Nov. 22, 1960 W. SIMPSON 2,960,945

MEANS FOR STITCHING HOOK TAPE TO GARMENTS

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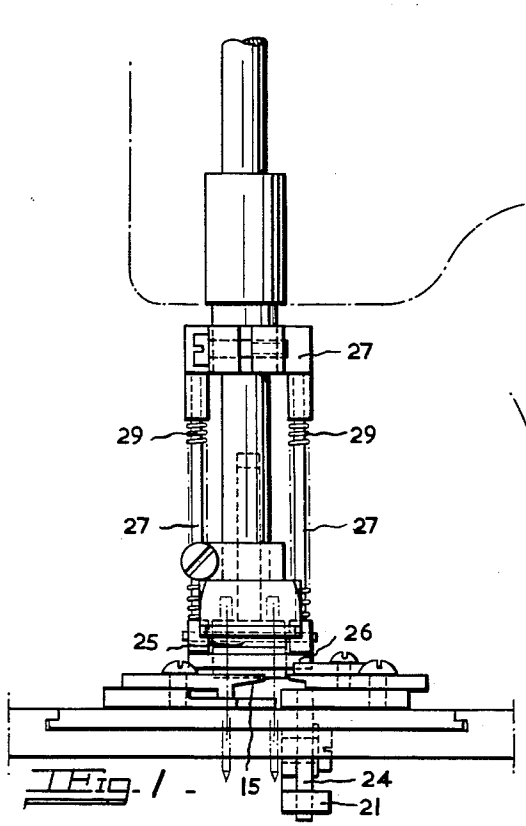

