June 24, 1941. N. KNAUS 2,247,127

TRIMMING MECHANISM FOR SEWING MACHINES

Filed Sept. 8, 1939 2 Sheets-Sheet 1

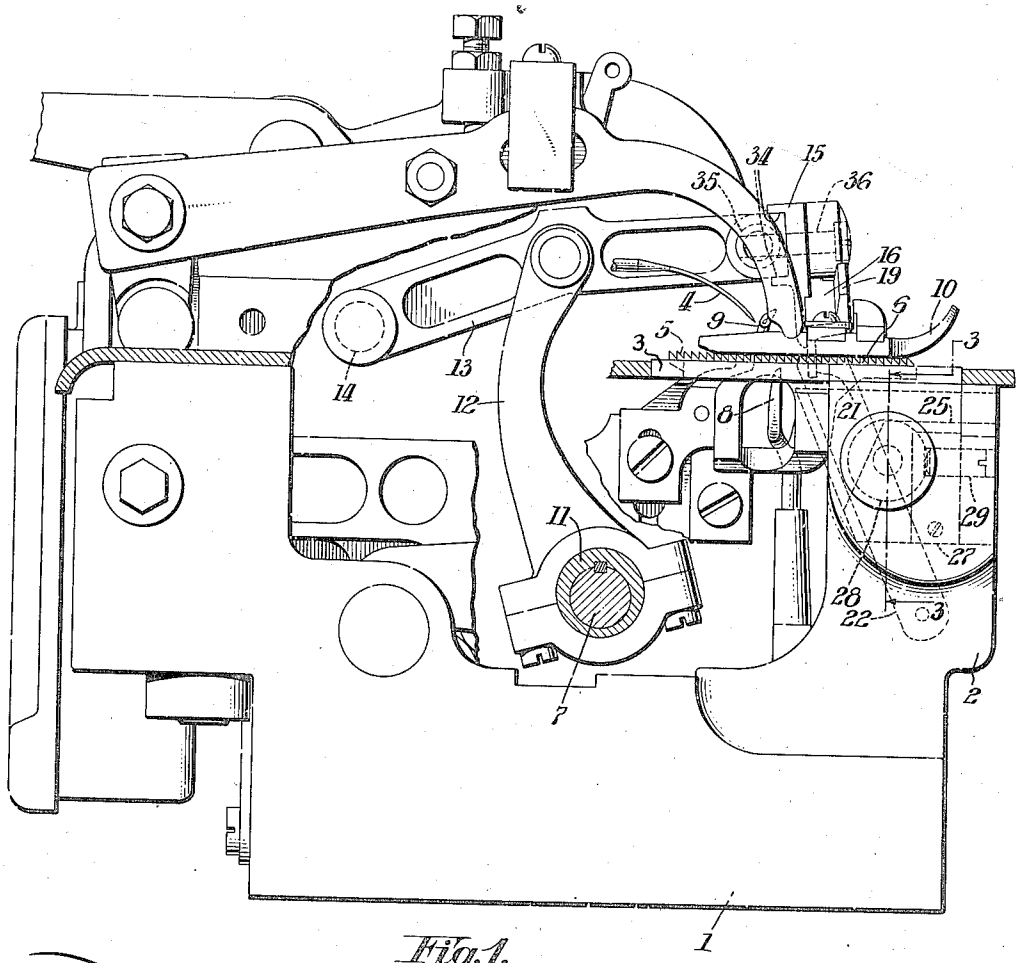

Fig. 1.

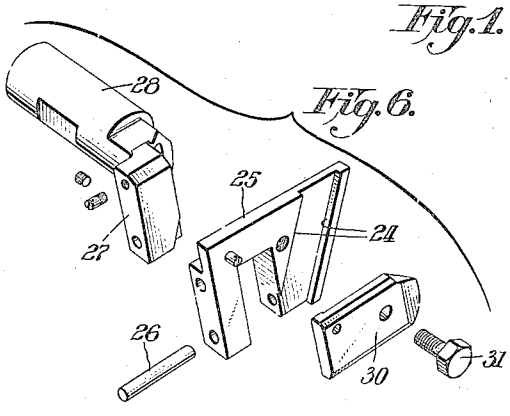

Fig. 6.

