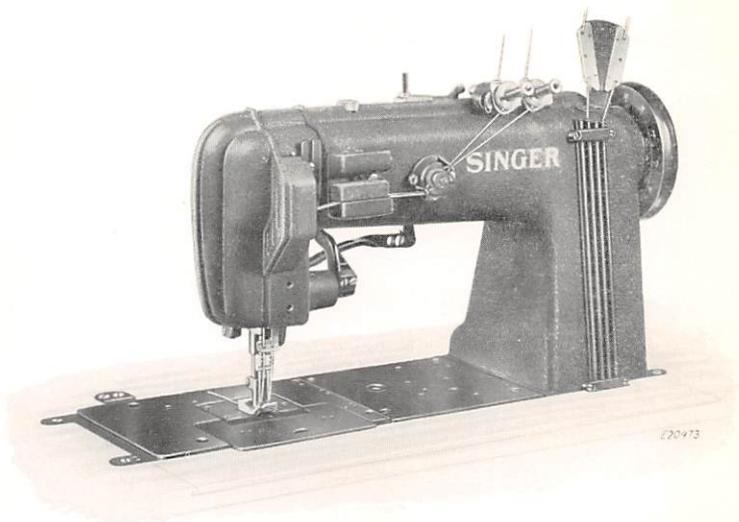


INSTRUCTIONS
FOR USING AND ADJUSTING
SINGER*
SEWING MACHINES
300w103 and 300w203



Machine 300w203

Special attention is called to the lubricating instructions on pages 6 and 7

THE SINGER MANUFACTURING COMPANY

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DESCRIPTION

Machine 300w103 has one needle and one looper and makes a single row of two-thread chain stitching.

Machine 300w203 has two needles and two loopers for simultaneously making two parallel rows of two-thread chain stitching. The needles are set abreast and the distance between them may be from $\frac{3}{16}$ inch to 1 inch, in steps of $\frac{1}{32}$ inch, as ordered. The standard gauges are $\frac{1}{4}$ " , $\frac{5}{16}$ " , $\frac{3}{8}$ " , $\frac{1}{2}$ " and $\frac{3}{4}$ " .

These machines are especially adapted for seaming overalls and work pants, automobile trim, stitching tarpaulins, tents, seat covers and similar work in medium and heavy fabrics.

A compound feed, consisting of needle feed and drop feed, working in combination with alternating pressers, comprising an upper feeding foot and lifting presser foot, carry the work forward in unison with the needle in the material, insuring powerful, positive and even feeding of two or more plies of material.

The maximum length of stitch is 3 to the inch. The needle bar stroke is $1\frac{1}{4}$ inches and the presser bar lift is $\frac{3}{8}$ inch.

An automatic oiling system delivers the required amount of oil to all principal bearings.

SPEED

The maximum speed recommended for these machines is 4000 R.P.M., depending upon the nature of the work. For the first few days, the speed of the machines should not exceed 3500 R.P.M., after which they can be driven at their maximum speed. The top of the balance wheel turns over toward the operator.

CAUTION: Before starting the machine, it must be thoroughly oiled, as instructed on pages 6 and 7.

TO SET UP MACHINE

Assemble the iron work, legs, brackets, treadles, etc., as shown in **Fig. 2.**

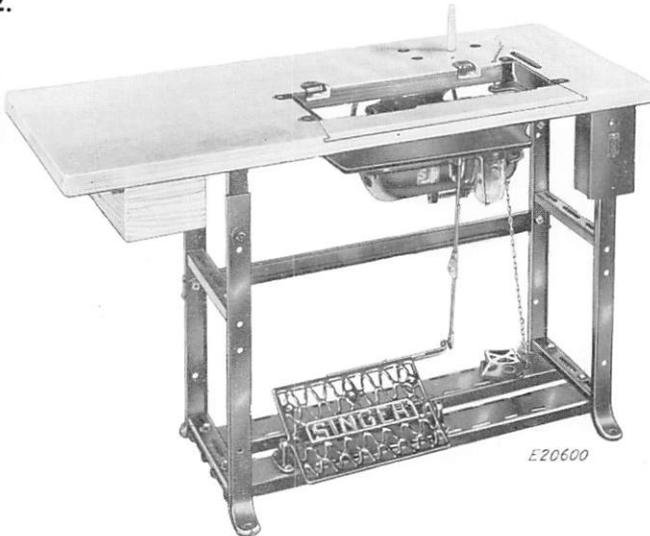


Fig. 2. Stand, Table and Electric Transmitter Assembled for Operation of Class 300w Machine

Assemble thread unwinder as shown in **Fig. 3.**



Fig. 3

Thread Unwinder Assembled

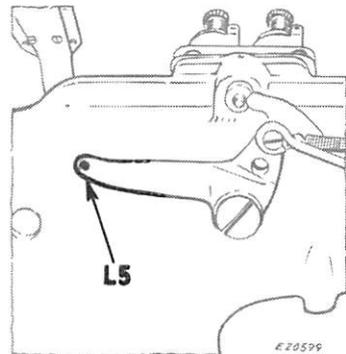


Fig. 3A. Foot Lifter Lever

Connect foot lifter treadle to foot lifter lever **L5, Fig. 3A** at back of machine by means of chain furnished for purpose.

Assemble oil pan **D** to hangers **B**, placing leather and steel washers as shown in **Fig. 4**. Attach oil jar to oil pans as shown in **Fig. 2**.

First set right hand hanger **B** as close to cut-out side as possible flush with table as shown in **Fig. 4**. Then place left hand hanger so that distance between centers of rubber bushing holes of right and left hangers is $17\text{-}3/16''$. Place four rubber insulating bushings **C** in hanger holes, as shown in **Fig. 5**. When necessary, to level machine, use four felt pads **A** on bed pins, as shown in **Fig. 5**, then set machine on these pads, having bed pins pass through rubber bushings **C**.

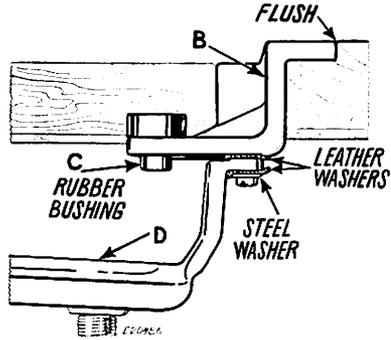


Fig. 4. Hanger and Oil Pan Assembled

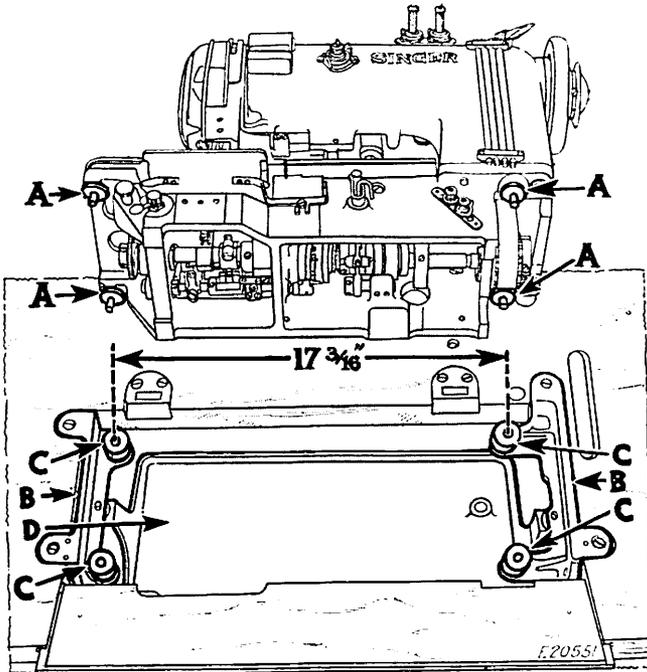


Fig. 5. Setting Up the Machine

TO OIL THE MACHINE

The machine has an efficient automatic oiling system comprising a hollow arm shaft and a hollow bed shaft which act as oil reservoirs and deliver the required amount of oil to all of the principal bearings when the machine is in operation. The oil is distributed to the various bearings by centrifugal force through small jets in the shafts so that only clean oil reaches the bearing surfaces. Oil holes are provided for hand oiling of parts in movable contact which are not oiled from the reservoirs.

CAUTION: Use "TYPE D" OIL sold by Singer Sewing Machine Company. See inside front cover for description of this oil.

THE MACHINE MUST BE OILED AS INSTRUCTED BELOW AND ON THE FOLLOWING PAGE. FAILURE TO DO THIS WILL RESULT IN DAMAGE TO THE MACHINE.

NOTE: It is not necessary to remove the work plate for the first servicing or subsequent oiling of the machine. For this purpose, merely swing out the face plate and remove bed slide plate.

USE ONLY THE PRESSURE OIL CAN NO. 228491 FURNISHED WITH THE MACHINE, AS SHOWN IN FIGS. 6 AND 8.

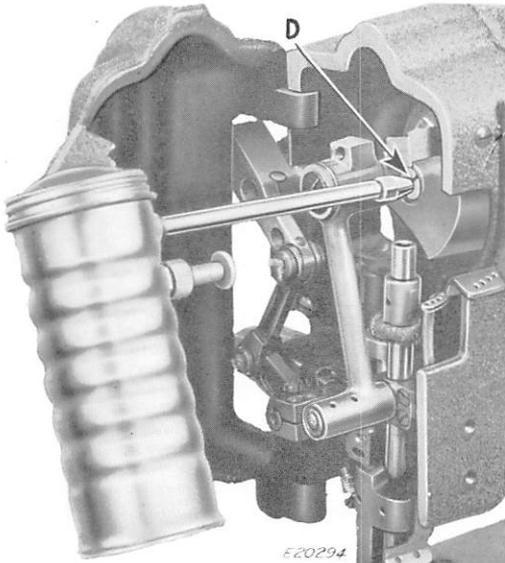


Fig. 6

TO OIL ARM SHAFT

1. To fill arm shaft oil reservoir, insert spout of pressure oil can in hole **D**, Fig. 6 and inject 6 shots of oil into shaft.

