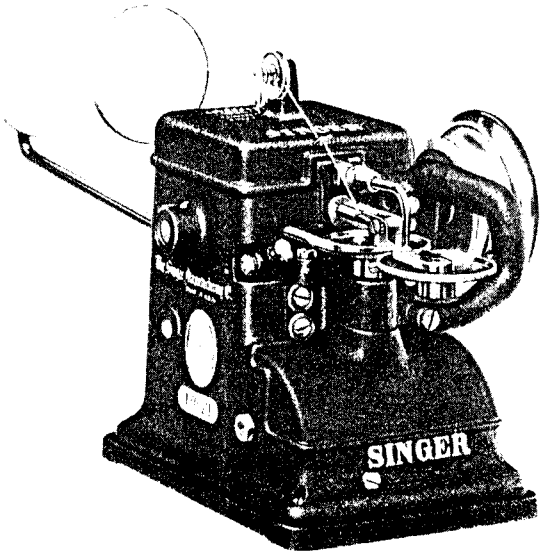
SINGER
176-21, 176-22, 176-23, 176-24

TO ALL WHOM IT MAY CONCERN:

The placing or renewal of the name "Singer" (Reg. U.S. Pat. Off.) or any of the trade marks of The Singer Manufacturing Company 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 176-21 is recommended for stitching light to medium heavy skins such as chinchilla, mink, ermine, Alaska seal, Hudson seal, fox,squirrel, raccoon, beaver, coney, etc. It is used for manufacturing fur garments and, by retail furriers, for repairs, remodeling and for general all-around work.

MACHINE 176-22 is similar to Machine 176-21 but has a longer needle bar stroke and higher looper lift for medium heavy skins such as dog, wolf, beaver, goat, etc., and for closing and sleeve operations.

MACHINE 176-23 is a much larger and heavier machine than either 176-21 or 176-22. It is fitted with heavier parts and has a still longer needle bar stroke and higher looper lift than Machine 176-22. It is adapted to sew the heaviest skins, such as horse, bear, sheep, heavy goat; also automobile rugs, etc.

MACHINE 176-24 is similar to Machine 176-23 except that it is fitted with special feed discs and work guide for the general Slipper Trade, for joining in one operation the sock lining, padding and upper portion of various kinds of slippers. It is widely used in the manufacture of house slippers.

Speed

Following are the maximum speeds recommended for these machines:

Machine	R.P.M.
176-21	2400
176-22	2000
176-23	1500
176-24	1500

To Oil the Machines

To insure easy running and prevent unnecessary wear of the parts which are in movable contact, the machines require oiling every day.

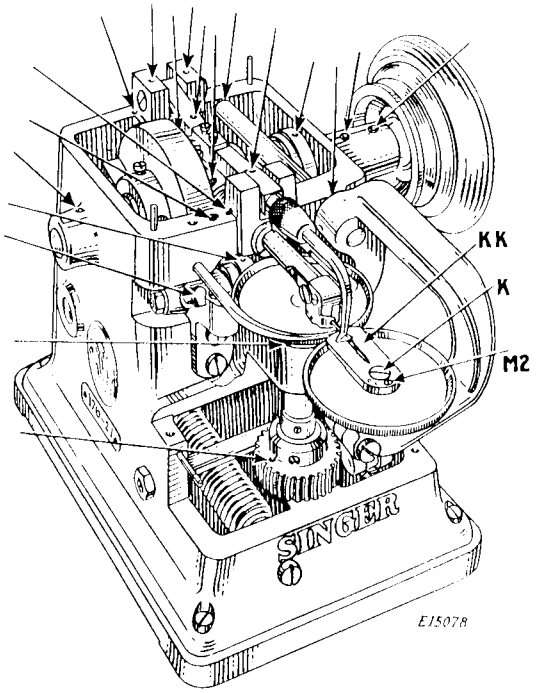


Fig. 3. Oiling Points at Front, Top and Left (Machines 176-21 and 176-22)

Use "Singer Stainless Oil for High Speed Sewing Machines" for all fur work.

Remove the screw (M2,Fig.3) and apply oil to the screw hole, after which replace the screw (M2).

Also apply oil to all of the oiling points indicated in Figs. 3, 4, 5 and 6, by the unlettered arrows.

