VIKING
"The Royal Family Sewing Machine"

HUSQVARNA VAPENFABRIKS AKTIEBOLAG
HUSKVARNA SWEDEN

Sole distributor in USA

CONSOLIDATED SEWING MACHINE CORPORATION
1115 BROADWAY NEW YORK 10, N. Y.

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A SWEDISH QUALITY PRODUCT BY HUSQVARNA VAPENFABRIKS AKTIEBOLAG

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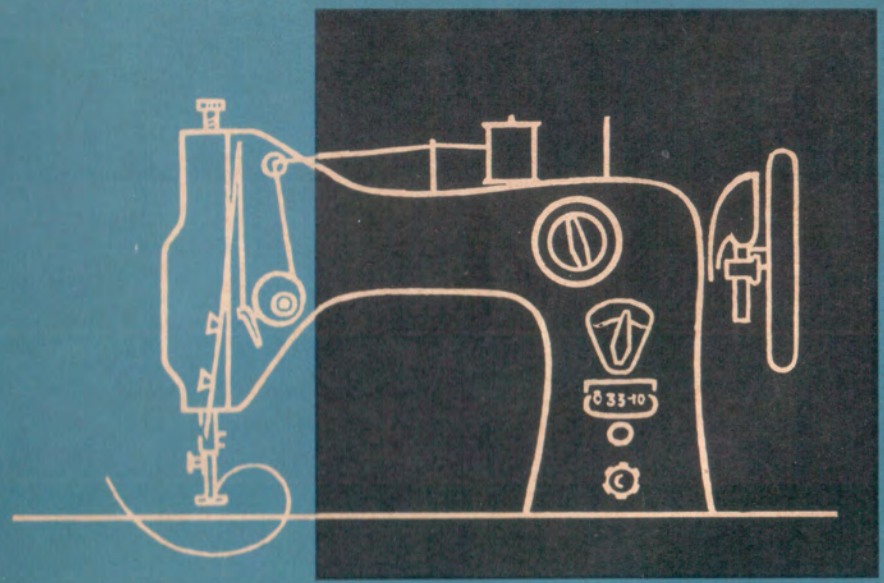
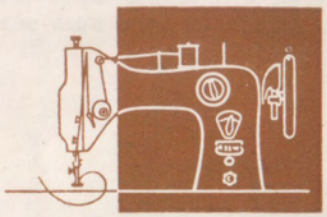


SERVICE MANUAL *for* VIKING *class 33* ZIG-ZAG SEWING MACHINE

SERVICE MANUAL
for VIKING *class 33*
ZIG-ZAG SEWING MACHINE



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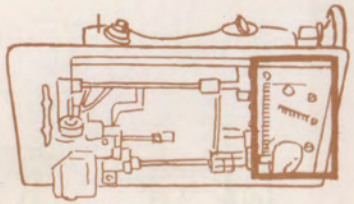
1. *Adjustments for obtaining straight stitch:*

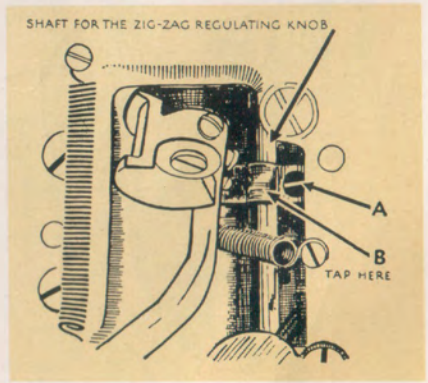
Turn zig-zag regulating knob to the left as far as it will go. Knob must point to dial marking "0". Make a stitching sample using a stitch of medium length for the purpose of ascertaining the extent of the oscillation of the needle bar.

To adjust machine for straight stitch proceed in the following manner:

Tilt the machine head backward and, looking inside the vertical arm from the underside of the bed, a lever can be seen mounted on the same shaft as the zig-zag regulating knob (see fig. 1).

