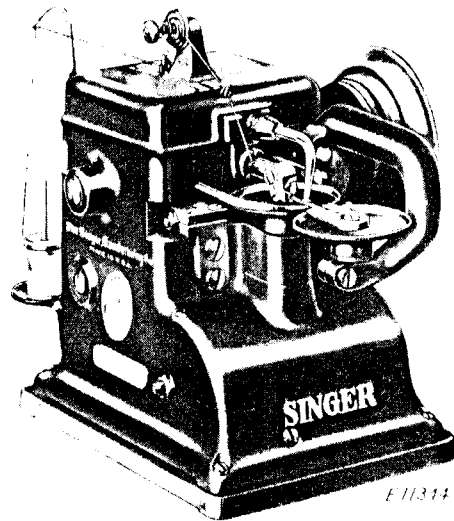


SINGER

176-11, 176-12, 176-13, 176-14

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

Machines of Class 176- have one needle and one looper and make a strong overcast seam with the single thread chain stitch.

Machine 176-11 is recommended for stitching fine and medium skins, such as mink, ermine, seal, Hudson seal, fox, squirrel, coney, etc. It is used for manufacturing furs and by retail furriers for repairs, remodelling and for general all-around work.

Machine 176-12 is similar to Machine 176-11, but is equipped with a longer needle bar stroke and higher looper lift for medium heavy skins, such as dog, wolf, beaver, etc., and for closing operations.

Machine 176-13 is a much larger and heavier machine than either 176-11 or 176-12. It is fitted with heavier parts and has a still longer needle bar stroke and higher looper lift than Machine 176-12. It is adapted to sew the heaviest skins, such as horse, bear, sheep, heavy goat; also automobile rugs, etc.

Machine 176-14 is similar to Machine 176-13 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.

To Set Up Machines 176-11 and 176-12

Lay the base plate on the table with the large hole to the right, and place the machine on it. Move the plate to about two inches from the front edge of the table and locate it sidewise in the desired position, then mark the table for the belt holes. Remove the machine and drill belt holes about one inch in diameter. After belt holes are drilled, replace the machine on the base plate, belt up and move until the belt centers with the holes, then mark the position of the base plate on the table; tilt the machine to the right until it rests on the balance wheel, remove the belt and take the machine off the base plate; and being sure the base plate has not moved from its marked position, mark the table through the two holes in the base plate. Remove the plate and drill 1-inch holes. Then fasten the base plate to the table with four wood screws, being careful to set it in marked position.

Place the machine on the base plate, tip it over to the right until it rests on the balance wheel, then from the bottom of the machine, hook the chain into the hole in the end of the pressure lever and start the other end of the chain down through the chain hole in the base plate. Tip the machine into working position and fasten it to the base plate with four special screws furnished. Now screw the oil pipe into the threaded hole in the base plate.

Locate the treadle lever (A, Fig. 2) on the underside of the table as follows: Hook one end of the lever into the chain, and insert the upper treadle rod (C, Fig. 2) in the other end of the lever; attach the lower treadle rod (E) to the left treadle, clamp the two rods together with the clamp (D) and adjust the rods in height until the lever bracket (B) can be held against the underside of the table with the treadle, then tighten the screw in the clamp (D). See that the lever clears the oil pipe and that the chain is about central with the hole in the table, then fasten the bracket (B) to the table with two wood screws provided. This set-up is for a heel-operated treadle used in the fur trade.

Machine 176-13 should also be set up in this manner when used in that trade.

To Set Up Machines 176-13 and 176-14

To set up Machine 176-14, or Machine 176-13 for other than the fur trade, follow the previous instructions **except** that the treadle lever should be arranged for toe operation. This is done by hinging one end of the treadle lever in the bracket (B, Fig. 2), hooking the chain in the center hole and the treadle rod in the hole in the other end of the lever. This arrangement of treadle is used on sheep-lined coats and on slipper work.

