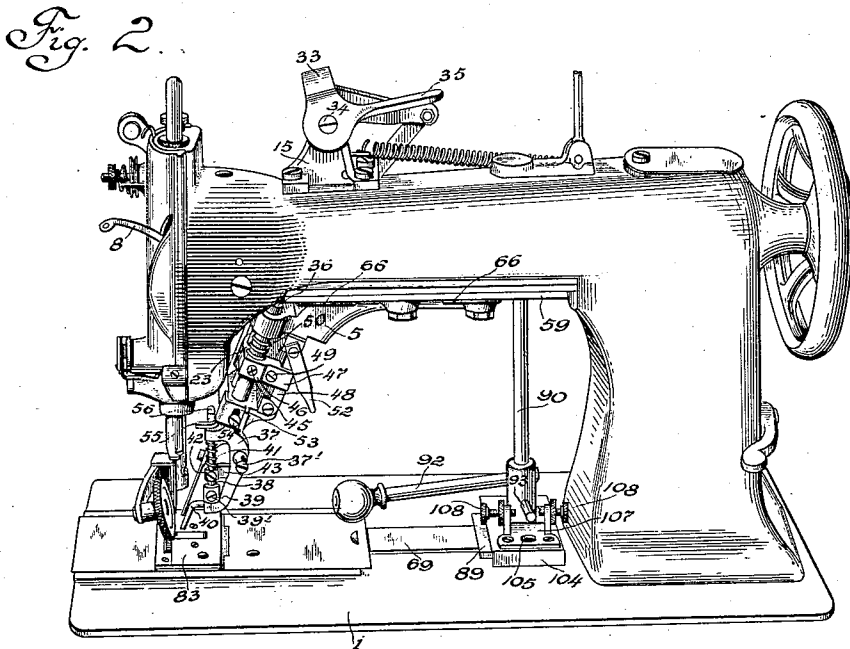
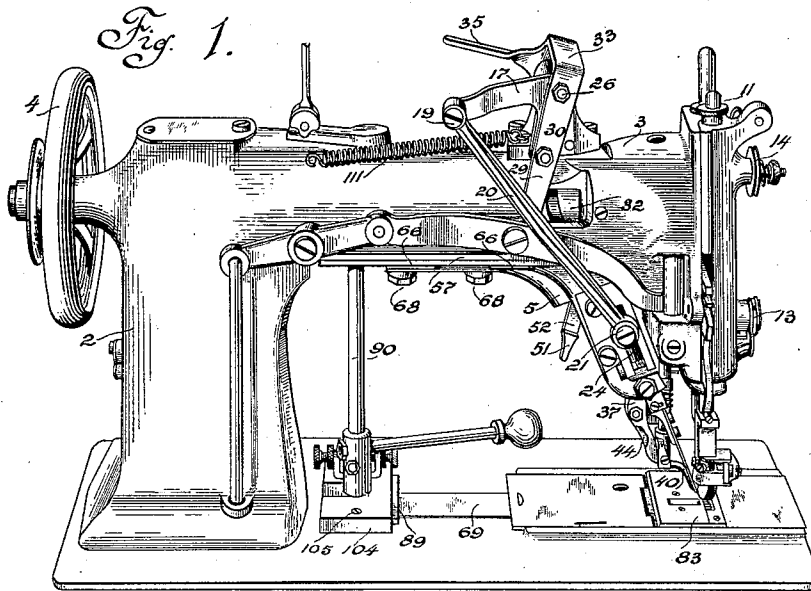


C. W. THOMAS.
SEWING AND TRIMMING MACHINE.
APPLICATION FILED MAY 31, 1910.

1,015,917.

Patented Jan. 30, 1912.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 3.

Fig. 6.

Fig. 7.

