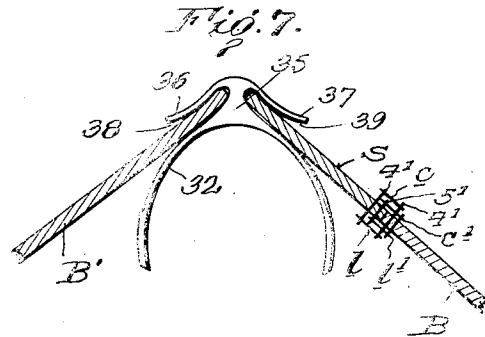
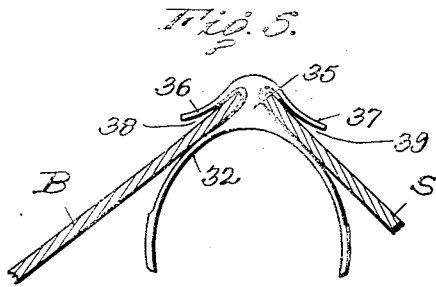
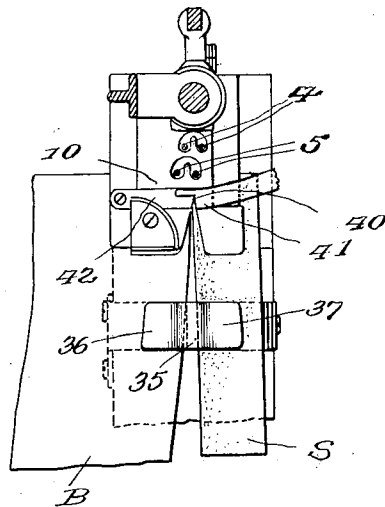


Fig. 10.



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UNITED STATES PATENT OFFICE.

WALTER W. SCOTT, OF AMSTERDAM, NEW YORK, ASSIGNOR TO UNION SPECIAL MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

FABRIC-GUIDING DEVICE FOR SEWING-MACHINES.

1,399,406.

Specification of Letters Patent.

Patented Dec. 6, 1921.

Application filed July 11, 1918. Serial No. 244,367.

To all whom it may concern:

Be it known that I, WALTER W. SCOTT, a citizen of the United States, residing at Amsterdam, in the county of Montgomery, State of New York, have invented certain new and useful Improvements in Fabric-Guiding Devices for Sewing-Machines, of which the following is a description, reference being had to the accompanying drawing and to the figures of reference marked thereon.

The invention relates to new and useful improvements in guiding devices for sewing machines, and more particularly to guiding devices for guiding a strip so that it may be stitched to a body fabric.

An object of the invention is to provide a sewing machine having a suspended work supporting arm and means for feeding the material being stitched off from the end of the arm, with a strip guiding means which includes devices located at the rear of the machine for supplying a continuous strip, and devices attached to the work supporting arm of the machine for reverting the strip and feeding the same to the stitching mechanism in a direction parallel with the work supporting arm.

A further object of the invention is to provide guiding devices of the above character, with guiding means located adjacent the presser foot of the sewing machine for guiding the strip and the body fabric to which this strip is to be attached.

A still further object of the invention is to provide a tension means at the rear of the machine for placing a slight tension on the strip on its way from the supply reel to the reverting guide.

These and other objects will in part be obvious and will in part be hereinafter more fully described.

In the drawings which show by way of illustration one embodiment of the invention,—

Figure 1 is an end elevation, showing a sewing machine and my improved strip supporting and guiding devices which are used in conjunction therewith;

Fig. 2 is a plan view showing a part only of the sewing machine;

Fig. 3 is a perspective view of the strip and body fabric guide located adjacent the presser foot;

Fig. 4 is a perspective view of the strip reverting guide;

Fig. 5 is a view showing more or less diagrammatically, the guide adjacent the presser foot in end elevation with the body fabric and the strip passing therethrough;

Fig. 6 is a view showing more or less diagrammatically the body fabric and strip attached together;

Fig. 7 is a view similar to Fig. 5, but showing the position of the strip and second portion of the body fabric as it passes through the guide for the joining of the strip to the second or other portion of the body fabric;

Fig. 8 is a diagrammatic view showing the strip joined to the two portions of the body fabric—the said figure being an edge view;

Fig. 9 is a plan view of the same;

Fig. 10 is a detail view showing in plan a portion of the presser foot, the end of the work supporting arm and the strip and body fabric guide.

The invention is directed broadly to the guiding means of a sewing machine for directing a strip so that it may be stitched to a body fabric. It has been found that in forming knit undergarments, wherein the wale of the material runs in a vertical direction over the shoulder, that the shoulder seam often unduly stretches, thus distorting the garment. It has been found desirable, in order to prevent this undue stretching, to insert a shoulder strap at the shoulder of the garment, which strap runs in a direction lengthwise of the shoulder and crosswise of the wale of the body fabric. By the inserting of such a strap the undue stretching of the garment at the shoulders is prevented. While my improved guiding means is, of course, capable of other uses, it is especially adapted for the inserting of these shoulder straps in a knitted garment during the manufacture of the garment.

