Feb. 16, 1954 A. J. HILTBRUNNER ET AL 2,669,203

SEWING-MACHINE ATTACHMENT FOR PRODUCING COMBINED EDGE-BINDING AND DOUBLE-RUFFLED TRIMMING

Filed May 23, 1949 3 Sheets-Sheet 1

Fig. 1

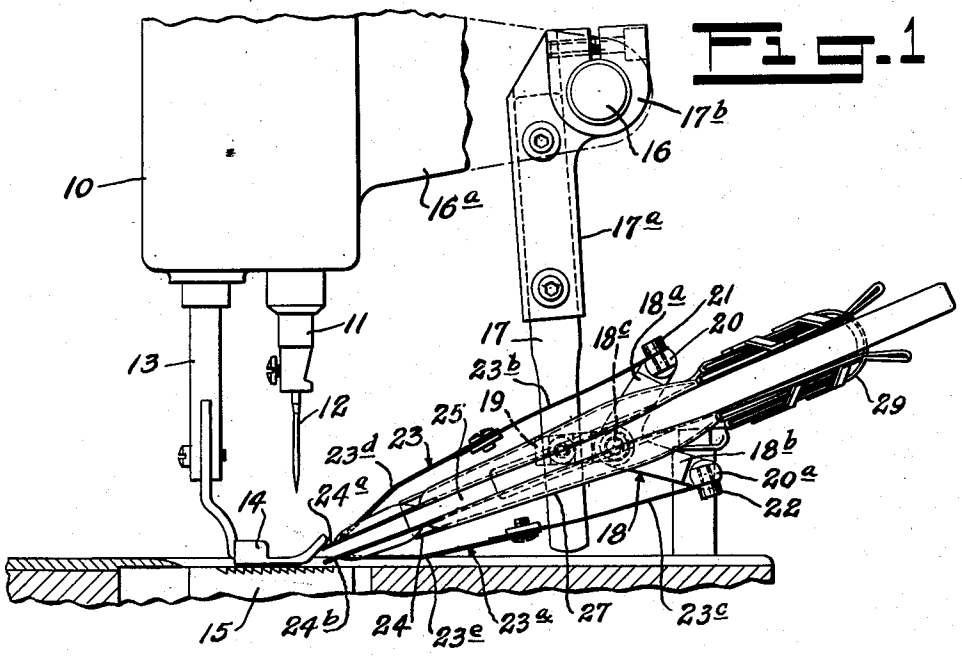
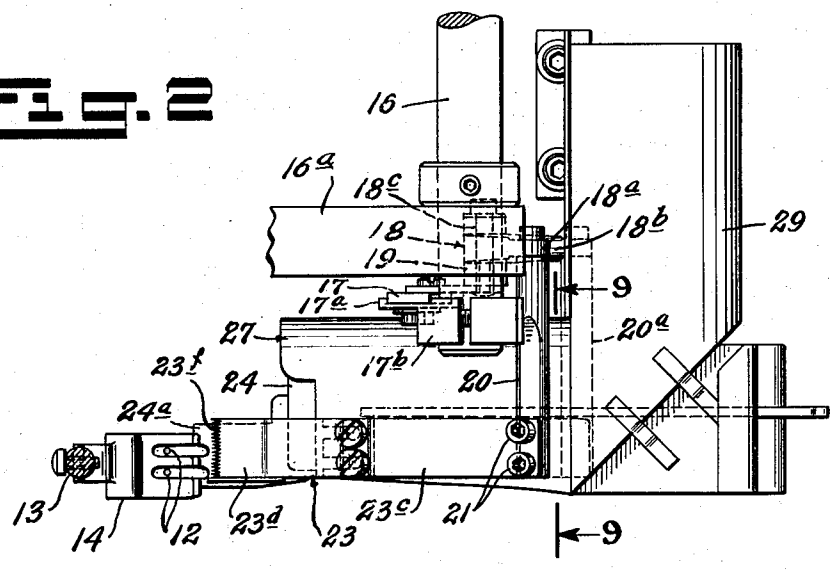


