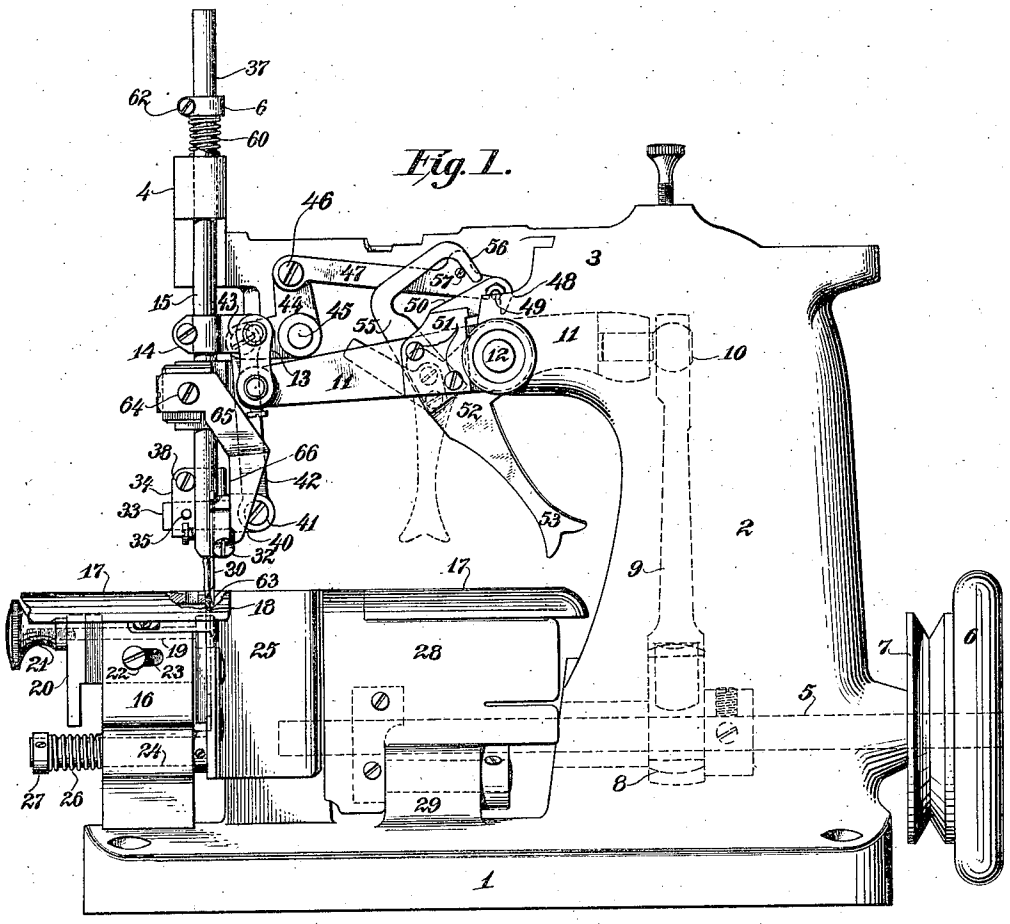
A. H. DE VOE.

TRIMMING DEVICE FOR SEWING MACHINES.

APPLICATION FILED JUNE 7, 1919.

1,426,466. Patented Aug. 22, 1922.

Fig. 1.



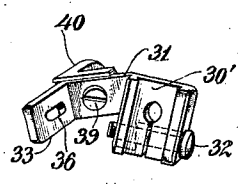


Fig. 3.

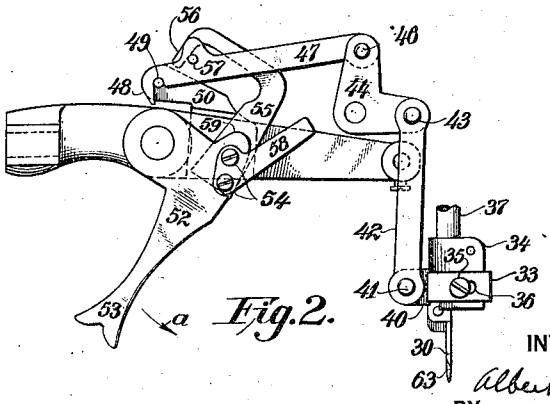


Fig. 2.

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TRIMMING DEVICE FOR SEWING MACHINES.

1,426,466. Specification of Letters Patent. Patented Aug. 22, 1922.

Application filed June 7, 1919. Serial No. 302,475.

To all whom it may concern:

Be it known that I, ALBERT H. DE VOE, a citizen of the United States, residing at Westfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Trimming Devices for Sewing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has for its object to provide means for throwing a trimming mechanism into and out of operation while the stitching proceeds and without impairing the operator's control of the work in directing it to the stitching mechanism.

