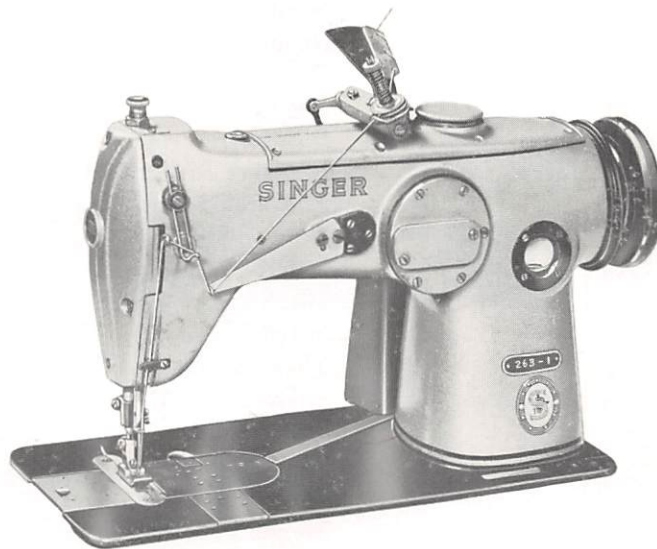


SINGER^{*}

Service Manual

MACHINE 263-1



THE SINGER COMPANY

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TO ALL WHOM IT MAY CONCERN:

The improper placing or renewal of the Trademark SINGER* or any other of the Trademarks of The Singer Company (all of which are duly Registered Trademarks) on any machine that has been repaired, rebuilt, reconditioned, or altered in any way whatsoever outside a SINGER factory or an authorized SINGER agency is forbidden.

DESCRIPTION

Machine 263-1 is a high speed, two thread, chain stitch, zig-zag machine for attaching lace to night-gowns, slips, panties, etc.

SPECIAL FEATURES

Federal Stitch Types 401 and 404.
One needle, one looper.
Needle, Catalog 2796.
Double looper-thread take-up.
Tension releaser for looper thread and needle thread.
Needle bar has a throw of up to 1/8 inch. Vibrates both sides of centerline.
Length of stitch, 9 to 16 stitches per inch.
Drop Feed.
Needle bar stroke, 1-3/16 inches.
Clearance under presser foot, 3/16 inch.
Dimensions of bed: Length, 15-3/4 inches; width, 7 inches; space at right of needle, 8 inches.
Automatic lubricating system delivers oil to all principal bearings.
Oil flow window in direct view of operation.
Head-end lubrication and oil-return system. Needle

bar bushings lubricated through wicks from arm shaft bushings.
Three plain super finished bearings position and support the arm shaft.
Rotary bed shaft is gear driven.
Knee lifter integral with machine base and oil reservoir.
Machine provided with seat for independent light fixture mounting.

MACHINE PULLEY

Machine pulley 146512, for 3/8 inch V-belt, has an outside diameter belt groove of 2.9 inches. Effective diameter for 5/16 inch round leather belt is 2-3/8 inches.

When in operation, the top of the machine pulley must always turn over toward the operator.

INSTALLATION

Machine base and oil reservoir shown in Fig. 2, fits into standard table cut-out and rests on four corners without bolting.

Rasp edges of cut-out if necessary, as base must be located so that machine does not touch table. Use shims on corners if necessary, to prevent base from rocking.

Base must be level in both directions so that oil level will be accurately indicated by marks on base.

Machine bed rests on felt gasket in base, Fig. 2, and is not bolted down. Machine hinge pins must not support machine head except when it is tilted back.

CAUTION: Do not run machine until it has been thoroughly lubricated as instructed next.

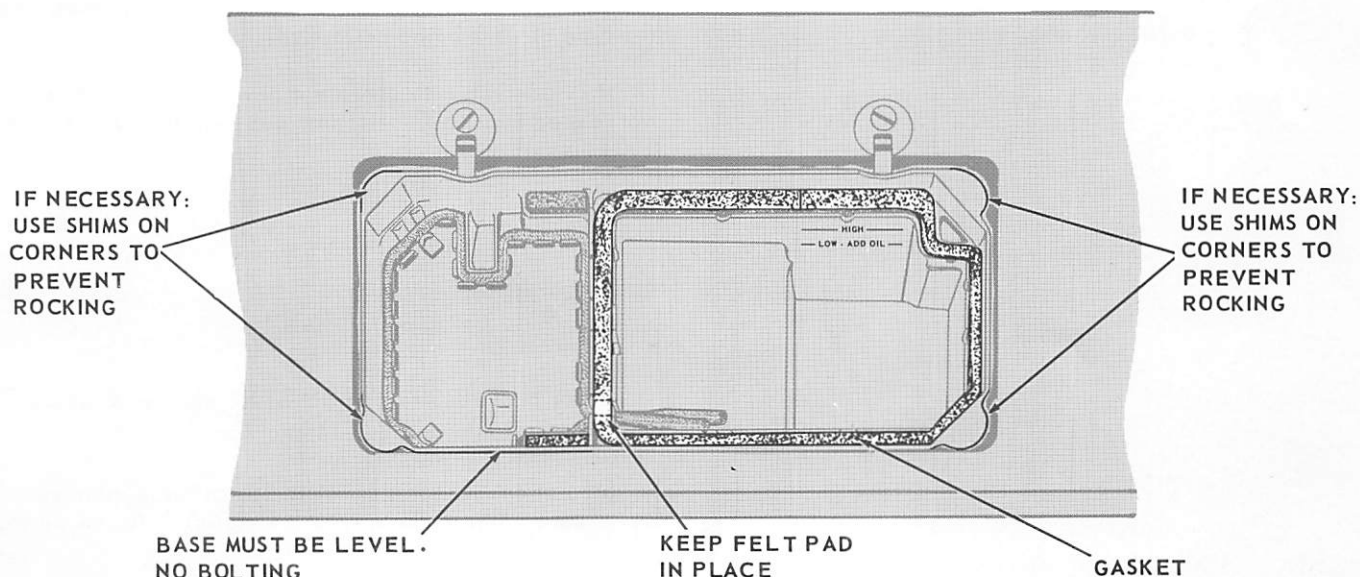


Fig. 2. Machine Base and Oil Reservoir

LUBRICATION

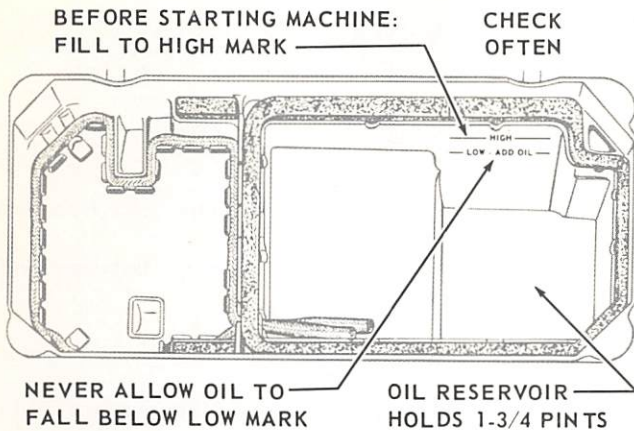


Fig. 3. Lubrication

Machine has an automatic lubricating system in which oil is circulated from the reservoir by means of a centrifugal pump below the bed.

Before starting machine, the oil reservoir, which holds approximately 1-3/4 pints, must be filled to high mark, as shown in Fig. 3.

Use SINGER* OIL "TYPE A" or "TYPE C". Use "TYPE C" OIL when an oil is desired which will produce a minimum of stain on fabrics.

Do not use additives in sewing machine oil, as they may cause a reduction in normal oil flow that can result in damage to machine.