I have shown the invention as applied to a sewing machine of the type wherein the material as it is stitched is fed off from a work supporting arm, which is preferably suspended, so that tubular articles may be stitched, if desired. The sewing machine which I have illustrated in the drawings is similar in construction to that shown and described in the application of Joseph Ber-

ger, Jr., Serial No. 40,895, filed July 20th, 1915.

My improved guiding means includes a support for the strip or shoulder strap, which is fed in a continuous strip to the stitching mechanism. This support is in the form of a reel located in the rear of the machine. The shoulder strap will be referred to hereinafter as a strip, it being understood that this term is used in the broad sense to cover other forms, such as binding strips, stay strips, and the like. This strip is led from the reel through a tensioning means which puts a slight tension on the strip. It is then led underneath the overhanging arm and to a point well up on the work supporting arm where it passes through the reverting guide so that the strip after leaving the reverting guide is fed to the stitching mechanism in a direction parallel with the work supporting arm. Adjacent the presser foot, there is a guide for the strip and also a guide for the body fabric which properly directs the edges of the strip and the body fabric, so that they may be united by the stitching mechanism. The stitching mechanism, as shown in the patent above referred to, is of the character wherein the edge of the strip and the edge of the body fabric may be abutted or slightly overlapped and joined at the meeting edges and covered by the stitching threads.

Referring more in detail to the drawings, I have shown my invention as applied to a sewing machine having a standard 1, carrying an overhanging arm 2, in which a needle bar 3 reciprocates, carrying the needles 4—4 and 5—5. This stitching mechanism in detail may be of the character shown and described in the patent and further description thereof is not thought necessary. Extending outwardly from the standard 1 is an arm 6, which carries in turn a horizontal arm 7, which has a depending support 8, and at the lower end of this depending support 8 is the work supporting arm proper, which is indicated at 9 in the drawings. The work supporting arm 9 terminates underneath the outer end of the overhanging arm 2 and the stitching mechanism operates at the free end of this work supporting arm. The materials being stitched are fed off from the arm by a feeding mechanism, which may be of the usual character. The material is held on the work support by a presser foot 10, carried by a presser bar 11. The presser foot 10 is slotted so as to receive the upturned edges of the fabric sections which are to be joined and said presser foot is so constructed as to turn these edges downwardly again into the plane of the fabric sections before they reach the stitching mechanism with the edges well crowded together or slightly overlapped. This insures that the edges of the fabric

sections when joined will be held closely together and not gap, which would make an unsightly seam. The stitching mechanism, as above noted, is of the character shown and described in the patent and includes the necessary devices for forming parallel lines of stitching and cross threads which thoroughly cover the meeting edges of the fabric sections.

In Figs. 6 and 8 of the drawings, I have shown more or less diagrammatically, the shoulder strap or strip S which has been stitched to the body garment B and to the body garment B'. These fabric sections are united by the stitching mechanism. The needle threads are indicated at 4'—4' and 5'—5'; the looper threads are indicated at l and l' and the cross threads on the upper surface of the fabric are indicated at c and c'. This stitching mechanism may be varied—the essential feature being that it shall be of a character which will unite the meeting edges of the shoulder strap or strip, indicated at S, and the body fabrics B and B', and cover the meeting edges so as to make neat seams.

A trimming mechanism, such as shown in the patent, may be used, if desired, to trim both of the edges which are to be joined, or either edge; or, if desired, the trimming mechanism may not be used and the edges of the fabric sections united without being trimmed.

My improved guiding means consists of a supply reel on which the shoulder strap or strip, indicated at S, is mounted. This reel is shown in Fig. 1 of the drawings, at 12. The reel is mounted on a shaft 13, carried by a bracket 14, and said reel may be of any desired construction. The strip after leaving the reel passes a guiding finger 15, and thence through a tensioning means consisting of two plates 16 and 17—the strip passing between these plates. The plates are mounted on a standard 18. At each end of the plate there is a post 19 on which is mounted a spring 20 and nuts 21 which serve to vary the tension of the spring. These springs at the ends of the plates force the upper plate 16 against the lower plate and thus places the tension on the strip which passes between the plates. Adjustable guides 22 and 23 are provided which may be moved along the plates and set so as to direct the strip between the plate at the proper region for guiding the strip from the reel to the work supporting arm of the sewing machine. There is a cross shaft 24 at the rear of the machine, and the strip, after leaving the tensioning plates, passes over this cross shaft which serves as a guide for the strip. Mounted on the work supporting arm 9 is a reverting guide 25, said reverting guide being preferably formed of wire having an eye 26, through which a

screw 27 may be inserted for securing the reverting guide to the work supporting arm. Said wire is bent so as to lie closely against the curved surface of the work supporting arm, as indicated at 28 in the drawings, and then is bent upwardly at an angle to the vertical, as indicated at 29, and thence backwardly, as indicated at 30, to form an open strip guide. The strip after leaving the cross-shaft 24 passes through this reverting guide. Said strip runs over the portion 29 and the turned back end 30 holds the strip on said portion 29. After leaving this reverting guide, the strip passes in a direction substantially parallel with the work supporting arm, as clearly indicated in Figs. 1 and 2 of the drawings.