Fig. 1





Turning the zig-zag regulating knob to dial setting "6" will bring into view and make accessible the lever clamp screw (A) which serves to lock the lever onto its shaft. Loosen this clamp screw and *slightly* tap same end of lever (B) causing it to turn a bit on the shaft relative to the zig-zag regulating knob. Tighten clamp screw and check for results of the adjustment by making an additional sewing sample. Should the stitch still lack straightness, repeat the above, moving the lever a bit more. In case it is impossible to obtain satisfactory results by following the above directions, try moving the lever in the opposite direction. Securely tighten clamp screw after machine has been adjusted to make a correct straight stitch.

2. *Adjusting the timing of the zig-zag motion:*

The zig-zag must be timed so that *sidewise* movement of the needle bar on its downward travel has stopped once the point of the needle is slightly more than ¼″ above the throat (needle) plate.

Set the zig-zag regulating knob at dial setting "6" to obtain greatest width of the zig-zag stitch. Remove arm cover plate from the rear of the arm. This exposes to view the mainshaft of the machine. Mounted on same, to the right of the opening, inside of the arm can be seen the worm gear (C) which operates the zig-zag mechanism.

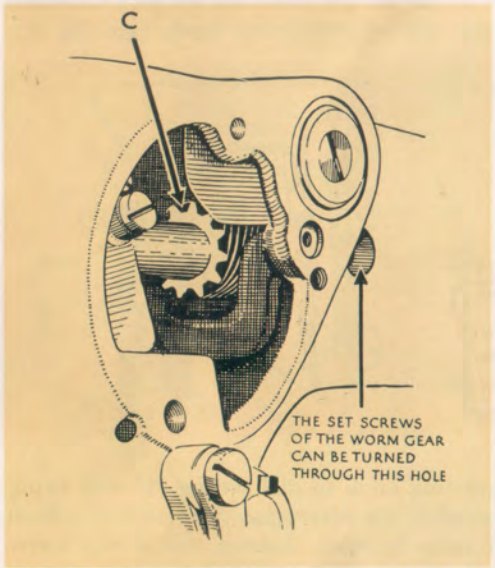
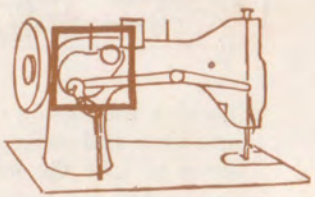


Fig. 2

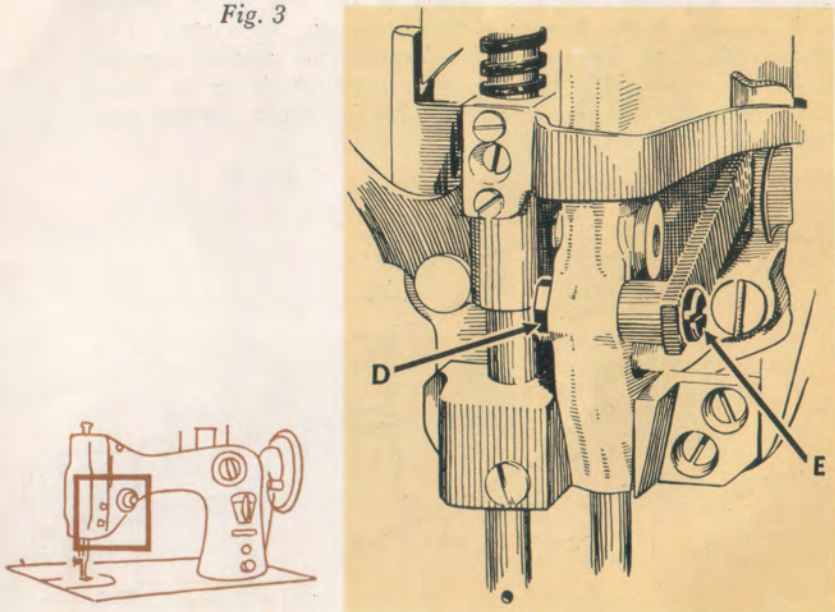


Loosen the two set screws of the worm gear and carefully turn worm gear relative to main shaft. Be certain not to turn worm gear more than the equivalent of the width of *one* gear tooth in either direction. Tighten worm gear set screws and check performance. If results are not satisfactory, retime worm gear to meet timing requirements stated at the start of this paragraph.