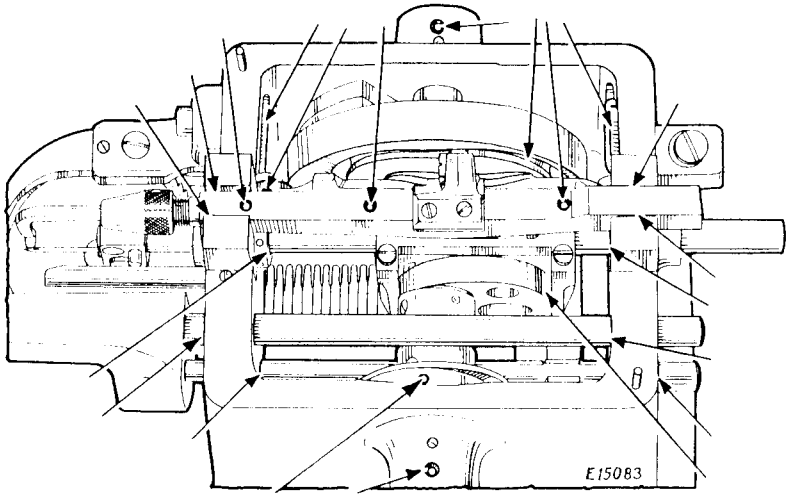


Fig. 4. Oiling Points at Top of Machines 176-23 and 176-24

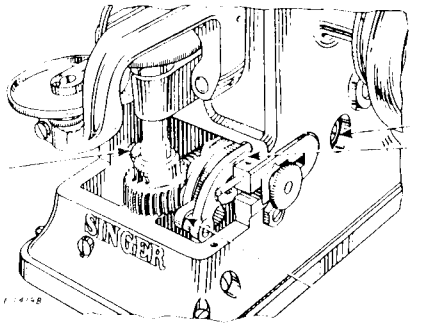


Fig. 5. Oiling Points at Right of Machines

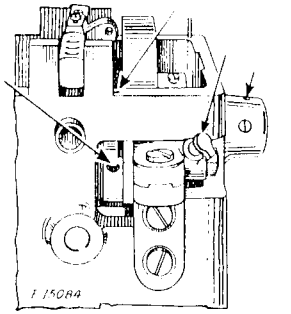


Fig. 6. Oiling Points at Rear of Machine 176-22

Needles

Machine	Needle Class and Variety	Size of Needle	Class of Work	Size of Thread
176-21	176x1	10 or 12	Medium heavy skins and closing	60
		9	Wolf, raccoon, coney, fox, beaver, etc.	70
		8	Hudson seal, skunk, medium mink, etc.	70-80
		6	Seal, mink, squirrel, etc.	80
		5	Ermine, mole, sable, etc.	90
		4	Chinchilla and all other very fine skins	100-120
176-22	176x3	18 or 21	Heavy dog and wolf, light sheep, etc.	40-50
		16 or 17	Dog, goat, light wolf, etc.	50-60
		14	Raccoon, heavy beaver, etc.	60
		11	For finer skins	60-70
176-23	176x5	22 or 23	Bear, deer, heavy wolf and sheep skin	20-24
		18 or 21	Dog and sheep	36-40
		16	All kinds of lighter skins	50-60
176-24	176x5	22 or 23	Leather soles and uppers and very heavy felt slippers	20-24
		18 or 21	Heavy felt slippers	36-40
		16	Light felt slippers	50-60

The size of the needle is determined by the size of the thread which must pass freely through the eye of the needle. The use of rough or uneven thread, or thread which passes with difficulty through the needle eye, will interfere with the successful use 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. Needles are sold in packages containing one dozen needles or in boxes of 100.

The following is an example of an intelligible order:

"6 doz. No. 8, 176x1 Needles".

For best results, use only genuine Singer needles, bearing the name "Simanco".

Keep Machines Clean

To get the best results, every Singer Fur Sewing Machine should be cleaned every day while in active service. Allowing the machine to accumulate dust, dirt and loose hair will greatly impair its efficiency. If kept clean, the machine will not only do better work but will operate much longer and at less expense for repairs.

Take out the screw (K,Fig.3); remove the needle guide (KK, Fig.3) and remove any foreign matter which may have accumulated beneath the needle guide. When replacing the guide (KK) make sure that the guide is set to insure that the needle centers in the needle groove in this guide, then firmly tighten screw (K).