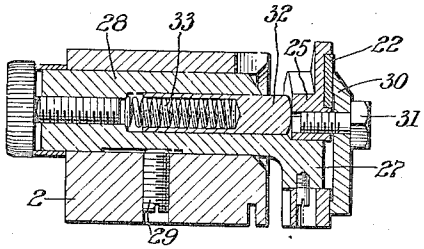

Fig. 5.

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TRIMMING MECHANISM FOR SEWING MACHINES

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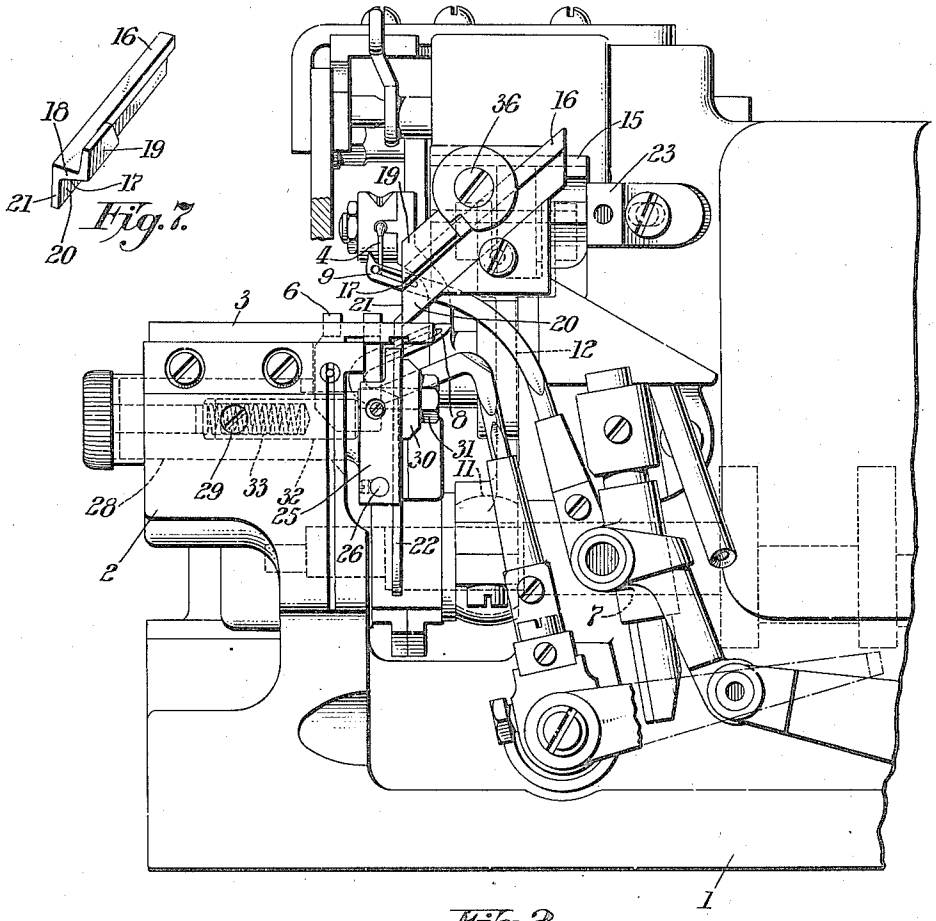

Fig. 7.

Fig. 2.

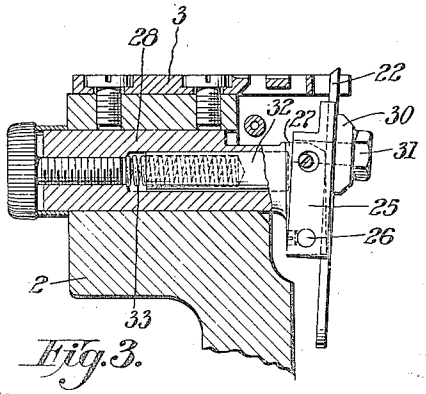

Fig. 3.

