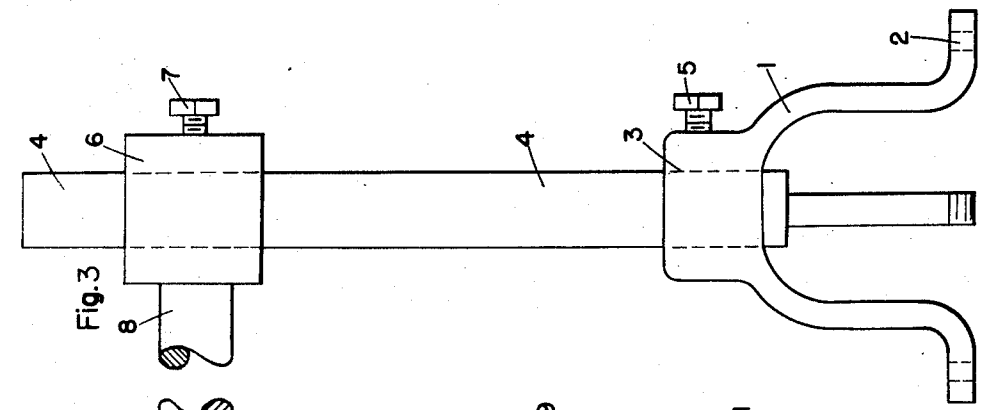
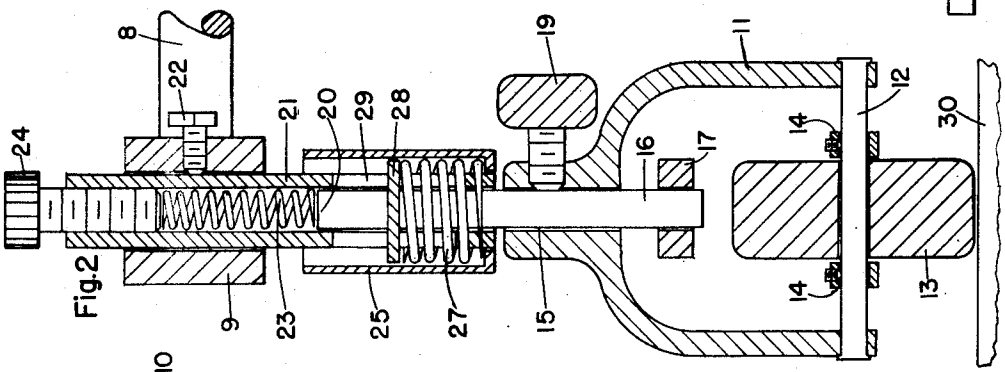
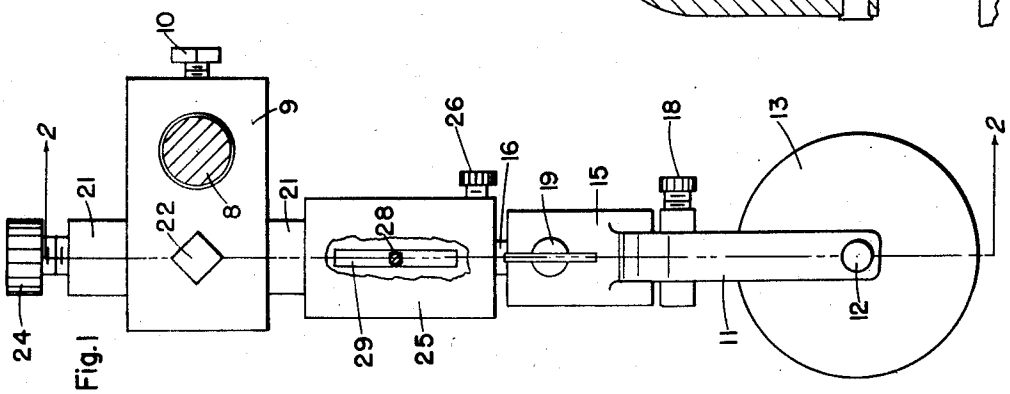
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FABRIC GUIDE FOR SEWING MACHINES

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FABRIC GUIDE FOR SEWING MACHINES

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9 Claims. (Cl. 112—214)

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The present invention is directed to sewing machines and more particularly to a special device capable of being attached thereto, which acts as a guide for fabric as it passes through the sewing machine.