To Set the Needle

Turn the balance wheel until the looper swings out of the way as shown below, and open the feed discs.

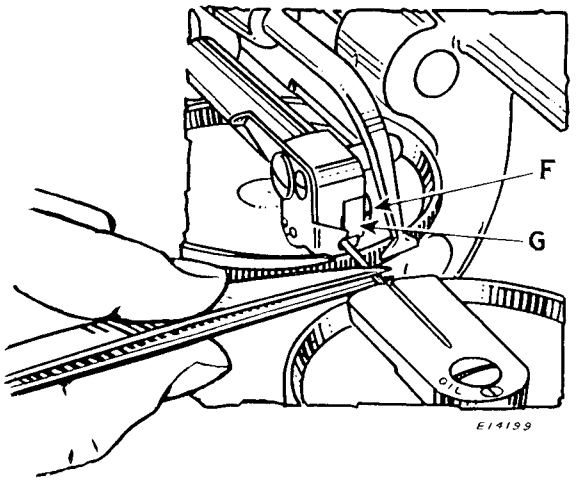


Fig. 7. Inserting the Needle

Holding the needle in tweezers with its short groove up, place it into the needle groove in the needle bar, under the clamp (G, Fig.7) and push it back as far as it will go, then tighten the clamp screw (F).

Never release the needle clamp more than is necessary to free the needle, and, before inserting a needle, make sure that a piece of broken needle is not left in the groove.

To Thread the Machines

Pass the thread from the spool on the spool holder (1,Fig.8) at the rear of the machine, then through the thread guide (2),

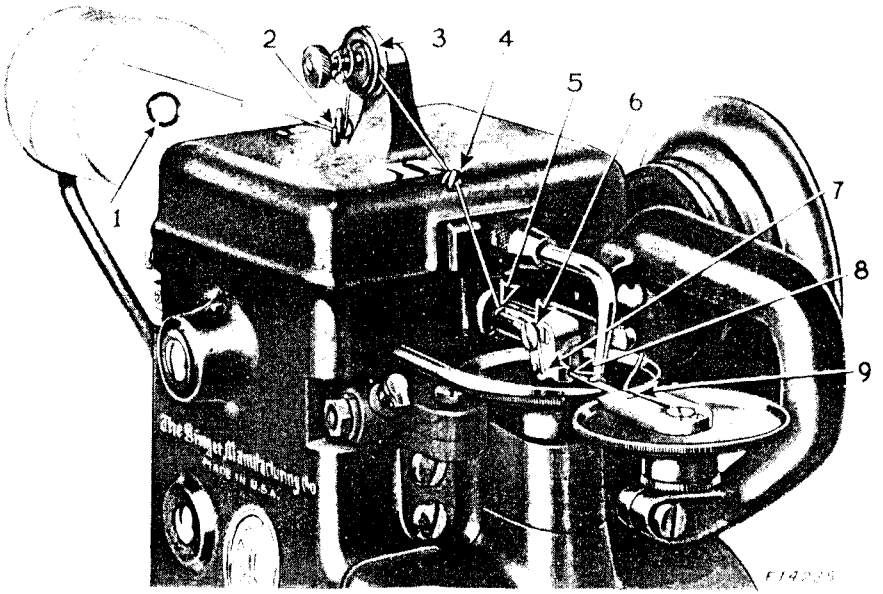


Fig. 8. Threading the Machine

forward and over between the tension discs (3), forward through the thread guide (4), down and through the hole (5) in the needle bar tension plate. Now turn the balance wheel until the needle bar tension plunger (6) opens, and, holding the thread stretched tight in both hands, open the front disc and pass the thread under the needle and BACK UNDER THE NEEDLE BAR into the thread slot (7). With the left hand, loop the thread over the tension plunger (6), then draw forward the end held in the right hand, close up under the needle bar and into the hole (8) in the tension plate through which the needle protrudes, then, from the underside, pass the thread up through the needle eye (9).

NOTE - Machines 176-23 and 176-24 are threaded as described above except that the thread is passed from the tension discs (3) through the guide (X), as shown in Fig.9, page 9.

Thread Tension

The tension on the thread is regulated by turning the thumb nut at the left of the tension discs, on top of the machine.