Fig. 2



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Fig. 3

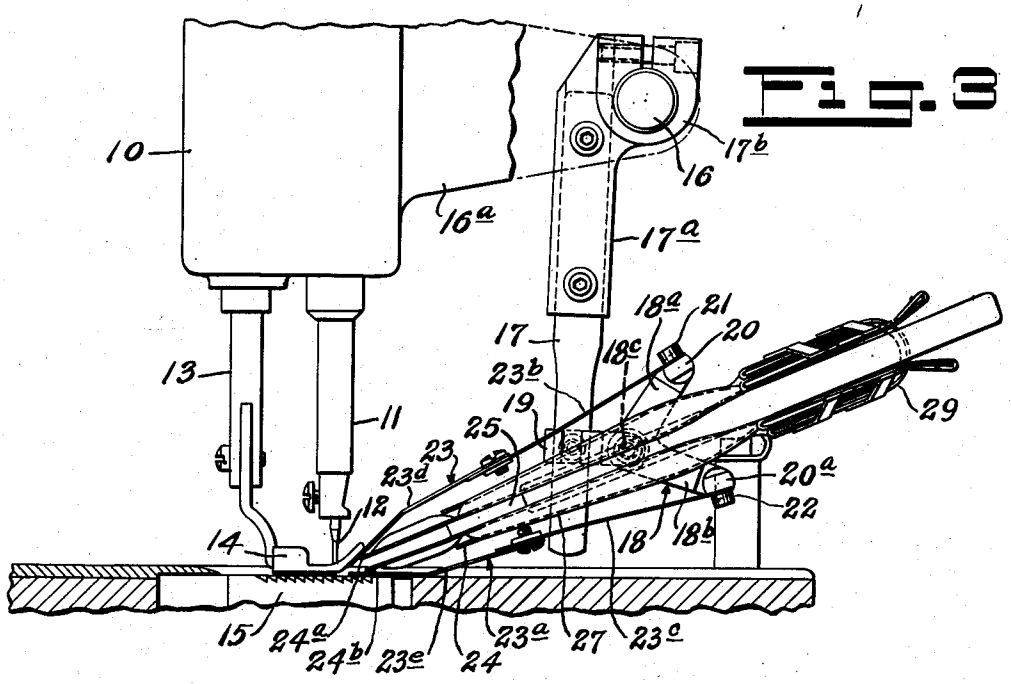


Fig. 4

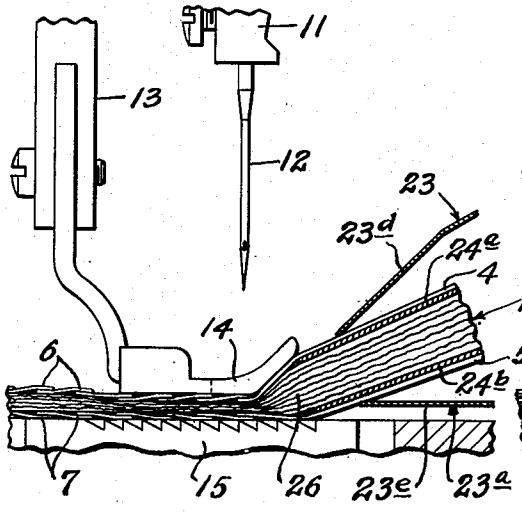
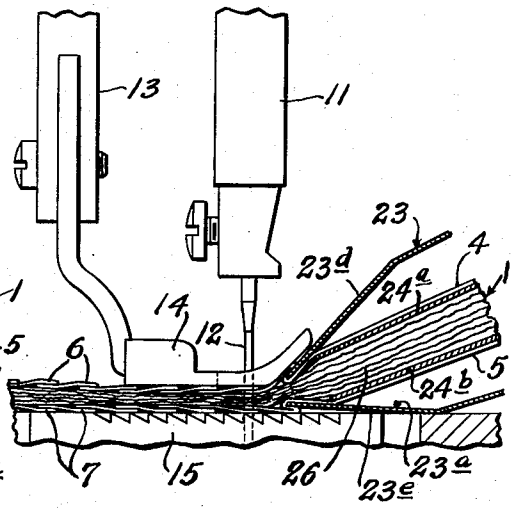


