Sept. 14, 1943. V. MILSTEIN 2,329,639

RIBBON TRIMMING METHOD

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Fig. 1

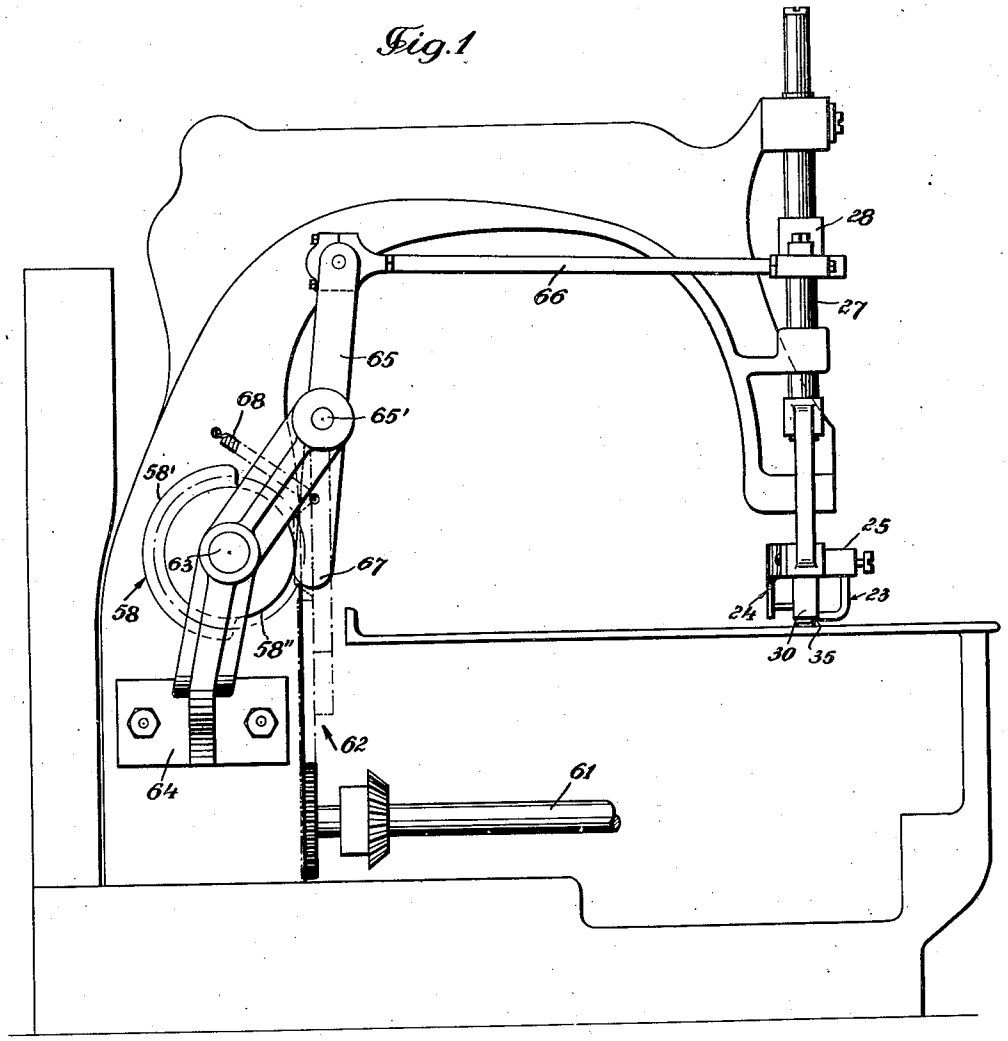

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Fig. 2

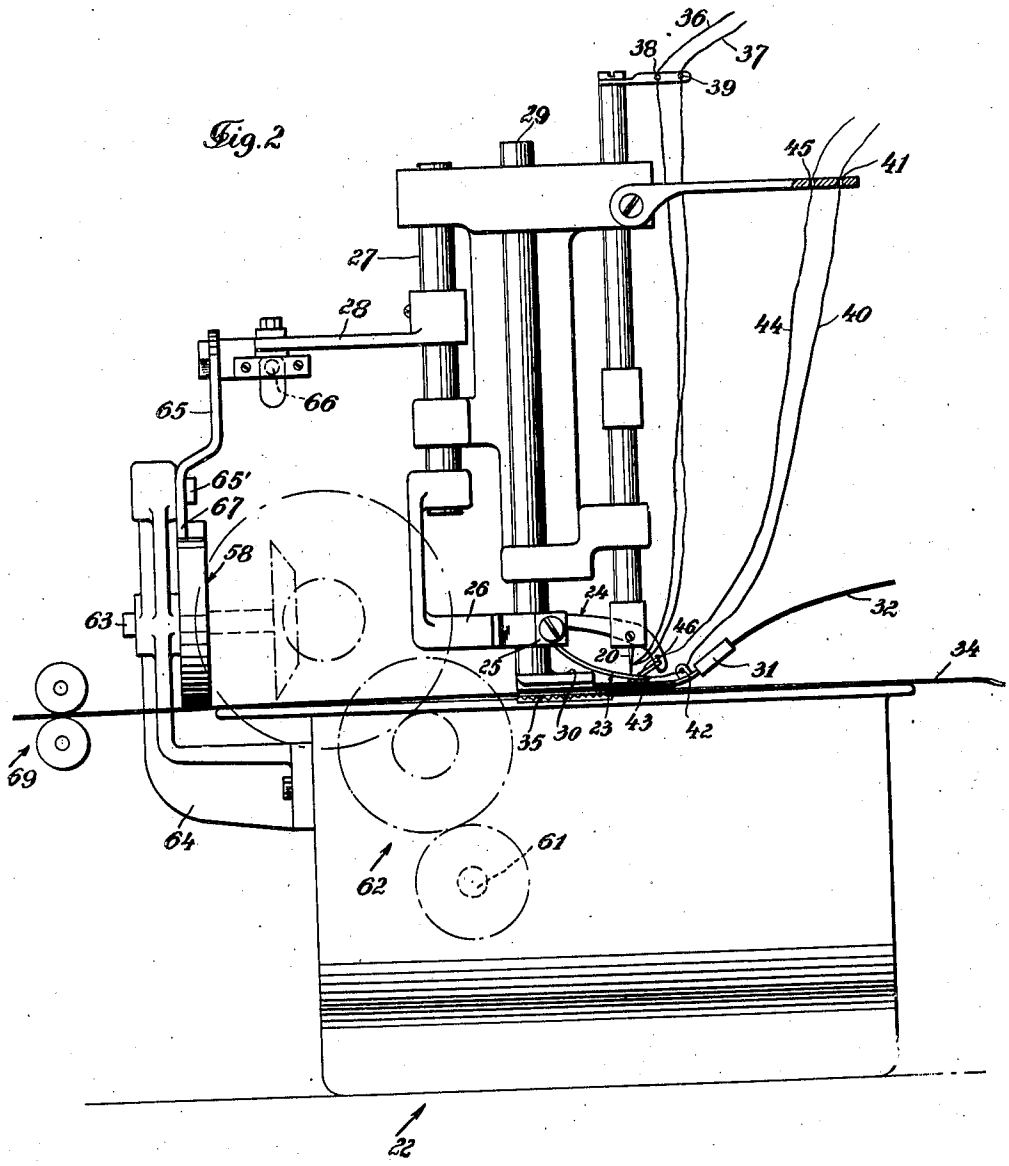

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Fig. 3

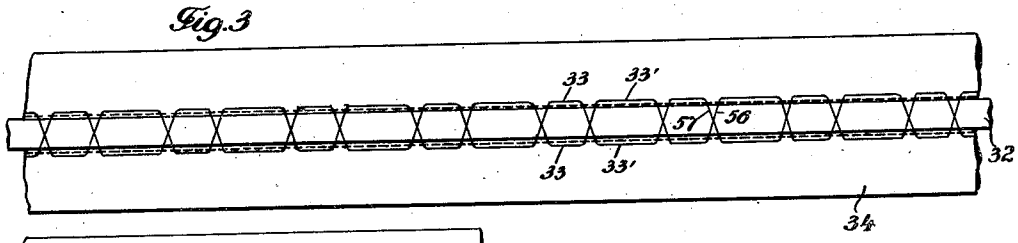


Fig. 4

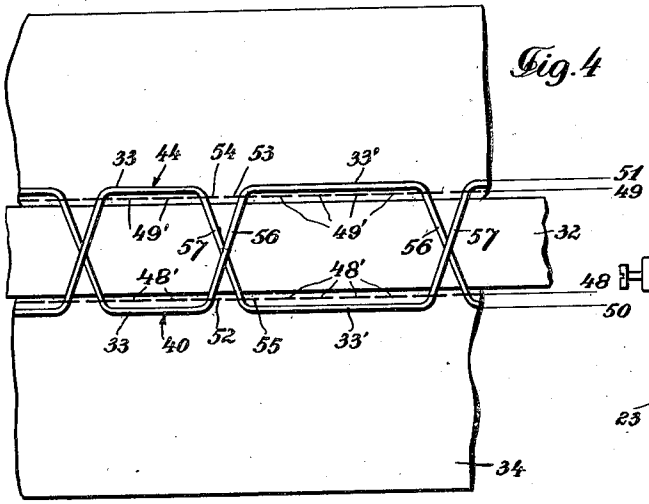


Fig. 7

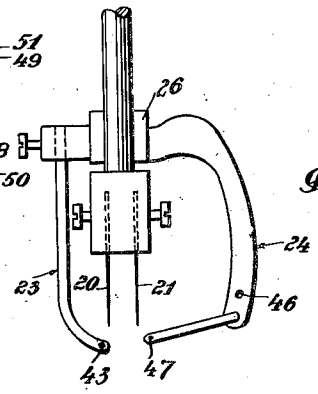


Fig. 5

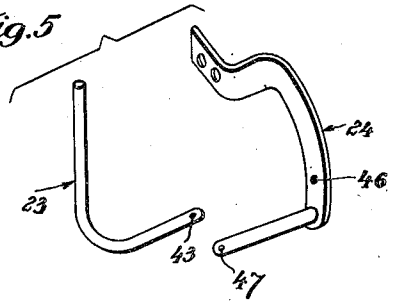


Fig. 8

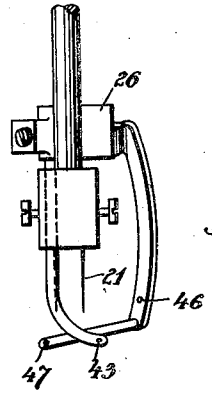
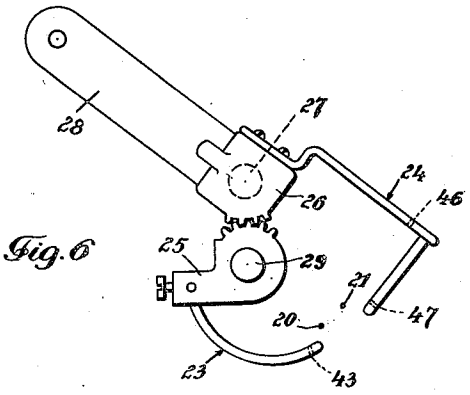


Fig. 6



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Patented Sept. 14, 1943 2,329,639

UNITED STATES PATENT OFFICE

2,329,639

RIBBON TRIMMING METHOD

Victor Milstein, New York, N. Y.

Application August 21, 1940, Serial No. 353,464

1 Claim. (Cl. 112—266)

This invention relates to a ribbon trimming method.

The object of this invention is to provide a novel and improved method for trimming or decorating laces, ribbons, tapes and fabrics of all kinds, with loose ribbon preferably, and with stitched-on ribbon, if desired.