Fabric guides for sewing machines have long been known and used. They are of various characters. Most of such devices were intended to be used for guiding relatively narrow fabrics and they were not capable of acting as guides where relatively wide and long pieces of fabric were being sewed. This applies especially to such large sized fabrics as are used in the manufacture of curtains, draperies and similar hangings. As far as I am aware, no satisfactory device of this character has been on the market, whereas the demand for the same is relatively great.

It is among the objects of the present invention to provide a device for guiding fabric which is capable of use in connection with the manufacture of curtains, draperies and the like.

It is also among the objects of the present invention to provide a device of this character which may be attached to the bed of the sewing machine and which may be adjusted in a considerable number of positions so as to guide the fabric under all conditions.

It is also among the objects of the present invention to provide a fabric guide which is simple in construction, which is light in weight and wherein the pressure thereof on the fabric may be easily and readily adjusted to accommodate the conditions under which it is used.

In practicing the present invention there is provided a base or stand which may be secured to the bed of the sewing machine or which may be placed alongside the machine and which carries the fabric guide. An arm extending from the base carries the guiding mechanism. The latter consists essentially of a wheel having a relatively wide face and capable of rotation on a horizontal axis. It usually cooperates with a driven roller underneath the fabric, said wheel resting upon said roller. The wheel is held in a yoke in such a manner that it may be adjusted so as to be in alignment with the direction of travel of the fabric from the needle, or it may be placed at any desired angle thereto. There is also provided means for yieldingly pressing the wheel on to the fabric and a counterspring or the like is incorporated in the device so as to minimize or balance the weight of the wheel and its associated parts. Thereby a delicate and close adjustment of the pressure of the wheel on the fabric is readily obtainable.

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In the accompanying drawing constituting a part hereof, and in which like reference characters indicate like parts.

Fig. 1 is a side elevational view of a fabric guide for sewing machines made in accordance with the present inventions, some parts being shown diagrammatically and other parts being broken away for clearness;

Fig. 2 is a vertical cross-sectional view taken along the line 2—2 of Fig. 1, some parts being shown in elevation and other parts being shown diagrammatically, and

Fig. 3 is a front elevational view of the stand or base for the fabric guide, some parts being shown diagrammatically and illustrating means for adjusting the position of the arm of the device.

The stand or base 1 may be a tripod or the like, having openings 2, whereby the same may be bolted or otherwise secured to the bed of the sewing machine, the floor or any other suitable support. In the top 3 of base 1 is a circular opening through which the lower end of a rod 4 extends. Set screw 5 provides means for fixing the position of the rod in said opening in any desired position. A collar 6 surrounds the upper part of rod 4 and a set screw 7 holds the same in adjusted position on rod 4. Fixed in collar 6 is a horizontal arm 8 which extends laterally to the fabric guide.

Arm 8 extends into an opening in block 9 and a set screw 10 provides means for fixing arm 8 in adjusted position in said block. By means of set screws 5, 7 and 10, rod 4 and arm 8, together with collar 6, may be adjusted in several directions and the effective lengths of the rod and arm altered so that the fabric guide may be readily adjusted into the proper position for operation under all circumstances.

A yoke 11 has a horizontal shaft 12 passing through the lower end thereof and being fixed therein. A wheel 13 having a relatively wide face is loosely mounted on shaft 12. Collars 14 are fixed on shaft 12 by means of set screws in order to limit the lateral motion of wheel 13. The wheel may be made of any suitable material, such as metal, plastic or the like, and it has been found that a rubber composition is highly suitable for the purpose since it provides the desired amount of friction so as to act properly in guiding the fabric in contact therewith.

Through an opening 15 in the upper part of yoke 11, there passes a rod 16 having a collar 17 at the lower end thereof, held in place by set screw 18. A thumb screw 19 in the upper part of the yoke bears against an intermediate portion of

rod 16 in order to fix the same in relative position to the yoke. The upper end 20 of rod 16 passes into hollow sleeve 21 acting as a guide for the upper sides of rod 16 and which in turn is held by set screw 22 in collar 9. A coil spring 23 in sleeve 21 rests on top 20 and an adjusting screw 24 threaded into the upper end of sleeve 21 bears against the upper end of spring 23 and provides means for adjusting the tension thereon.