Fig. 5



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Fig. 6

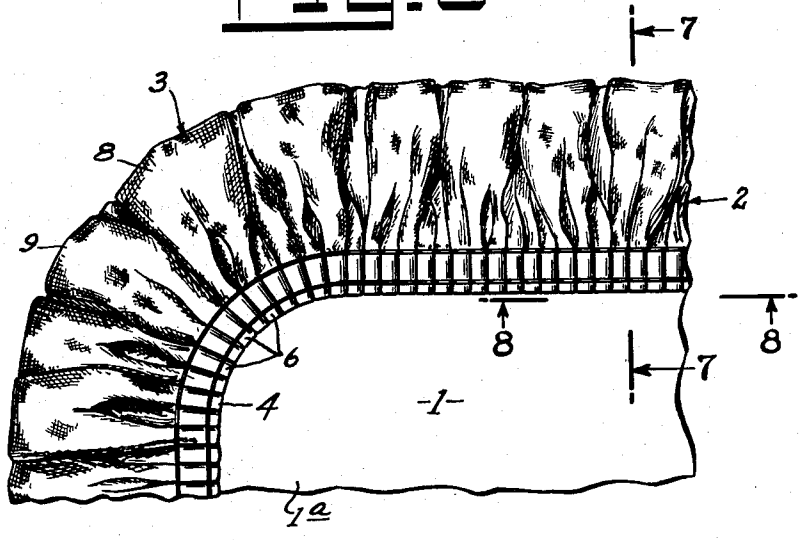


Fig. 7

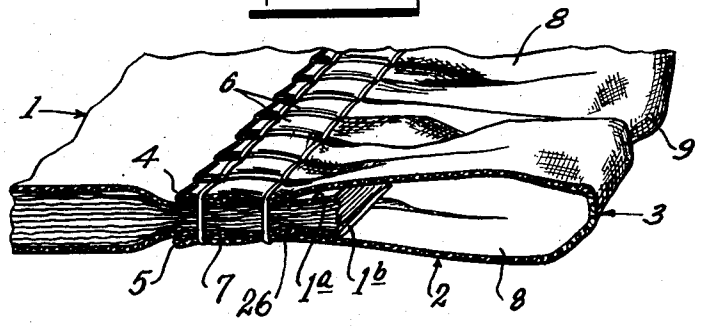


Fig. 8

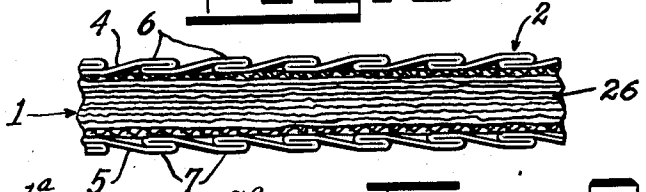
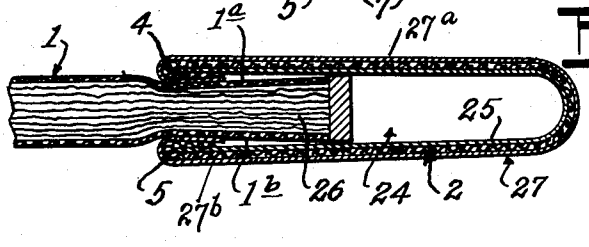


Fig. 9



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UNITED STATES PATENT OFFICE

2,669,203

SEWING-MACHINE ATTACHMENT FOR PRODUCING COMBINED EDGE-BINDING AND DOUBLE-RUFFLED TRIMMING

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Application May 23, 1949, Serial No. 94,908

4 Claims. (Cl. 112—134)

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This invention relates to a sewing-machine attachment for producing a quilt or like article having a combined edge-binding and double-ruffled trimming.

One of the objects of this invention is to provide a quilt or like article having a combined edge-binding and trimming member composed of a single longitudinally folded strip of trimming material provided along its opposite edges with ruffle-pleats sewed to the opposite surfaces of the quilt at the edge thereof, whereby we produce a quilt or the like having a binding member that encloses and binds its edge and provides an ornamental ruffled trimming for opposite surfaces thereof.

Another object of our invention is to produce a quilt or the like having edge-binding and double-ruffled trimming composed of a single folded strip, the ruffled pleats on opposite surfaces of the edges of which are of equal and uniform depth on both edges so that during a sewing to the quilt of a considerable length of such pleats, we will avoid any substantial unevenness of the travel of opposite edges of the trimming strip that would cause distortion or uneven tension or pulling of the material at the middle or body-portion of the edge-encircling trimming member between the rows of pleats which is ornamentally fluted by the pleats.

Another object of our invention is to provide on a conventional sewing machine a binding and ruffling attachment that will, during a sewing operation, enable the simultaneous binding of the edge of a quilt or the like and produce ruffling pleats of opposite side edges of a single folded strip of trimming material to provide a trimming surrounding such edge to function both as an edge-binding and as an ornamental ruffled trimming.

Still another object of our invention is to provide a ruffling attachment having a pair of ruffling blades mounted for reciprocable movement conjointly toward and away from a common plane and adapted, during a machine stitching operation for sewing to opposite surfaces adjacent to the edge of a quilt or the like the opposite edges of a folded trimming strip, to simultaneously ruffle such opposite edges of the folded trimming strip and thus to provide on the edge of the quilt or the like a combined edge-binding and double-ruffled trimming.