TO OIL BED SHAFT

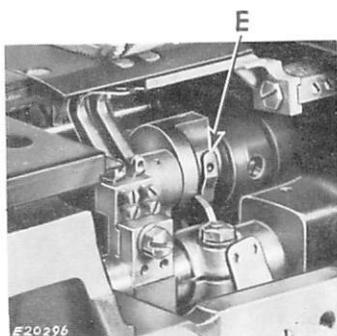


Fig. 7

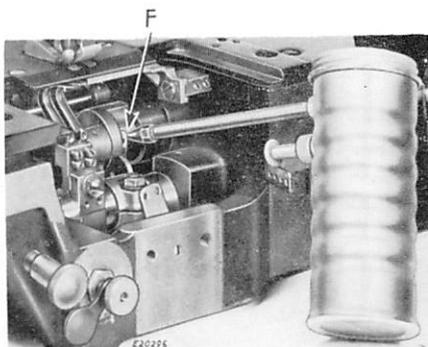


Fig. 8

2. To fill bed shaft oil reservoir, push spring cover **E**, **Fig. 7** to left, insert spout of pressure oil can in hole **F**, **Fig. 8** and inject six shots of oil into shaft. Close oil spring cover **E**.

NOTE: The arm shaft and bed shaft can also be oiled from right hand ends.

3. Apply oil to work plate oil holes and arm oil holes. Oil needle bar bearings and connections, needle bar rock frame bearings, looper rocker sleeve, presser lifting mechanism and looper pull-out rack.

A MACHINE IN DAILY USE MUST BE OILED AS FOLLOWS:

Fill arm shaft oil reservoir **D**, **Fig. 6** (approximately 6 shots of oil).

Fill bed shaft oil reservoir **F**, **Fig. 8** (approximately 6 shots of oil).

Once a day Apply oil to all holes in work plate.

Oil needle bar bearings and connections and needle bar rock frame bearings.

Oil looper rocker sleeve.

Oil feed lifting rock shaft bearings in back of arm.

Occasionally oil tension release mechanism and looper pull-out rack.

TO THREAD THE LOOPERS

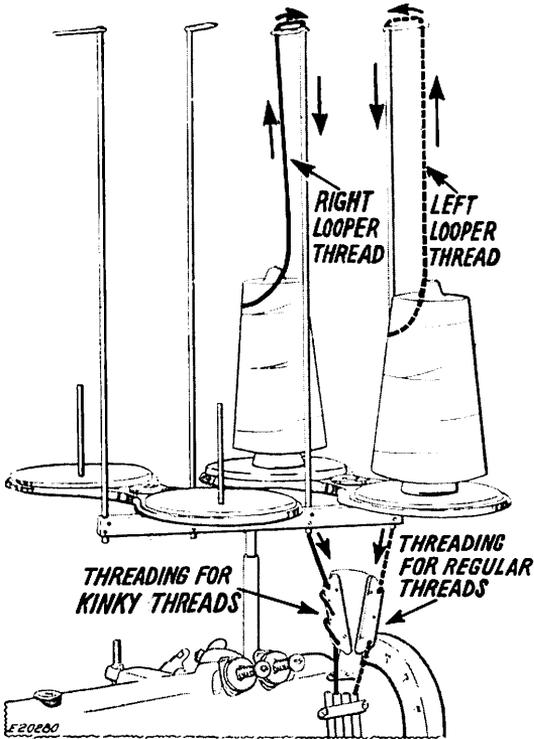


Fig. 9. Looper Threading

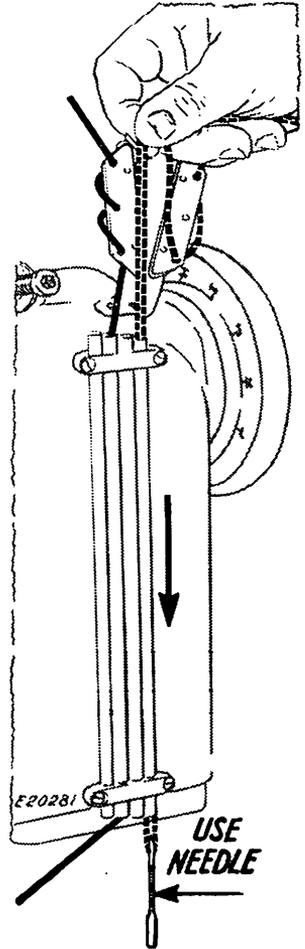


Fig. 10. Looper Threading

Pull table slide toward you and turn balance wheel over toward you until needle bar is at its highest position.

Move loopers out of sewing position, by pulling rod **H**, **Fig. 11** out 1/4" and gear rack button **G**, **Fig. 11** as far as it will go. This will make threading easier and prevent accidental operation of machine before loopers are returned to sewing position.

To thread loopers, pass threads through threading points in the order shown in **Figs. 9 to 15**. Dotted line indicates thread for left looper.

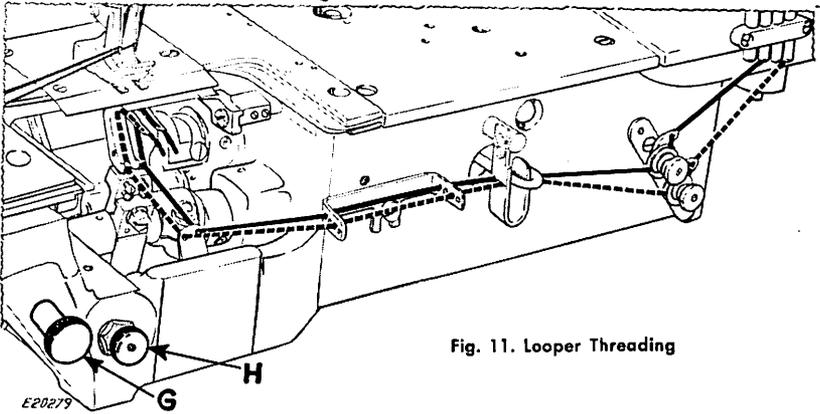


Fig. 11. Looper Threading

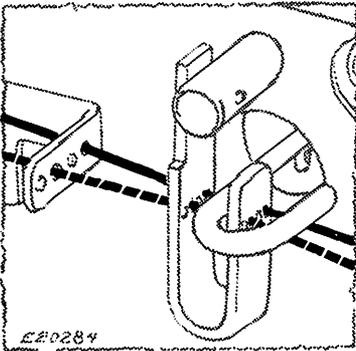


Fig. 12. Threading Take-up
for SHORT Needle Loop

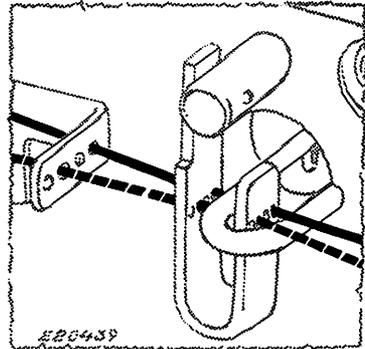
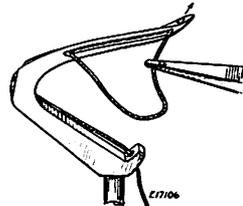
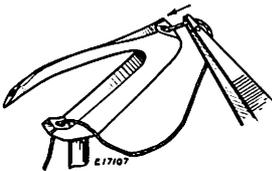


Fig. 13. Threading Take-up
for LONG Needle Loop

NOTE: To change formation of stitching from a short needle loop to a long needle loop, decrease tension on needle threads and pass both looper threads over one arm of take-up wire shown in Fig. 13. Adjust tension to suit.



Figs. 14 and 15. Threading Looper

For threading loopers, use tweezers No. 228451, as shown in **Figs. 14 and 15**.
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TO THREAD THE NEEDLES

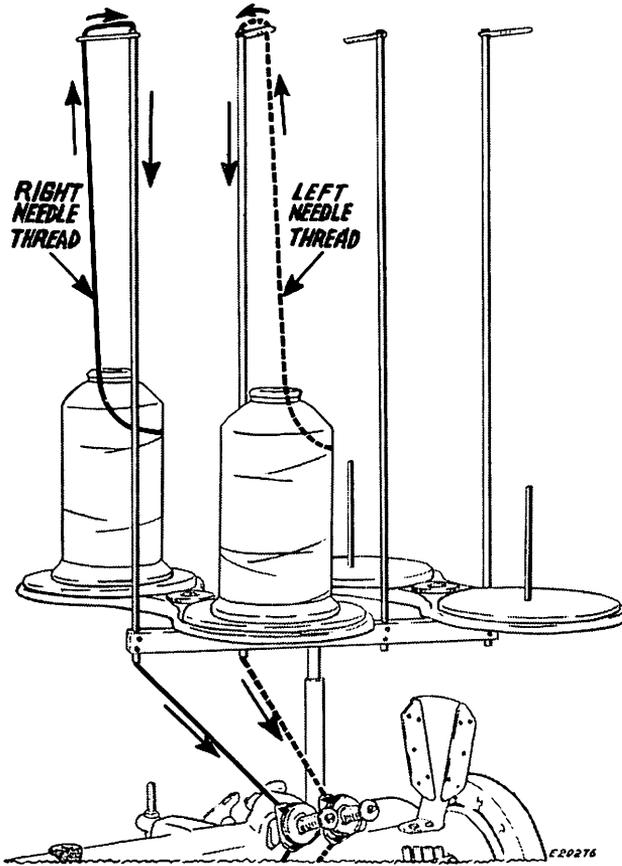


Fig. 16. Needle Threading

Turn balance wheel over toward you until needle bar is at its highest position.

To thread needles, pass thread through threading points in the order shown in **Figs. 16, 17** and **18**. Dotted line indicates thread for left hand needle.

