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3,149,590

SEWING MACHINE FABRIC TRIMMING ATTACHMENT

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2 Sheets-Sheet 1

FIG. 1.

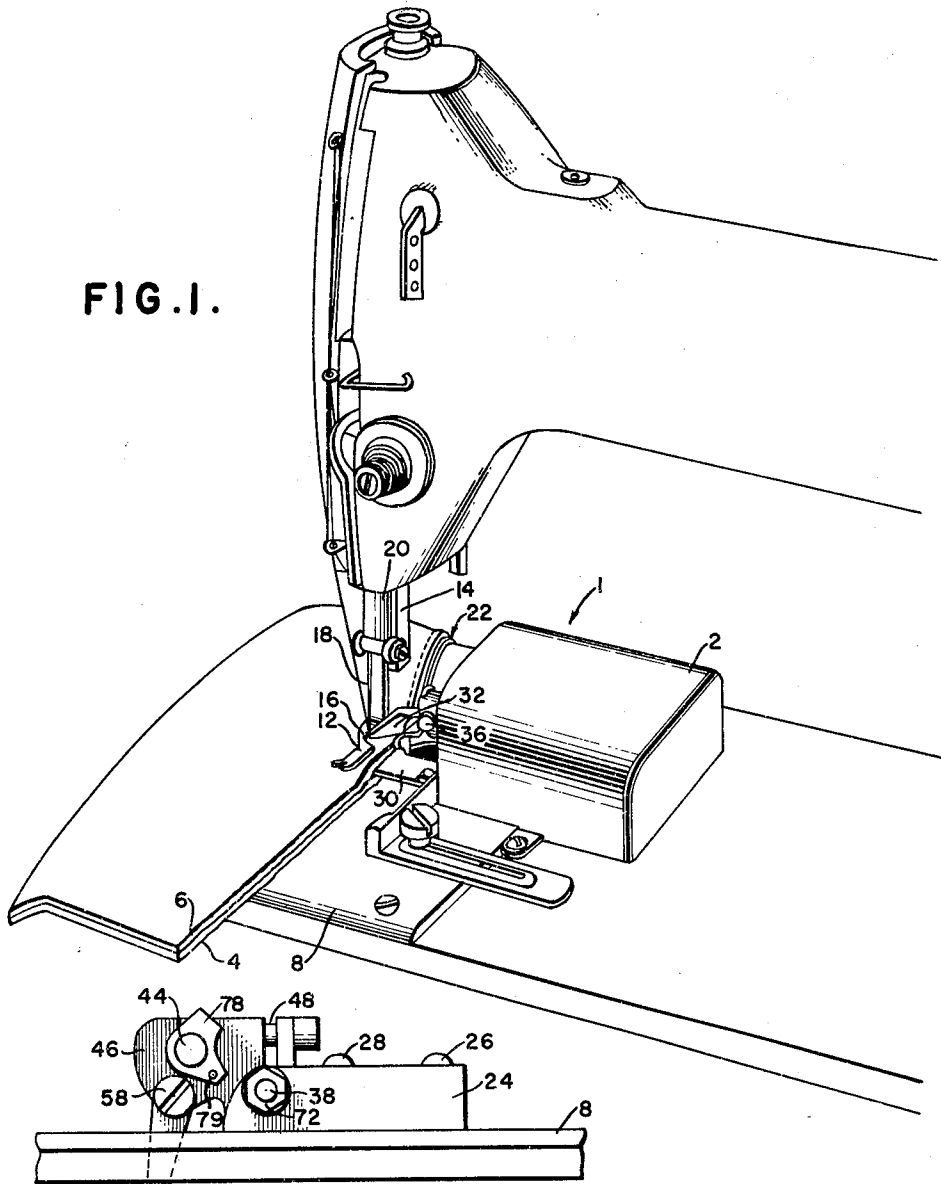
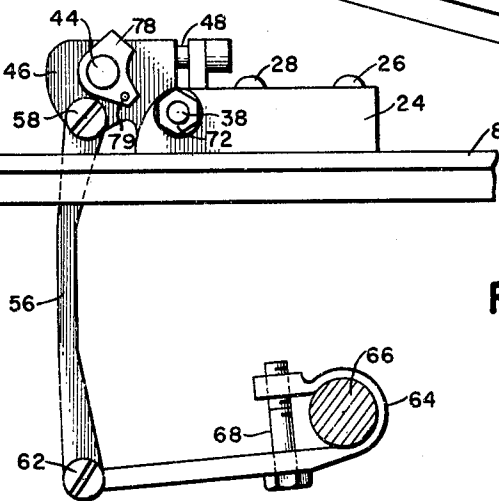


FIG. 6.