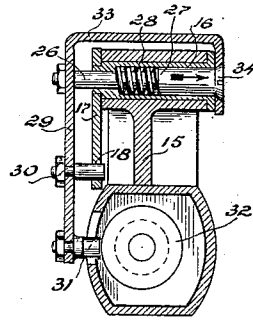
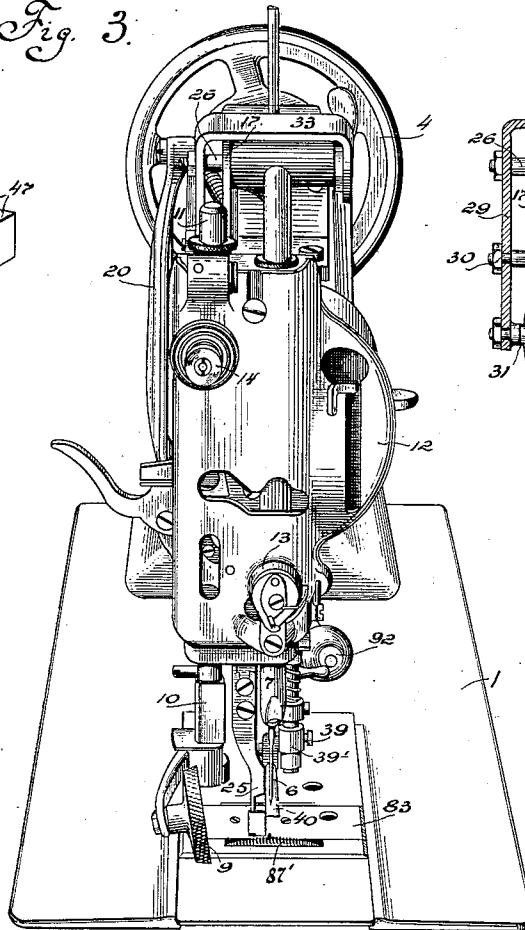
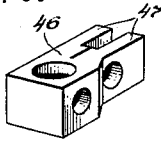


Fig. 5.

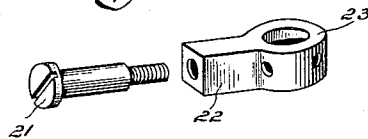
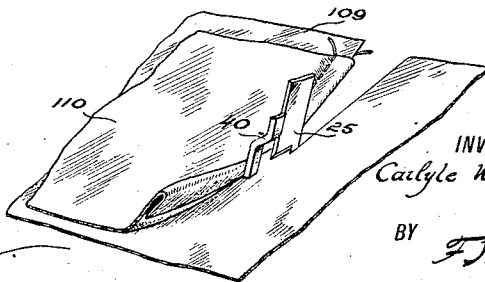


Fig. 8.



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UNITED STATES PATENT OFFICE.

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SEWING AND TRIMMING MACHINE.

1,015,917.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed May 31, 1910. Serial No. 564,096.

To all whom it may concern:

Be it known that I, CARLYLE W. THOMAS, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut; have invented certain new and useful Improvements in Sewing and Trimming Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in sewing and trimming machines and has for its primary object to improve machines of the class represented by U. S. Patent to W. A. Neely, No. 628,227, dated July 4, 1899, to which reference may be had for a more detailed understanding of the operative relationship of the elements common to the means herein employed.

Prior to the present invention it has been common to provide sewing machine trimming devices with manually controlled mechanism for changing the relationship of the trimming line with respect to the line of seam formation during the sewing operation, but it is believed that such adjusting mechanism has heretofore found application only in connection with edge trimmers employing a trimmer blade operated in substantially the same vertical plane as the needle-carrying bar.

While the invention is herein shown and described in connection with one form of commercial sewing machine equipped with the preferred form of under edge trimming mechanism, it is to be understood that it is not limited in this respect, the mechanism for manually determining the line of trimmer bar actuation with respect to the line of vertical movement of the needle-carrying bar being mounted and actuated independently of the specific means for causing the trimmer blade to sever the material, except as it may be connected with the commonly employed ledger blade and trimmer blade carrying elements.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a rear side elevation, in perspective, of a sewing machine equipped with an under edge trimming mechanism, together with the improved mechanism for manually changing the relationship of the trimming line with respect to the line of seam formation. Fig. 2 is a front side view, in perspective,

of the machine shown in Fig. 1. Fig. 3 is a front end elevation, in perspective, of the machine shown in the previous figures. Fig. 4 is a detail perspective view of the manually controlled means for effecting the adjustment of the coacting trimming elements with respect to the stitch-forming elements. Fig. 5 is a perspective view of the trimmer bar collar and collar link screw. Fig. 6 is a cross-section through the bracket arm and bracket carried by said arm, together with a view in section of the rocking frame and hollow shaft for controlling the action and inaction of the trimmer blade, showing in full lines the central shaft and its actuating spring. Fig. 7 is a detail perspective view of the gage bar guide collar. Fig. 8 is a perspective view showing the operative relationship of the fabric, fabric gage and trimmer blade.

As many of the parts comprising the stitch-forming and edge-trimming mechanism herein illustrated are similar in machines of this class, only such limited reference will be made to such parts as is deemed necessary for a proper understanding of the invention.