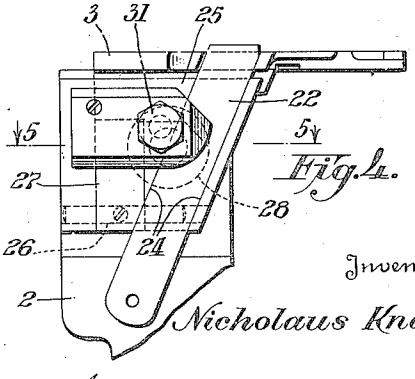

Fig. 4.

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TRIMMING MECHANISM FOR SEWING MACHINES

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Application September 8, 1939, Serial No. 293,890

6 Claims. (Cl. 112—122)

This invention relates to trimmer-mechanisms for sewing machines, more particularly of the overedge type disclosed in my copending application, Serial No. 278,393, filed June 10, 1939.

The present invention has for an object to improve sewing machine trimming mechanism, such as that disclosed in my said copending application, so that grinding of the trimmer-knives will be required only at infrequent intervals. Another object of the invention is to provide the trimming mechanism with means to insure that the beginning end of work introduced to the mechanism will not pass over the cutting edge of the slantingly mounted upper trimmer-knife and fail to be properly trimmed.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations, and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the accompanying drawings, Fig. 1 is a left end elevation of an overedge sewing machine embodying trimming mechanism according to the present invention. Fig. 2 is a partial front side elevation of the machine. Fig. 3 is a section on the line 3—3, Fig. 1. Fig. 4 is a face view of the ledger-blade and its carrier. Fig. 5 is a horizontal section on the line 5—5, Fig. 4. Fig. 6 is a disassembled perspective view of the ledger-blade carrier and support and Fig. 7 is a perspective view of the upper or movable trimmer-blade removed from the machine.

Except as hereinafter more particularly described, the machine is constructed substantially in accordance with the disclosure of my said copending application, Serial No. 278,393. Such a machine is constructed with a frame 1 including a pedestal 2 which supports the throat-plate 3 through which work the curved eye-pointed needle 4 and feed-dogs 5 and 6. Journaled in the frame 1 is the main-shaft 7 which, through suitable connections, actuates the under looper 8 and overedge looper 9. The work passes over the throat-plate 3 and under the presser-foot 10; being propelled by the feed-dogs 5 and 6 in the usual manner.

The main-shaft carries an eccentric 11 which is connected by the pitman 12 to the upper trimmer-lever 13 fulcrumed at its rear end at 14 in the frame 1 and having at its forward end a head 15 in which is slantingly mounted the upper trimmer-blade 16 having at its lower end a cutting edge 17. Rising from the intermediate wall 18 of the trimmer-blade 16 is the forwardly disposed smooth surfaced upstanding guard-wall 19 which blocks the introduction of work on top of or above the cutting edge 17, when the blade 16 is at the lower limit of its stroke below the level of the throat-plate 3. Depending from the intermediate wall 18 is the rearwardly disposed wall 20, the lower end of which constitutes a pilot edge 21 against which the ledger-blade 22 rests. The trimmer-blade head 15 is guided at one end against lateral displacement by the horizontally adjustable block 23. This block 23 resists displacement of the working position of the upper blade 16 by the side pressure of the ledger-blade 22 thereagainst.

The ledger-blade 22 is adjustable lengthwise of itself in a guideway 24, Fig. 6, in the head 25 which is pivoted on the pin 26 carried by the depending ear 27 at the end of the cylindrical shank 28 longitudinally slidably adjustable horizontally in the pedestal 2 and held in set position by the set-screw 29. The ledger-blade 22 is clamped in the guideway 24 by the clamp-plate 30 and screw 31.