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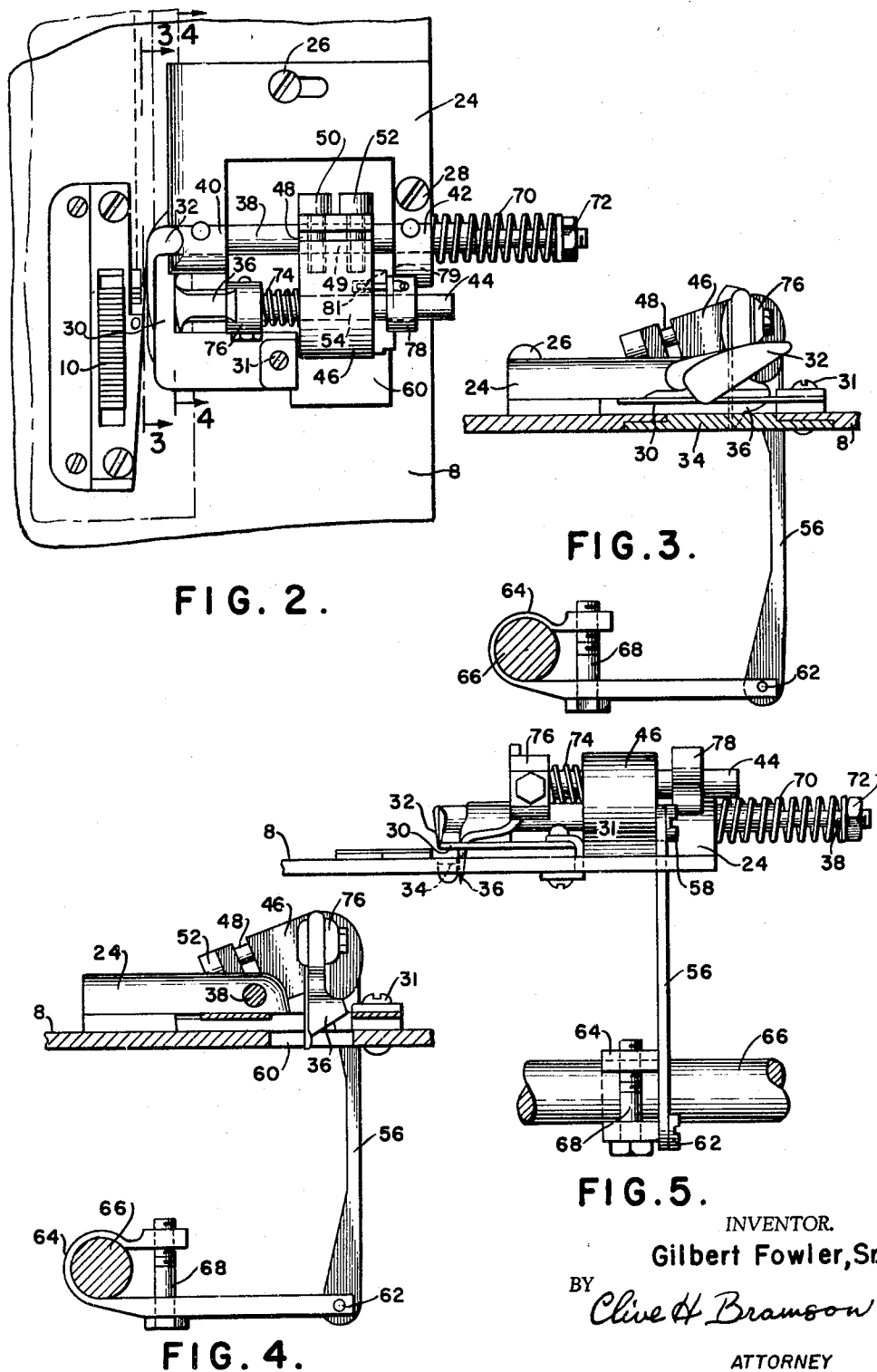
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SEWING MACHINE FABRIC TRIMMING ATTACHMENT

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This invention relates to a novel sewing machine mechanism and more particularly to a cloth trimming attachment for trimming the edge portions of superposed fabric sections parallel to the direction of travel, the said fabric sections being stitched simultaneously with the trimming operation.