1 represents the bed-plate of the sewing machine, 2 the arm standard, 3 the bracket arm, 4 the band or hand wheel, 6 the needle, 7 the needle-carrying bar, 8 the take-up, 9 the roller presser, 10 the roller presser bracket, 11 the presser bar and 12 the arm face plate carrying the thread controller 13 and tension mechanism 14.

Secured upon the overhanging arm is a bracket 15 which receives a hollow rock-shaft 16 having fixed to it at one end an elbow lever 17, a depending arm of said lever having an opening 18 while the other or longer arm thereof receives a stud screw 19 which forms a pivotal connection for the upper end of the trimmer-carrying bar link 20. The opposite end of said link is pivotally attached, by screw 21, to a projection extending from a collar 23 fast on the trimmer-carrying bar 24 to which the trimmer blade 25 is attached, said bar being mounted in suitable bearings formed in the trimmer bar frame 5.

The hollow rock-shaft 16 receives through it a shaft 26, a portion of which is reduced in diameter thereby forming a shoulder 27 against which bears one end of a spring 28 which normally acts to hold said shaft in

the direction indicated by the arrow. The smaller end of the shaft 26 has fixed upon it an arm 29 provided with a stud 30, which enters the opening 18, said arm also carrying at its lower end a roller stud provided with a roller 31 which, at the will of the operator, as will later be explained, coacts with the cam groove formed in the periphery of the hub 32 to actuate the trimmer bar 24 through the connections previously pointed out. The arm 29 comprises one member of a rocking frame 33, which, at the side opposite said arm, is secured by screw 34 to the shaft 26 and provided with a hand lever 35.

Slidably mounted in suitable bearings carried by the trimmer bar frame 5 is a gage bar 36 carrying at its lower end a yoke 37 provided with a gage-carrying bar 38 to the lower end of which is secured, by screw 39, a collar 39' carrying a gage 40 which is yieldingly held in depressed position by a spring 41 acting upon the guide collar 42, the latter being provided with a projection 43 which enters a groove 44 formed in said yoke. To properly guide the bar 36, there is secured to it, by screw 45, a collar 46 provided with complementary projections 47, 47 arranged one at each side of the guide bar 48, a screw 49 acting to adjust said projections with relation to said guide bar. Mounted upon the bar 36 is a spring 50 which normally acts to hold said bar in its lowest position, but when it is desired to hold the gage 40 out of operative relationship with the fabric, said bar is elevated sufficiently to seat the outer projection 47 on the shoulder 51 of the swinging latch 52. 37' represents a stud screw for adjusting the groove 44 with respect to the projection 43 carried by the guide collar 42.

It is sometimes desirable to adjust the gage 40 slightly above the under ply of the material but in operative relationship with the upper ply thereof, and for effecting such adjustment the frame 5 is provided with a plate 53 adjustably secured by screw 54, said plate having a finger 55 which coacts with a shoulder 56 formed on the upper end of the bar 38 to limit the downward movement of said bar to the desired position.

All of the foregoing parts are substantially the same as in the construction represented by Patent No. 628,227 previously referred to, and are herein illustrated and described not as part of the present invention but as representing a preferred mode of applying such invention.

Referring now to the parts more directly connected with the improvement, a plate 57 is secured to the underside of the bracket arm by suitable screws which pass through openings 58 and are threaded into said arm, and to the underside of said plate is suitably secured a frame plate 59 provided with an opening 60 and with complementary openings

61 through which latter suitable stud screws as 63 are threaded into the openings 62 in the plate 57.

64 represents a guide block complementary to each of the openings 61 and into which the body portions of the screws 63 extend, and directly under the head of each of said screws is mounted a spring plate 65 (shown at 66, Figs. 1 and 2), thus frictionally holding the plate 59 in contact with the plate 57. The trimmer bar frame 5 is secured to the underside of the frame plate 59 by screws 67, 67 which pass through suitable openings in said frame and receive the nuts 68, 68, as illustrated in Figs. 1 and 2.

69 represents a ledger blade adjusting plate connected at its forward end, by screws 70 and plate 80, with an extended arm 81 secured by screws 82, 82 to the ledger blade plate 83, the latter being provided with the usual ledger blade 84, resiliently held knife guard 85, needle opening 86 and feed-dog slot 87, said slot being of sufficient width to permit of the desired adjustment of the plate 83, without contacting with the serrated feeding element 87', the plate 69 having secured to its rear end, by pins 88, a slide block 89.