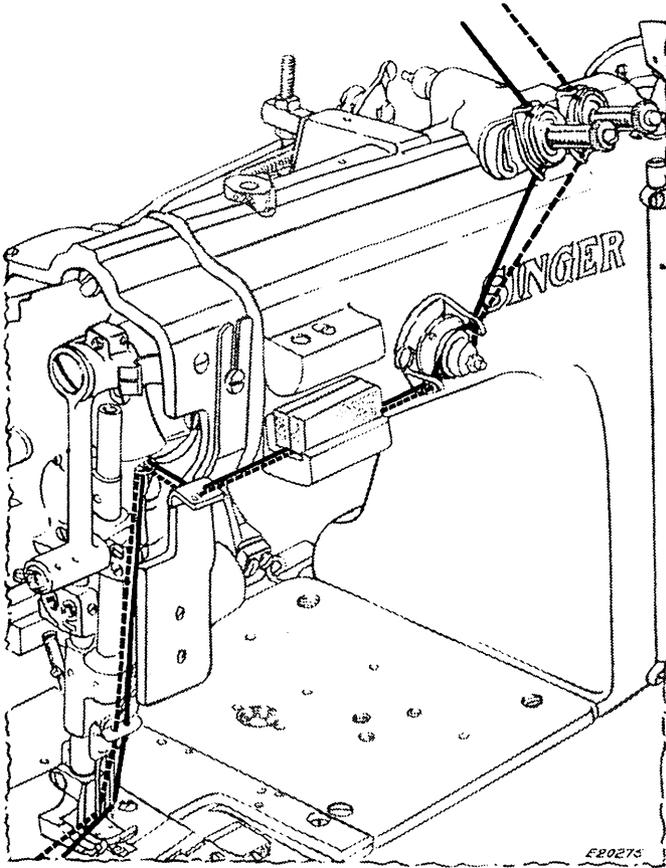


Fig. 17. Needle Threading

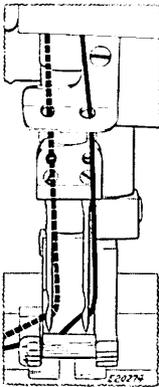


Fig. 18. Needle Threading

Draw about two inches of thread through eye of each needle with which to commence sewing.

TO SET THE NEEDLES

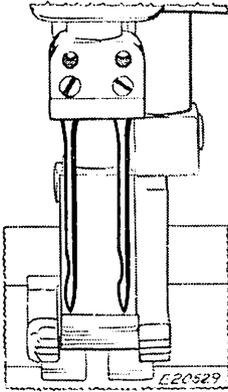


Fig. 19
Setting Needles

Insert the needles up into the needle clamp as far as they will go with the **scarf of each needle toward the left**, as shown in **Fig. 19**, then securely tighten the needle set screws.

NEEDLES

Depending on the nature of material to be sewn, use needles of Class and Variety 62x59 (for medium heavy work) and 62x57 (for medium light work).

Needles 62x59 are made in sizes from 20 to 25. Needles 62x57 are made in sizes 16 to 24.

The size of the needle to be used is determined by the size of the thread which must pass freely through the eye of the needle. Rough or uneven thread, or thread which passes with difficulty through the eye of the needle will interfere with the proper operation of the machine.

Orders for needles must specify the **quantity** required, the size number, also the **class** and **variety** numbers separated by the letter **X**.

The following is an example of an intelligible order:

"100 No. 22, 62x59 Needles."

The best stitching results will be obtained with needles sold by Singer Sewing Machine Company.

THREAD

Either left twist or right twist thread can be used in the needles and loopers.

TO REGULATE PRESSURE ON MATERIAL

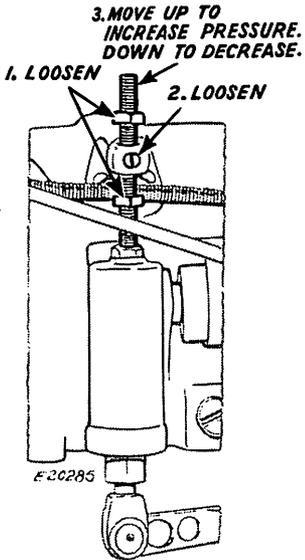


Fig. 20

When correct feeding pressure is attained (which will feed work without noise in spring arm connection), tighten lock screw 4.

Always use lightest pressure possible to permit higher working speeds.

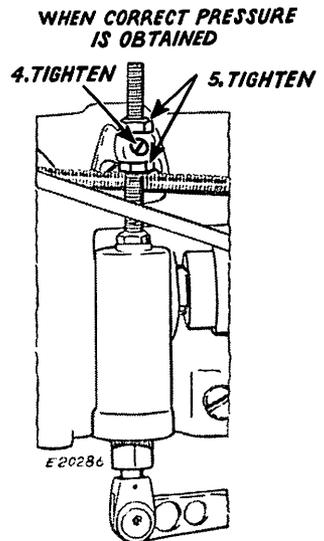


Fig. 21

TO REGULATE TENSIONS

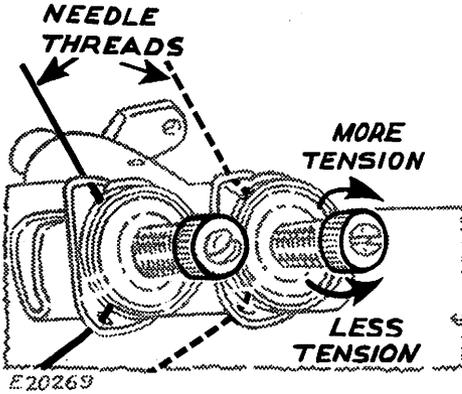


Fig. 22

For average sewing, the tension on the looper threads should be very light.

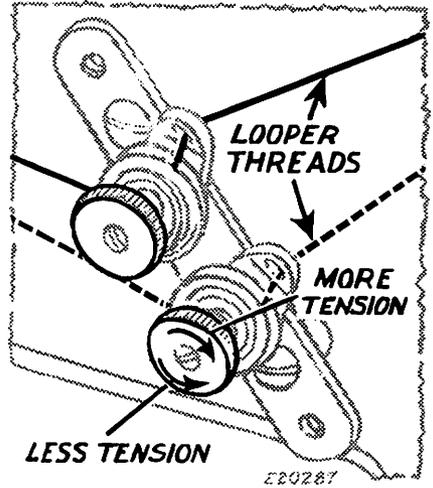


Fig. 23

TO REGULATE THE LENGTH OF STITCH

The letters **A** to **L** on the stitch indicator plate **J**, **Fig. 24** denotes the various lengths of stitches that can be made, the letter **A** indicating the longest stitch. The letter opposite the arrow **K**, **Fig. 24** on the front of the arm indicates the length of stitch the machine is ready to make when the plunger **L**, **Fig. 25** and button **M**, **Fig. 25** engage the notches in the feed eccentrics.

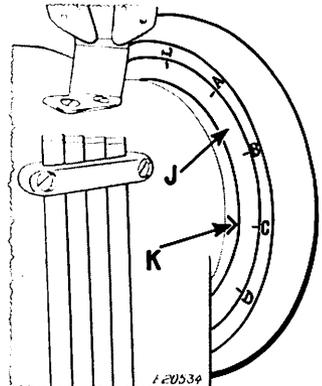


Fig. 24. Stitch Indicator

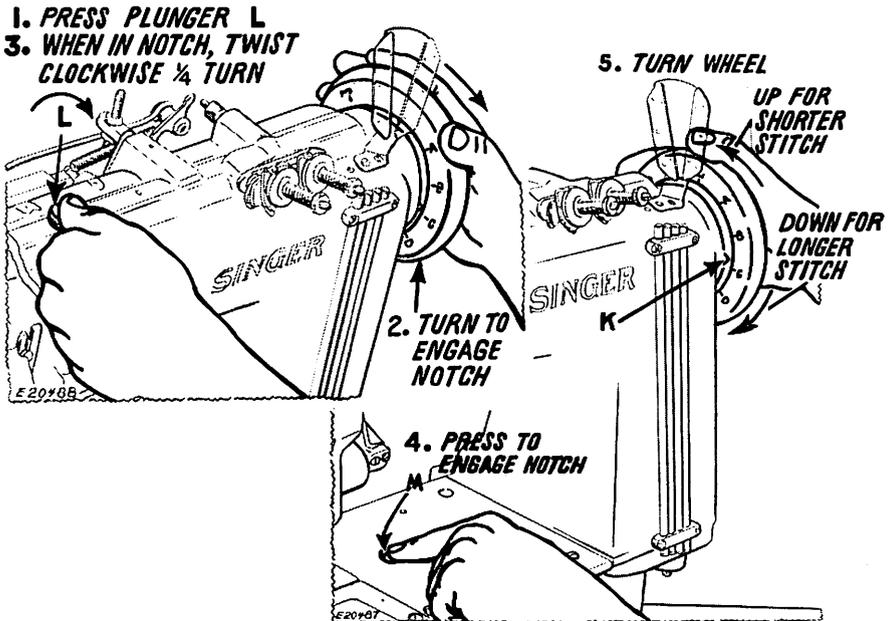


Fig. 25. Adjustments for Changing Length of Stitch

The forward and backward movements of the needles and feeding foot are regulated by the knurled plunger **L**. The travel of the feed dog is regulated by the button **M**.

When changing the length of stitch, the following adjustments must be made in **UNISON**.

Press in plunger **L** and at the same time turn balance wheel over toward you until plunger **L** enters a notch in adjustable eccentric on arm shaft, then turn plunger clockwise to lock it in position. Now, press button **M** and at the same time turn balance wheel over toward you to increase length of stitch or over from you to shorten stitch, until desired letter on stitch indicator is opposite arrow **K**. Then release button **M** and TURN plunger **L** to right or left until it springs outwardly and releases eccentric. The machine is then ready for operation.

CAUTION: NEVER change forward and backward movements of needles and feeding foot without changing the travel of the feed dog.

The upper and under feeds are usually set to act synchronously, but this setting is subject to slight variations depending upon the nature of work being sewn.