Surrounding the lower part of sleeve 21 and fixed thereto is a cylindrical member 25, being held against sleeve 21 by set screw 26. A coil spring 27 within cylinder 25 surrounds sleeve 21 and rests against the bottom of the cylinder. A key 28 passes through a pair of vertical diametrically opposite slots 29 in sleeve 21 and through a suitable opening in rod 16. The upper end of spring 27 bears against the under side of key 28 and tends to raise rod 16 and wheel 13 together with their associated parts. This upward spring pressure balances the weight of such elements.

In use, the sewing machine is provided with a relatively wide horizontal roller 30. On the bed of the machine over which the fabric after which it is sewed passes, said roller is preferably power driven. Wheel 13 is placed so that a vertical plane passing therethrough and perpendicular to shaft 12 is at one side parallel to the plane of the needle of the sewing machine. Wheel 13 is adjusted to a position above roller 30 and screw 24 is adjusted so that the proper amount of pressure is exerted by spring 23. Thereby wheel 13 contacts with the fabric, which in turn contacts with roller 30. The rotation of the roller causes similar rotation of wheel 13 and thus the fabric is moved by positive action away from the needle of the machine.

In many cases it is desirable and often necessary to guide the fabric at an angle to its normal path of travel. To accomplish this, thumb screw 19 is loosened and yoke 11 is twisted about the rod 16 until wheel 13 is at a sufficient angle to the aforesaid vertical plane. Then the thumb screw is tightened. Under these conditions, wheel 13 in cooperation with roller 30 tends to move the sewed fabric laterally in one direction or the other as it passes away from the needle. This will give a desired direction so that the sewing operation continues smoothly and at high speed.

The device described herein has a number of advantages in actual operation and particularly in quantity production. The device is sturdy and strong and is capable of withstanding rigorous service in connection with high speed sewing machines. Because of the counterspring arrangement, the weight of the guide is balanced and it may be used for guiding sheer and fine fabrics of extremely light weight with equal facility to guiding heavy fabrics. In the latter case, spring pressure is so adjusted as to adequately guide the same. Because of the swivel arrangement of the guide wheel, the latter may be placed at an angle and thus it will feed bias fabrics at the same rate as such fabrics are passed through the sewing machine itself. Feeding of very wide lengths of fabrics is uniform at all times, thus preventing any interference with the sewing operation. The work of the operator is much easier and simple in that the operator is not under the burden of watching the side of the fabric, which is guided automatically by the aforesaid device. The operator's hands are free for the actual sewing operation and thereby a better product is obtained and the production by the operator is increased.

Although the invention has been described setting forth a single embodiment thereof, various changes may be made in the details of the invention within the scope thereof. For instance, bar 8 and rods 4 and 16 which are shown as solid, may be tubular members or may be of any other form. There may be introduced on rod 16 a collar suitably held by a set screw at a point just above the yoke. This will limit the relative movement of rod 16 and the wheel attached thereto. Roller 30 is usually sufficiently wide so that it extends not only at the rear of the wheel but over practically the entire width of the machine and in front of the needle. This roller need not necessarily be of such width and may be made narrower. The stand or base 1 may be eliminated and the device may be attached directly to any suitable type of support which may be considered the base thereof.

In the drawings there has been shown various adjustbable parts so as to give latitude for adjustment for many conditions. However, some such adjustments may be omitted and other means may be substituted for the same to obtain the proper positioning of the guiding device. The wheel, while usually made of a vulcanized rubber composition, may be made of synthetic plastic materials, metals, wood, fiber compositions or any other material, it being essential that there be sufficient of a friction surface so as to properly guide the fabric. The materials of construction of the device may be any of those normally available and suitable for the purpose. Various mechanical elements which are the equivalent of those specifically described may be substituted therefor.

These and other changes in the details of the invention may be made within the spirit thereof and the invention is to be broadly construed and not to be limited except by the character of the claims appended hereto.

I claim:

1. A fabric guide for sewing machines comprising a base, an arm extending therefrom, a wheel mounted on a horizontal axis for rotation, said wheel being in contact with and in line with the direction of travel of said fabric, a depending support having two parts including a sleeve and a rod operable in said sleeve, one of said parts being held on said arm and the other of which has said wheel axis mounted thereon, a spring in said sleeve bearing on said rod for yieldingly pressing said wheel against said fabric, a counterspring having its ends in operative contact with said sleeve and rod, respectively, said counterspring being biased against said first spring for balancing the weight of said wheel.