Note: The top of the balance wheel on all 176-class machines turns away from the operator, or to the right when facing the balance wheel.

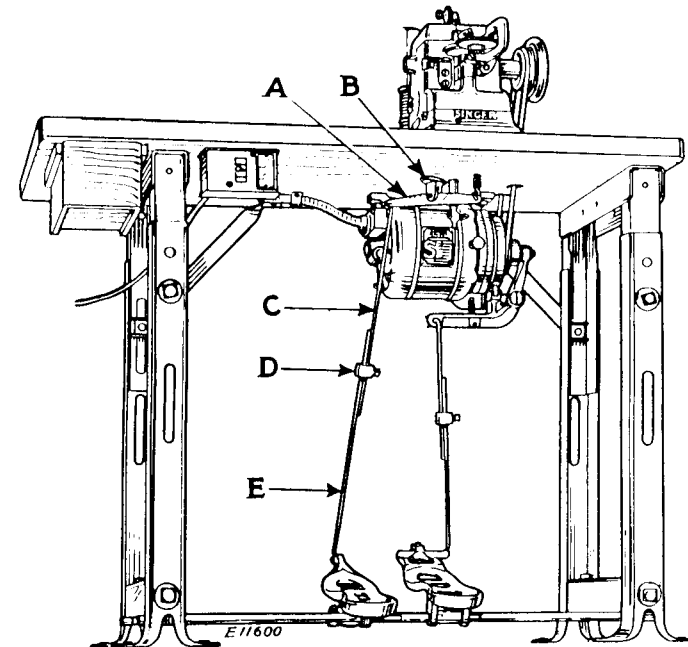


FIG. 2. SETTING UP MACHINE 176-11

Speed

Following are the maximum speeds recommended for these machines:

MACHINE	R. P. M.
176-11	2000
176-12	1750
176-13	1500
176-14	1500

To Oil the Machines

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

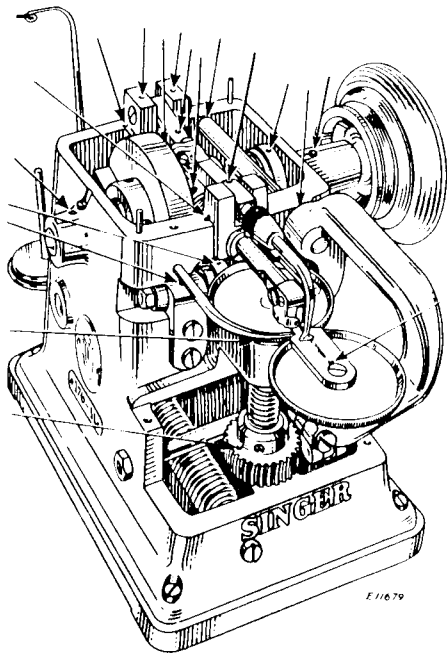


FIG. 3

Use Singer "Stainless Oil for High Speed Sewing Machines." Oil should be applied at the places indicated by unmarked arrows in Figs. 3, 4 and 5.

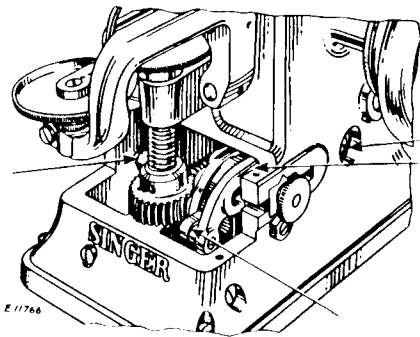


FIG. 4. OILING POINTS AT RIGHT OF MACHINE

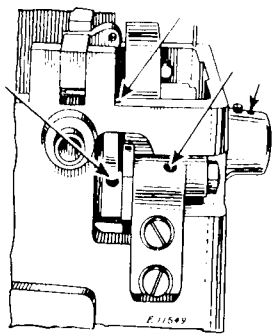


FIG. 5. OILING POINTS AT REAR OF MACHINES 176-12, 176-13 AND 176-14

Keep Machine Clean

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

Needles

Needles recommended for Machines of Class 176- are as follows:

MACHINE	NEEDLE CLASS AND VARIETY	SIZE OF NEEDLE	CLASS OF WORK	SIZE OF THREAD
176-11	176x1	11 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
176-12	176x3	4	Chinchilla and all other very fine skins	100-120
		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
176-13	176x5	11	For finer skins	60-70
		22 or 23	Bear, deer, heavy wolf and sheep skin	20-24
		18 or 21	Dog and sheep	36-40
176-14	176x5	16	All kinds of lighter skins	50-60
		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 to be used should be determined by the size of the thread, which must pass freely through the eye of the needle. If rough or uneven thread is used, or if it passes with difficulty through the eye of the needle, the machine cannot stitch perfectly.

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 one-dozen packages or 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."

To Set the Needle

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

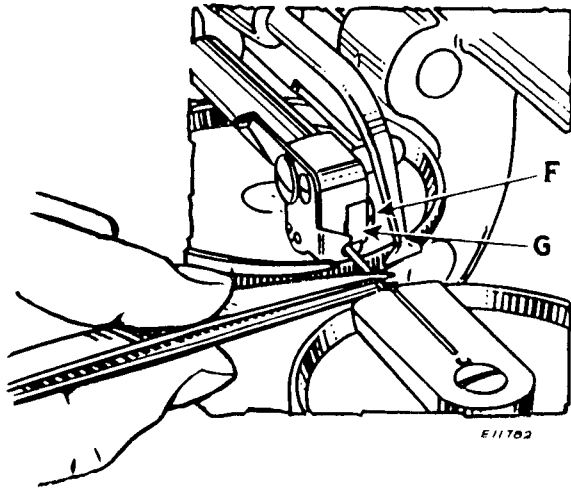


FIG. 6. INSERTING A NEEDLE

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. 6) 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 be certain before inserting a needle that a broken piece of needle is not left in the groove.

Purchasing of Parts and Needles

Supplies of parts and needles for Singer machines can be purchased at any Singer Shop for the Manufacturing Trade or ordered by mail. If orders are sent by mail, money or a post office order covering their value, including postage, should be enclosed and the order will then be promptly filled and forwarded by mail or express.

To Thread the Machines

Pass the thread from the spool on the spool stand, through the thread guides (1 and 2, Fig. 7), over toward you between the

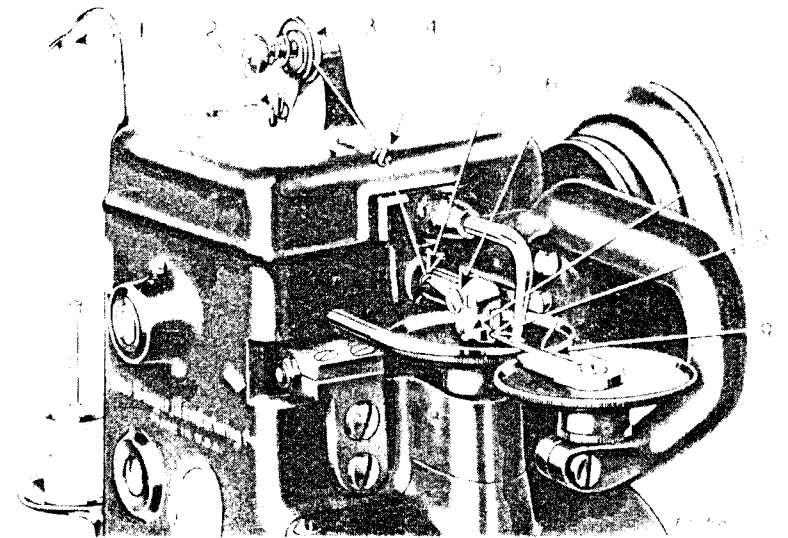


FIG. 7. THREADING THE MACHINE

tension discs (3), 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; thread the needle (9) from the underside up.