Still another object of our invention is to provide a guide or guides for such ruffling blades to cause such movement toward and away from a common plane and preferably to utilize as the guiding means for such reciprocating movements of the pair of ruffling blades, the terminal end of a channeled guiding member that is also adapted to guide opposite edges of the folded trimming strip and the edges of the quilt or the like into position for stitching the opposite edges of the trimming strip to the edge of the quilt or the like.

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Still another object of our invention is to provide an attachment of the type specified comprising a pair of ruffling blades reciprocably movable conjointly toward and away from a common plane extending adjacently above a sewing-machine base and the feed dog thereof combined with means for moving and guiding said blades to move at a position above said feed dog and below a presser foot to provide on both surfaces of a guided edge of a quilt or the like ruffled pleats of a trimming strip.

Another object of our invention is to provide an attachment of the type specified which is adapted to produce ruffles or pleats of equal width at opposite surfaces of the guided edge of the quilt or the like.

Still another object of our invention is to provide an attachment of the type specified adapted to be conjointly mounted on a single ruffling blade lever operated from the ruffle shaft of a conventional ruffling machine, said lever preferably being mounted on such shaft in an inwardly-offset position to provide room for mounting and operation of the ruffling blades.

Still another object of our invention is to provide a mounting means for said blades which will enable both blades to be moved by a common ruffling-blade lever and to be moved similar distances on each operation of said lever and to provide a mounting means preferably comprising an oscillatory yoke pivotally mounted between its ends on said ruffling-blade lever and having arms through which the pair of ruffling blades are conjointly reciprocated by said ruffling blade lever through equal distances to produce uniform ruffle pleats on each operation.

Still another object of our invention is to provide a pair of ruffling blades of the type specified having ruffle-producing end portions bent toward each other and guided, preferably by the terminal

ends of a rigid folding and guide member for the edges of the trimming strip and the edge of the quilt or the like, to cause such blade ends to engage and simultaneously ruffle opposite edges of a suitable strip of trimming material during the sewing thereof to opposite surfaces of the edge of a quilt or the like.

With these and other objects in view, the invention comprises the combination of members and arrangement of parts so combined as to coact and cooperate with each other in the performance of the functions and the accomplishment of the results herein contemplated, and comprises in one of its adaptations the species or preferred form illustrated in the accompanying drawings, in which—

Fig. 1 is a fragmentary view in end elevation of a sewing machine head embodying our double-ruffling attachment showing the needles in raised position and the ruffling blades in retracted position;

Fig. 2 is a fragmentary view in plan of our double-ruffling attachment with the parts in the position shown in Fig. 1;

Fig. 3 is a view in end elevation similar to Fig. 1 showing the needles lowered and the ruffling blades in ruffling position;

Fig. 4 is a fragmentary view of the needles, presser foot and adjacent ruffling-attachment parts with the needles raised, the ruffling blades retracted on the guides and showing the paths of the materials through said guides and the machine;

Fig. 5 is a fragmentary view similar to Fig. 4 with the needle lowered and the ruffling blades forming ruffles between the presser foot and feed dog adjacent to the needles;

Fig. 6 is a view in plan of a portion of a quilt showing my combined binding and trimming sewed thereto;

Fig. 7 is a section on the line 7—7 of Fig. 6;

Fig. 8 is a section on the line 8—8 of Fig. 6; and

Fig. 9 is a section on the line 9—9 of Fig. 2.

Referring now to these drawings which illustrate a preferred embodiment of our invention, we are enabled to produce an article such as the quilt 1 shown in Figs. 6, 7 and 8 having a combined edge-binding and trimming member 2 composed of a single longitudinally folded strip 3 of trimming material provided along its opposite edges 4 and 5 with ruffle-pleats 6, 7 sewed to the opposite surfaces 1^a, 1^b of the quilt 1 at the edge thereof whereby we produce a quilt or the like having a binding member that encloses and binds its edge and provides an ornamental ruffled trimming 8 for opposite surfaces thereof. The ruffled pleats 6, 7 on opposite surfaces of the edges are of equal and uniform depth on both edges so that during a sewing to the quilt of a considerable length of such pleats, we will avoid any substantial unevenness of the travel of opposite edges of the trimming strip that would cause distortion or uneven tension or pulling of the material at the middle or body-portion 9 of the edge-encircling trimming member between the rows of pleats which is ornamentally fluted by the pleats.