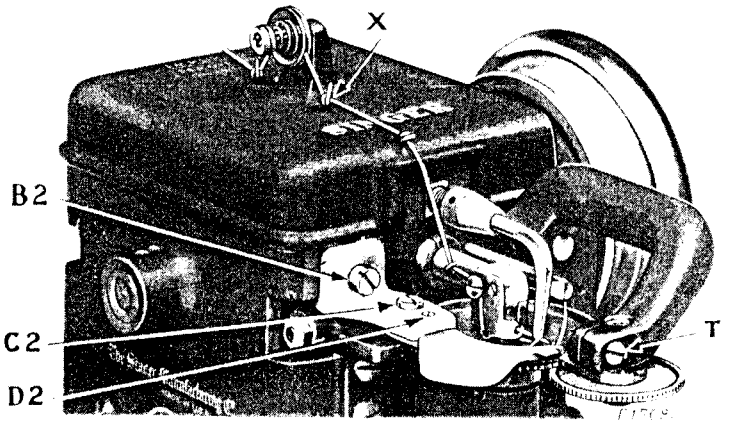


Fig. 9. Adjustments on Machine 176-24

To Change the Length of Stitch

Loosen the round thumb nut on the lower right hand side of the machine and move it toward you for a shorter stitch, or away from you for a longer stitch.

To Regulate the Pressure of the Feed Discs

The pressure between the feed discs may be increased by turning the screw (N,Fig.10) to the right, or decreased by turning this screw to the left. Do not use a heavier pressure than is necessary for positive feeding of the work.

To Adjust the Work Guide on Machines 176-23 and 176-24

The work guide may be moved sidewise, toward or away from the needle, after loosening the large screw (B2,Fig.9)

To raise or lower the guide, loosen screw (C2) and turn the small set screw (D2) up or down as required, then tighten screw (C2).

Regarding Orders for Machines

When ordering Singer fur sewing machines, also when returning machines for adjustment or repair, always include a few scrap pieces of skins, showing the lightest as well as the heaviest skins being used; also a spool of thread. The machine can then be adjusted at the factory to exactly meet the requirements. These adjustments should not be disturbed.

INSTRUCTIONS
FOR
ADJUSTERS AND MACHINISTS

To Adjust the Feed Discs in Relation to the Needle

Both discs on these machines should be set to a height where the needle, at or just forward of its eye, barely clears the rim of the disc. Both discs should be adjusted to the needle and should be held apart while adjustment is being made.

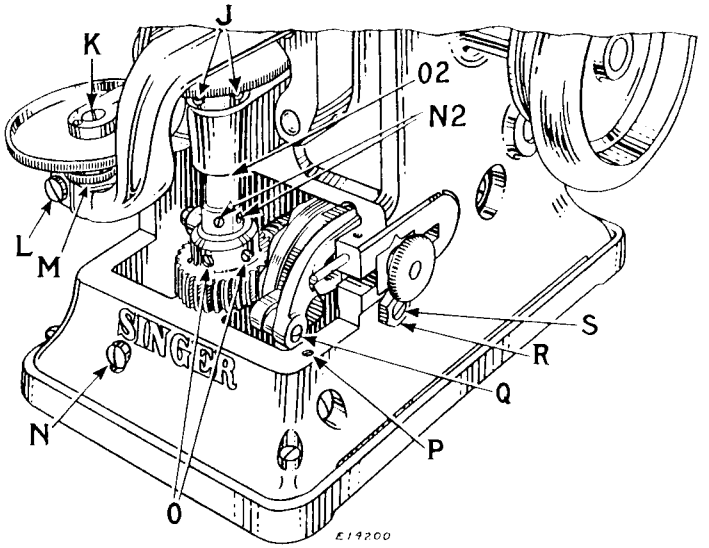


Fig. 10. Adjusting the Feed Discs

TO ADJUST THE REAR DISC ON MACHINES 176-21,176-22,176-23 and 176-24, loosen the two set screws (N2,Fig.10) in the back feeding disc shaft reinforcing sleeve; also loosen the two set screws (O, Fig.10) in the hub of the back feeding disc worm gear; then, by means of the left hand treadle, hold the front disc disengaged from the back disc and set the back disc up or down as required. With the worm gear down against its seat, tighten the two screws (O), then tighten the two screws (N2) in the reinforcing sleeve, making sure that the upper end of the sleeve is against the machine casting at (02,Fig.10).