3. *Centering the zig-zag stitch in the needle hole of the throat (needle) plate:*

Set zig-zag regulating knob at marking "6" on dial. Remove face plate from machine.

Fig. 3



Loosen locknut (D) from eccentric screw stud (E) near bottom of needle bar frame. Turn screw stud (E) to right or left until needle can be seen to pass through oblong needle hole in throat plate at equal distance from either end.

Tighten locknut upon completion of adjustment.

4. *Adjusting left and right needle (starting) positions:*

The adjustments for the left and right needle positions are made at the factory and the components of the machine which control this adjustment are pinned in place thereafter.

If, however, for some reason, it should become necessary to make a readjustment, proceed as follows:
Set needle position regulator knob to the left needle position and remove it by loosening the screw at its center. Then disassemble from the arm of the machine the position regulator dial. This exposes the bearing cover plate which on its reverse side carries the arresting mechanism for the needle position regulator knob.

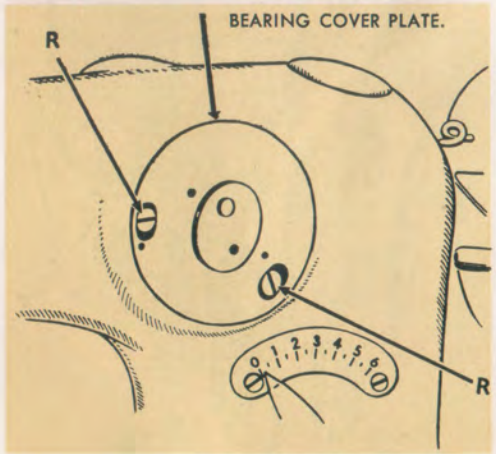
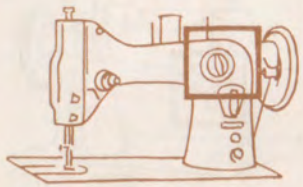


Fig. 4

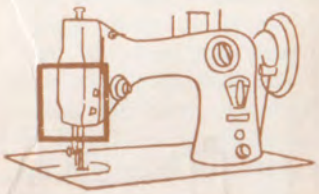


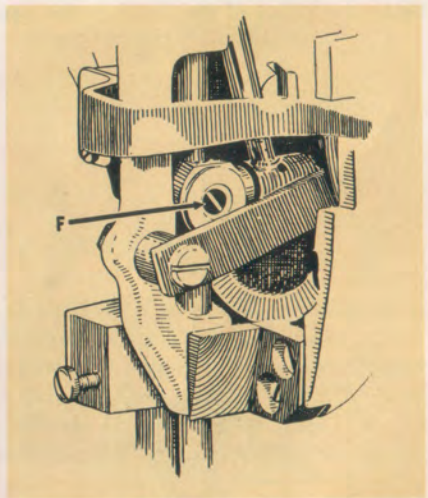
Turn handwheel of machine until needle bar is on its downward travel and stop when point of needle is about 3/16 to 1/4″ above the throat (needle) plate. Now move zig-zag regulating knob from "O" to "6" and back and observe the sidewise movements of the needle bar. If the sidewise movement is quite noticeable, back off the two screws (R) fastening the bearing cover plate to the arm. Turn bearing cover plate slightly until there *is no* appreciable sidewise movement of the needle bar, when tested as described above. Make same test also for right hand needle position. If sidewise movement of needle is noticeable in this setting, re-adjust bearing cover plate. No appreciable sidewise movement should be observed in either position. Securely tighten all screws and reassemble components.

5. *To set the needle bar at the correct height:*

See that the needle, preferably a new one, is pushed up into the needle clamp as far as it will go. Remove the face plate from the machine. Also take off the throat plate. Set the zig-zag regulating knob at "O" and the needle position regulator knob in the left hand position. Turn the balance wheel toward you to bring the hook point to the center of the needle.

Fig. 5





Loosen screw (F) and move the needle bar up or down to bring the top of the needle eye between $^{1}/_{32}$ and $^{3}/_{64}$″ below the point of the hook. Then securely tighten screw (F).