TO REGULATE THE AMOUNT OF LIFT OF THE PRESSERS

The vibrating presser or feeding presser is provided with needle holes and moves forward in unison with the needles. The lifting presser has only an up and down motion. Remove arm cover at **Q**, Fig. 26. The lift of the vibrating and lifting pressers is controlled by adjustable eccentric **N**. Turn balance wheel until feeding presser is down, loosen two lock screws **I**, and two clamping screws **O**, hold screwdriver in notch of adjusting disc **P**, and turn balance wheel as indicated in Fig. 26, for required amount of lift.

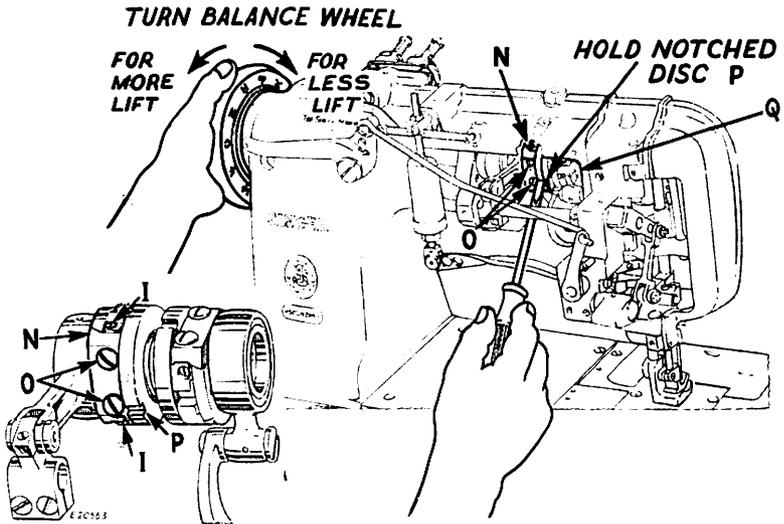


Fig. 26. Regulating Lift of Pressers

CAUTION: When correct lift is attained, securely tighten two clamping screws **O** and their locking screws **I**. If it is desirable to have either one of the pressers lift more than the other, turn balance wheel until lifting presser is at its highest position. Loosen two clamp screws **U**, Fig. 27, turn lifting rock shaft crank **T**, Fig. 27 up or down until required lift of each presser is attained.

CAUTION: Securely tighten clamp screws **U** before operating machine with power. Limit lift of pressers to minimum required for the work, as this permits higher speeds.

TO TIME PRESSER FEED LIFTING ECCENTRIC

The presser feed lifting eccentric unit is not spotted. To adjust, loosen two holding screws **R**, **Fig. 27** by not more than one half turn with screwdriver. (This will keep the part correctly aligned sidewise as the holding screws engage a shallow groove in the feed driving flange **S**). Move feed lifting eccentric so that vibrating presser will seat on work at about same time needle enters work. This condition will vary slightly depending on type of work being done.

CAUTION: Securely tighten holding screws **R** after adjustment is made.

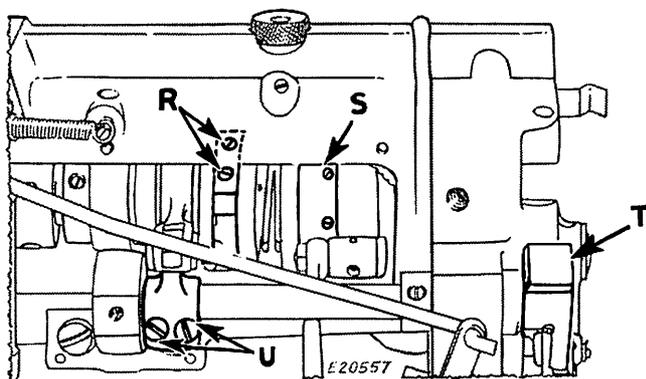


Fig. 27. To Time Presser Feed Lifting Eccentric

NOTE: The instructions on the following pages are for adjusters and mechanics only.

TO SET FEED BAR AT THE CORRECT HEIGHT

See that feed lift crank timing screw **V**, **Fig. 28** engages shaft spot correctly and that slot of feed lift link clamp **W** is properly aligned with rock shaft timing flat. If an adjustment is required, loosen clamp screw **X**, move feed lift link to correct position, see that it is not binding side-wise, then securely tighten clamp screw **X**.

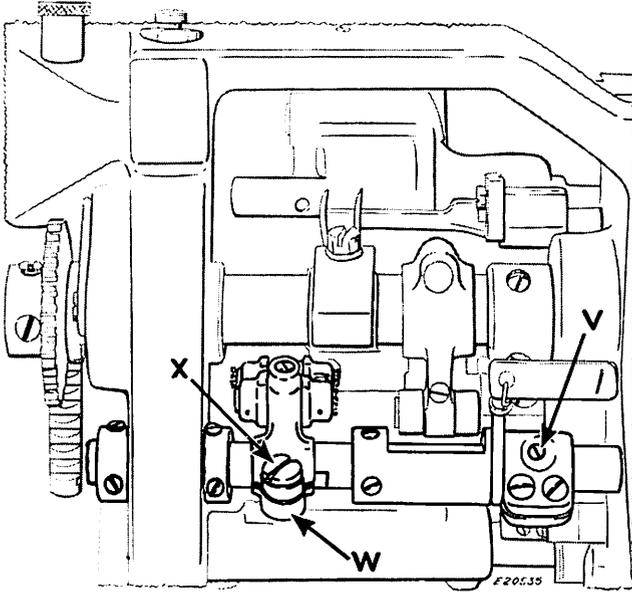


Fig. 28. Adjustment for Setting Feed Bar at Correct Height

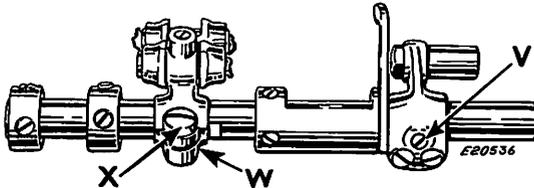


Fig. 29. Feed Lift Crank and Link Assembly

TO SET FEED DOG SIDWISE IN RELATION TO NEEDLES

To adjust feed dog sidwise so that needles will enter center of needle holes, loosen thrust collar screws in right collar **A2**, **Fig. 30** and in left collar **Y** and move feed rocker and feed bar assembly to required position. (This adjustment permits a sidwise movement of feed dog of not more than 1/64 inch.) When feed dog is correctly set, move thrust collars into proper position and tighten screws. See that feed driving strap **D2** and feed lifting link **F2** are not binding.

For more than 1/64 inch sidwise movement of feed dog, loosen screws **Y**, **A2**, **B2**, and **E2**, driving strap **D2** and feed lifting link **F2**, and move feed rocker and feed bar assembly to required position and retighten. Be sure strap **D2** and link **F2** are not binding.

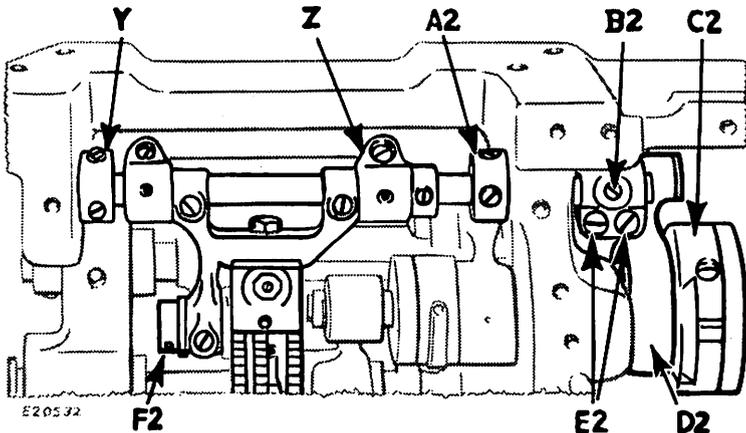


Fig. 30. Adjustments for Setting Feed Dog
Sidewise in Relation to Needles

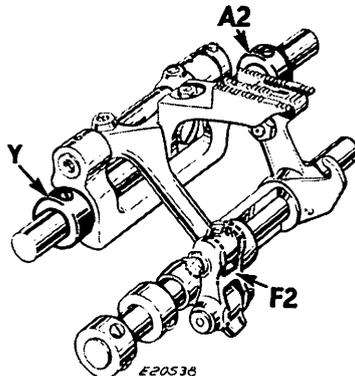


Fig. 31. Feed Rocker and Feed Bar Assembly

TO SET FEED DOG FORWARD AND BACKWARD IN RELATION TO SLOTS IN THROAT PLATE

To adjust feed dog in direction of feed after feed dog has been positioned sidwise in relation to needles, set feed eccentric **C2**, **Fig. 32** for desired stitch with respect to throat plate slots. Loosen set screws **B2** and two clamp screws **E2** in feed driving rock shaft crank and move feed rocker **Z** to required position, then securely tighten two clamp screws **E2** and lock them with set screws **B2**.