To carry out these objects, I have modified the construction and the mode of operation, and have otherwise equipped a sewing machine of the double needle, double thread thrower type, as I now illustrate and describe as a means for practicing the teachings of this invention.

In the accompanying drawings forming part of this application, similar characters of reference indicate corresponding parts in all the views.

Fig. 1 is the rear view of a sewing machine of the double needle, double thread thrower type, modified in construction and in mode of operation and otherwise equipped to practice my method of trimming with a ribbon.

Fig. 2 is a side view of Fig. 1.

Fig. 3 shows a ribbon trimmed lace effected by the practice of this invention.

Fig. 4 is a fragmentary magnified view of Fig. 3.

Fig. 5 is a perspective view showing the thread thrower fingers included in the machine of Fig. 1.

Fig. 6 is a diagrammatic plan view showing the assembly of the thrower members.

Fig. 7 is a fragmentary front view of the thread thrower fingers in one of their rest positions with respect to the needles of the machine.

Fig. 8 is a similar view showing the other rest position of said fingers after they had been shifted so that the threads they carry are made to change their paths with respect to the lines of stitching effected by the needles of the machine.

In the drawings, the numerals 20 and 21, are the needles of a machine of the type mentioned, which machine indicated generally by the numeral 22, is provided with the usual thread throw fingers 23 and 24, extending respectively from the members 25 and 26 which are in geared relation. The member 26, is secured on the vertical, axially rotatable shaft 27, as is an arm 28, while the member 25 is rotatably carried on the vertical post 29, of the pressure foot 30. At the front of this foot 30, is mounted a ribbon guide 31, to receive a narrow ribbon 32 from off a spool, and to lead said ribbon onto and along a lace 34, as an example; the feeding of both the ribbon 32 and the lace 34, being effected by action of the grip feeder 35.