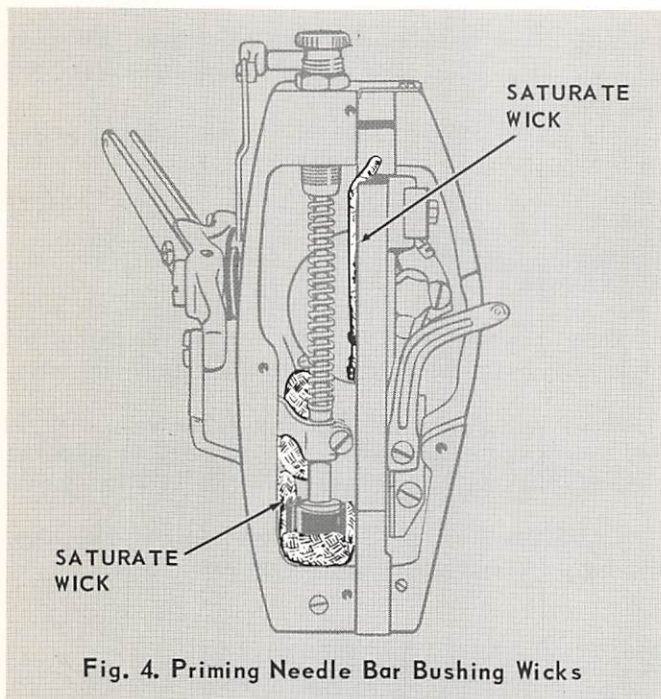


Fig. 4. Priming Needle Bar Bushing Wicks

PRIMING: When machine is new or has been idle for sometime, remove face plate and oil upper and lower needle bar bushing wicks, shown in Fig. 4, by hand. The automatic oiling system will function efficiently after the first few minutes of operation.

Check oil level often to keep it from going below mark.

CAUTION: If the flow of oil passing the oil flow window shown in Fig. 5, should stop or become erratic, stop machine immediately and do not run machine until the trouble has been eliminated.

SPEED

The maximum speed for this machine is 5000 stitches per minute, according to the material being sewn and the type of work being performed.

It is advisable to operate a new machine at a speed not exceeding 4500 stitches per minute for the first 100 hours of operation.

NEEDLES

For best results use SINGER* needle, Catalog 2796, available in Sizes 14 and 16.

Size of needle for a specific operation is determined by size of thread and type of material to be sewn.

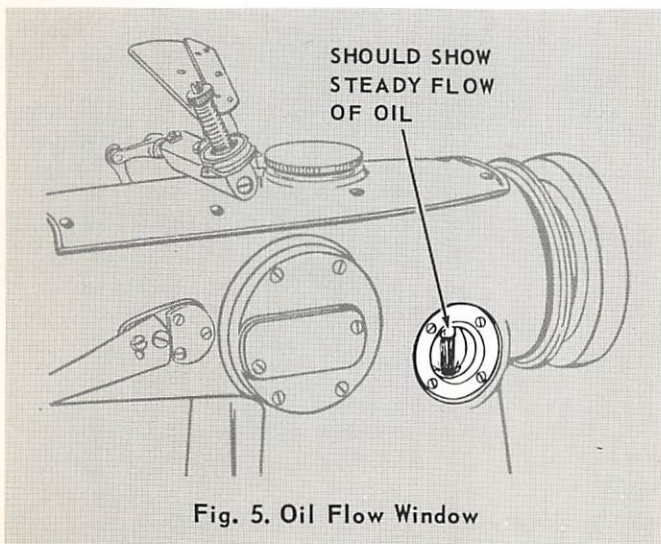


Fig. 5. Oil Flow Window

SETTING THE NEEDLE

Turn machine pulley over toward operator until needle bar is at highest point as shown in Fig. 6.

Loosen needle set screw and remove old needle.

Insert new needle into needle bar as far as it will go, making certain that the long groove on the needle faces toward the operator, as shown in Fig. 6. Then tighten needle set screw.

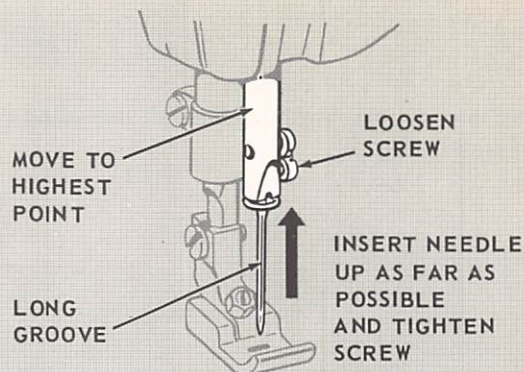


Fig. 6. Setting the Needle

THREAD

Use left twist thread in the needle and left or right twist thread in the looper.

To determine twist of thread, hold thread as shown in Fig. 7. Twirl thread over toward you between thumb and forefinger of right hand. If left twist, strands will wind tighter. If right twist, strands will unwind or separate.

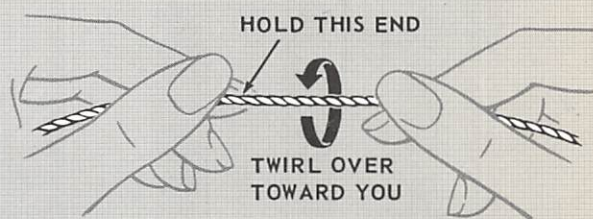


Fig. 7. Determining the Twist of Thread

UPPER THREADING

Turn machine pulley over toward operator until needle bar is at the highest point. as indicated in Fig. 8.

Pass thread from unwinder through threading points

Draw about two inches of thread through needle eye, to start the sewing.

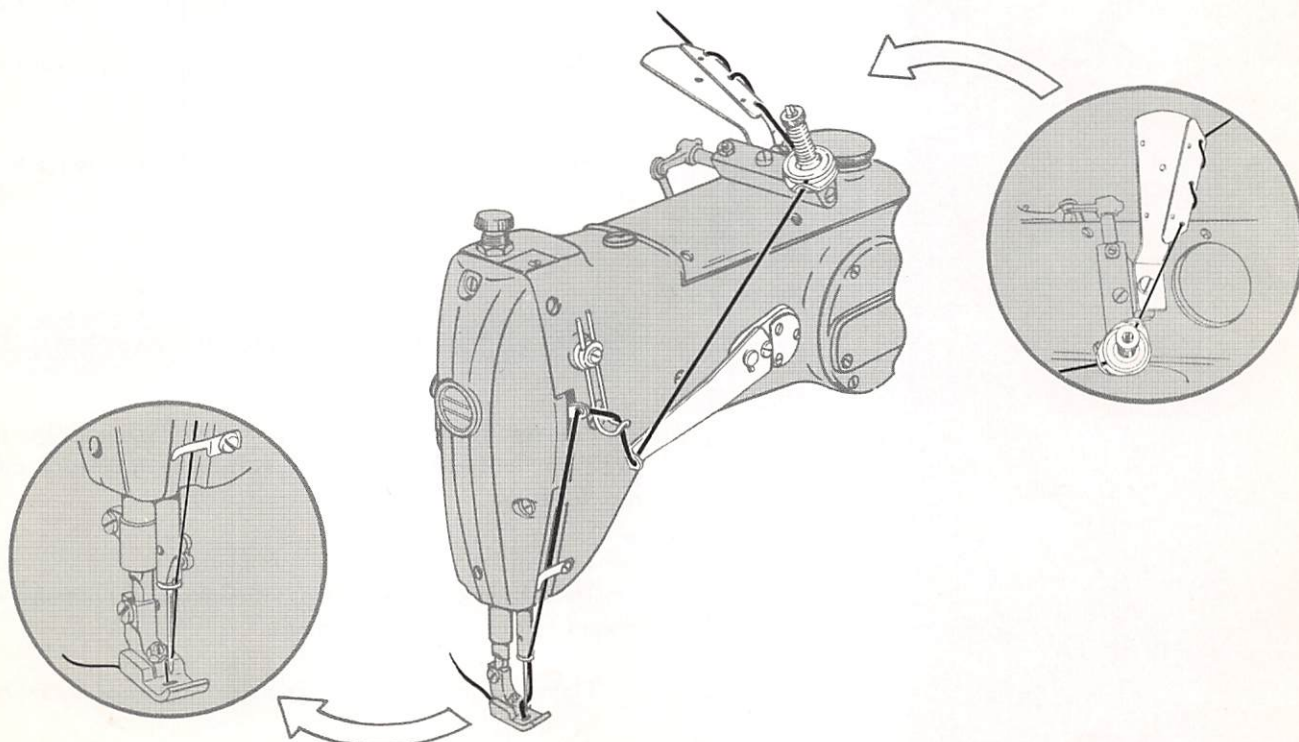


Fig. 8. Upper Threading

LOWER THREADING

Pass thread from unwinder through threading points as indicated in Fig. 9.