Fig. 1

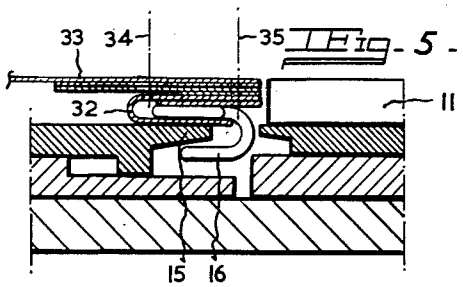

Fig. 5

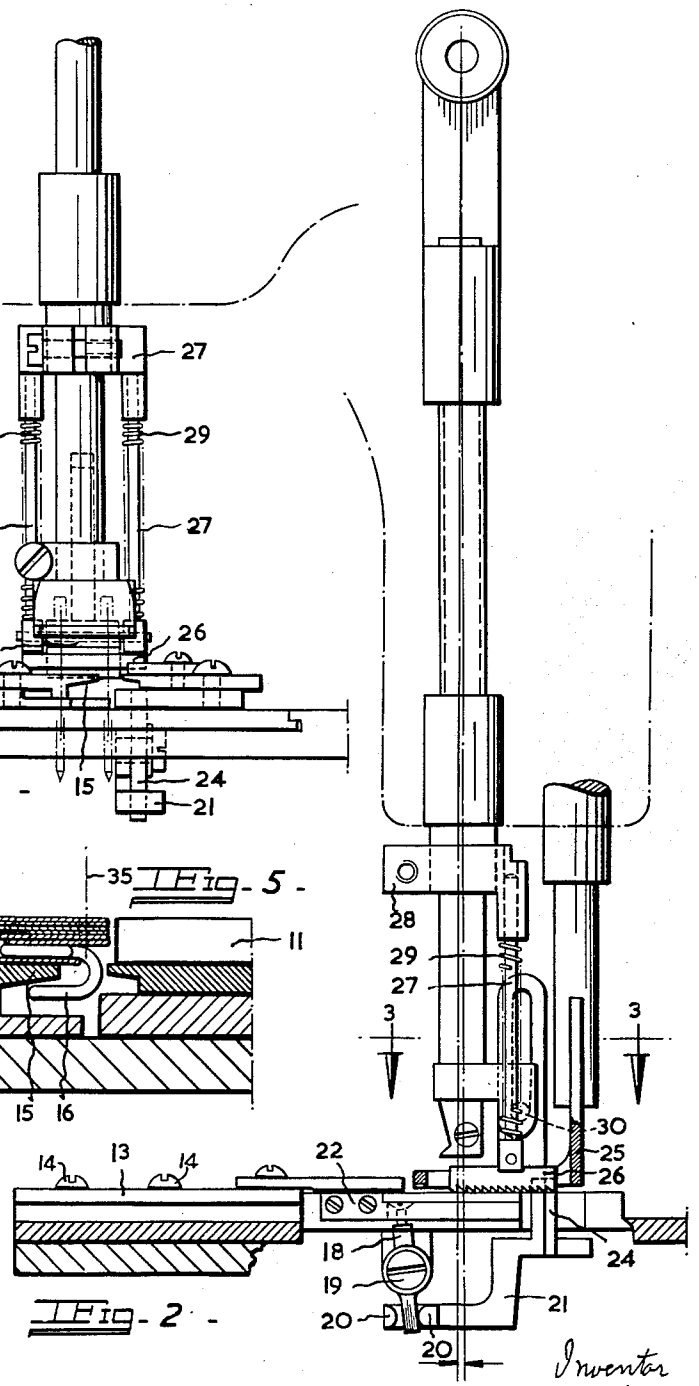

Fig. 2

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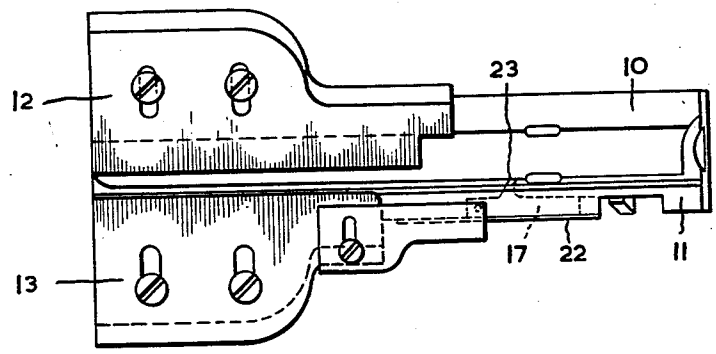
Fig. 4



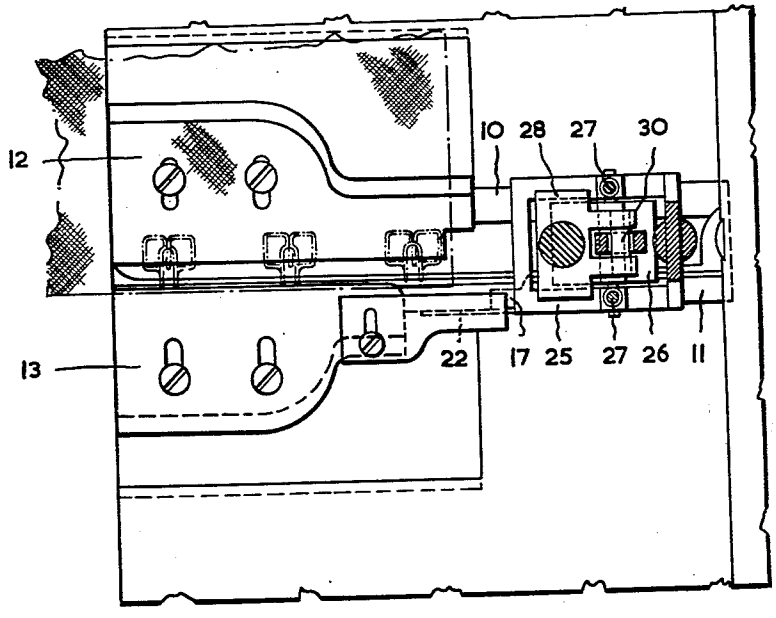


Fig. 3

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MEANS FOR STITCHING HOOK TAPE TO GARMENTS

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1 Claim. (Cl. 112—2)

This invention relates to means for stitching hook tape to garments.

Hook tape comprises a folded strip of fabric into which hooks are stitched at uniformly spaced intervals and which is adapted to be secured by stitching to a garment, the hooks co-operating with similarly spaced eyes on tape stitched to another part of the garment.

For some purposes it is desirable that the hooks should be as close as possible to an edge of the garment so that this edge can abut against the edge of another portion of the garment carrying the eye tape and there is no overlapping.

Hitherto this has involved two separate operations in stitching the hook tape to the garment. The edge portion of the tape extends laterally beyond the hooks and this is stitched to the garment first with the bill of the hook uppermost. The garment is then folded back and the other edge is secured by a second line of stitching parallel to the first.

According to my invention, hook tape is stitched to a garment in a single operation in a two-needle sewing machine with the tape in an inverted position below the garment, one line of stitching being closely adjacent to the edge of the tape and intersecting the line of hooks of which the bills are so formed as to provide passage for a needle between the wires, and the machine incorporating means for guiding the hook tape and for momentarily displacing a hook as the needles descend if a wire of the hook bill should be in the path of a needle.