90 represents a vertically arranged oscillating cam shaft having its upper end mounted in the opening 91 formed in the plate 57, its lower end being mounted in a suitable bearing (not shown) formed in the bed-plate 1 of the sewing machine. For a short portion of its length the shaft 90 is increased in diameter, and in such enlarged portion are suitably secured the hand lever 92 and stop pin 93.

Secured to the upper end of the shaft 90 is an eccentric cam 94 which enters an opening 95 in the cam plate 96, said plate being mounted in the opening 60 formed in the plate 59, a disk 97 which forms a part of the cam 94 acting to hold the plate 96 in operative relationship with the plate 59. At the lower end of the shaft 90 is a second eccentric cam 98, complementary to the cam 94, said cam 98 coacting with the opening 99 formed in the cam plate 100 which is mounted in the opening 101 formed in the block 89.

104 represents a guide block which is grooved at its underside to receive the block 89 and secured by screws 105 to the bed-plate 1. The upper side of the guide block 104 has secured to it a bracket 107 provided with adjusting screws 108, the inner ends of which latter coact with the stop pin 93 to limit the angular movements of the cams 94 and 98 carried by the shaft 90.

In the operation of the device, the fabrics are first fed into operative relationship with the stitch-forming mechanism, with the ply 109 below the gage 40 and the upper ply 110 in contact with the front side of said gage as shown in Fig. 8, the lower end of said

gage resting upon the lower ply of material or being slightly raised, as the nature of the production may require. If, for any purpose, it is desired to change the trimming line with respect to the line of stitch formation during the stitching operation, as when trimming a curved line, the operator by manipulating the lever 92 moves the cams 94 and 98, thus transmitting movements of like amplitude to the trimmer blade 25 and ledger blade plate 83 through the connections pointed out.

In the figures, the cam roller 31 is illustrated as adjusted out of operative relationship with its actuating cam groove formed in the hub 32, but whenever it is desired to adjust said roller into operative relationship with said groove, the operator presses down on the hand lever 35, which turns the rock-shaft 26 in opposition to the spring 111, thus bringing said roller in line with said cam groove, when the spring 28 will cause said roller to enter said groove. To remove the roller 31 from operative relationship with its coacting cam groove, it is merely necessary to move the frame 33 bodily back to the position shown in Fig. 6.

Claims:—

1. In a sewing and under edge trimming machine, a stitch-forming and cloth-feeding mechanism, a trimmer mechanism including a reciprocating trimmer-carrying bar provided with a trimmer-blade, a trimmer-carrying bar frame movably mounted on the sewing machine bracket-arm and in which said trimmer-carrying bar is mounted to move in a direction oblique to the line of needle actuation, a ledger-blade plate movably mounted on the sewing machine bed-plate and provided with a ledger-blade, and connections between said trimmer-carrying bar and ledger-blade plate for simultaneously adjusting said trimmer-carrying bar and ledger-blade plate in directions transverse to the line of seam formation.

2. In a sewing and under edge trimming machine, a stitch-forming and cloth-feeding mechanism, a trimmer mechanism including a reciprocating trimmer-carrying bar provided with a trimmer-blade, a trimmer-carrying bar frame movably mounted on the sewing machine bracket-arm and in which said trimmer-carrying bar is mounted to move in a direction oblique to the line of needle actuation, a ledger-blade plate movably mounted on the sewing machine bed-plate and provided with a ledger-blade, and connections between said trimmer-carrying bar and ledger-blade plate for simultaneously adjusting said trimmer-carrying bar and ledger-blade plate in directions transverse to the line of seam formation, said connections including a hand-lever controlled to predetermine the relationship of the trimming line with respect to the line of seam formation.

3. In a sewing and under edge trimming machine, a stitch-forming and cloth-feeding mechanism, a trimmer mechanism including a reciprocating trimmer-carrying bar provided with a trimmer-blade, a trimmer-carrying bar frame in which said trimmer-carrying bar is mounted to move in a direction oblique to the line of needle actuation, a slide-plate secured to the sewing machine bracket-arm and to which said trimmer-carrying bar frame is secured, a ledger-blade plate provided with a ledger-blade, a slide-plate to which said ledger-blade plate is secured, and a cam-shaft provided with cam members for giving to said slide-plates synchronous movements in directions transverse to the line of seam formation.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

CARLYLE W. THOMAS.

Witnesses:

ABBIE M. DONIHUE,
CHARLES E. BERGER.