Draw about two inches of thread from front to rear through eye of looper, to start the sewing.

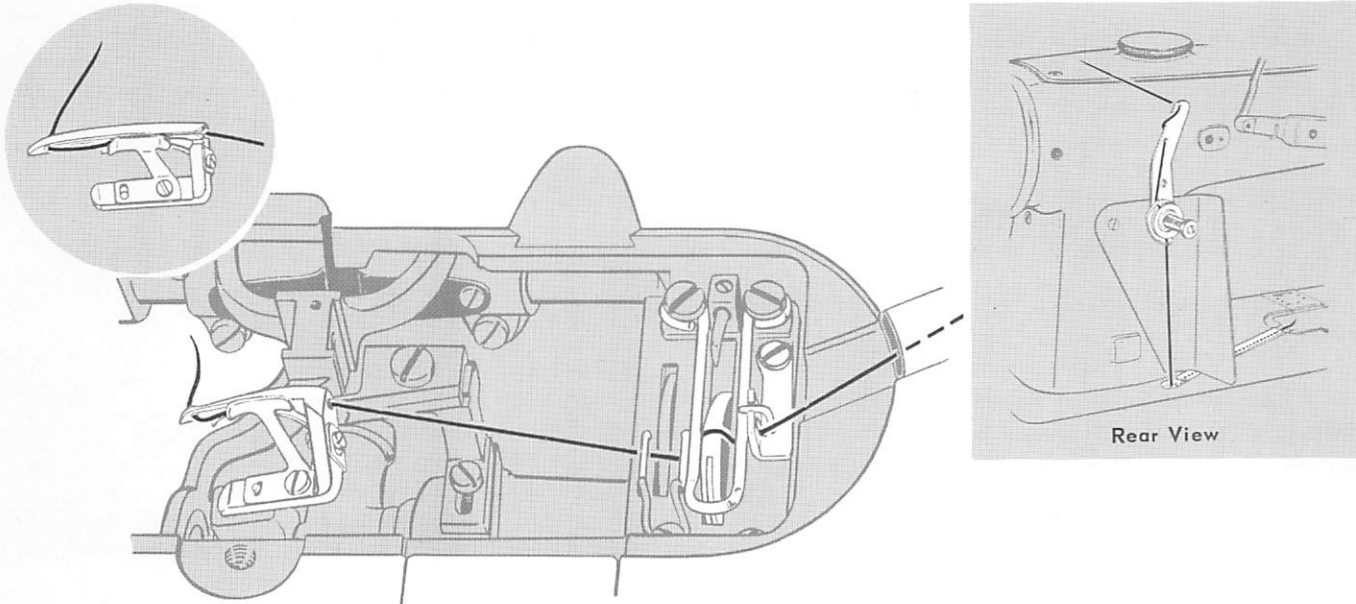


Fig. 9. Threading the Looper Thread

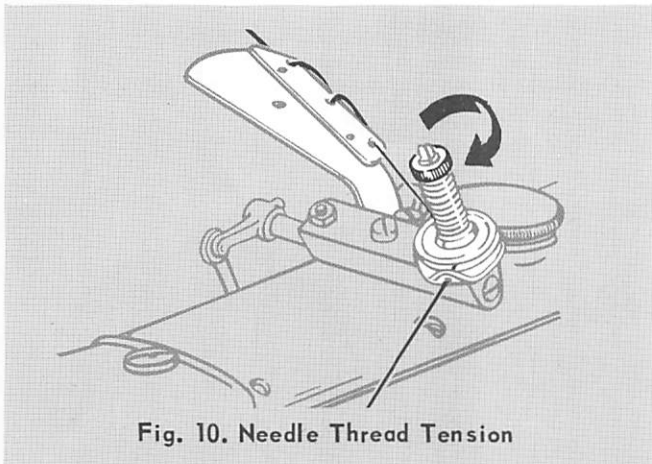


Fig. 10. Needle Thread Tension

REGULATING TENSION ON THREADS

Tension on thread should be as light as possible while still sufficient to set the stitch in material.

Regulate needle thread tension only when presser foot is down.

To adjust, turn thumb nut at front of tension discs, shown in Figs. 10 and 11 as required.

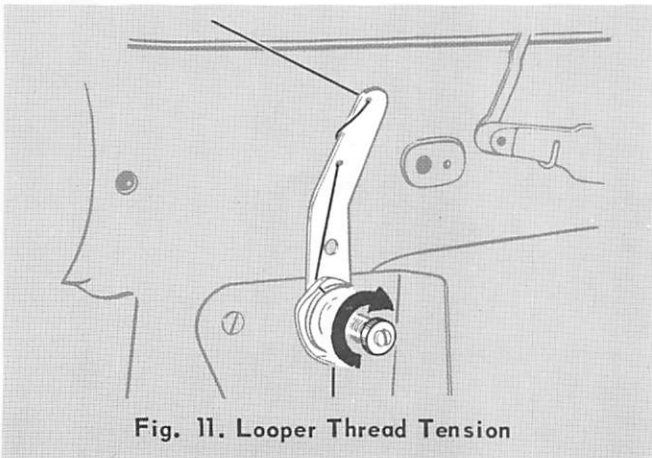


Fig. 11. Looper Thread Tension

REGULATING PRESSURE ON THE MATERIAL

Presser foot pressure on material should be as light as possible while still sufficient to insure correct feeding.

To adjust, loosen lock nut shown in Fig. 12 and turn thumb screw toward right to increase pressure or toward left to decrease pressure.

Tighten lock nut to maintain desired pressure.

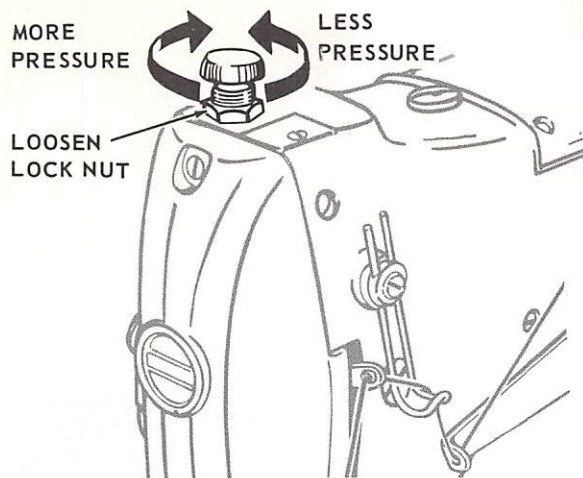


Fig. 12. Adjustment for Pressure on Material

STITCH LENGTH

To regulate stitch length, unscrew large cap from top of machine arm and loosen the two clamping washer screws shown in Fig. 13.

Rotate machine pulley away from operator approximately 90° ($1/4$ turn) until regulating screw, shown in Fig. 14 is accessible.

Turn regulating screw for longer or shorter stitch as instructed in Fig. 14.

Tighten clamping washer screws and replace cap.