The mechanism for producing the article 1 comprises a head 10 of a conventional sewing machine having a needle-bar 11 carrying a needle 12 and a presser-foot bar 13 carrying a presser foot 14, both of which are actuated by conventional mechanism not shown. The presser foot presses and holds the material in engagement with a set of feed dogs 15 also actuated in the usual manner by conventional mechanism not shown.

The sewing machine head 10 is provided with a conventional horizontally disposed ruffle shaft 16 mounted in bearing arm 16^a extending laterally from the head 10, and we mount on the shaft 16 a binding and ruffling attachment that will during a sewing operation enable the simultaneous binding of the edge of a quilt or the like and produce ruffling pleats of opposite side edges of a single folded strip of trimming material to provide a trimming surrounding such edge to function both as an edge-binding and as an ornamental ruffled trimming. In our preferred embodiment, we preferably mount in an inwardly-offset position a ruffling-blade lever 17 which, as shown, is adjustable vertically in a sleeve 17^a and has an offset collar 17^b fast on the said shaft 16. The inward offsetting of the lever 16 provides more space at the outside thereof for our blade-connecting device which, in the preferred embodiment shown, comprises an oscillatable yoke member 18 having arms 18^a, 18^b extending angularly to each other from an intermediate pivot-bearing 18^c which is pivoted on a block or collar 19 adjustable vertically on the lever 17. In the embodiment shown, the outer ends of the yoke-arms 18^a, 18^b have mounted therein and carry horizontal extensions or blades-positioning rods 20, 20^a, the outer ends of which extend transversely across the path of movement of the quilt edge and the trimming material and are provided at such outer ends with pairs of attaching screws 21 and 22, by which a pair of ruffling-blades 23, 23^a are mounted on the rods 20, 20^a to extend transversely thereto in substantial parallelism and alignment with the said path of movement of the quilt edge and trimming material. Said pair of blades 23, 23^a are resilient and bent at their outer ends to extend toward a common plane and are positioned to move in contact with upper and lower terminal plates 24^a, 24^b of a channeled guiding member 24 having a middle guide-channel portion 25 for the reception of the edge 26 of the quilt 1 and a U-shaped channelled portion 27 fitting around said channeled portion 25 and having leg portions 27^a, 27^b extending on opposite sides thereof. A channel is formed between the inner channelled portion 25 and the outer channeled portion 27 and the channel so formed received a folded strip of trimming material 3 which has been initially folded between its edges by any suitable means and then passed through a lateral or side extension 29 of said U-shaped channel member 24, from which it is turned to pass through said U-shaped double-channeled member 24. Said member 24 extends along the front of the machine in alignment with the final path of travel both of the quilt-edge 26 and of the trimming material 3. In such travel, the quilt edge and trimming material pass through the upper and lower terminal ends of the said guiding member 24, and in accordance with our invention, said terminal ends 24^a, 24^b are utilized as guides for the movement of the resilient upper and lower ruffling blades 23, 23^a. Due to the resilience, positioning and mounting of said ruffling blades, they are adapted to move toward each other, and are guided by said channelled-portion ends 24^a, 24^b to move into ruffling contact with the opposite edges of the trimming material fed through said channel between the portions 25 and 27 and through the outlet at the ends of said terminal portions 24^a, 24^b.

The ruffling blades are preferably formed of

relatively flat blade-attaching spring members 23^b, 23^c and reversely-bent blade-sections 23^d, 23^e which are each provided at their terminal ends with fine teeth 23^f as shown in Fig. 2.

As shown, the lower terminal end 24^b extends to a line adjacent to the bottom of a shallow groove 30 in the top surface of the sewing machine table *t* and the outer end 23^e of the lower ruffling blade operates in said groove 30 and reciprocates between the bottom thereof and said terminal end 24^b of the said guide member 24.