The invention is preferably embodied in a sewing machine provided with trimming mechanism having a fixed ledger-blade and a reciprocating blade normally cooperating therewith but retractable at will in case the trimming is to be interrupted while the stitching continues. In its preferred construction the reciprocating trimmer-blade carrier has a train of connections with the usual rocking needle-operating lever including an actuating link formed with a hook adapted to engage a stud carried by said needle-lever. A controlling lever is so mounted within reach of the operator's hands and in such relation to said actuating link that in one position it serves to couple the link with its actuating stud and to simultaneously shift the movable trimmer blade into cooperative relation with the ledger-blade, while the shifting of the same into another position serves to disengage the parts so coupled and insure the separation of the trimmer blades for performing plain stitching.

The invention is illustrated in the accompanying drawing in which Fig. 1 is a front side elevation of the machine. Fig. 2 is a detail elevation of the mechanism for actuating the upper trimmer-blade and the controlling lever for throwing it into and out of action, and Fig. 3 is a perspective detail of the carrier for the upper trimmer-blade.

The improvement is embodied in a machine of the chain-stitch type, as disclosed, for instance, in my prior Patents No. 1,107,659, issued August 18, 1914, and No. 1,273,157, issued July 23, 1918. It comprises the base 1 from which rises the standard 2 provided with the overhanging arm 3 terminating in the head 4 in which are journaled the usual needle-, presser- and trimmer-bars. Journaled in the lower portion of the standard 2, lengthwise of the machine, is the main-shaft 5 having fixed upon its rearward end the balance-wheel 6 with attached grooved pulley 7. Secured to the main-shaft 5, within the standard 2, is the ball-eccentric 8 which is embraced by the lower end of a pitman 9 whose upper end has a ball-and-socket connection 10 with a needle-lever 11, pivoted upon the stud 12 centrally of the overhanging arm 3. The forward end of the needle-lever 11 has a link connection 13 with a collar 14 clamped upon the needle-bar 15 journaled in the head 4. Rising from the base 1 are two posts, one of which is shown at 16 to which is secured the work-support 17.

The lower trimmer-member or ledger-blade 18 is removably clamped, by means of the notched head of the pin or plug 19, in an inclined channel formed in the carrier-block 20, the pin passing through the carrier-block and having upon its threaded opposite end portion a milled clamping nut 21 by which the head of the pin is drawn into operative engagement with the ledger-blade 18 in its channel. The carrier-block 20 is slidably mounted in a suitable channel in the post 16 and it may be clamped in any position of adjustment by means of the fastening screw 22 passing through a slot 23 in the post 16 and entering the carrier-block. The construction just described is similar to that disclosed in the patent to Alfred Grieb, No. 933,033, of August 31, 1909.

Secured to the pin 24, slidably mounted in the post 16, is the trimmer-chute 25 which is yieldingly maintained against the lower trimmer-member 18 by the coiled spring 26 embracing the pin 24 and interposed between the post 16 and a collar 27 upon the pin. The trimmer-chute 25 may be moved laterally with its pin and swung downwardly in order to permit removal of the lower trimmer member for sharpening and to expose the looper for threading. A cover-plate 28, hinged upon a lug 29 rising from the base 1, prevents the material, while being operated upon, from being soiled by contact with the moving parts and gives access to the parts beneath the work-support for oiling and adjustment.

Cooperating with the lower trimmer member is the upper reciprocating trimmer-member 30 which is clamped in a suitable channel 30′ in the carrier 31 by the screw 32. The lateral arm 33 of the carrier is adjustably mounted in a channel formed in the head 34 and retained in the latter by the screw 35 passing through a slot 36 in the arm and entering the head, the head being clamped upon the lower end of the trimmer-bar 37 by the screw 38. Fixed to the carrier 31 by the screw 39 is the bracket 40 to which is secured by means of the screw-stud 41 one end of a link 42 whose other end is pivotally attached by the screw-stud 43 to one arm of a rocker 44 journaled upon the pin 45 fixed in the overhanging arm 3, adjacent the trimmer-bar 37. Pivoted to the other arm of the rocker, by the screw-stud 46, is the actuating link 47 whose free end is formed in a hook 48 adapted to engage a stud 49 carried by a plate 50 secured to the needle-lever 11 by the screws 51. The actuating link 47, with its hook 48, constitutes a coupling for establishing or interrupting the connection between the upper trimmer mechanism and its actuating means and the manner of controlling this coupling will now be described.

Fulcrumed upon the stud 12, which supports the needle-lever 11, is a manually shiftable controlling lever 52 with its finger-piece 53 directed downwardly in proximity to the work-support 17 so as to be accessible to the hands of the operator while directing the work to the stitch-forming and trimming mechanisms. Secured to the controlling lever by means of fastening screws 54 is an inverted L-shaped extension 55 having the depending portion 56 adapted to engage a pin 57 secured to the actuating link 47. Interposed between the heads of the screws 54 and the extension 55 is a flat spring 58 which bears against the side of the overhanging arm 3 and frictionally retains the controlling lever in any desired position. To disengage the actuating link 47 from the stud 49, the controlling lever 52 is provided with a shoulder 59 so that when the controlling lever is moved in the direction of the arrow *a* shown in Fig. 2, the shoulder 59 will rise and contact with the lower edge of the link 47 and lift the latter until its hooked end 48 is clear of the stud 49 upon the needle-lever and retain it in elevated position clear of the stud which thereafter rocks idly beneath the link. When disconnected from its actuating means the upper trimmer-member 30 returns to its retracted position clear of the work-support 17, under the action of the spring 60 mounted upon the trimmer-bar 37 and interposed between the head 4 of the overhanging arm and a collar 61 clamped upon the trimmer-bar by the screw 62.