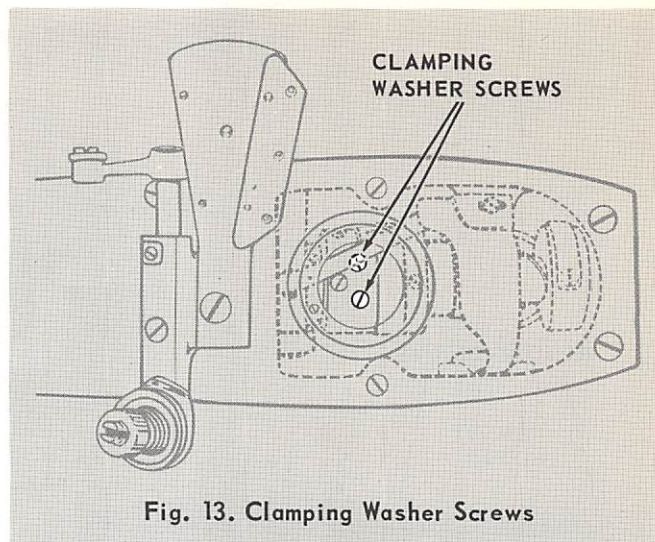


Fig. 13. Clamping Washer Screws

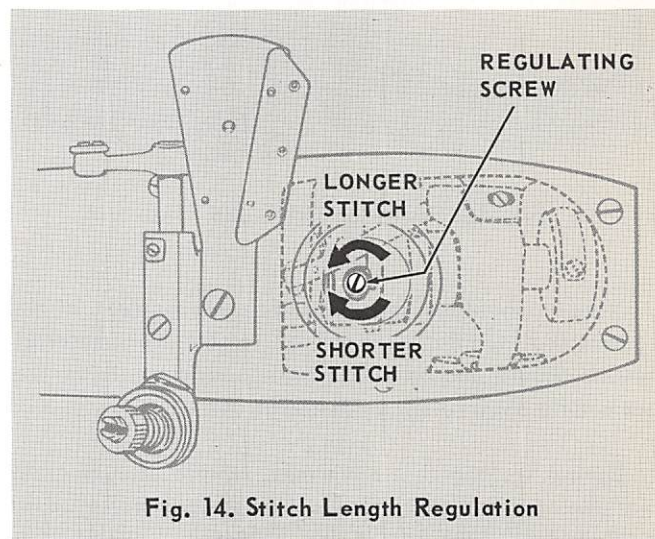


Fig. 14. Stitch Length Regulation

PRESSER BAR HEIGHT

1. When presser foot rests firmly on throat plate with feed dog below throat plate, guide bracket should just clear lifting bracket, as shown in Fig. 15.
2. When presser foot is at its highest point and needle bar at its lowest point, top of presser foot must not contact needle bar or needle clamp.

ADJUSTMENT: Loosen guide bracket clamp screw and presser bar stop screw shown in Fig. 15.

1. Position guide bracket so that it just clears lifting bracket, as shown in Fig. 15. Align presser foot with feed dog. Tighten guide bracket clamp screw.
2. Raise or lower presser bar stop so that it prevents presser foot from striking needle bar when presser foot is raised. Then tighten stop screw.

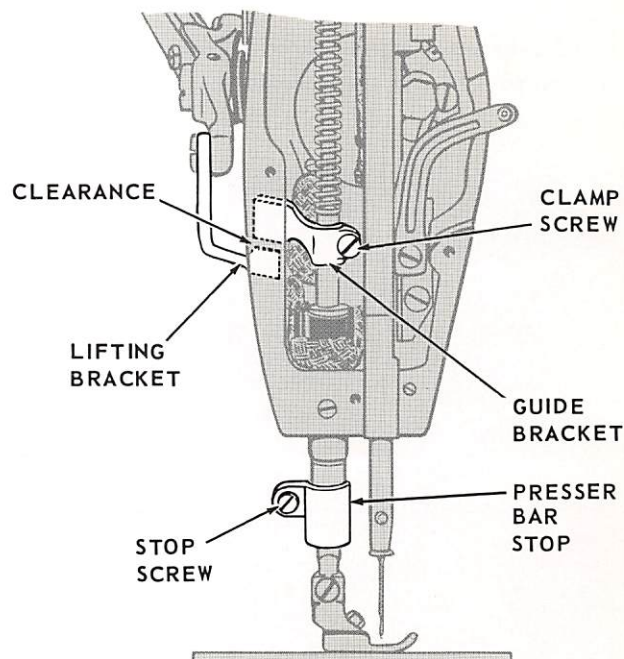


Fig. 15. Presser Bar Height Setting

ZIG-ZAG MOVEMENT

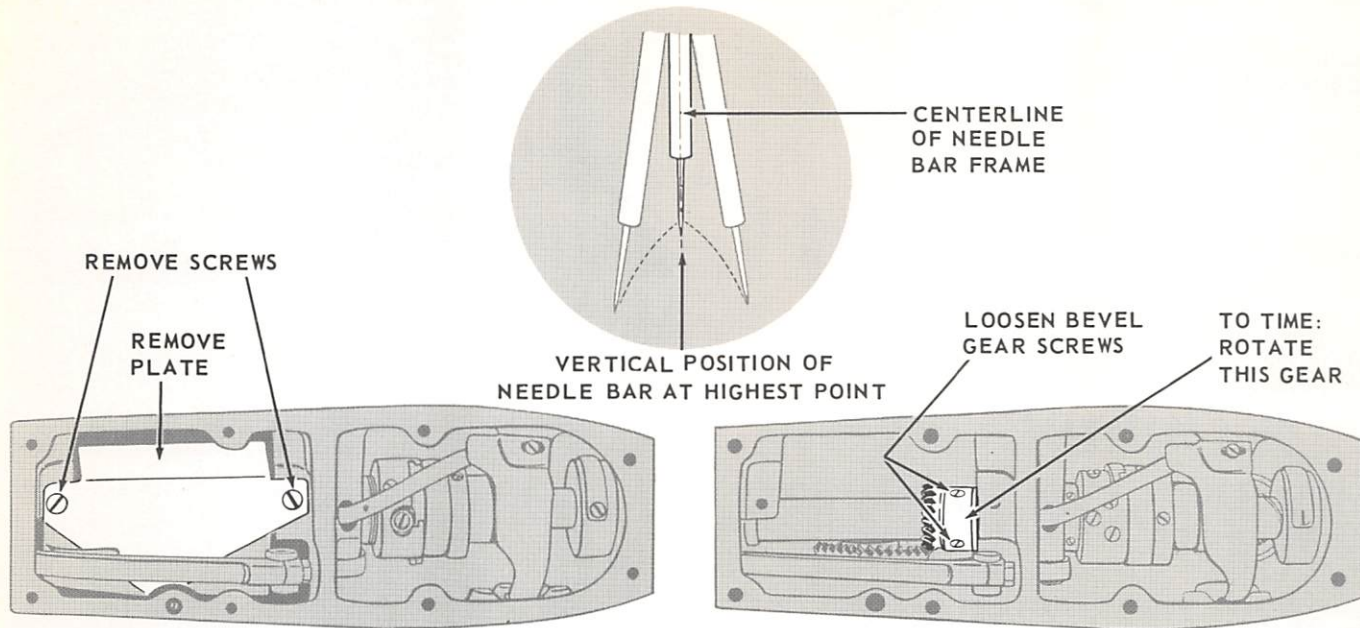


Fig. 16. Removing Oil Guide Plate

Fig. 17. Timing the Zig-Zag Movement

Needle should begin its zig-zag movement at the moment that needle point begins to rise from material. Needle should complete its zig-zag movement just before needle point re-enters material.

During its zig-zag movement, needle should cross over the vertical centerline of needle bar frame at the same moment that needle bar is at its highest point (see inset in Fig. 16).

To adjust, remove arm top cover from machine and remove two screws and plate shown in Fig. 16. Loosen

the two bevel gear screws, Fig. 17. Turn machine pulley over toward operator until needle bar reaches its highest point.

Rotate bevel gear as required to time the zig-zag movement of needle bar (see Fig. 17).

Securely tighten the two bevel gear screws and check for binding or excessive play.

Replace oil guide plate and arm top cover.

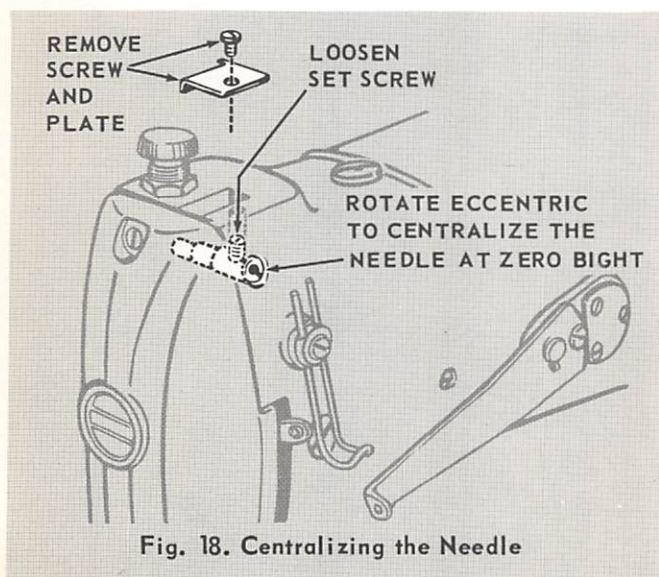


Fig. 18. Centralizing the Needle

CENTRALIZING THE NEEDLE

At zero bight, needle should penetrate center of needle hole in throat plate. Needle must not contact surface of throat plate at anytime.