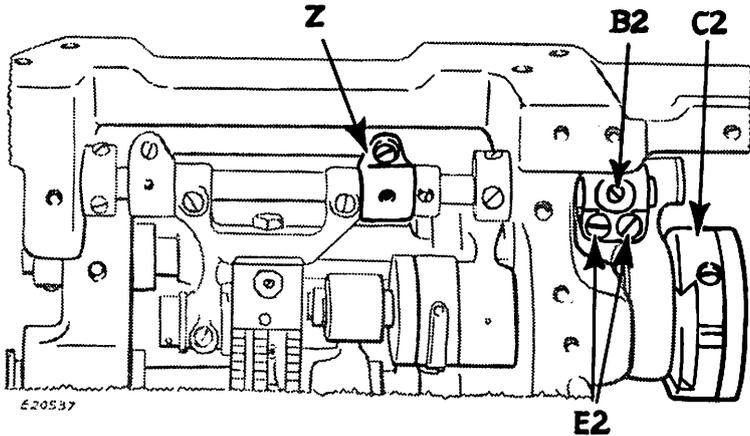


Fig. 32. Adjustments for Setting Feed Dog Forward and Backward in Relation to Slots in Throat Plate

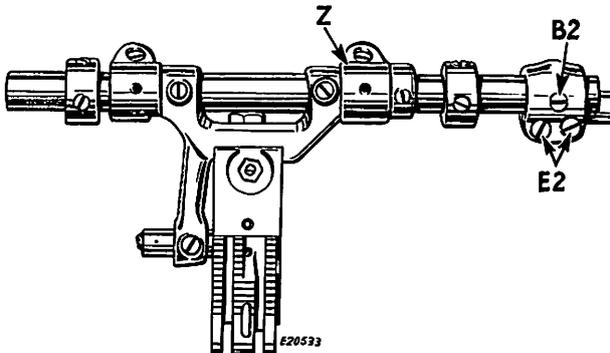


Fig. 33. Feed Driving Rock Shaft Crank and Feed Rocker Assembly

TO SET FEED DOG AT CORRECT HEIGHT

When feed dog is at its highest position on feed stroke, approximately full depth of teeth should show above throat plate. To raise or lower feed dog, loosen jack screw **H2**, **Fig. 34** and slightly loosen feed dog clamping screw **G2** and nut **L5**, then set feed dog at correct height, turning jack screw **H2** counterclockwise and tapping feed dog down to lower it or turning jack screw **H2** clockwise and tapping feed dog up to raise it. When feed dog is correctly set, securely tighten clamping screw **G2** and nut **L5**.

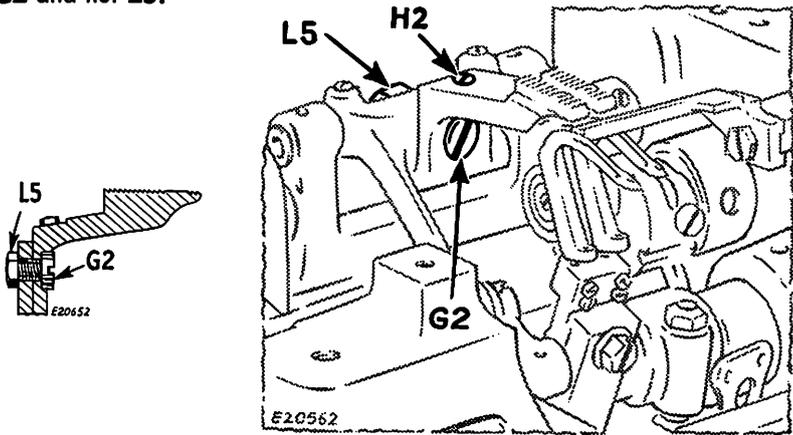


Fig. 34. Adjustments for Setting Feed Dog at Correct Height

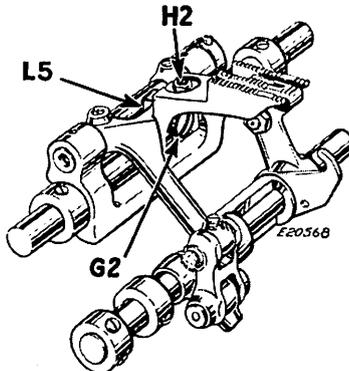


Fig. 35. Adjustments for Setting Feed Dog at Correct Height

TO TIME FEED LIFT ECCENTRIC

The feed lifting eccentric is not spotted. To adjust, insert screwdriver in hole in feed lift strap, slightly loosen screws at **J2**, **Fig. 36** and move feed lift eccentric forward to make feed dog rise earlier or backward for later. When feed dog is at its highest position, the top of teeth should be parallel with upper surface of throat plate and project full depth of teeth above throat plate, then securely tighten screws at **J2**.

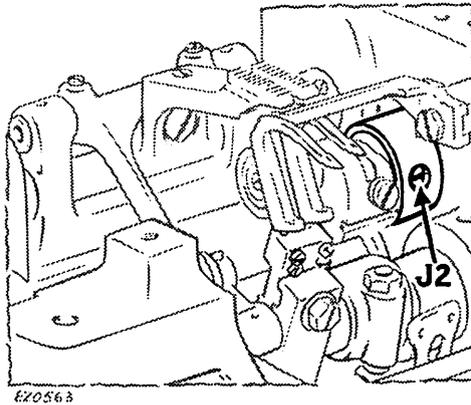


Fig. 36. Adjustment for Timing Feed Lift Eccentric

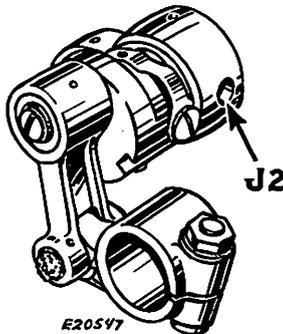


Fig. 37. Feed Lift Eccentric

TO POSITION NEEDLE BAR FORWARD AND BACKWARD IN RELATION TO FEED DOG

Insert 62x57 needles (or 62x59 for heavy seams) in needle clamp as far as they will go, then securely tighten screws. See that needles are correctly aligned with needle holes in vibrating presser and feed dog. Set feed eccentrics **L** and **M**, **Fig. 38** to desired stitch length. Press needle bar rock frame **L2**, against drive arm before loosening screws **K2**, as shown in **Fig. 39**. Continue holding needle bar rock frame while positioning needles in needle holes of previously positioned feed dog.

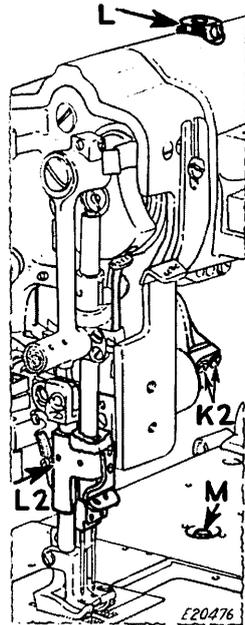


Fig. 38

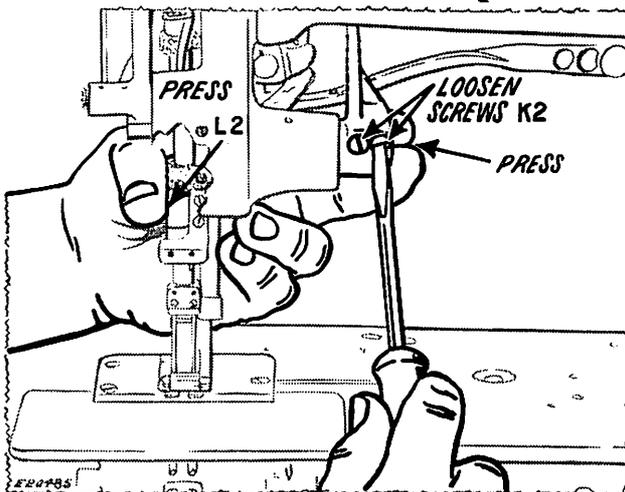


Fig. 39. Positioning Needle Bar Forward and Backward
in Relation to Feed Dog

CAUTION: Before releasing pressure on needle bar rock frame against drive arm, securely tighten screws **K2**.

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TO POSITION LOOPERS SIDWISE IN RELATION TO NEEDLES USING GAUGE 268280

Remove looper from its holder and insert gauge **M2** in holder exactly in the position shown in **Fig. 40**, having flat side on upper end of gauge pin at right and sheet metal arm pointing toward you, then fasten gauge in this position. Loosen screw **N2** and move looper holder sidwise until flat side on gauge pin just touches needle, then tighten screw **N2**. Remove gauge and replace looper in holder.

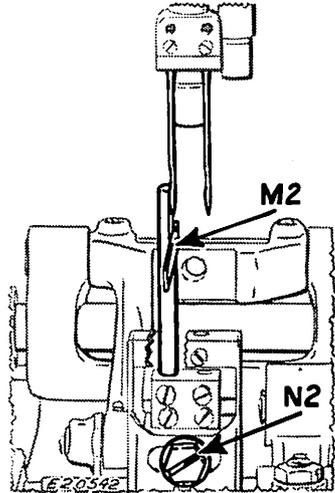


Fig. 40. Using Gauge to Position Loopers Sidwise in Relation to Needles

TO SET LOOPERS AT CORRECT HEIGHT USING GAUGE 268280

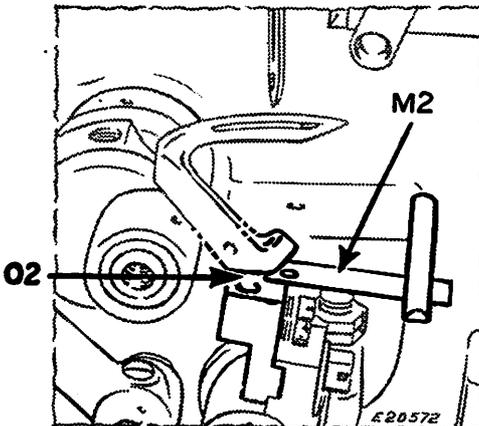


Fig. 41. Using Gauge to Set Loopers at Correct Height

Loosen looper set screws and use thickness of sheet metal arm **M2** of gauge to determine correct distance between looper shank and top face of looper holder, as shown at **O2**, then tighten looper set screws.

TO TIME AND POSITION
CLASS 300W MACHINE LOOPERS

The following instructions, prepared by the Bridgeport Division of Research, supersede all previous instructions covering these important adjustments:

1. Set machine to desired stitch length.
2. Lessen Looper Carrier Crank Clamping Nut (201524 E) sufficiently to be able to tap the Looper Carrier from position.
3. Set looper timing mark (L.T.) on machine pulley opposite the arrow on the front of the arm.
4. Tap looper carrier until looper points are at the center of the needles.
5. Turn machine pulley until letter " G " is opposite the arrow on the front of the arm. At this position the looper points should again be at the center of the needles. If they are not, adjust the timing of the looper crank by adjusting the two looper timing screws -- until the points of the loopers are at the center of the needles at both the above described positions of the machine pulley (" L.T. " opposite arrow and " G " opposite arrow). When this position is obtained, securely tighten the Looper Carrier Crank Clamping Nut. The loopers will be timed and positioned correctly.