Whereas it is frequently desirable to arrange fabric sections in flat overlapped relation to each other, the appearance or finish of the edge portions of the respective fabric sections and the economics involved with respect to achieving the sought after appearance have been formidable problems to both designers and manufacturers alike. The sewing machine attachment to be hereinbelow disclosed now enables, both with rapidity and facility, the simultaneous trimming of the respective edge portions of superposed fabric sections and the stitching together thereof simultaneously therewith, a step or layer off-set effect being established for aesthetic purposes useful, for example, when the stitched and finished edge portions are to form the trim for a cloth coat collar, etc.

Essentially the present invention is directed to providing a sewing machine attachment of the above nature wherein the fabric sections may be fed to the trimming mechanism with the edges thereof substantially in alignment although rough and untrimmed, the said fabric sections, upon leaving the attachment, being trimmed, stitched, and the edge of the upper layer being inwardly off-set with respect to the trimmed edge of the lower layer, thus providing a stepped effect greatly improving the appearance of the trimmed superposed and united fabric sections.

Consonant with the foregoing, the instant invention has for an object the provision of a sewing machine fabric trimming attachment which may be readily adapted to a conventional sewing machine.

Another object of the present invention is to provide a sewing machine attachment of the above character wherein the shearing members are reciprocally actuated through a single motivating linkage; said motivating linkage being in synchronism with the cloth feeding mechanism.

A further object of the present invention is the provision of a cloth trimming mechanism having two pairs of shearing members, the pivotal blade of each pair of shearing members being automatically and continuously tensioned with respect to the respective stationary blade thereof.

A still further object of the instant invention is the provision of a new and useful sewing machine fabric trimming attachment wherein the trimming devices are so disposed as to cut the respective edges in parallel lines adjacent the stitching mechanism of a conventional sewing machine.

Still another object of the present invention is to provide a sewing machine fabric trimming attachment having upper and lower pivotal blades and upper and lower stationary blades, the upper stationary blade being further employed as a platform for supporting an upper fabric section and for separating said section from a lower fabric section.

It is a still further object of this invention to provide a sewing machine fabric trimming attachment accomplishing the objectives noted above, which attachment is of extremely simple construction, economical of manufacture, and highly reliable in operation.

Further and additional objects and advantages will

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become apparent to those skilled in the art as the description proceeds with reference to the accompanying drawings, wherein:

FIG. 1 is a perspective view of a machine showing superposed layers of fabric being fed into the shearing members of the sewing machine attachment according to the present invention;

FIG. 2 is a top plan view of the attachment in isolation, the cover member being removed therefrom;

FIG. 3 is a front end elevational view taken along line 3-3 of FIG. 2;

FIG. 4 is a front end elevational view taken along line 4-4 of FIG. 2;

FIG. 5 is a side elevational view of the device shown in FIG. 2; and

FIG. 6 is a rear end elevational view of the device shown in FIG. 2.

Referring in detail to the accompanying drawings, the invention is shown operationally attached to a conventional sewing machine in FIGURE 1 wherein the attachment is generally designated by numeral 1 and is partially concealed by cover member 2. Superposed fabric sections 4 and 6, the lower and upper sections respectively, are fed along the work supporting base plate 8 by virtue of the eccentric movement of feed dog 10 shown in FIGURE 2 of the drawings and the action of presser foot 12 which is adjustably mounted and held rigidly by fixed support member 14. The said presser foot is provided with an opening 16 for the needle 18, the said needle being carried by a needle bar 20 which is reciprocated in the usual manner in the overhanging arm of the machine.

The purpose of the instant device will be appreciated upon observation of the completed condition of the outgoing product as seen in FIGURE 1 at 22. To that end an off-set relation between the upper and lower fabric section is accomplished with respect to the edge portions thereof. In addition, the fabrics are stitched to one another, and their respective edges are trimmed.