To correctly position needle, remove screw and small plate in top of machine head above needle bar and loosen set screw, shown in Fig. 18.

Rotate eccentric on side of machine head, Fig. 18, as required to centralize needle.

Securely tighten set screw and cover it with the small plate as shown in Fig. 18.

BIGHT

Width of zig-zag movement of the needle, while stitching, is termed the "BIGHT".

To adjust the width of bight, remove one cover screw and loosen the other, allowing cover to drop, as shown in Fig. 19. Loosen hex-nut and move lever with nut toward left for more bight or toward right for less bight, as instructed in Fig. 19.

Tighten hex-nut and replace cover.

NOTE: Whenever bight adjustment is changed, looper gauge must be checked and adjusted as instructed below.

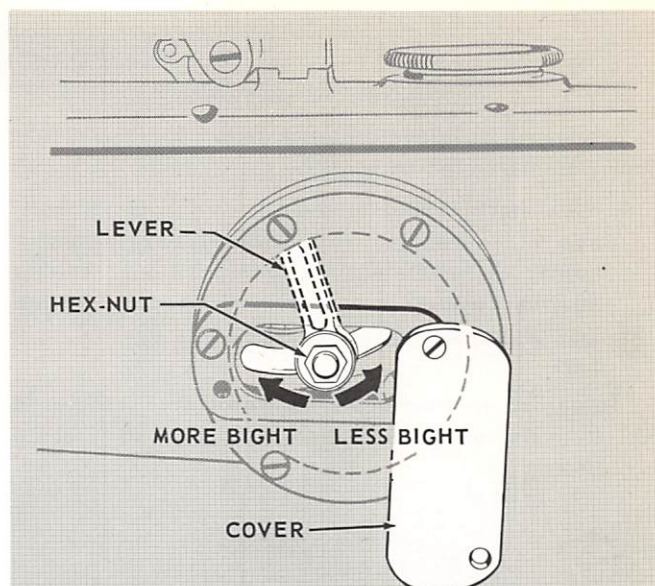


Fig. 19. Adjusting Width of Bight

LOOPER GAUGE

When needle is at extreme right position, and looper is at end of backward stroke, distance from centerline of needle to point of looper should be $5/32$ inch, as shown in Fig. 20.

To adjust, loosen clamp screw on ball crank arm, shown in Fig. 21. Rotate ball crank arm toward right or left, as required, to obtain correct distance.

Tighten ball crank clamp screw.

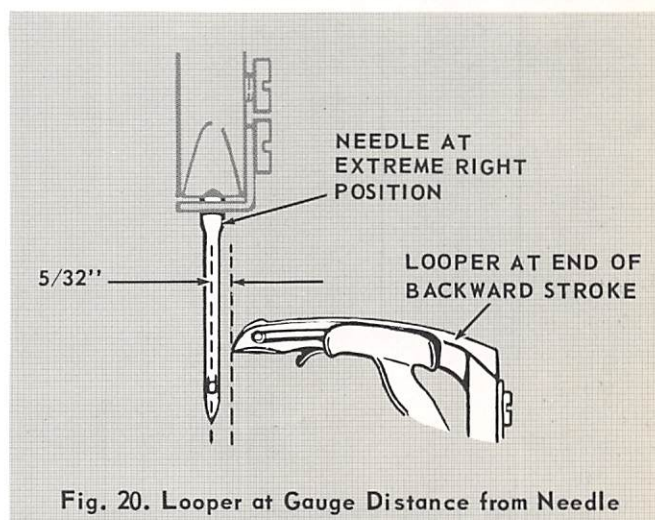


Fig. 20. Looper at Gauge Distance from Needle

TIMING THE LOOPER

When needle bar is at its lowest position, looper should be at the end of its backward stroke (just ready to begin its forward stroke).

To set the timing, remove bed slides, presser foot, throat plate and feed dog. Loosen the two bevel gear screws located at machine pulley end of rotary bed shaft (see Fig. 19). Turn machine pulley over toward operator until needle bar is at lowest point.

Turn rotary bed shaft (now free of gear action) forward or backward by hand to set looper at extreme right position.

Tighten the two bevel gear screws just enough to hold above setting. Obtain correct looper and needle eye positions, as instructed next, before finally tightening the two bevel gear screws securely.

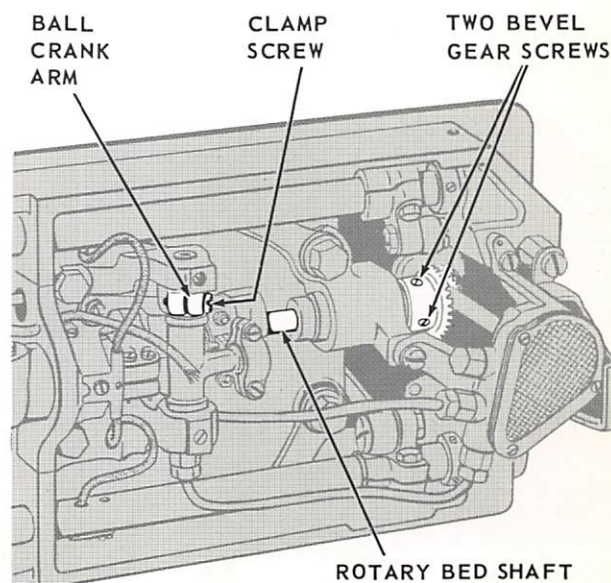


Fig. 21. Adjusting and Timing the Looper

NEEDLE BAR HEIGHT

Set looper at gauge distance from needle and time looper, as instructed on page 9.

1. Turn machine pulley over toward operator until eye of looper (on its forward stroke) reaches center of needle (at its left position). At this position, eye of looper should be exactly in line with eye of needle, as shown in Fig. 22.

To adjust, loosen needle bar clamp screw shown in Fig. 23. Raise or lower needle bar as required. Tighten

needle bar clamp screw.

2. Upon return (backward) stroke of looper, eye of needle (at its left position) must be just above the looper, as shown in Fig. 24, when looper eye passes centerline of needle. To adjust, loosen the two bevel gear screws, shown in Fig. 21, page 9) and advance or retard the bed rotary shaft, as required. Securely tighten the two bevel gear screws.

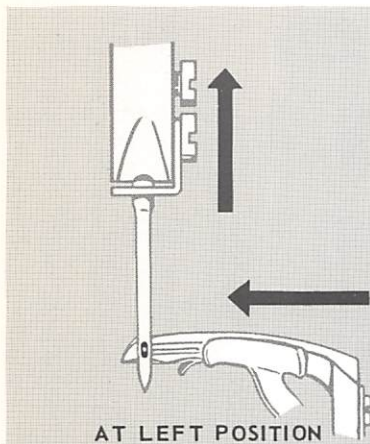


Fig. 22. Needle and Looper Eyes Aligned

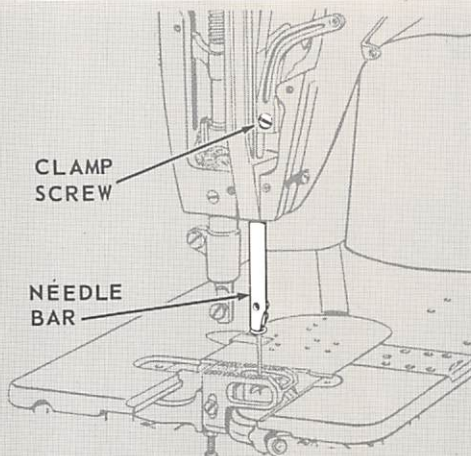


Fig. 23. Setting Needle Bar Height

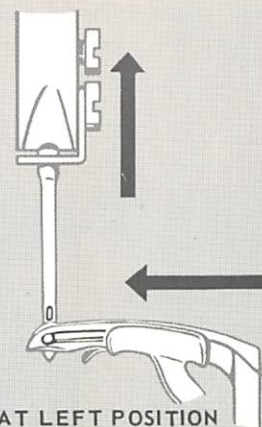


Fig. 24. Needle Eye just Above Looper

NEEDLE-AVOIDING MOTION OF LOOPER

When looper starts its forward stroke, needle bar begins to rise from its lowest position. During its forward stroke, looper should pass behind needle (just clearing back of needle). When needle bar reaches its highest position, looper completes its forward stroke

and moves from rear to front. As needle bar descends, looper moves backward and passes in front of needle, (just clearing front of needle). At end of downward stroke of needle bar, looper completes its backward stroke and moves from front to rear ready to start its forward stroke again.