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TO POSITION LOOPERS FORWARD AND BACKWARD IN RELATION TO NEEDLES USING GAUGE 268280

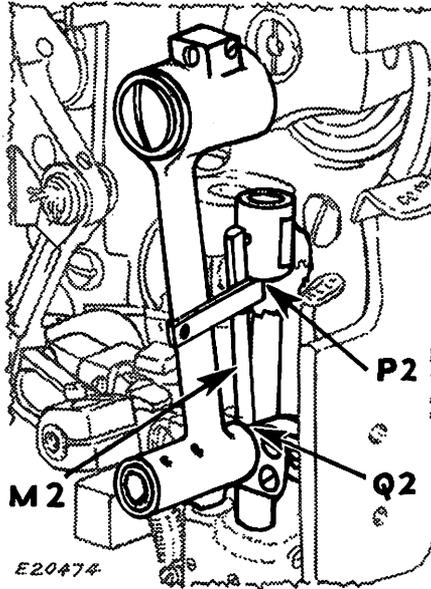


Fig. 42. Using Gauge to Position Loopers
in Line of Feed

With needle bar at its lowest point, place gauge **M2** on top of needle bar connecting stud, as shown at **Q2** in **Fig. 42**, and turn **top of balance wheel over toward you** until top of sheet metal arm of gauge touches needle bar rocker at **P2**. Hold balance wheel in this position and at same time, loosen looper carrier clamping nut **S2**, **Fig. 43** and move looper carrier until point of looper is at center line of its needle, then securely tighten looper carrier clamping nut **S2**.

TO SET SPREADER SIDWISE IN RELATION TO LOOPERS

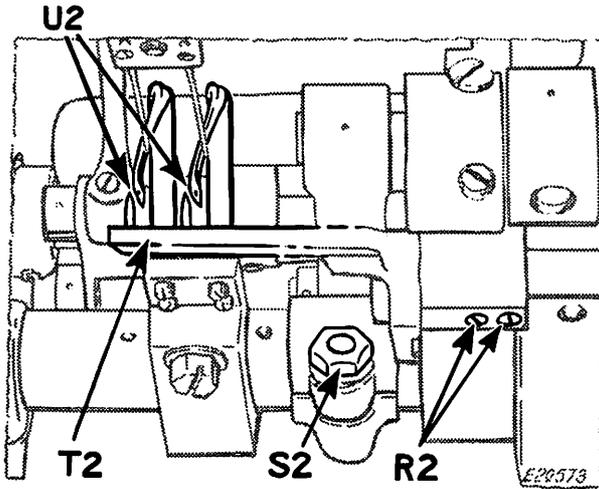


Fig. 43. Spreader Set Sidewise in Correct Relation to Loopers

When loopers are passing spreader points on their forward stroke, spreader **T2**, **Fig. 43** must clear loopers by a double thickness of ordinary paper at **U2**. If spreader is too far away or too close to loopers, loosen two screws **R2** in spreader holder and move spreader and holder sidewise in required direction. Be careful not to tip spreader up or down when moving it sidewise, as this will change loop casting-off position. When spreader is correctly set, tighten screws **R2**.

TO SET SPREADER FORWARD OR BACKWARD IN RELATION TO NEEDLES

To check position of spreader in direction of feed, turn balance wheel over toward you until needle bar is on its downward stroke and points of needles have descended to same level as top of looper blade, as shown in Fig. 44. When needles are in this position, distance between needles and spreader points should be approximately $\frac{1}{16}$ inch, as shown in Fig. 44, slightly more for longer stitches. To make this adjustment, loosen screw **W2**, Fig. 44 and move spreader **X2** in required direction, then firmly tighten screw **W2**.

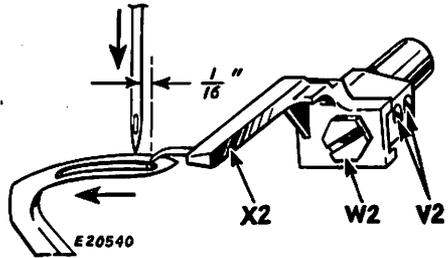


Fig. 44. Spreader Set Forward and Backward in Correct Relation to Needles and Loopers

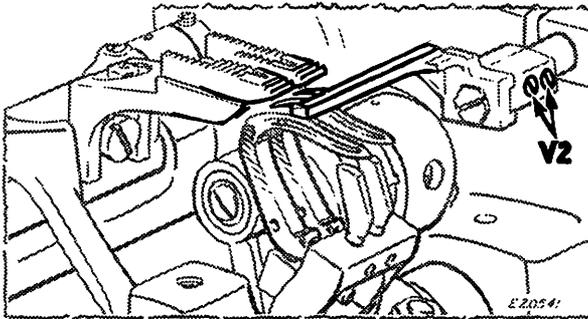


Fig. 45. Showing Correct Clearance Between Spreader Points, Feed Dog and Loopers

The spreader **X2** should be adjusted horizontally so that when it moves sidewise, its fingers will clear the loopers and feed dog. To make this adjustment, loosen two screws **V2**, Fig. 44 and tilt spreader **X2** up or down to the correct position, then securely tighten screws **V2**.

TO SET SPREADER POINTS AT CORRECT HEIGHT IN RELATION TO LOOPERS

Loosen two screws **V2**, Fig. 45, tilt spreader holder so that points of spreader are exactly opposite top of thread groove at side of loopers while passing on forward stroke of loopers. Tighten screws **V2**.

TO CHANGE AMOUNT OF SIDewise MOVEMENT OF SPREADER

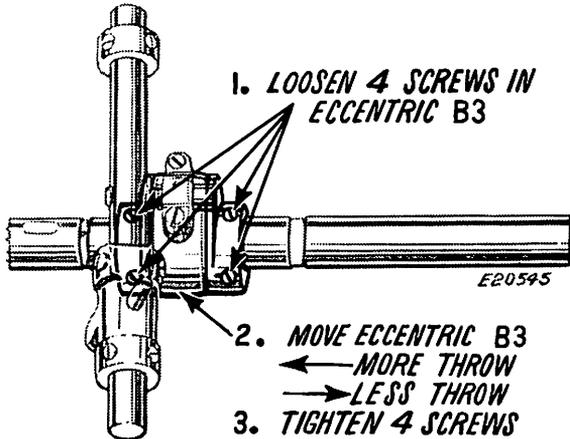


Fig. 46. Showing Spreader Driving Eccentric Screws

Loosen four screws in spreader driving eccentric **B3**, Fig. 46 and move eccentric to **left** to **increase** sidewise movement of spreader or to **right** to **decrease** it, then tighten four screws. For average sewing requirements, distance between left side of ball strap **Z2**, Fig. 47 and right side of rock shaft **Y2** should be $\frac{1}{4}$ inch when ball stud **A3** is in horizontal position.

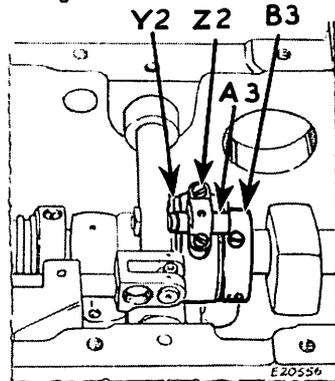


Fig. 47. Sidewise Adjustment of Spreader

TO REMOVE SPREADER SHAFT

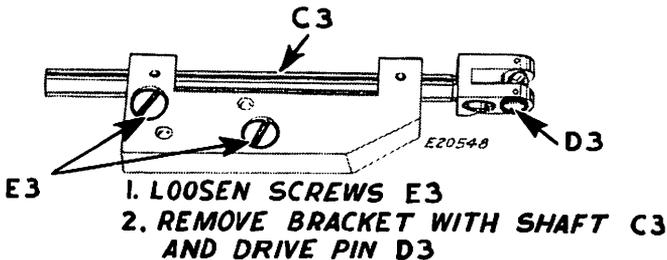


Fig. 48. Spreader Shaft and Bracket

TO REMOVE LOOPER CARRIER ASSEMBLY

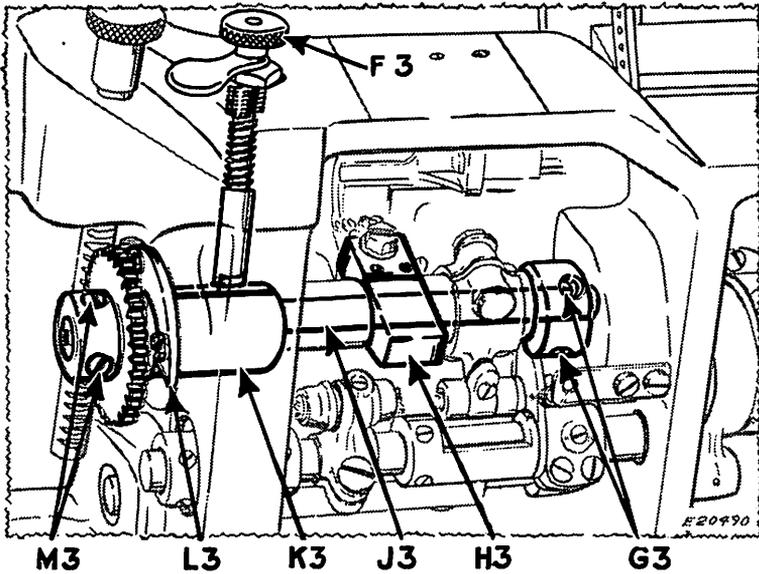


Fig. 49. To Remove Looper Carrier Assembly

Loosen screws **M3**, **Fig. 49** in rack gear, remove gear and thrust plate **L3**. Loosen screws in **right hand** looper rocker bushing **G3** and pull out left hand looper rocker bushing **K3** and shaft, holding latch pin **F3** out of engagement while removing bushing **K3**. The looper rocker **H3**, and driving member can then be removed.