With reference to FIGURES 2-6 of the drawings a full understanding of the structural embodiment of the present device will be realized. Accordingly, the embodiment of the invention illustrated thereby is comprised of a substantially U-shaped bearing block 24 which is supported by the said base plate 8 and firmly secured thereto by machine screws 26 and 28. First stationary blade 30 and pivotal blade 32 cooperatively associated therewith and second stationary blade 34 and pivotal blade 36 cooperatively associated therewith comprise the pairs of shearing members adapted to trim the upper and lower fabric sections, respectively. A first horizontal shaft 38 rotatably journaled at 40, 42 within the arms of the said bearing block 24 and slidably supported thereby, and second horizontal shaft 44, comprise the pivotal blade extensions disposed at substantially right angles therewith and arranged to transmit the below described reciprocating pivotal motion to the said blades. Connecting member 46 is provided with a slotted end 48 permitting reception thereof over the said first horizontal shaft for seating of the said shaft within passage 49. Machine screws 50 and 52 are provided to firmly secure the said connecting member to the said first horizontal shaft subsequent to the positioning thereof as aforescribed. Bore 54 provided in the other end of the said connecting member is adapted to receive the said second horizontal shaft rotatably and slidably. Elbow-crank lever 56 pivotally secured at one end to connecting member 46 by means of machine screw 58 depends downwardly from said connecting member through opening 60 in the said base plate and beyond elbow pivot 62 is connected at looped end 64 to oscillating shaft 66 and secured thereto by machine screw 68. Thus, the vertical reciprocating motion imparted to elbow crank lever 56 is transmitted di-

rectly to connecting member 46 wherefrom the said motion is transposed into angular reciprocating motion with respect to the said first and second horizontal shafts, the said pivotal blades integral with said shafts being ultimately reciprocated in shearing relation with their respective stationary blades.

Horizontal shaft 38 enveloped by compression spring 70 at a portion of the shaft extending without the bearing block 24, provides continuing resilient contact between pivotal blade 32 and stationary blade 30. In addition, horizontal shaft 38 may be manually adjusted longitudinally against bearing block 24 by nut 72 on the threaded end of shaft 38 to place pivotal blade 32 in proper cutting relationship with stationary blade 30 or out of cutting relationship therewith if that be desired.

Pivotal blade 36 is, by compression spring 74, in the manner described with respect to pivotal blade 32, resiliently urged into shearing engagement with its co-operating stationary blade 34. Accordingly, said spring 74 envelops horizontal shaft 44 at the region between the said connecting member and blade holder 76 positioned endwise thereof, thus biasing said blade 36 against the cutting edge of blade 34, said cutting edge being disposed flush with the surface of said base plate 8, spaced vertically below stationary blade 30 and spaced at least one eighth to one half inch from the cutting edge of said stationary blade 30 in the direction of the connecting member. As shown in FIGURES 2, 5 and 6, stop member 78 is secured about shaft 44 to thereby limit the horizontal movement of said shaft within bore 54. One end of pin 79, seen in FIGURES 2 and 6, is integral with said stop member 78, the other end thereof being slidably received within bore 81 provided in connecting member 46, to thereby preclude rotation of shaft 44 within bore 54.

In operation, superposed layers of fabric 4, 6, to be trimmed and stitched in off-set relation, are fed through the device, the edge portion of the upper layer 6 being supported upon and automatically moved across the platform provided by first stationary blade 30, the edge of the lower layer being supported upon and automatically moved across second stationary blade 34, which as aforementioned is disposed flush with the plane of base plate 8. Thus, separation of the edges of said upper and lower fabric sections occurs during the period of movement of said fabric sections across the respective stationary blade platforms, trimming and stitching being also accomplished at that time. The width of the step resulting by dint of the off-set trimming operation may be varied by adjusting the position of first stationary blade 30 which may be predetermined and secured by machine screw 31 which connects the said platform thereof to the said base plate 8. By reason of the aforescribed self-adjusting feature possessed by first pivotal blade 32 with respect to first stationary blade 30, shearing relation therebetween will be maintained notwithstanding re-positioning of the said first stationary blade.

Both the structural and operational characteristics of the invention having been described, it will be understood that changes may be made in the form, construction, and arrangement of parts from that disclosed herein without in any way departing from the spirit of the invention or sacrificing any of the attendant advantages thereof, provided, however, that such changes fall within the scope of the claims appended hereto.

What is claimed is:

1. A sewing machine attachment adapted for trimming the respective edge portions of superposed fabric sections parallel to the direction of travel, the said fabric sections being stitched simultaneously therewith, said attachment being comprised of a base plate having an upper and a lower surface, a first stationary blade supported above said base plate in spaced parallel relation with respect to the upper surface of said base plate, a first pivotal blade in shearing engagement with said first stationary

blade, a second stationary blade disposed flush with respect to the upper surface of said base plate and in spaced parallelism with respect to said first stationary blade, a second pivotal blade in shearing engagement with said second stationary blade, said first and second pivotal blades being mutually connected for united pivotal movement, said pivotal blades being disposed in spaced parallel relation.