These correctly timed movements of looper, from front to rear and rear to front, are called the needle-avoiding motion of the looper.

To check the setting, turn machine pulley over toward operator until eccentric-edge of crank is down, as shown in Fig. 25. When centerline between the two set screws on eccentric coincides with centerline on eccentric-edge of crank, as shown by dash-line in Fig. 25, looper is set for maximum amount of needle-avoiding motion.

To adjust, loosen the two eccentric set screws shown in Fig. 25. Rotate eccentric as indicated by arrow, Fig. 25, until needle-avoiding motion (as described above) is obtained. Then tighten the two eccentric set screws.

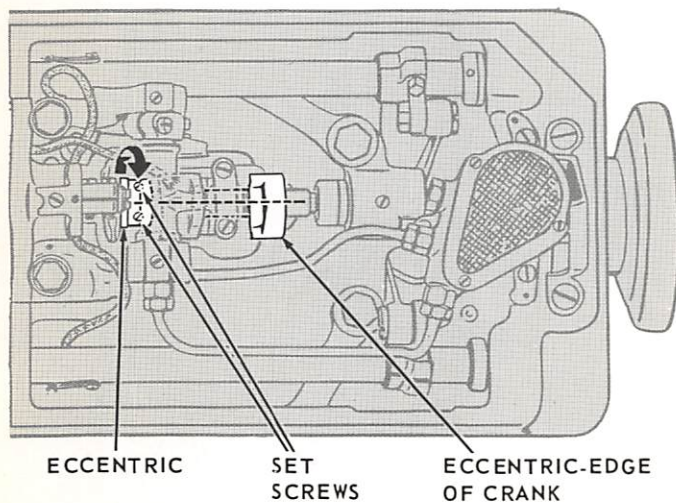


Fig. 25. Timing Needle-Avoiding Motion

POSITIONING THE LOOPER AN EQUAL DISTANCE (FRONT AND REAR) FROM NEEDLE

Loosen the two clamp screws on looper-avoiding eccentric connection, shown in Fig. 26. Move looper, as required, to position looper an equal distance in front of and behind needle.

Tighten the two clamp screws on looper-avoiding eccentric connection.

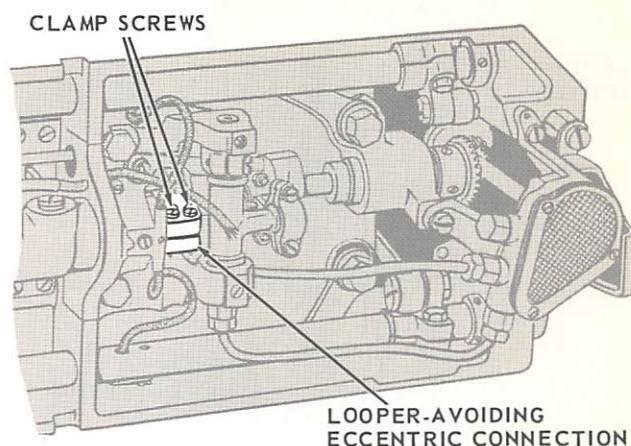


Fig. 26. Positioning the Looper

LOOPER-THREAD TAKE-UPS

The "flat" or straight edge of looper thread take-up (right) must contact looper thread just as looper is starting its backward stroke or loop shedding motion, as shown in Fig. 27. Flat of looper thread take-up (left) should then be even with top of stripper plate as shown. Take-ups will then keep looper threads taut until point of needle has entered the triangle formed by looper blade, looper thread and needle thread loop, as shown in enlarged view of this area, Fig. 27.

If take-up is timed incorrectly, it may strain thread, causing it to break or to form a puckered stitch.

Loosen screw in hub of looper thread take-up (right), Fig. 28. Rotate hub toward rear of machine to time take-up to contact looper thread sooner or toward front of machine to time take-up to contact looper thread later, as shown in Fig. 28. Tighten screw.

Loosen the two screws in hub of looper thread take-up (left), Fig. 28. Rotate looper thread take-up until "flat" of take-up is even with top surface of stripper plate, as shown in Fig. 27. Then tighten the two screws.

Check timing of take-ups by rotating the machine pulley and observing stitch formation. Re-adjust if necessary.

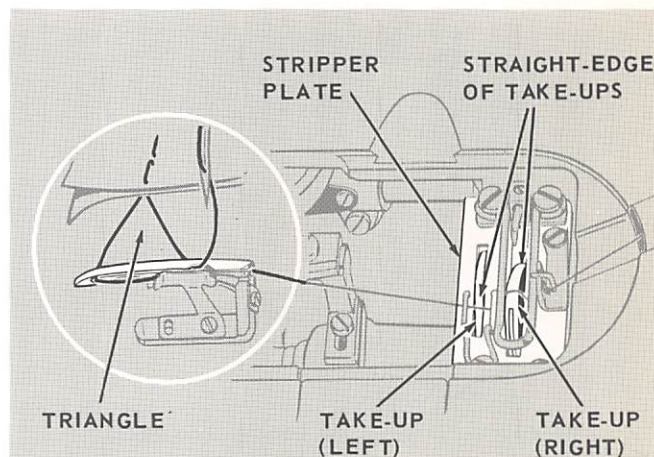


Fig. 27. Looper-Thread Take-Ups Contacting Thread

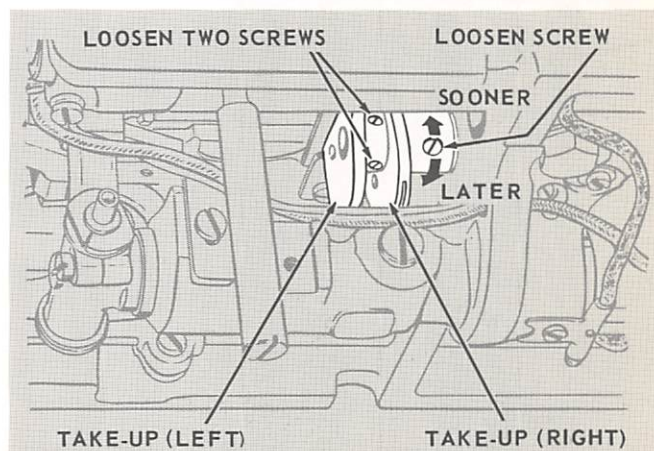


Fig. 28. Timing Looper-Thread Take-Ups
(view beneath machine bed)

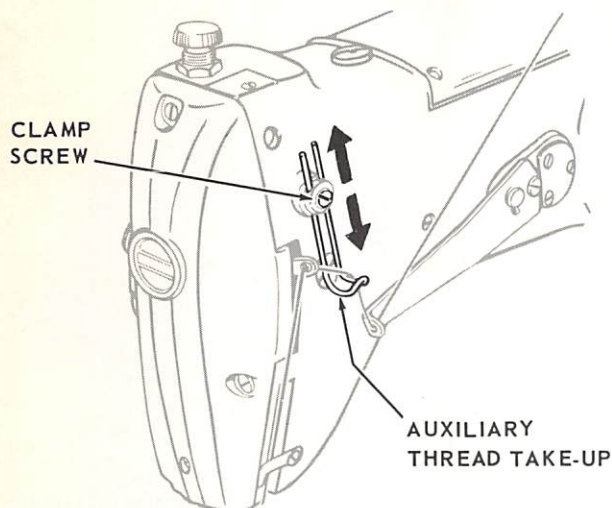


Fig. 29. Adjusting the Auxiliary Thread Take-Up

AUXILIARY THREAD TAKE-UP

The auxiliary thread take-up aids in setting the stitch by taking up slack needle thread, as needle bar finishes its downward stroke and starts to set the stitch.