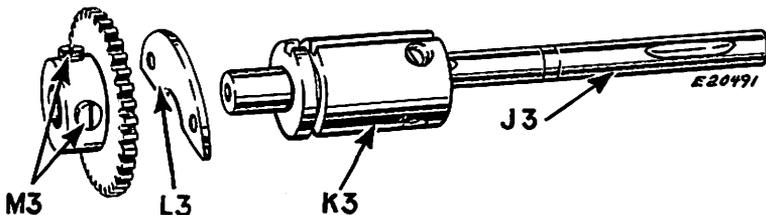


Fig. 50. Looper Carrier Assembly

TO REMOVE ALTERNATING PRESSER MECHANISM

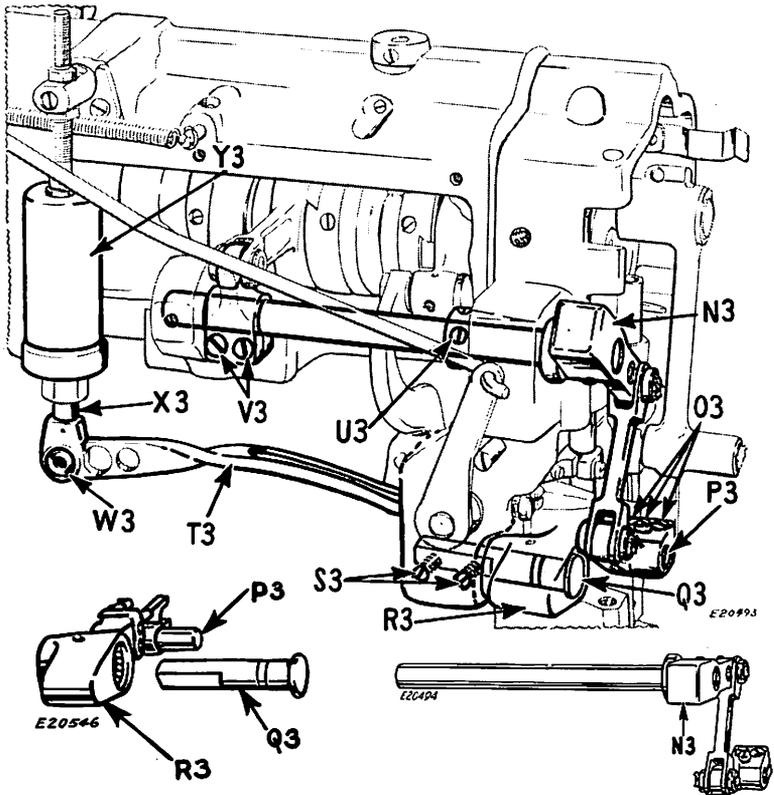
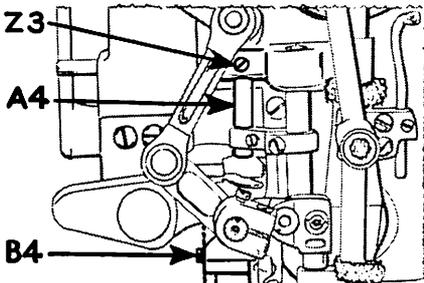


Fig. 51. To Remove Alternating Presser Mechanism

Release tension on dash pot **Y3**, **Fig. 51**. Remove leather connection **W3** between dash pot plunger **X3** and spring arm **T3**. Loosen two clamp screws **V3**, thrust collar screw **U3**, and crank screws **O3**. Remove lifting rock shaft crank **N3** with its shaft and links as one unit from head end of machine.



Loosen two screws **S3** and remove lifting lever hinge stud **Q3**. Remove lifting lever **R3** and lifting presser bar lifting crank **P3**. Loosen lifting presser bar guide shaft holding screws **Z3** and **B4**, **Fig. 52**. Push shaft **A4** down and out of lower bearing.

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Fig. 52. Alternating Presser Mechanism

TO REMOVE PRESSER LIFTING MECHANISM

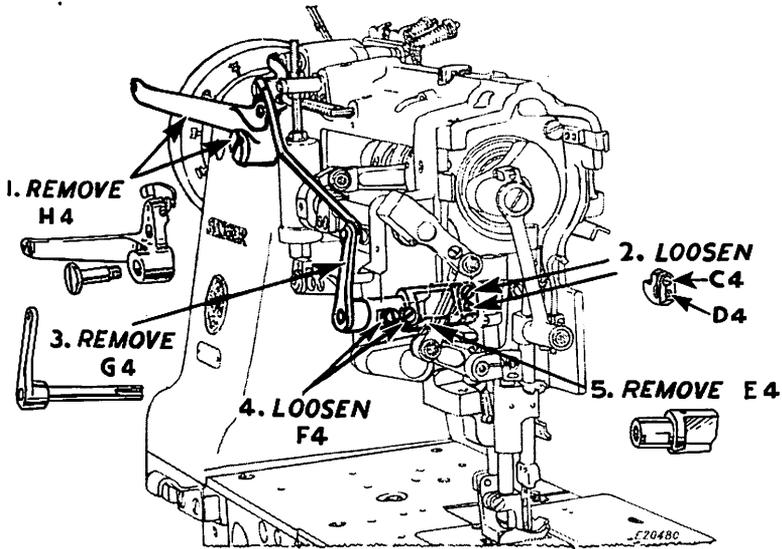


Fig. 53. To Remove Presser Lifting Mechanism

Remove foot lifter lever **H4**, Fig. 53. Loosen spot screw **D4** and clamp screw **C4** of foot lifter arm. Then remove foot lifter crank **G4**. To remove presser bar spring arm fulcrum **E4**, loosen two presser bar spring arm fulcrum holding screws **F4**.

CAUTION: When reassembling presser bar spring arm fulcrum, make certain that holding screws **F4** seat correctly on the flat part of the fulcrum shank to position fulcrum accurately.

Spot screw **D4** is used for clearance adjustment in foot lifter mechanism. Turn clockwise to reduce lost motion when lifting or counterclockwise to increase. Then tighten clamp screw **C4** securely.

TO SET NEEDLE THREAD TAKE-UP

The needle thread take-up **L4**, **Fig. 54** is usually set with lower end of take-up $1/2$ inch below bottom of its holder.

Depending on kind of material, length of stitch, etc., it is necessary to move needle thread take-up **L4** upward for a larger needle loop and more pulling action in stitch formation on the heavier grades of materials. Move the take-up **L4** downward for shorter stitches and finer threads.

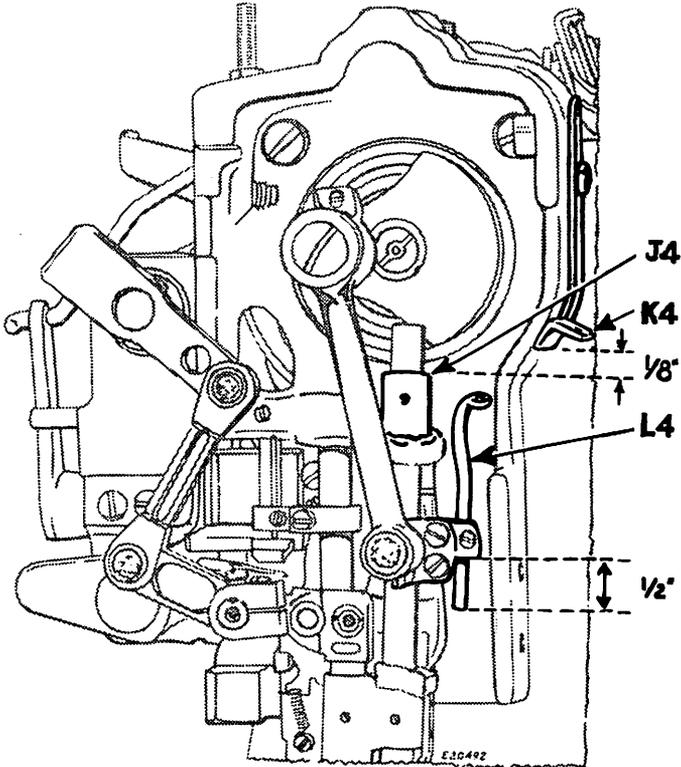


Fig. 54. Adjustment of Needle Thread Take-up and Loop Setting Eyelet

TO ADJUST LOOP SETTING EYELET

The loop setting eyelet **K4**, **Fig. 54** controls loop forming and setting action. For average kind of material and sewing condition it is advisable to have the lower or thread loop controlling edge approximately $1/8"$ above top of needle bar rock frame **J4**, as shown in **Fig. 54**. Slightly reposition loop setting eyelet **K4** upward for heavier grades of work and downward from above given position for lighter work and shorter stitches—the stitch setting and thread pulling action should take place on upward stroke of needle bar.

TO ADJUST AUTOMATIC THREAD NIPPER

The needle thread nipper permits setting a tight stitch with relatively light tension on needle threads. Nip threads just before needle loops slide off loopers on downward stroke of needles. The thread nipper eccentric is not spotted and permits timing on main shaft to suit work. Loosen screws **Q4**, Fig. 55. Rotate eccentric to correct position, then lock screws securely **Q4**.

To increase duration of nipping or clamping action of automatic thread nipper on thread, loosen lock screw **N4**, Fig. 56 and turn collar **M4** counterclockwise, or turn it clockwise to reduce holding time, then securely tighten lock screw **N4** to prevent collar **M4** turning.