Threads 36 and 37 for the needles 20 and 21, are guided thereto through eyes 38 and 39 respectively, while a thread or gimp 40 for the throw finger 23, is guided through eyes 41 and 42, before entering eye 43 of said finger, while a thread or gimp 44 for the throw finger 24, is guided through eyes 45 and 46 before entering eye 47 of the said finger 24. All threads are from off spools or cones as usual.

It is preferred that the width of ribbon 32 shall be less than the distance between the parallel stitch lines 48 and 49 effected by the needles 20 and 21, and lie between them, and it is required that the distance between said stitch lines 48 and 49 shall be less than the distance between the parallel feed lines 50 and 51 effected by the throw fingers 23 and 24, and that said stitch lines 48 and 49, shall lie within the lines 50 and 51.

It is evident that upon axial rotation of shaft 27, the throw fingers 23 and 24 will move, and thereby exchange the paths of the threads 40 and 44, after crossing each of the stitch lines 48 and 49 in reverse order, and over the ribbon 32 between said stitch lines; it being the normal operation of the machine, when the throw fingers 23 and 24 so shift their positions that the thread 40 will become engaged by the stitches 52 and 53, and the thread 44 at stitches 54 and 55; thus forming the loops 56 and 57 over the ribbon 32, and the ribbon will appear as if laced through said loops and will lie loose therethrough and remain against the lace or other material 34 sewn on.

An essential of the present invention, is to permit the creation of such loops 56 and 57, only at definitely, substantially spaced intervals, which may be either equal or unequal, so that the threads 40 and 44 shall lie along the ribbon 32, in free loops 33, while quite a number of functionless stitches 48′ and 49′ are made along lines 48 and 49, between the formation of the ribbon straddling loops 56 and 57. To accomplish this, I utilize a cam 58 to control the movement of the shaft 27, which cam is so designed that its circumferential parts 58′ and 58″, shall be determined by either equal or unequal central angles, in accordance with the desired relative distances between successive pairs of loops 56 and 57, and the rate of rotation of said cam 58, is made to be slow relative to a shaft 61 of the machine controlling the stitching along lines 48 and 49, by means of a suitable system of reduction gearing indi-

cated generally by the numeral **62**. In the specimen of trimming illustrated, particularly as shown in the magnified figure, the respective lengths of the free loops **33** and **33'** are unequal, that is, the cam **58** has caused the actuation of the shaft **27**, after four non-functional stitches had been sewn on the lace **34**, and then again after the next three non-functional stitches along the stitch lines **48** and **49**, and of course, continued operation is in like manner. The loops **33** and **33'** may be said to bridge a series of the short stitches, respectively, along the stitch lines **48** and **49**.

Said cam **58** is on a stud **63** in the bracket **64**, which is mounted on the frame of the machine **22**. A lever **65**, on stud **65'** in said bracket, is linked at its upper end to arm **28**, by means of the member **66**, and is provided at its lower end with a cam follower **67**, which is maintained against the periphery of the cam by action of a tension spring **68** on said lever.

It is advisable to include the rotating rollers indicated by the numeral **69**, for maintaining tautness in the last finished portion of the ribboned lace, for better working of the contrivance, and such rollers may be driven in any suitable manner from any shaft of the machine proper.

For better decorative effect, the loose ribbon is preferred, but should same be desired to be stitched, it is evident that with the use of a little wider ribbon, such can be readily effected. I may also suggest that the color of all threads and gimps used might be so chosen that all stitching and loops shall appear as if an original part of the lace makeup, and not as a subsequent addition.

The operation of ordinary double needle sewing machines equipped with two thread throwing fingers, being well understood, and the modifications in structure and mode of operation as herein taught having been hereabove in detail explained, no further exposition as to operation is deemed necessary.

This invention is capable of numerous forms and various adaptations without departing from the essential features herein taught. It is therefore intended and desired that the embodiment herein be deemed illustrative and not restrictive, and that the patent shall cover all patentable novelty herein disclosed; reference being had to the following claims rather than to the specific description herein to indicate the scope of this invention.

I claim:

A method of trimming a fabric consisting in laying a ribbon on said fabric, concurrently laying a pair of threads on the fabric with the ribbon, with each thread alternately extending a distance in spaced relation to and substantially parallel with the opposed edges of the ribbon and with said threads extending over said ribbon in intersecting relation between said parallel portions thereof, and concurrently forming a pair of parallel lines of stitching in said fabric intermediate the respective edges of the ribbon and said parallel portions of said threads with certain of said stitches locking said threads at their intersections with said lines of stitching; one or more stitches being between successive locking stitches.

VICTOR MILSTEIN.