To bias the ledger-blade sidewise about its pivot 26 against the trimmer-blade 16 there is provided in a longitudinal bore in the cylindrical shank 28 a plunger 32 and biasing spring 33 which exert pressure upon the head 25, as shown in Figs. 3 and 5. It will be observed that the longitudinal axis of the pivot-pin 26 is parallel to the cutting plane transversely of which plane the carrier 28 is adjustable. Also, the hinge-pin 26 which supports the ledger-blade 22 is parallel to the line of feed which, of course, is lengthwise of the presser-foot 10 and underlying feed-dogs 5 and 6.

The cutting plane may be adjusted transversely of the line of feed by lateral adjustment of the trimmer-blade head 15 on the lever 13 and corresponding adjustment of the ledger-blade carrier 28. The head 15 has in its rearward face a guideway 34 into which the free end of the trimmer-lever 13 fits and is expanded by the horizontally disposed cylinder nut 35 in the split and socketed free end of the lever 13 entered by the trimmer-blade clamp-screw 36, as more particularly described in my said copending application.

It will be understood that the ledger-blade 22, by virtue of its hinge connection 26 with its carrier 28 is free to move against and be maintained by the spring 33 in sensitive shear-cutting rela-

tion with the trimmer-blade 16, without any tendency to cramp or bind in the pedestal 2. Frequent grinding of the knives 16 and 22 is therefore not required.

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

1. In a trimmer-mechanism for sewing machines, a frame, a trimmer-lever, means to actuate said lever, a trimmer-blade shiftably carried by said trimmer-lever for adjustment transversely of the direction of cutting movement thereof, a ledger-blade, a head on which said ledger-blade is removably mounted, a carrier on which said head is pivotally mounted on an axis parallel to the cutting plane, and a spring to bias said head in a direction to yieldingly maintain said ledger-blade against said trimmer-blade, said carrier being mounted in said frame for bodily adjustment transversely of the cutting plane.

2. In a sewing machine, a frame, a pedestal thereon, a throat-plate on said pedestal, a carrier horizontally adjustable in said pedestal below said throat-plate, a ledger-blade head pivotally mounted on said carrier, a ledger-blade endwise adjustably mounted in said head, a spring to bias said head about its pivot, and a reciprocatory trimmer-blade into yielding engagement with which said ledger-blade is maintained by said spring.

3. In a shear trimmer, the combination with a reciprocatory cutting blade, of a ledger-blade, a carrier on which said ledger-blade is pivotally mounted for movement into side engagement with said cutting blade, a spring for biasing said ledger-blade about its pivot in a direction to maintain said side engagement of said blades, and stationary guiding means to prevent lateral displacement of said reciprocatory cutting blade under the pressure of said spring.

4. In a sewing machine, a frame having a horizontal guideway, a carrier slidable in said guideway, means to fix said carrier in a selected position in said guideway, said carrier having at one end a plate-like head, a plate-like ledger-blade head hinged to said carrier-head and formed with a ledger-blade guideway, a ledger-blade adjustable endwise of itself longitudinally of said guideway and fixed in a selected position therein, a reciprocatory trimmer-blade cooperatively related to said ledger-blade, and a spring to bias said ledger-blade head about its hinge connection with said carrier to maintain said ledger-blade in shearing engagement with said trimmer-blade.

5. In a sewing machine trimming mechanism, a carrier having a tubular shank formed at one end with a depending ear, a plate hinged to said ear and formed in its outer face with a ledger-blade-receiving groove, a clamp overlying said groove, a screw passing through said clamp and into said plate, and a spring in said tubular shank arranged to exert pressure upon the inner face of said hinged plate.

6. In a trimmer-mechanism for sewing machines, a frame, a drive-shaft, a movable trimmer-lever mounted in said frame and actuated by said drive-shaft, a trimmer-blade carried by said trimmer-lever, a throat-plate, a ledger-blade, a head upon which said ledger-blade is endwise adjustably mounted, a carrier on which said head is pivotally mounted on an axis parallel to the cutting plane, and a spring to bias said head in a direction to yieldingly maintain said ledger-blade against said trimmer-blade, said carrier with said head being mounted in said frame independently of said trimmer-lever and below said throat-plate for bodily adjustment relative to said trimmer-lever and transversely of the cutting plane.

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