To adjust, loosen clamp screw shown in Fig. 29 and raise or lower auxiliary thread take-up as required. Then securely tighten clamp screw. Adjustment may vary with changes of thread or materials in use.

THREAD TENSION RELEASER

Tension releaser must release tension on needle thread and looper thread when presser foot is raised but should not release tension (even slightly) when presser foot is down.

To adjust the tension releaser, loosen set screw shown in Fig. 30 and turn shaft until correct adjustment is obtained. Then tighten set screw.

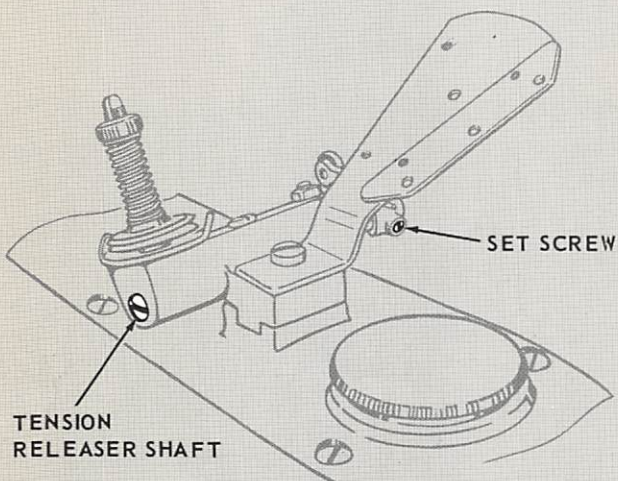


Fig. 30. Adjusting the Tension Releaser

LOOPER-THREAD RETAINERS

1. Thread retainer on bottom of looper, shown in Fig. 31, should produce a tension of 10 to 15 grams on # 80 white cotton thread

To adjust, loosen retainer screw on heel of looper and move bottom retainer against bottom surface of looper, as required. Make certain side-edges of retainer do not protrude beyond sides of looper. Securely tighten retainer screw.

2. Thread retainer on side of looper (facing operator, as shown in Fig. 31), should produce a tension of 20 to 30 grams, on # 80 white cotton thread.

To adjust, loosen retainer screw at lower end of looper and move retainer against side of looper as required. Securely tighten retainer screw.

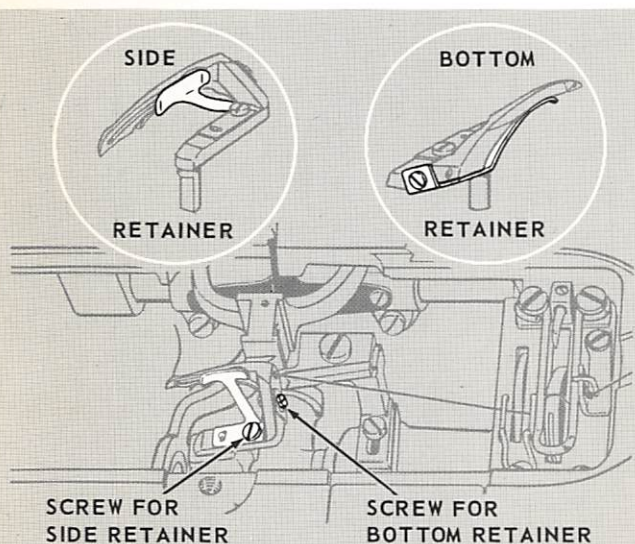


Fig. 31. Adjusting the Looper-Thread Retainers

FEED ECCENTRIC AND FEED-LIFTING ECCENTRIC

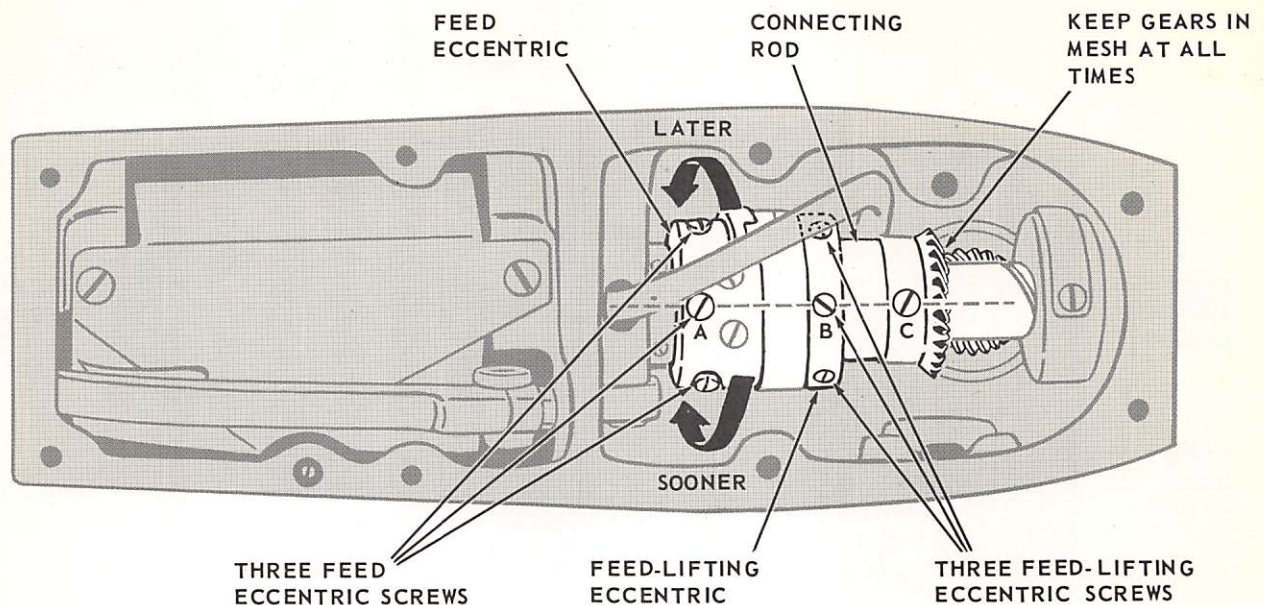


Fig. 32. Adjusting and Timing the Feed

FEED ECCENTRIC

Feed eccentric shown in Fig. 32 should be set so that feed dog starts its feeding movement immediately after needle leaves material and stops feeding movement before needle enters material.

To adjust, remove large cap from top of machine arm and loosen the three feed eccentric screws shown in Fig. 32. (Entire arm top cover is removed in this illustration to show relationship of associated parts.)

Turn feed eccentric over toward operator to start and stop feed motion sooner, or away from operator to start and stop feed motion later.

Tighten one of the three feed eccentric screws and check the timing. Reset if necessary. Then tighten all three screws and replace large cap.

Check timing of looper thread take-up as instructed on page 11.

To check the setting, rotate machine pulley over toward operator until feed dog begins to move forward. At this point, feed dog should also begin to rise above throat plate.

FEED-LIFTING ECCENTRIC

Position of feed-lifting eccentric, shown in Fig. 32, defines the shape of the elliptical path taken by the feed dog in its rise and fall. Thus, the feed-lifting eccentric determines distance feed dog will rise and fall and the point where feed dog will contact and drop away from material.

To set, remove cover from top of machine arm and loosen the three feed-lifting eccentric screws, shown in Fig. 32.

Turn lifting eccentric until connecting rod, Fig. 32, is at its lowest point. Screws A, B and C, Fig. 32 should now be set in line as shown. Tapered set screw C in bevel gear should be seated in timing slot on shaft. Tighten screws A and C.

Tighten the three lifting eccentric screws. Replace arm top cover.

CAUTION: Bevel gears shown in Fig. 32, have been lapped together at the factory and must be kept in mesh at all times.