6. *Timing of the rotary sewing hook:*

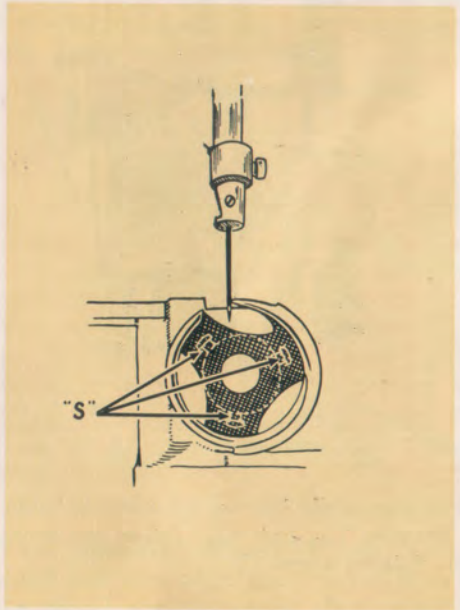
Remove presser foot, throat plate and bobbin case and push open slide plate. Take out the two screws holding the feed dog and remove same.

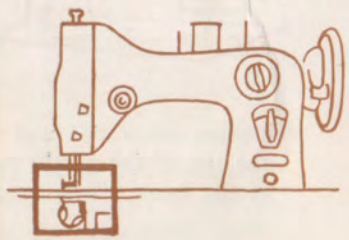
Set zig-zag regulating knob at dial marking "O" and needle position regulator knob in LEFT hand position. Insert a new

needle, preferably size 14, in needle bar. Be sure needle is pushed up into the needle clamp as far as it will go.

To time the hook, turn the balance wheel over toward you until the needle reaches the lowest point of its travel. Continue turning the balance wheel until the needle has risen $^{3}/_{32}$″ from its lowest point. Loosen the three screws (S) in the hub of the hook which are accessible from the top of the machine, the throat plate having been removed. Now turn the hook on its shaft to bring the point of the hook to the center of the needle (see fig. 6).

Fig. 6





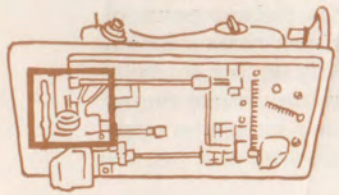
Make certain that the needle bar will not move as the hook is being turned on its shaft. Then tighten the three hub screws. While timing the sewing hook, also make sure of the correct distance between its point and the needle when in a position as described above. The hook point is at the proper distance from the needle when it is possible to *slightly* deflect the needle point toward the hook point by applying slight pressure against the needle. This deflection of the needle should barely be noticeable and amount to a clearance of about .005 to .008″ (equal to thickness of a postal card). Do not set hook point closer, as otherwise it may strike the heavier size needles and become damaged as a result.

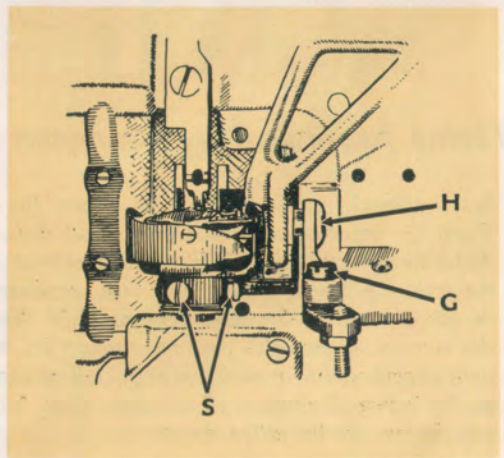
Recheck for clearance between hook point and needle with needle position regulator knob set for right hand needle position.

7. *Setting the feed dog at the correct height:*

The feed dog is usually set, so that the full height of its teeth is visible above the throat plate when at its highest position. However, the feed dog may be raised or lowered to suit particular operating requirements. This adjustment can be made by loosening the clamp screw (G), see fig. 7 and moving crank (H) up or down on its shaft as required. Tighten clamp screw upon completion of adjustment.