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.

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.

To Regulate the Pressure of the Feed Discs

The pressure between the feed discs may be increased by turning the screw (CC, 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.

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 all 176- class machines should be set to a height where the needle, at or just forward of its eye, barely clears

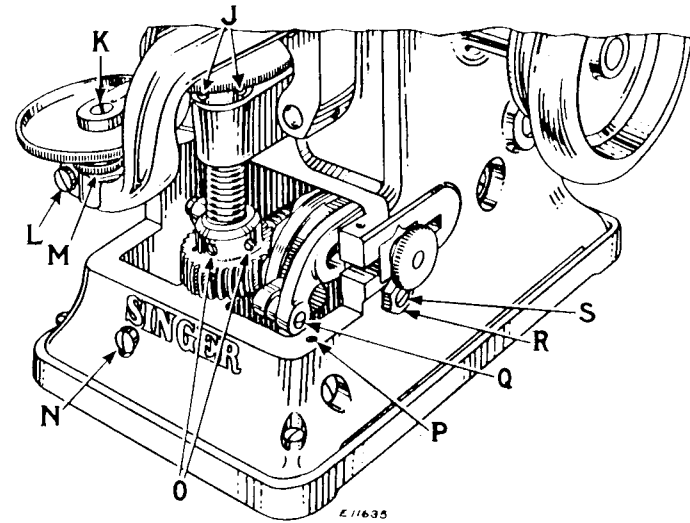


FIG. 8

the rim of the disc. Both discs should be adjusted to the needle and held apart when the adjustment is being made.

To adjust the rear disc on Machines 176-11 and 176-12, remove the front cover, loosen the set screws (O, Fig. 8) and move the disc up or down as required.

To adjust the front or idler disc on Machines 176-11, 176-12 and 176-13, loosen the screw (L, Fig. 8) and adjust the disc to the needle by turning the knurled flange of the disc stud (M) to the right to lower, or to the left to raise the disc. Should the needle guard stand in the way of the needle in making this adjustment, loosen screw (K, Fig. 8) and move the guard out of the way, then re-tighten the screw slightly; when the disc is set at the correct height, loosen the screw (K), move the needle guard back into position with the needle aligned central with its groove and tighten the screw (K).

On Machines 176-13 and 176-14, the feeding disc (U, Fig. 9) may be raised or lowered after loosening the four set screws (W and X, Fig. 9). When adjustment is made, see that the gear is down against its seat before tightening the two screws (X) in the gear. Then slide the sleeve (V) upward against the casting and tighten the two set screws (W).

On Machine 176-14, 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.

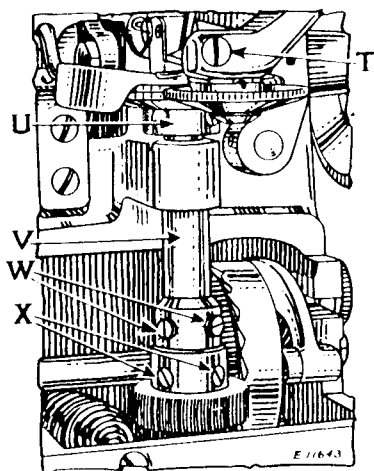


Fig. 9

To Remove the Feed Discs

A set of thinner feed discs for sewing mink and similar furs may be furnished for Machine 176-11.

To remove the idler disc, remove the screw (K, Fig. 8) and lift off the idler disc, being careful not to lose the bearing rollers. To remove the rear or feeding disc, loosen the set screws (O, Fig. 8), also the two set screws in the hub of the feeding disc (J, Fig. 8), then drop the shaft down until the disc can be removed.