FEED DOG

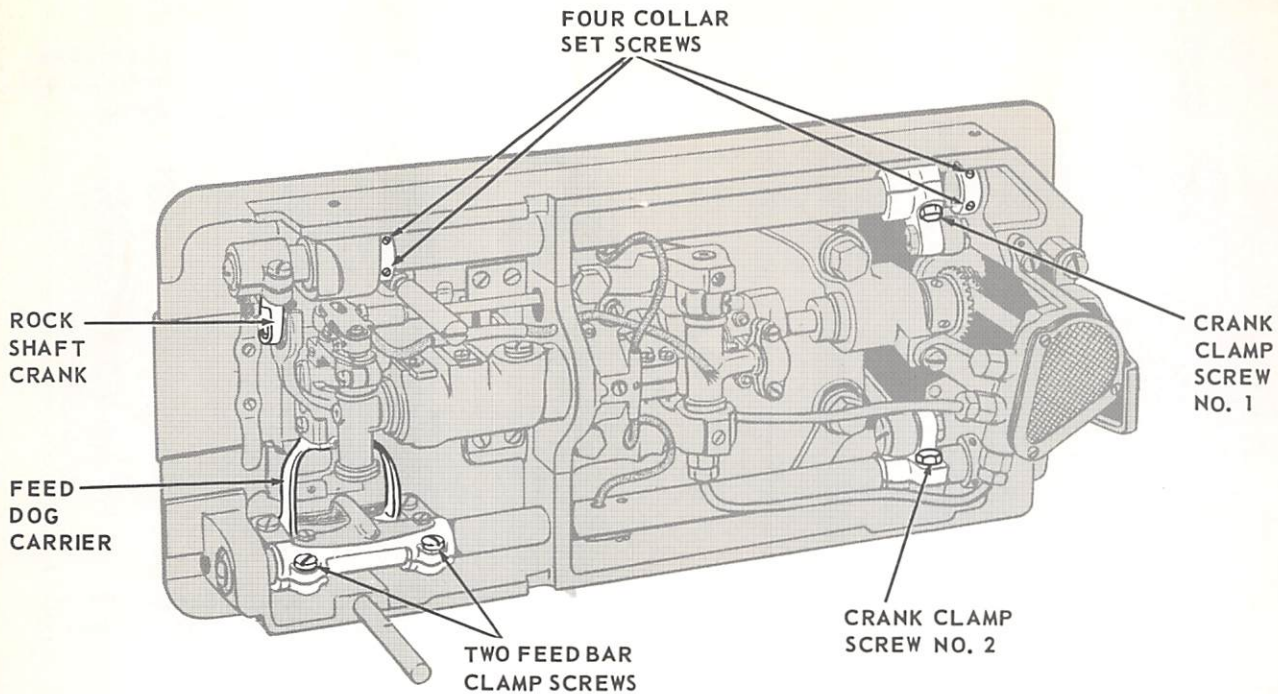


Fig. 33. Centralizing the Feed Dog

CENTRALIZING

Feed dog should never contact edges of throat plate slots.

SIDewise SETTING: To move the feed dog toward left or right, loosen two feed bar clamp screws, crank clamp screw # 1 and four collar set screws, shown in Fig. 33.

Adjust feed dog carrier so that feed dog moves in a line midway between sides of throat plate slots. Then align feed lifting rock shaft crank with feed dog carrier.

Securely tighten all screws.

LENGTHWISE SETTING: To centralize the feed dog so that its movement is equidistant from front and rear ends of throat plate slots, first set machine for longest stitch. Then loosen crank clamp screw # 2, Fig. 33, and move feed dog carrier, as required, to centralize feed dog within throat plate slots.

Securely tighten crank clamp screw # 2, Fig. 33.

LEVELING OR TILTING

To level or tilt the feed dog, loosen clamp screw on rock shaft crank shown in Fig. 34.

Raise crank to tilt feed dog up in front or lower crank to tilt feed dog down in front.

Securely tighten clamp screw.

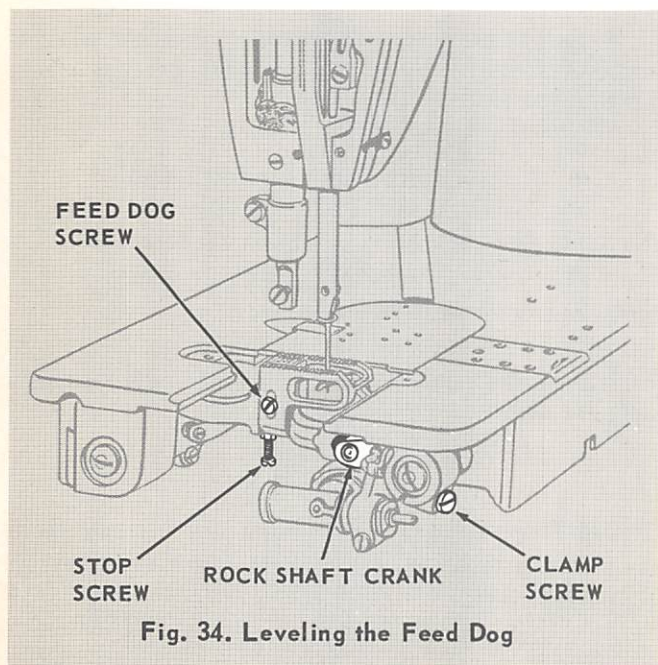


Fig. 34. Leveling the Feed Dog

HEIGHT

When machine is set for longest stitch, approximately the full depth of the rear teeth of feed dog should project above the top surface of throat plate, as shown in Fig. 35.

To adjust, remove feed dog from machine. Raise or lower stop screw, shown in Fig. 34, as required. Replace feed dog so that it rests firmly upon stop screw, as shown in Fig. 34. Recheck feed dog height. Securely tighten feed dog screw, when correct height of feed dog is obtained.

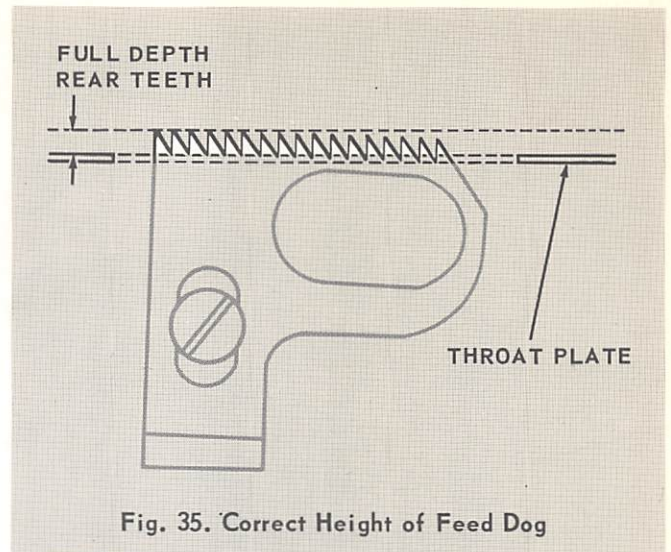


Fig. 35. Correct Height of Feed Dog

CHECK LIST FOR CAUSES OF TROUBLES

PUCKERED SEAMS:

1. Blunt needle or wrong pointed needle.
2. Stitch too long (except for "wash and wear" materials).
3. Tension too tight.
4. Needle hole in throat plate too large.
5. Operator pulling and stretching the material while machine is stitching.
6. Feeding too much material while stitching.

LOWER THREAD BREAKING:

1. Lower tension too tight.
2. Improper threading of looper.
3. Burr on looper or on underside of throat plate.

UPPER THREAD BREAKING:

1. Upper tensions too tight.
2. Improper threading.
3. Needle bent or damaged (blunt point). Burr on needle.

4. Thread too coarse for size of needle and material.
5. Burr on looper or in needle hole of throat plate (caused by breaking of needle).
6. Needle turned wrong when set in needle bar.
7. Needle too long, or not set all the way up in needle bar.
8. Tension discs worn so deeply that thread works in a groove.
9. Thread catching upon an imperfection on the surface of machine arm.

SKIPPING STITCHES:

1. Looper incorrectly set (front to rear).
2. Needle not accurately set in needle bar.
3. Needle dirty, bent or damaged (blunt point).
4. Needle eye too small for thread use.
5. Needle too short or too long for machine.
6. Needle point of wrong shape for material.
7. Oil on needle.