Fig. 7





8. *Adjustment of the feed eccentrics:*

The movements of the feed dog are governed by two eccentrics, one being responsible for its forward travel and return, while the second eccentric controls elevation above the throat plate and the subsequent dropping below. Both are assembled to the longitudinal hook shaft at the underside of the machine bed (see fig. 8).

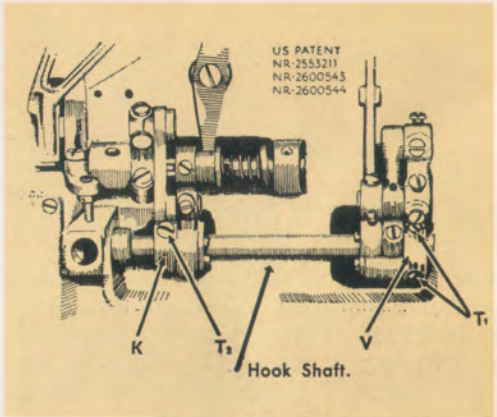
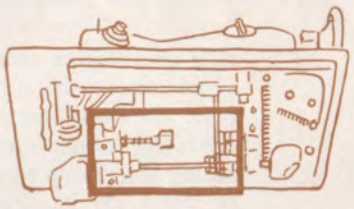


Fig. 8



A. *Timing the forward feeding motion eccentric:*

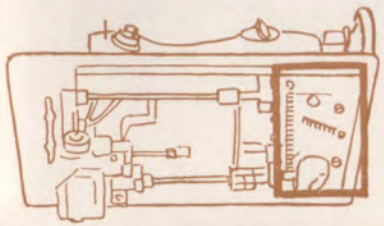
Set the stitch regulator knob to obtain the longest *forward* stitch. Turn the handwheel toward you and observe when the feed dog stops its forward travel. This must occur at the same instant as the take-up lever, on its way up, reaches the highest point of its course and is about to reverse itself. To adjust timing, loosen the two set screws (T1) on eccentric (V), see fig. 8, and carefully turn eccentric on its shaft as required to obtain the correct timing of the forward motion of the feed dog. Tighten set screws upon completion of the adjustment.

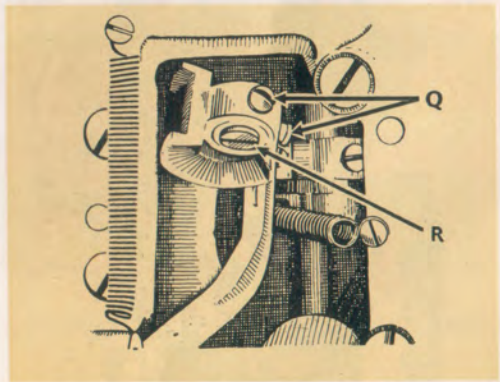
B. *Timing the eccentric elevating the feed dog:*

Set the stitch regulator knob to obtain the longest stitch. Turn the handwheel of the machine toward you and follow the movements of the feed dog. Upon completion of its forward travel the feed dog moves downward. This downward movement is properly timed when, at the instant the top surface of the feed dog teeth is flush with the throat plate, the *bottom edge* of the needle's eye on the down stroke of the needle bar is likewise level with the throat plate. The above adjustment can be made by loosening the two set screws (T2) of eccentric (K), see fig. 8, and by turning the latter relative to its shaft. Be sure to tighten screws securely upon completion of the adjustment.

9. *Tightening the stitch regulator knob (Creeping Stitch Length):*

Fig. 9





Tilt back machine to bring into view underside and hollow of arm. Loosen slightly (about ½ to ¾ turn) set screws (Q) at side of Stitch Regulator Cam. Then tighten screw (R) at bottom of Stitch Regulator Cam approximately ½ turn, holding Stitch Regulator Knob on top of bed tightly to keep it from rotating. Tigthen set screws (Q). Turn Stitch Regulator Knob to check whether it operates with the desired degree of tightness.

