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GATHERING DEVICE FOR BLIND-STITCH MACHINES

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Fig. 1

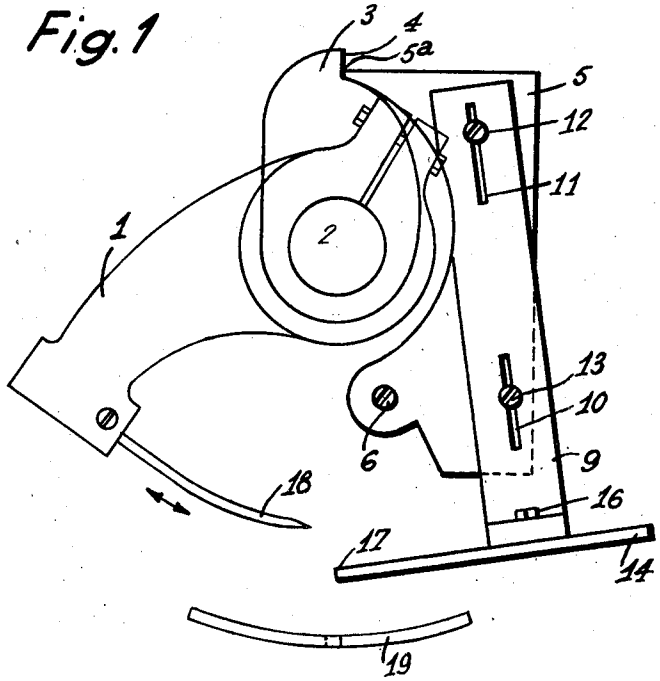
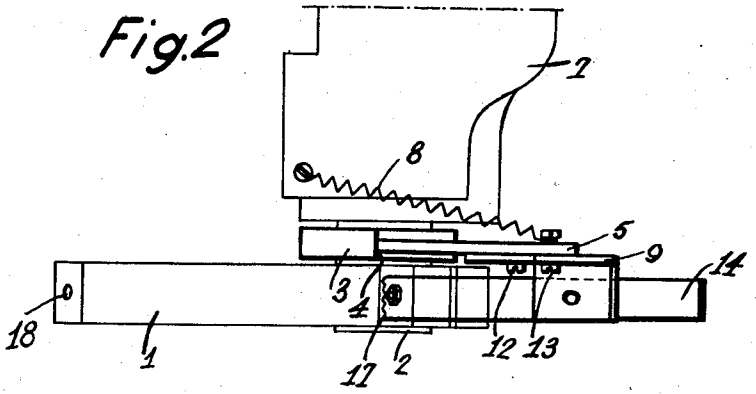


Fig. 2



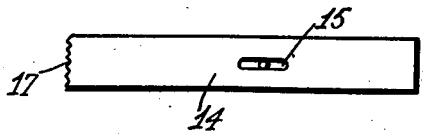


Fig. 3.

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GATHERING DEVICE FOR BLIND-STITCH MACHINES

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6 Claims. (Cl. 112—178)

In the manufacture of wearing apparel, use is generally made of sewing machines of the so-called blind-stitch type especially in order to make the facing of clothes. The blind-stitches thus obtained are intended for tensioning the fabric and more particularly the inside canvas of the facings to prevent the latter from rolling up outwardly.

Such a work requires an experienced and skilled stitcher to be employed, for the latter has to manually repel the stuff towards the needle in order to cause it to be slightly puckered.

It will be easy to state the primitiveness and the drawbacks of this operation:

Necessity of employing a manual labour highly skilled in the art;

Low efficiency of the machine on account of the attention to be paid to the work if a regularity of the result is wanted.

The subject-matter of this invention is to provide improvements in or relating to said type of sewing machine so as to have this operation automatically achieved and said drawbacks eliminated.

The sewing machine of the blind-stitch type designed in accordance with the invention is substantially remarkable by the fact that it comprises a gathering device.

Further features and advantages of the invention will appear from the following description with reference to the accompanying drawings illustrating by way of example the manner in which the present invention is to be performed, the details resulting from the description and from the drawings constituting naturally part of the invention.

Figs. 1 and 2 show the gathering device mounted on a sewing machine of the blind-stitch type.

Fig. 3 is a plan view of the gathering plate.

As may be seen from Figs. 1 and 2, the gathering device according to the invention is adjustable to sewing machines of the blind-stitch type wherein the needle-holder 1 rocks about the driving shaft 2.