To reengage the upper trimmer member with its actuating means, the controlling lever 52 is moved to the position shown in Fig. 2. When thus moved, the shoulder 59 of the controlling lever recedes from its supporting position and the lower edge of the link 47 is thus permitted to rest upon the actuating stud 49, after which the depending portion 56 of the controlling lever extension 55 engages the pin 57 and forcibly shifts the actuating link toward the trimmer-bar 37. As the inclination of the portion 56 of the controlling lever 52 increases in the turning of the lever upon its fulcrum 12, the vertical component of the shifting movement serves to depress the link 47 to bring the throat of its hook 48 into coupling relation with the actuating stud 49 in any position of its range of operative movements. As the actuating link is moved toward the trimmer-bar, the latter is depressed against the action of its spring 60 until the upper trimmer-member 30 is lowered into operative engagement with the ledger-blade 18.

The upper trimmer-member is provided with the usual depending finger 63 which maintains it, when depressed, in operative contact with the lower trimmer member or ledger-blade 18.

Secured to the head 4 of the overhanging arm, by means of the screw 64, is the depending guide-arm 65 whose edge 66 bears against the carrier 31 for the upper trimmer-member 30 and guides the latter in its reciprocatory movements.

Having thus set forth the nature of the invention, what I claim herein is:—

1. In a trimming mechanism for sewing machines, the combination with an overhanging bracket arm, of a trimmer-blade, a carrier for said blade, a needle-lever, a connection between the needle-lever and carrier for actuating the latter, a controlling lever mounted upon and depending from the bracket arm and terminating at a point accessible to the hand of the operator while in work-directing position for interrupting said connection, and means for shifting the trimmer blade into inoperative position upon disconnection from its actuating means.

2. In a trimming mechanism for sewing machines, in combination, a trimmer-blade, a needle-lever, a stud carried by said needle-lever, a hooked member operatively connected with said trimmer-blade for actuating the latter, a manually shiftable lever for establishing and interrupting the connection between said hooked member and said stud without affecting the trimmer-blade, and means for shifting the trimmer-blade into inoperative position upon disconnection from its actuating means.

3. In a trimming mechanism for sewing machines, in combination, a trimmer-blade, a needle lever, means whereby operative con-

nection may be established between said needle-lever and trimmer-blade for actuating the latter, means for normally maintaining said trimmer-blade in retracted position, and means including a single manually shiftable element for lowering said trimmer-blade into operative position and establishing said connection between it and its actuating means.

4. In a trimming mechanism for sewing machines, in combination, a trimmer-blade, a needle-lever, an operative connection between the trimmer-blade and needle-lever, means for interrupting said operative connection without shifting the trimmer-blade, and means for shifting the trimmer-blade to inoperative position after it is disconnected from the needle-lever.

5. In a trimming mechanism for sewing machines, in combination, a trimmer-blade, a needle-lever, a stud carried by said needle-lever, a hooked member operatively connected with the trimmer-blade and adapted to embrace said stud and a single manually shiftable controlling lever for lowering said trimmer-blade into operative position and establishing operative connection between said stud and hooked member.

6. In a trimming mechanism for sewing machines, in combination, a trimmer-blade, a needle-lever, a stud carried thereby, a hooked member operatively connected with said trimmer-blade, a single manually shiftable controlling lever provided with means whereby the hooked member may be disengaged from its stud, and means for shifting the trimmer-blade into inoperative position upon disengagement of said hooked member from said stud.

7. In a trimming mechanism for sewing machines, in combination, a trimmer-blade, a needle-lever, a stud carried thereby, a hooked member operatively connected with said trimmer-blade, a single manually shiftable controlling lever provided with means for disengaging the hooked member from its stud without shifting the trimmer-blade, and means also carried by said controlling lever for restoring the operative connection between the hooked member and its stud.

8. In a sewing machine, in combination, a work-support, an overhanging bracket-arm, a reciprocating needle-bar mounted in said bracket-arm, a needle-lever fulcrumed upon said bracket-arm and operatively connected with said needle-bar, means for actuating said needle-lever, a ledger-blade mounted below said work-support, a movable blade mounted above the work-support, connections between the needle-lever and movable blade for actuating the latter, and a controlling lever mounted upon the bracket-arm and disposed within reach of the hand of the operator without necessitating removal of the hand from work-directing position whereby the movable blade may be readily connected to or disconnected from its actuating means and said movable blade restored to operative position while the work is in progress.

In testimony whereof, I have signed my name to this specification.

ALBERT H. DE VOE.