If required, the "zero" setting of the Stitch Regulator Knob can also be adjusted by this procedure. After loosening set screws (Q), turn Stitch Regulator Knob to obtain correct position. Be sure to hold Stitch Regulator Cam tightly in place while adjusting Stitch Regulator Knob. Tighten all screws upon completion of adjustment.

10. *Disassembly of the rotary sewing hook:*

The rotary sewing hook can be disassembled *without* removal from the machine and without disturbing its timing by going about as follows:
Remove needle from bar. Remove bobbin case with bobbin. Turn handwheel toward you and, tilting the machine head, watch the rotation of the sewing hook. Stop turning when hook gib (fig. 10) is in front.

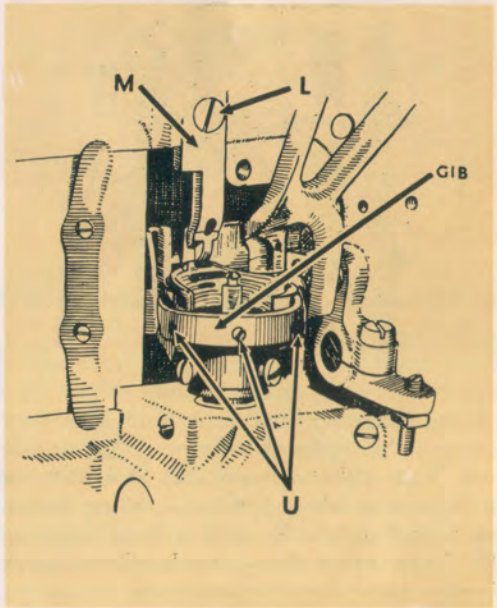
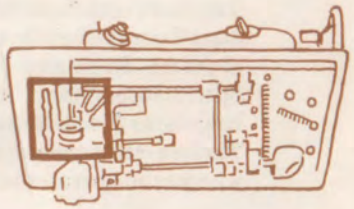
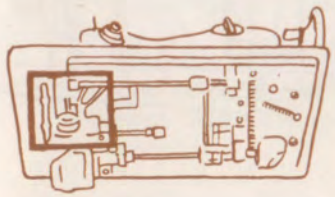


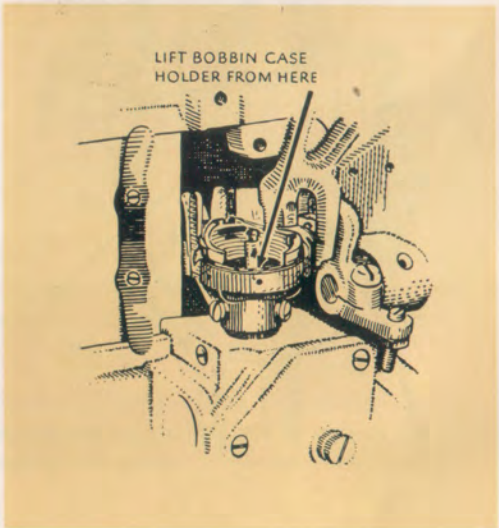
Fig. 10



Remove the three small hook gib screws (U) beginning with the middle one and take off the hook gib. Now loosen screw (L), fastening bobbin case position finger (M), and disassemble it from the machine by pulling it toward you. Exercise care in removing the bobbin case position finger to avoid damage to the notch in the bobbin case holder which it engages. After all components have been disassembled, the bobbin case holder itself can be removed from the rotating hook body by placing it in a position as shown on fig. 11. Begin lifting at that portion of the bobbin case holder marked by an arrow.

Fig. 11





To reassemble, reverse the above sequence. When inserting the hook gib screws begin with the middle one, the two outer ones following. Tighten only after all gib screws are in place. When inserting the bobbin case position finger, make certain that its tip does not touch the bottom of the notch in the bobbin case holder. There must be at least $^{1}/_{64}$" clearance between them, as otherwise the thread will not pass through, causing looped stitches on the underside of the material.

11. *Presser bar adjustment*:

When the machine is used for ordinary sewing purposes, the clearance between the underside of the raised presser foot and the top of the throat plate should be $^{9}/_{32}$". To alter this setting, and also to align the presser foot with the needle, remove the face plate and loosen set screw (N) in the lifter bracket (fig. 12).