2. A fabric guide for sewing machines comprising a base, an arm extending therefrom, a wheel mounted on a horizontal axis for rotation, said wheel being in contact with and in line with the direction of travel of said fabric, a vertical sleeve, the upper end of said sleeve being secured to said arm, a yoke, said wheel being journalled therein, a rod in the lower portion only of said sleeve and extending downwardly, said yoke being secured to said extension, a spring wholly within the upper part of said sleeve and bearing on the top of said rod, said sleeve constituting a guide for the upper sides of said rod.

3. A fabric guide for sewing machines comprising a base, an arm extending therefrom, a wheel mounted on a horizontal axis for rotation, said

wheel being in contact with and in line with the direction of travel of said fabric, a vertical sleeve, the upper end of said sleeve being secured to said arm, a yoke, said wheel being journalled therein, a rod in said sleeve and extending downwardly, said yoke being secured to said extension, a spring wholly within the upper part of said sleeve and bearing on the upper end of said rod, a counter spring about said sleeve and pressing upwardly on said rod.

4. A fabric guide for sewing machines comprising a base, an arm extending therefrom, a wheel mounted on a horizontal axis for rotation, said wheel being in contact with and in line with the direction of travel of said fabric, a vertical sleeve, the upper end of said sleeve being secured to said arm, a yoke, said wheel being journalled therein, a rod in the lower portion only of said sleeve and extending downwardly, said yoke being secured to said extension, a spring wholly within the upper part of said sleeve and bearing on the top of said rod, said sleeve constituting a guide for the upper sides of said rod, and means for adjusting the tension of said spring located at the top of said sleeve.

5. A fabric guide for sewing machines comprising a base, an arm extending laterally therefrom, a vertical sleeve depending from said arm, a downwardly extending rod in the lower portion only of said sleeve, a transverse pin passing through said rod and sleeve, a spring in the upper part of said sleeve bearing downwardly on the top of said rod, a counter-spring mounted on said sleeve and bearing upwardly against said pin, a guide wheel, a yoke, said wheel being journalled in said yoke, said yoke being secured to said rod.

6. A fabric guide for sewing machines comprising a base, an arm extending laterally therefrom, a vertical slotted sleeve depending from said arm, a downwardly extending rod in the lower portion only of said sleeve, a transverse pin passing through said rod and the slots in said sleeve, a spring in the upper part of said sleeve bearing downwardly on the top of said rod, a counter-spring mounted on said sleeve and bearing upwardly against said pin, a guide wheel, a yoke, said wheel being journalled in said yoke, said yoke being secured to said rod.

7. A fabric guide for sewing machines comprising a base, an arm extending laterally therefrom, a vertical sleeve depending from said arm, a downwardly extending rod in the lower portion only of said sleeve, a transverse pin passing through said rod and sleeve, a spring in the upper part of said sleeve bearing downwardly on the top of said rod, a counter-spring mounted on said sleeve and bearing upwardly against said pin, a guide wheel, a yoke, said wheel being journalled in said yoke, said yoke being secured to said rod, and means for adjusting the tension of said spring.

8. A fabric guide for sewing machines comprising a base, an arm extending laterally therefrom, a vertical sleeve depending from said arm, a downwardly extending rod in the lower portion only of said sleeve, a transverse pin passing through said rod and sleeve, a spring in the upper part of said sleeve bearing downwardly on the top of said rod, a counter-spring mounted on said sleeve and bearing upwardly against said pin, a guide wheel, a yoke, said wheel being journalled in said yoke, said yoke being secured to said rod, and means for adjusting the tension of said spring including a capped screw threaded into the top of said sleeve and the end of said screw bearing against the upper end of said spring.

9. In a fabric guide, the improvement which comprises a wheel mounted on an axis for horizontal rotation, a depending support having two parts including a sleeve and a rod operable in said sleeve, one of said parts being held on said arm and the other of which has said wheel axis mounted thereon, a spring in said sleeve bearing on said rod for yieldingly pressing said wheel, and a counterspring having its ends in operative contact with said sleeve and rod, respectively, and biased against said first spring for balancing the weight of said wheel.

LEO SCHWARTZ.

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