TO ADJUST THE FRONT OR IDLER DISC ON MACHINES 176-21, 176-22 and 176-23, loosen the screw (L,Fig.10) and adjust the disc to the needle by turning the knurled flange of the disc stud (M,Fig. 10) to the left to lower the disc, or turn the knurled flange to the right to raise the disc. Should the needle guard be in the way of the needle while making this adjustment, loosen the screw (K,Fig.10) and turn the guard aside, then retighten the screw (K) slightly. When the disc is set at the correct height, loosen the screw (K), move the needle guard back into position so that the needle will be located centrally in the needle groove of the guard and securely tighten the screw (K).

ON MACHINE 176-24, the idler disc may be slid up or down after loosening the clamp screw (T,Fig.9). See that the needle guard groove is in line with the needle before tightening the clamp screw.

To Remove the Feed Discs

A set of thinner feed discs, for sewing mink and similar furs, may be furnished for Machine 176-21.

To remove the idler disc, remove the screw (K,Fig.10) and lift off the idler disc, being careful not to lose the bearing rollers for this disc.

To remove the rear or feeding disc, loosen the two set screws (O,Fig.10) in the hub of the back feeding disc worm gear; also loosen the two screws (N2,Fig.10) in the reinforcing sleeve and loosen the two screws (J,Fig.10) in the hub of the back feeding disc, then drop the feeding disc shaft down until the feeding disc can be removed.

To Remove the Looper Cam Roller

To remove this roller without disturbing the cam, loosen the two screws (AA,Fig.11), draw out the looper shaft and remove the roller arm (BB,Fig.11) with the roller. Note that the roller can be removed or replaced in the cam raceway only through the cut at (CC,Fig.11).

When reassembling these parts, be sure that the screws (AA) are seated on the "flat" of the looper shaft.

Adjustment for Wear in the Needle Bar

The needle bar bushing (Y,Fig.11, page 12) is split and may be drawn in, to take up any play which develops, by turning the threaded collar (Z,Fig.11) in the direction indicated by the arrow in Fig.11. This collar is provided with holes and may be tapped around the needle bar with a small punch.

To Set the Needle Bar

The needle bar may be set to the correct position after loosening the two clamp screws (DD,Fig.11).

ON MACHINES 176-21, 176-22 and 176-23, the needle bar should be set so that the center of the needle eye is opposite the mark

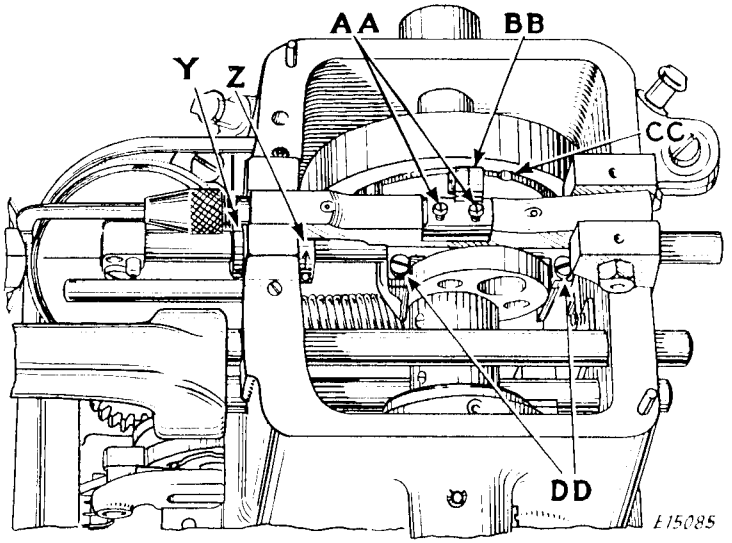


Fig. 11. Needle Bar Adjustments

(LL,Fig.12) on the needle guard when the needle bar is all the way forward and the feed discs are together.

ON MACHINE 176-24, the needle bar should be set so that the front end of the needle bar tension plate (HH, Fig.12) is about 1/32 inch from the rim of the feeding disc (JJ) when the needle bar is all the way forward.