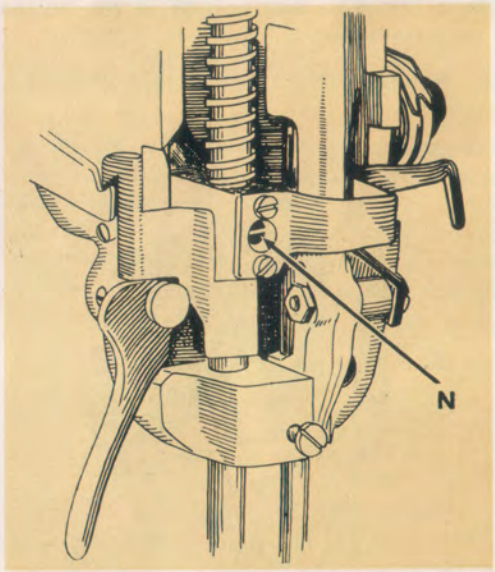
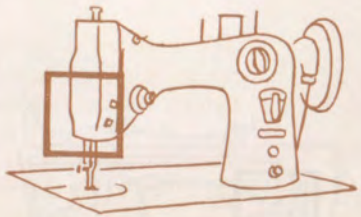


Fig. 12

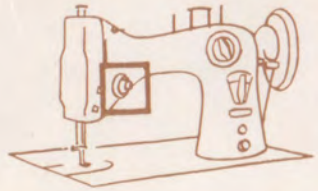


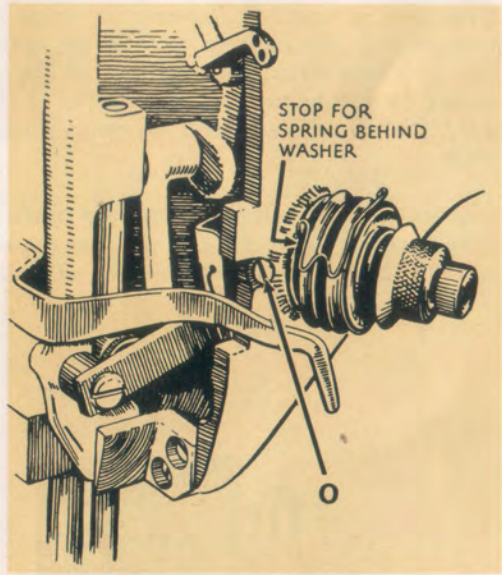
Tighten set screw after presser bar and/or presser foot are in the desired position.

12. *Adjustment of the thread take-up spring*:

The thread take-up spring should be adjusted so that, when the eye of the needle reaches the sewing material on the downward travel of the bar, the spring will have completed its action and will rest against the stop on the thread take-up spring regulator.

Fig. 13



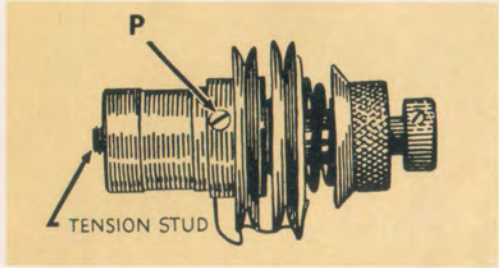


To make adjustment, should the thread take-up spring not be set as described in the preceding paragraph, loosen set screw (O) behind the face plate in the arm of the machine.

Turn thread tension assembly to the right to increase the movement of the thread tension spring and to left to reduce the movement. After the spring is set correctly, securely tighten the set screw.

To regulate the tension of the thread take-up spring, loosen set screw (O) as mentioned above and remove entire tension assembly

Fig. 14



from arm of machine. Loosen set screw on regulator (P) and turn stud to the right to increase the spring tension and to the left to loosen same. The tension of the thread take-up spring should be just enough to take up the slack of the needle thread until the eye of the needle on its downward stroke reaches the cloth.

The instructions outlined above are applicable to average operation. Special operating conditions may require suitable adjustments in both the setting and the tension of the thread take-up spring.