Hook tape can thus be stitched to a garment in a single operation instead of two operations so that there is a considerable saving of time and labour.

Preferably the mechanism is arranged as an attachment to a standard two-needle sewing machine in place of existing parts so that no major modifications of the machine are required.

One practical attachment to a sewing machine for stitching hook tape to a garment in accordance with my invention is illustrated by way of example in the accompanying drawings in which:

Figure 1 is a front elevation,

Figure 2 is a side elevation,

Figure 3 is a horizontal section on the line 3—3 of Figure 2,

Figure 4 is a plan of the throat plate and guides,

Figure 5 is a fragmentary section on a larger scale of the guides showing the work in position.

The attachment illustrated is designed to be fitted to a standard two-needle sewing machine in place of existing parts.

The standard throat-plate of a two-needle machine is replaced by a throat plate having two parallel walls **10**, **11** between which a hook tape is guided, and a guide unit **12**, **13** is secured by screws **14** to the front plate to direct the tape into the throat plate. Extending horizontally from the wall **10** is a guide member **15** of which the free edge is spaced from the other wall, and with the hook tape in an inverted position the bills of the

hooks **16** fit over and slide on this edge of the guide member as shown in Figure 5.

The other wall **11** of the throat plate is slotted or recessed to receive a rocking pawl **17** which rocks in a horizontal plane and is actuated by the upper end of a short substantially vertical lever **18** which is pivoted on a fixed horizontal pin **19** and the lower end of which engages between spaced pegs or lugs **20** on a portion of the standard mechanism **21** normally serving to actuate the feed-dog for the work. The pawl **17** is loaded by a light blade spring **22** and has a tooth **23** adapted to engage and displace the wire of a hook if it would be in the path of a needle. The mechanism **21** also actuates a substantially vertical finger **24** for periodically lifting the presser foot of the machine.

The standard presser foot is replaced by a modified foot **25** having an opening to receive a feed-dog **26** which is located above the work instead of below. The feed-dog is mounted to slide on two parallel vertical rods **27** carried by the needle bar rocker frame **28** and is urged downwardly by compression spring **29** on the rods. The feeding movement of the feed-dog is effected by the rocker frame and it is adapted to be moved vertically by a pin **30** in the needle frame working in a vertical slot **31** in the feed-dog.

The timing is such that the normal feed mechanism **21** below the throat plate raises the presser foot momentarily through the medium of the finger **24** to take the pressure off the work while the feed dog is carrying out its feeding movement, and then the feed-dog rises as the presser foot is lowered again.

In stitching a length of hook tape **32** to a garment the inverted hook tape is fitted to the guide member **15** in the throat plate, the garment **33** is fitted over it in alignment with the hook edge of the tape, and in engagement with the guiding wall or flange **11** on the throat plate, as shown in Figure 5, and the machine is then operated normally.

One line of stitching **34** passes through the hook tape to the rear of the hooks and the other line **35** intersects the line of the bills of the hooks which are formed from two substantially parallel wires spaced apart at such a distance as to allow a needle to pass between them. If, as the needle descends, a wire of a hook bill would be in the path of the needle making the line of stitching **35** the hook is momentarily displaced by the rocking pawl **17** which is actuated on every stitch.

It will be noted that the line of stitching **35** is very close to the edge of the tape carrying the hooks so that the tape does not tend to be pulled away from the garment by a strain on the hooks.

In addition to the great saving of time and labor made by my invention, it has the further advantage that both lines of stitching securing the tape to the garment are the right way up and the appearance of the finished garment is improved.

I claim:

An attachment for a standard two-needle sewing machine for stitching to a garment in a simple operation a hood tape carrying closely adjacent to one edge a series of spaced hooks of which the bills are formed by substantially parallel wires spaced apart sufficiently to allow a needle to pass between them, said attachment comprising a throat plate adapted to replace the standard throat plate of the sewing machine, having an upstanding guide wall for engagement with the aligned edges of the tape and garment to which it is to be sewn, and also having a work bearing surface parallel with the main working surface of the sewing machine, the work bearing surface of the throat plate having a parallel sided slot, parallel with the guide wall, for receiving the bills of the hooks on the inverted hook tape and guiding the hook tape to-

wards the needles, one of which produces a line of stitching parallel with and closely adjacent to the said aligned edges, a pawl supported from the throat plate for momentarily displacing a hook as the needle descends should a wire of the hook bill be in the path of the needle, and pawl operating means beneath the level of the work bearing surface, actuated by the standard sewing machine parts serving to operate the feed-dog in an unmodified machine.

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