2. A sewing machine attachment adapted for trimming the respective edge portions of superposed fabric sections parallel to the direction of travel, the said fabric sections being stitched simultaneously therewith, said attachment being comprised of a base plate having upper and lower surfaces, a first stationary blade supported above said base plate in spaced parallel relation with respect to said upper surface, a first pivotal blade in shearing engagement with said first stationary blade, a second stationary blade disposed flush with respect to the upper surface of said base plate, and in parallelism with respect to said first stationary blade, a second pivotal blade in shearing engagement with said second stationary blade, said first and second pivotal blades being mutually connected for united parallel pivotal movement, and actuating means in engagement with said pivotal blades, said means being adapted to impart reciprocating motion to the said pivotal blades.

3. A sewing machine attachment adapted for trimming the respective edge portions of superposed fabric sections parallel to the direction of travel, the said fabric sections being stitched simultaneously therewith, said attachment being comprised of a base plate, a first stationary blade supported above said base plate in spaced parallel relation with respect to said base plate, a first pivotal blade in shearing engagement with said first stationary blade, a second stationary blade disposed flush with respect to the surface of the said base plate and in parallelism with respect to said first stationary blade, a second pivotal blade in shearing engagement with said second stationary blade, a connecting member mutually securing said pivotal blades, said connecting member continually maintaining said first pivotal blade in spaced parallel relation with respect to said second pivotal blade, actuating means in engagement with said connecting member, said means being adapted to impart reciprocating motion thereto.

4. A sewing machine attachment adapted for trimming the respective edge portions of superposed fabric sections parallel to the direction of travel, the said fabric sections being stitched simultaneously therewith, said attachment being comprised of a base plate having an upper and a lower surface, a U-shaped bearing block supported by and secured to the upper surface of said base plate, a first stationary and pivotal blade and a second stationary and pivotal blade, said first stationary blade being supported in spaced parallel relation with respect to the upper surface of said base plate, the second stationary blade being disposed flush with respect to the upper surface of said base plate, a first horizontal shaft integral with said first pivotal blade, said first horizontal shaft being rotatably journaled and slidably supported by said U-shaped bearing block, a second horizontal shaft fastened to said second pivotal blade, a connecting member fixedly secured at one end thereof to the said first horizontal shaft, the other end thereof being adapted to slidably support said second horizontal shaft whereby said first pivotal blade is continually maintained in spaced parallel relation with respect to said second pivotal blade, an elbow-crank lever drivingly associated with the said connecting member and adapted for effectuating united reciprocating movement of said first and second pivotal blades, said pivotal blades being spring biased in the direction of the cutting edges of the respective stationary blades.

5. A sewing machine attachment adapted for trimming the respective edge portions of superposed fabric sections parallel to the direction of travel, said fabric sec-

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tions being stitched simultaneously therewith, said attachment being comprised of a base plate having upper and lower surfaces, and an opening disposed there-through, a stationary blade platform supported in spaced parallel relation with respect to the upper surface of said base plate, a first stationary blade integral with said stationary blade platform, a first pivotal blade in shearing engagement with said first stationary blade, a second stationary blade secured within the opening disposed through said base plate, said second stationary blade being flush with respect to the upper surface of said base plate, a second pivotal blade in shearing engagement with said second stationary blade, said first and second pivotal blades being disposed in spaced parallel relation and said first and second stationary blades being disposed in spaced parallel relation.

6. A sewing machine attachment adapted for trimming the respective edge portions of superposed fabric sections parallel to the direction of travel, said fabric sections being stitched simultaneously therewith, said attachment being comprised of a base plate having obverse and reverse surfaces, a first stationary and pivotal blade, a first horizontal shaft integral with said first pivotal blade,

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a bearing block secured to said base plate and adapted to rotatably journal and slidably support said first pivotal blade, a second horizontal shaft fastened to said second pivotal blade, a connecting member fixedly secured at one end thereof to said first horizontal shaft and adapted to pivotally support said second pivotal blade for relative axial movement with respect to said first pivotal blade, said first and second pivotal blades being disposed in spaced parallel relation and said first and second stationary blades being disposed in spaced parallel relation, said bearing block, said first and second horizontal shafts, and said connecting member being disposed above the obverse surface of said base plate.

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