This shaft 2 carries a ratchet-wheel 3 that is provided with a notch 4 co-operating with a pawl 5*a* rigid with a lever 5 capable of rocking about a centre embodied in the axle 6 which maintains the support against the frame 7 of the machine. A tension spring 8 has the tendency of bringing the upper part of the support 5 closer to the frame 7 so that the pawl 5*a* may remain in touch with the notch 4 of the ratchet-wheel 3. The spring is fastened with one of its ends to the frame 7 and with its other end to the support 5.

It is to be noted that the ratchet-wheel 3 may be replaced by a cam, an eccentric projection of which applying to the support 5 and its partial rotation causing the said support to rock about the axle 6.

The support 5 carries the plate-holder 9 consisting for example of a square piece. This plate-holder may have different positions with relation to said support,

owing to slots 10 and 11 pierced through the larger limb to be crossed by the fastening screws 12 and 13.

To the smaller limb of the square is secured the gathering comb 14 which thus may occupy different positions with respect to the square 9, an elongated eye 15 permitting the fastening bolt 16 to slide when unscrewed.

The working end 17 of said comb is cut out according to a toothed profile. This comb enters between the trajectory of the needle 18 fixed to the needle-holder 1 and the plate 19, called needle-plate, well-known in machines of that type.

The operation of the gathering device is the following: when the needle 18 and the needle-holder 1 go up after a stitch, the ratchet-wheel 3 (or an equivalent cam) keyed on the driving shaft 2 repels the support 5 against the action of the spring 8. Said support carrying the comb 14 rocks about the axle 6 and the extremity 17 of this comb pushes the stuff to be gathered towards the needle.

During the reverse motion, the shaft 2 causes the needle-holder 1 and the needle 18 to go downwards; the ratchet-wheel 3 (or the equivalent cam) follows this angular displacement, the pawl 5*a* rigid with the support 5 of the plate-holder 9 is returned to its initial position under the action of the spring 8. Thus the plate 17 is ready again to push the stuff during the following operation.

Of course, this invention is not limited to the embodiment described and shown in the drawings merely by way of example, for any suitable modification may be performed within the scope of this invention.

What I claim is:

1. In a sewing machine, in combination, a frame; a driving shaft mounted for oscillation about its axis on said frame; a needle carrier arm mounted at one end on said driving shaft for oscillation therewith, said arm having a needle mounted on the free end thereof extending substantially concentric with said driving shaft; actuating means mounted on said driving shaft for oscillation therewith; lever means mounted on said frame for turning about an axis parallel to said driving shaft, said lever means having one end arranged opposite said actuating means and having a gathering portion on its opposite end arranged opposite and facing said needle on said carrier arm; and means urging said one end of said lever means into contact with said actuating means, whereby turning of said driving shaft in one direction moves said carrier arm with said needle thereon in a direction toward said gathering portion of said lever means for stitching material placed in the path of said needle and moves said actuating means in a direction away from said one end of said lever means in contact therewith so that said gathering portion is moved by said urging means in a direction away from said needle, and turning of said driving shaft in the opposite direction moves said needle away from said gathering portion and causes said actuating means to move said gathering portion towards said needle for gathering the material to be thereafter stitched by said needle.

2. In a sewing machine, in combination, a frame; a driving shaft mounted for oscillation about its axis on said frame; a supporting arm carrying a needle mounted on said driving shaft for oscillation therewith; actuating means mounted on said driving shaft for oscillation therewith; lever means mounted on said frame for turning about an axis parallel to said driving shaft, said lever means having one end arranged opposite said actuating means and having a gathering portion on its opposite end arranged opposite and facing said needle on said supporting arm; and means urging said one end of said lever

means into contact with said actuating means, whereby turning of said driving shaft in one direction moves said supporting arm with said needle thereon in a direction toward said gathering portion of said lever means for stitching material placed in the path of said needle and moves said actuating means in a direction away from said one end of said lever means in contact therewith so that said gathering portion is moved by said urging means in a direction away from said needle, and turning of said driving shaft in the opposite direction moves said needle away from said gathering portion and causes said actuating means to move said gathering portion towards said needle for gathering the material to be thereafter stitched by said needle.