Located adjacent the presser foot is a combined strip and body fabric guide, indicated at 31. This guide is shown in perspective view in Fig. 3 and consists of a supporting shank 32, which is curved to conform to the curved surface of the work supporting arm. This shank is secured to the work supporting arm by screws 33 which pass through one end of the shank and into the arm and also a screw which passes through the opening 34 at the other end of the shank. The shank has a central raised portion 35 which extends laterally, as at 36, and also at 37 at each side of the raised portion 35. These portions are substantially parallel with the outer face of the shank and form respectively the guiding recesses 38 and 39. The guiding recess 39 receives the strip S and directs the same underneath the presser foot. This guiding recess 39 is shaped so as to turn up slightly the inner edge of the strip or the edge which is to be stitched to the body fabric. Likewise, the guiding recess 38 is also shaped so as to turn up slightly the edge of the body fabric and these upturned edges pass into the guiding channel 40 of the presser foot 10 (see Fig. 10 of the drawings.)

The trimming mechanism of the sewing machine includes trimming blades 41 and 42, which are horizontally disposed and which will operate to trim these upturned edges provided they extend a sufficient distance in a vertical direction upwardly through the guiding channel in the presser foot. I prefer, however, to form my guide 31 so that the edges will not be raised sufficiently to be trimmed, for the reason that in stitching a shoulder strap to the body portion of the garment, the shoulder parts are shaped and the edge properly cut for the inserting of the strip, and the strip is preferably trimmed to the proper width, so that no trimming of the parts is necessary in order to produce a finished garment.

In the operation of my machine, the strip passes continuously through the guiding means and to the stitching mechanism. The

operator inserts one shoulder section in the guiding recess 38 and it passes underneath the presser foot and will be stitched to this shoulder strap. The other shoulder section is passed through the guiding recess and stitched to the strap. The operator then passes the section of another garment through the guiding recess 38, and this may continue until a bundle of garments have been stitched to the strip which forms the shoulder straps of the garments. The strip with the sections of the garments attached thereto is again passed through the guiding recess 39 with the opposite or free edge of the strip positioned so as to be joined to the other sections of the garments, which are indicated at B' in the drawings.

In Figs. 7 and 8, I have shown this positioning of the strip and the body fabric. The sections of the body fabric are one after the other attached to the strip and, of course, in such a manner that the strip may be cut at the shoulder and at the neck portion of the garment, so as to leave the shoulder strap properly inserted between the front and rear edges of the shoulder sections of the garment joining the body sections by the stitching. During the second operation, wherein the shoulder strap is stitched to the other sections of the body fabric, of course the reverting guide is not used and the strip is severed from the supply, so that no further feeding of the strip from the supply occurs during this second operation.

It is obvious that minor changes in the details of construction and the arrangements of parts may be made without departing from the spirit of the invention as set forth in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination with a sewing machine having a work supporting arm, a presser foot, stitching mechanism operating at the free end of said arm, and means for feeding the material being stitched off from the end of said arm; of a strip guiding means for directing a continuous strip to the stitching mechanism, said strip guiding means including devices for supporting a strip supply at the rear of the machine, a reverting guide on the work supporting arm adjacent the opposite end of said arm from the stitching mechanism, whereby the direction of movement of the strip may be reversed and the strip fed to the stitching mechanism in a direction substantially parallel with the work supporting arm, and a guide located adjacent the stitching mechanism for directing said strip beneath the presser foot and for directing the body fabric to the stitching mechanism whereby the strip and body fabric will be united.

2. The combination with a sewing machine having a work supporting arm, stitching mechanism and means for feeding the material being stitched off from the end of
5 said work supporting arm, of a strip guiding means for directing a continuous strip to the stitching mechanism, said strip guiding means including a strip supporting reel located at the rear of the machine, a tension means through which said strip passes,
10 a reverting guide on the work supporting arm in advance of the stitching mechanism, whereby the direction of movement of the strip may be reverted and the strip fed to
15 the stitching mechanism in a direction substantially parallel with said work supporting arm, and a guiding device located adjacent the presser foot for receiving said strip and for receiving a body fabric and directing the strip and body fabric to the stitching mechanism, whereby they will be united.
20 3. The combination with a sewing machine having a work supporting arm, stitching mechanism and means for feeding the
25 material being stitched off from the end of said work supporting arm, of a strip guiding means for directing a continuous strip to the stitching mechanism, said strip guiding means including devices for supporting a strip supply at the rear of the machine, 30 a reverting guide on the work supporting arm in front of the stitching mechanism, whereby the direction of movement of the strip may be reversed and the strip fed to the stitching mechanism in a direction substantially parallel with said work supporting arm, and guiding devices between the strip supply and the reverting guide for directing the strip, said guiding devices being located at one side of the vertical plane 40 passing lengthwise through the work supporting arm, so that the operator will have a clear range of vision of the stitching point.
- In testimony whereof, I affix my signature, in the presence of two witnesses. 45
WALTER W. SCOTT.
- Witnesses:
C. McNEIL,
J. F. KELLY.