It will be seen that the pair of ruffling blades are mounted for reciprocable movement conjointly toward and away from a common plane and adapted, during a machine stitching operation for sewing to opposite surfaces adjacent to the edge of a quilt or the like the opposite edges of a folded trimming strip, to simultaneously ruffle such opposite edges of the folded trimming strip and thus to provide on the edge of the quilt or the like a combined edge-binding and double-ruffled trimming: that the pair of ruffling blades are reciprocably movable conjointly toward and away from a common plane extending adjacently above a sewing machine base and the feed dog thereof combined with means for moving and guiding said blades to move at a position above said feed dog and below a presser foot to provide on both surfaces of a guided edge of a quilt or the like ruffled pleats of a trimming strip, and that the attachment of the type specified is adapted to produce ruffles or pleats of equal width at opposite surfaces of the guided edge of the quilt or the like, and also that we provide a mounting means for said blades which will enable both blades to be moved by a common ruffling blade lever and to be moved similar distances on each operation of said lever and to provide a mounting means preferably comprising an oscillatory yoke pivotally mounted between its ends on said ruffling-blade lever and having arms through which the pair of ruffling blades are conjointly reciprocated by said ruffling blade lever through equal distances to produce uniform ruffle pleats on each operation.

Having described our invention, we claim:

1. A binding and ruffling attachment for sewing machines provided with conventional needles comprising a ruffling blade lever, means for mounting said lever on a ruffling shaft of a ruffling sewing machine to oscillate said lever toward and away from the needles, a pair of ruffling blades mounted on said lever for reciprocal movement conjointly toward and away from a common plane and adapted during the machine stitching operation for engaging the opposite edges of a folded strip of trimming material to simultaneously ruffle such opposite edges of the folded trimming strip during such stitching operation, a guiding element completely U-shaped in cross-section having spaced sides and provided with terminal ends forming positive guides for said ruffling blades, said guiding element being provided between its sides with an intermediate straight channel to guide the edge of a quilt into position between the feed dogs and the needles of the machine, and also having a U-shaped trimming material guide channel extending to opposite sides of said straight quilt-edge guide channel for guiding each of two folds of a folded trimming strip and causing one of said folds to contact with one face of said quilt edge and the other fold to contact with an opposite surface of the edge of the quilt for ruffling and sewing said opposite folds of the trimming strip to the edge of the quilt.

2. A binding and ruffling attachment for sewing machines provided with conventional needles comprising a ruffling blade lever, means for mounting said lever on a ruffling shaft of a ruffling sewing machine to oscillate said lever toward and away from the needles, a pair of ruffling blades mounted on said lever for reciprocal movement of the ends thereof conjointly toward and away from a common plane and adapted during the machine stitching operation for engaging each of two folds of a folded strip of trimming material being sewed to opposite surfaces of a quilt adjacent to the edges thereof to simultaneously ruffle both of said two folds of the folded trimming strip, said pair of ruffling blades being mounted on an oscillatory yoke pivotally mounted between its ends on said ruffling blade lever, said yoke having arms on which said pair of ruffling blades are mounted for conjoint reciprocation by said ruffling blade lever throughout equal distances to produce during each operation uniform ruffled pleats on opposite sides of the quilt.

3. A binding and ruffling attachment for sewing machines as claimed in claim 2 in which the pair of ruffling blades mounted on said yoke are provided with end portions bent toward each other and both of said ends are guided to cause the same to engage and simultaneously ruffle each of two folds of the strip of trimming material during the sewing thereof to opposite surfaces of the quilt at the edge thereof.

4. A binding and ruffling attachment for sewing machines provided with conventional needles, comprising a guide member formed of a pair of spaced plates arranged in relatively close parallel relationship to each other and forming a narrow trimming-material guide channel and bent into U-shaped cross-section to produce double channels, each channel being adapted to enclose one of the folds of a folded trimming-material strip and said double-channelled member providing guide-channels for guiding and maintaining two folds of such folded trimming strip with the edges thereof extending in the same direction, one above the other, said U-shaped guide member having between the plates forming said double trimming-material guide-channels a relatively wide straight guide-channel open at one side to permit insertion and guiding of the edge portion of a quilt into position between said folds of the folded trimming strip and conjointly to guide said folds of the folded trimming strip and said edge portion of the quilt into position beneath said needles, and ruffling means comprising a ruffling-blade lever, means for mounting the said ruffling-blade lever on a ruffling shaft of a ruffling sewing machine to oscillate the same toward and away from said needles, a pair of ruffling-blades mounted on said lever for conjoint reciprocal movement toward and away from the opposite faces of said quilt, one member of said pair of ruffling blades during a machine stitching operation in which the trimming is being sewed to said quilt adjacent to the edge thereof engaging and ruffling one fold of said folded strip of trimming material against one face of said edge portion of the quilt, and the other member of said pair of ruffling-blades engaging the other fold to ruffle the same against the opposite face of said edge portion of the quilt, said two blades independently engaging its fold of said strip and co-acting to simultaneously ruffle both of such

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