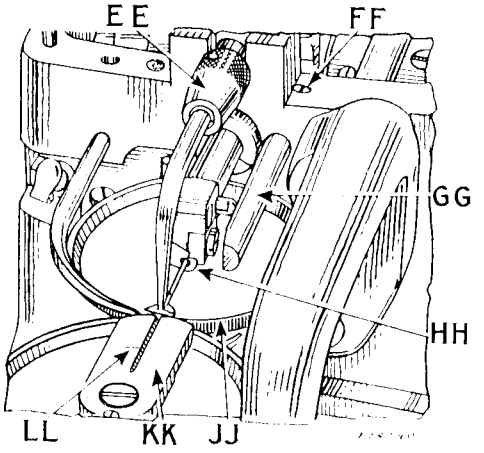


Fig. 12. Setting the Needle Bar

See that the needle bar is turned so that the side of the tension plate (HH) is about square with the surface of the disc. Align the groove in the needle guard (KK) with the needle, and have the needle locate in the center of the groove; then tighten the clamp screws (DD,Fig.11). These screws need not be excessively tight.

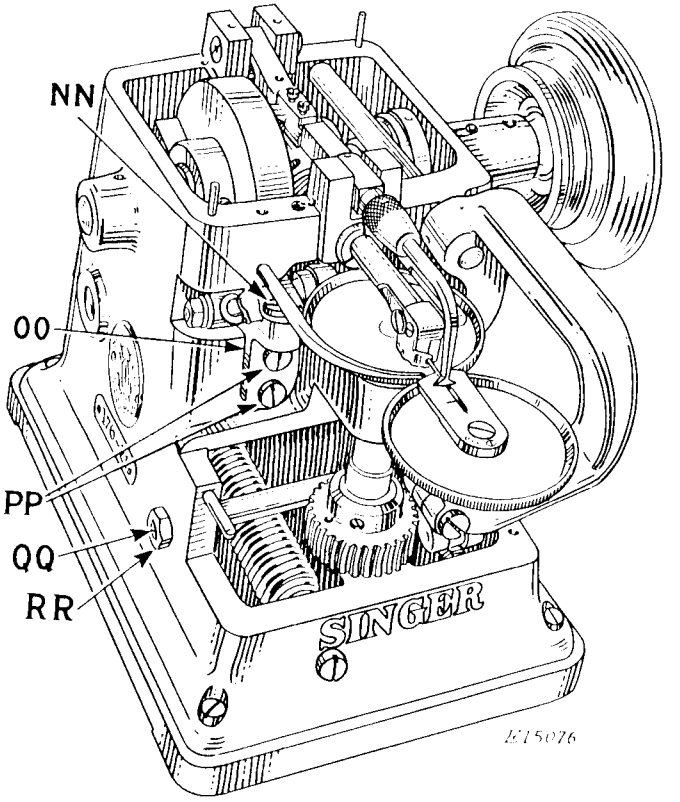


Fig. 13. Adjustments on the Looper

To Adjust the Looper

With the needle bar and feed discs properly adjusted, insert the shank of the looper in the holder and tighten the clamping screw (EE,Fig.12) sufficiently to insure that the looper will remain in position while making adjustments. Turn the balance wheel until looper is at extreme front end of its stroke, when it

should stand about centrally over the groove in the needle guard as shown in Fig.13; also adjust it in or out so that it covers about half of the needle eye and leaves half of the needle eye visible when looking straight down the front of the looper as shown in Fig.13.

Adjust the looper for height by loosening the screws (PP,Fig. 13) and moving the bracket (OO,Fig.13) up or down until the looper clears the needle guard a scant 1/16 inch, then tighten the screws (PP,Fig.13, page 13). After the clamping nut (EE,Fig.12, page 12) is finally tightened, a test should be made with the machine running at full speed - to make sure that the looper does not strike the needle guard.

Now turn the balance wheel until the looper has moved to the extreme end of its backward stroke, and adjust it sidewise until the looper nearly touches the needle at the top of its sloping surface as shown in Fig.12. If the needle does not clear the sloping top surface of the looper heel, loosen screw (NN,Fig.13, page 13) and move the top portion of looper bracket (OO,Fig.13) forward, or outward, thus lowering the looper on its extreme back stroke until the needle just clears,but does not touch,the sloping top surface of the looper heel, as shown in Fig.12, page 12, FIRST properly setting it for height above the needle guard. If the needle comes too far above the heel of the looper, loosen screw (NN) and move the top portion of bracket (OO) backward, or inward. When correct adjustment is made, firmly tighten the screw (NN).