3. In a sewing machine, in combination, a frame; a driving shaft mounted for oscillation about its axis on said frame; a supporting arm carrying a needle mounted on said driving shaft for oscillation therewith; actuating means mounted on said driving shaft for oscillation therewith; lever means mounted on said frame for turning about an axis parallel to said driving shaft, said lever means having one end arranged opposite said actuating means; a gathering member on the opposite end of said lever means arranged opposite and facing said needle on said supporting arm; and resilient means permanently urging said one end of said lever means into contact with said actuating means, whereby turning of said driving shaft in one direction moves said supporting arm with said needle thereon in a direction toward said gathering member of said lever means for stitching material placed in the path of said needle and moves said actuating means in a direction away from said one end of said lever means in contact therewith so that said gathering member is moved by said resilient means in a direction away from said needle, and turning of said driving shaft in the opposite direction moves said needle away from said gathering member and causes said actuating means to move said gathering member towards said needle for gathering the material to be thereafter stitched by said needle.

4. In a sewing machine, in combination, a frame; a driving shaft mounted for oscillation about its axis on said frame; a needle carrier arm mounted at one end on said driving shaft for oscillation therewith, said arm having a needle mounted on the free end thereof extending substantially concentric with said driving shaft; actuating means mounted on said driving shaft for oscillation therewith; lever means mounted on said frame for turning about an axis parallel to said driving shaft, said lever means having one end arranged opposite said actuating means and having a gathering portion on its opposite end arranged opposite and facing said needle on said carrier arm; and resilient means connected to said frame and said lever means permanently urging said one end of said lever means into contact with said actuating means, whereby turning of said driving shaft in one direction moves said carrier arm with said needle thereon in a direction toward said gathering portion of said lever means for stitching material placed in the path of said needle and moves said actuating means in a direction away from said one end of said lever means in contact therewith so that said gathering portion is moved by said resilient means in a direction away from said needle, and turning of said driving shaft in the opposite direction moves said needle away from said gathering portion and causes said actuating means to move said gathering portion towards said needle for gathering the material to be thereafter stitched by said needle.

5. In a sewing machine, in combination, a frame; a driving shaft mounted for oscillation about its axis on said frame; a supporting arm carrying a needle mounted on said driving shaft for oscillation therewith; actuating means mounted on said driving shaft for oscillation therewith; lever means mounted on said frame for turning about an axis parallel to said driving shaft, said lever means having one end arranged opposite said actuating means, said lever means comprising a pivoted lever member and a supporting plate adjustably mounted on said lever member for adjustment longitudinally thereof and extending toward the opposite end of said lever means; a gathering member mounted on said supporting plate at the opposite end of said lever means arranged opposite and facing said needle on said supporting arm; and resilient means permanently urging said one end of said lever means into contact with said actuating means, whereby turning of said driving shaft in one direction moves said supporting arm with said needle thereon in a direction toward said gathering member of said lever means for stitching material placed in the path of said needle and moves said actuating means in a direction away from said one end of said lever means in contact therewith so that said gathering member is moved by said resilient means in a direction away from said needle, and turning of said driving shaft in the opposite direction moves said needle away from said gathering member and causes said actuating means to move said gathering member towards said needle for gathering the material to be thereafter stitched by said needle.

6. In a sewing machine, in combination, a frame; a driving shaft mounted for oscillation about its axis on said frame; a supporting arm carrying a needle mounted on said driving shaft for oscillation therewith; actuating means mounted on said driving shaft for oscillation therewith; lever means mounted on said frame for turning about an axis parallel to said driving shaft, said lever means having one end arranged opposite said actuating means, said lever means comprising a pivoted lever member and a supporting plate adjustably mounted on said lever member for adjustment longitudinally thereof and extending toward the opposite end of said lever means; a gathering member mounted on said supporting plate at the opposite end of said lever means arranged opposite and facing said needle on said supporting arm; and resilient means connected to said frame and said lever means permanently urging said one end of said lever means into contact with said actuating means, whereby turning of said driving shaft in one direction moves said supporting arm with said needle thereon in a direction toward said gathering member of said lever means for stitching material placed in the path of said needle and moves said actuating means in a direction away from said one end of said lever means in contact therewith so that said gathering member is moved by said resilient means in a direction away from said needle, and turning of said driving shaft in the opposite direction moves said needle away from said gathering member and causes said actuating means to move said gathering member towards said needle for gathering the material to be thereafter stitched by said needle.

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