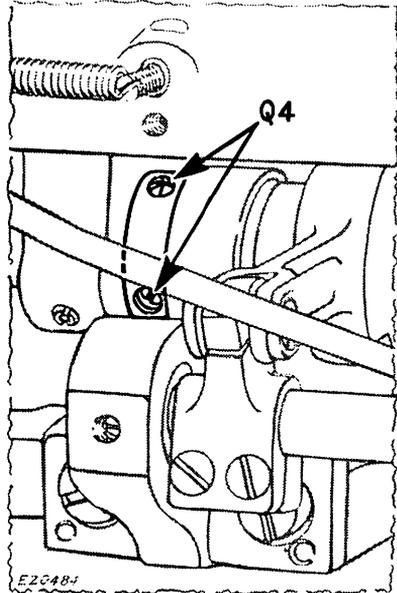


Fig. 55. Automatic Thread Nipper Eccentric at Back of Machine

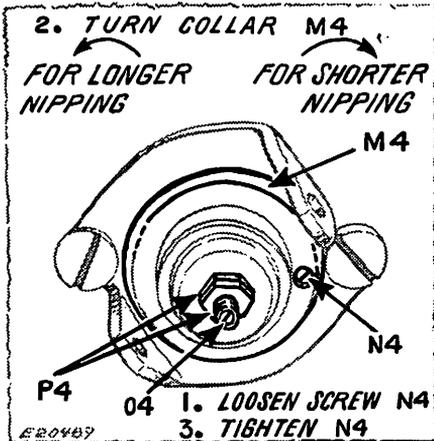


Fig. 56. Adjustments on Automatic Thread Nipper

If more or less clamping pressure is required on thread during nipping action, turn two nuts **P4**, Fig. 56 inwardly on center pin **O4** of nipper for more pressure, or outwardly for less. Lock outer nut against inner nut to retain adjustment.

For average sewing conditions, the nipper should act as follows: Start nipping needle threads when stitch indicating arrow on machine arm is in line with letter "G" on balance wheel. Release needle threads when indicating arrow is in line with letter "E" on balance wheel. Very little or no nipping action is required for light work. When nipper is not required, omit threading of nipper eyelets.

TO ADJUST NEEDLE THREAD TENSION RELEASER

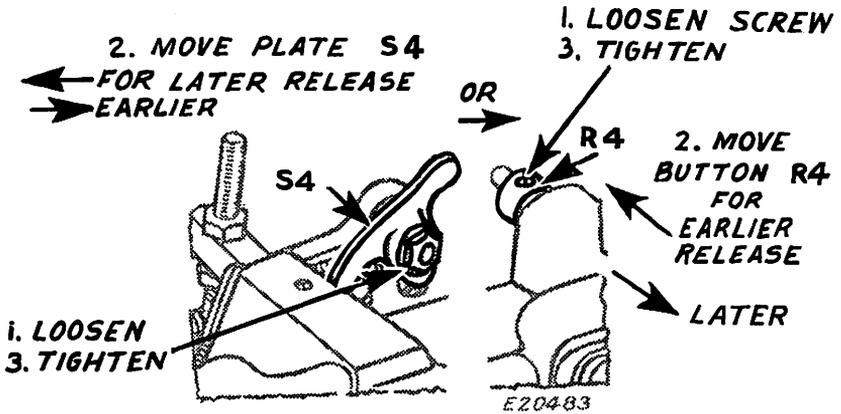


Fig. 57. Adjustments on Needle Thread Tension Releaser

The function of tension releaser is to release tension on needle threads when presser feet are raised. If tension releaser does not release threads when presser feet are raised, or if tension partially released when presser feet are down, move button **R4**, Fig. 57 in or out on its holding stem to open tension more or less, or if necessary, move tension releaser plate **S4** sidewise to release tension at correct time.

TO ADJUST LOOPER THREAD TAKE-UP

The looper thread take-up **T4**, Fig. 58 can be raised or lowered to take up more or less thread, as required, after loosening the screw **U4** which holds it in position.

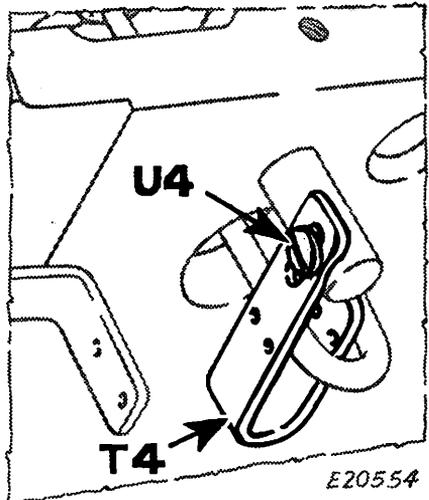


Fig. 58. Adjustment of
Looper Thread Take-up

TO REMOVE ARM SHAFT

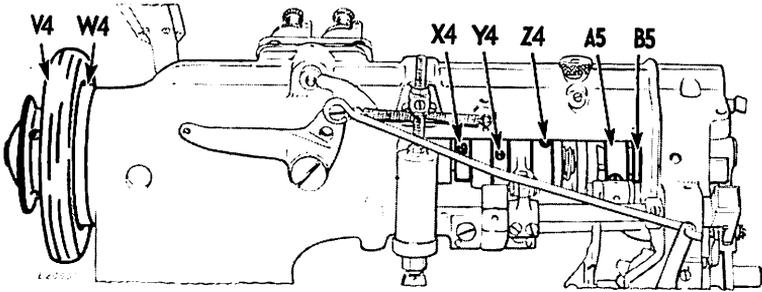


Fig. 59. To Remove Arm Shaft

Remove back cover from machine. Loosen two screws in balance wheel **V4**, Fig. 59, remove balance wheel and bearing ring **W4**. Loosen screw in oil sling **B5**, two screws in needle vibrating eccentric **A5**, two screws in presser lifting eccentric **Z4**, collar **Y4** and screws **X4** in nipper drive eccentric. Remove check screw **C5** and loosen two screws **D5** and **E5** in needle bar drive crank **F5**, Fig. 60, (these screws are accessible through hole in casting), slide belt off bed shaft pulley and remove it through pulley bearing hole, then remove arm shaft from pulley end of machine.

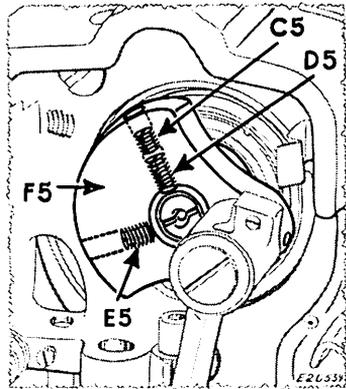


Fig. 60. Needle Bar Drive Crank



Fig. 61. Arm Shaft

TO REMOVE BED SHAFT

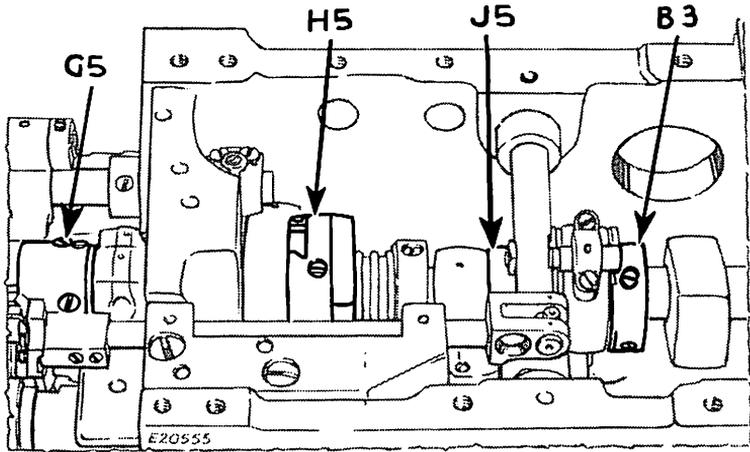


Fig. 62. To Remove Bed Shaft

Loosen screws in spreader drive eccentric **B3**, **Fig. 62**, looper thread take-up drive eccentric **J5**, feed drive eccentric **H5**, and looper rocker drive crank **G5**, then remove bed shaft from pulley end of machine, leaving pulley on shaft for easier handling.

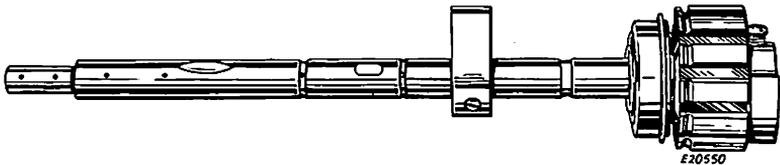


Fig. 63. Bed Shaft

TO TIME ARM SHAFT AND BED SHAFT AND REPLACE MOULDED BELT

After reassembling mechanism on arm and bed shafts, replace belt on arm shaft pulley and turn arm shaft until needle bar is at its highest position, then turn bed shaft until arrow **K5**, Fig. 64 on counterweight of bed shaft pulley points straight upward toward arm shaft. Now, without disturbing either arm shaft or bed shaft, slip belt

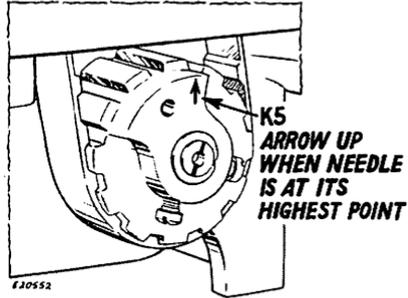


Fig. 64. Showing Timing Arrow on Bed Shaft Pulley

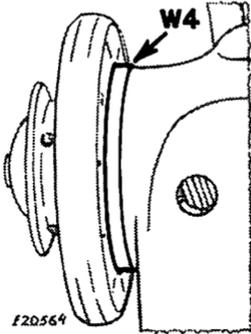


Fig. 65. Showing Bearing Ring

over bed shaft pulley, making certain that rubber teeth properly engage pulley notches. Replace bearing ring **W4**, Fig. 65 and tighten ring screws, then replace balance wheel, forcing it into bearing ring, and tighten balance wheel set screws.

NEEDLE THREAD OILER

The machine is equipped with a needle thread oiler for extra heavy work or gummy material. The best results will be obtained by using "TYPE E STAINLESS THREAD LUBRICANT" sold only by Singer Sewing Machine Company.



Fig. 66. Adjustment on Thread Oiler