To Set the Needle Bar Tension Release

The tension plunger on the needle bar should release the thread about the time the looper has taken up the slack in the thread after it has entered the loop. This adjustment usually has to be varied somewhat for different skins and for different threads.

The post (GG,Fig.12, page 12) should be moved inward (toward the machine) for a later release, or outward (away from the machine) for an earlier release of the thread, after loosening the small set screw (FF,Fig.12, page 12).

To Remove the Feed Clutch

First take the machine off the base-plate, then remove screw (Q,Fig.10, page 10). Loosen the small set screw (P,Fig.10) and disengage the retaining dog (A2,Fig.14, page 15) from the rim of the gear, removing it through the bottom of the machine. Then loosen the lock nut (R,Fig.10) and back out the screw center (S, Fig.10) until the gear with the clutch can be lifted out.

Adjustment of Feed Clutch on 176-21 and 176-22

Loosen the set screw (XX,Fig.14) and remove the collar (WW). Loosen lock nut (UU) and remove the feeding disc worm wheel driver (SS) from the gear. Remove the spring and plunger pin from the worm wheel driver at (TT), then replace the worm wheel driver and set the clutch jaws so that there is only about 1/32 inch clearance between the worm wheel driver and the shaft at (TT). To do this, hold the worm wheel driver in the correct position and at the same time turn the jaws (VV) toward the right, and firmly tighten lock nut (UU). Replace the plunger pin and its spring into the recess in the worm wheel driver and, compressing the spring against the shaft, slip the worm wheel driver back into place. Replace the collar (WW) and tighten the screw (XX).

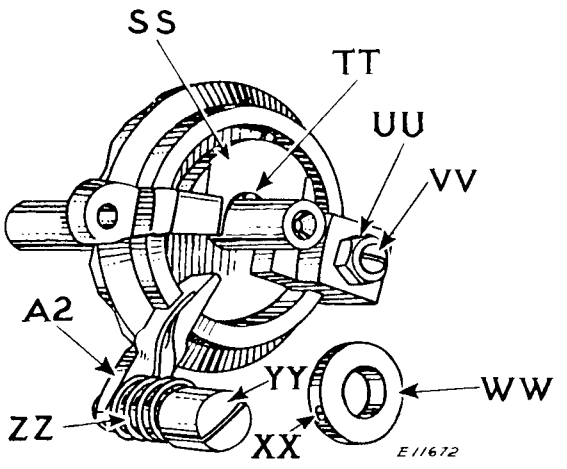


Fig. 14. Adjustment of Feed Clutch
Removal and Replacement of
Feed Clutch Gear

To Replace the Feed Clutch and Gear

When replacing the feed clutch and gear, adjust the screw centers (S,Fig.10, page 10) and (QQ,Fig.13, page 13) until the gears mesh closely without binding and the gear shaft turns freely but without end play. Then tighten the lock nuts (R,Fig.10, page 10) and (RR,Fig.13, page 13). When replacing the old clutch gear in the machine, the left screw center (QQ,Fig.13) need not be disturbed. When replacing the old clutch gear with a new one, both screw centers should be adjusted as instructed above.

Insert the screw (Q,Fig.10, page 10) in the feed connection. Replace the worm wheel stop dog (A2,Fig.14) in position on the rim of the gear, and wind the spring (ZZ,Fig.14) to a moderate tension by turning the stud (YY,Fig.14) a fraction of a turn, with a screwdriver, toward the right. Then, being careful not to

apply any end thrust (which would jam the worm wheel stop dog against the gear), tighten the set screw (P,Fig.10, page 10) to hold the stud. The stop dog (A2,Fig.14) should float free, except for spring tension, in order to adjust itself properly to the rim of the gear.

ON MACHINES 176-23 AND 176-24, the clutch jaws are not adjusted as described on page 15, but both jaws are easily replaced when worn. When replacing the feed clutch, the stud (similar to YY,Fig.14) should be turned to the left instead of to the right to apply pressure against the stop dog, since the clutch turns in the opposite direction from that on Machines 176-21 and 176-22.

THE IMPORTANCE OF USING GENUINE SINGER PARTS AND NEEDLES IN SINGER MACHINES

The successful operation of Singer machines can only be assured if genuine Singer parts and needles are used. Supplies are available at all Singer Shops for the Manufacturing Trade and mail orders will receive prompt attention.