To Remove the Loper Cam Roller

To remove this roller without disturbing the cam, remove the taper pin (AA, Fig. 10), draw out the looper shaft and remove the roller arm (BB, Fig. 10) with the roller. Note that the roller can be removed or replaced in the cam raceway only through the cut at (CC).

Adjustment for Wear in the Needle Bar

The needle bar bushing (Y, Fig. 10) is split and may be drawn in to take up any play which develops by turning the threaded collar (Z) in the direction indicated by the arrow in Fig. 10. This collar is provided with holes and may be tapped around with a small punch.

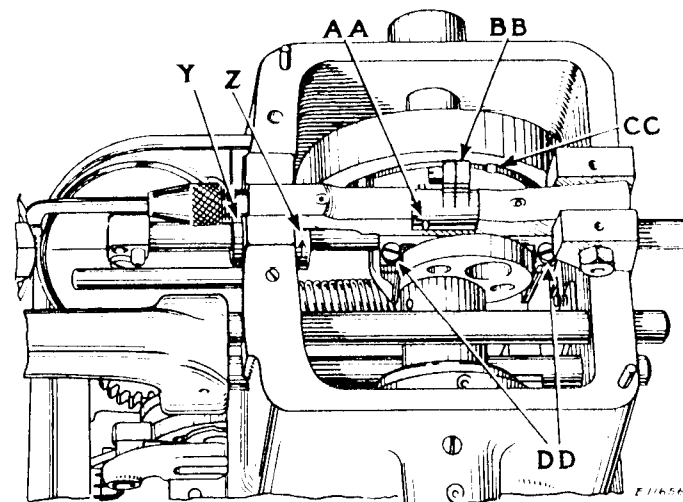


Fig. 10

To Set the Needle Bar

The needle bar may be set to the correct position after loosening the two clamp screws (DD, Fig. 10).

On Machines 176-11, 176-12 and 176-13, the needle bar should be set so that the center of the needle eye is opposite the mark (LL, Fig. 11) on the needle guard when the needle bar is all the way forward and the feed discs are together.

On Machine 176-14, the needle bar should be set so that the front end of the needle bar tension plate (HH, Fig. 11) is about $\frac{1}{32}$ inch from the rim of the feeding disc (JJ) when the needle bar is all the way forward.

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. 10). These screws need not be excessively tight.

To Adjust the Loooper

With the needle bar and feed discs properly adjusted and a needle in the needle bar, insert the shank of the looper in the holder and tighten the clamping nut (EE, Fig. 11) until the looper is snug enough to stay put while making adjustments. Turn the balance wheel until the looper is at the extreme front end of its stroke, when it should stand about central over the groove in the needle guard as shown in Fig. 12; also adjust it in or out until it covers half of the needle eye, leaving half of the eye visible when looking straight down the front of the looper, as shown in Fig. 12.

Adjust the looper for height by loosening screws (PP, Fig. 12) and moving the bracket (OO) up or down until the looper clears the needle guard a scant $\frac{1}{8}$ inch, then tighten screws (PP). After

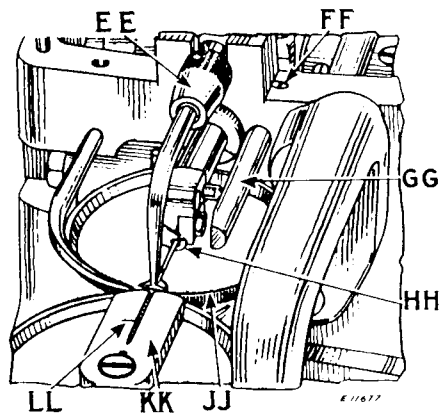


FIG. 11

the clamping nut (EE, Fig. 11) 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 it barely touches, but does not deflect the needle (see Fig. 11). If the needle does not clear the sloping top surface of the looper heel, remove the screws (PP, Fig. 12), tilt the bracket (OO) out from its seat and insert a shim of the required thickness to bring the looper to the position shown in Fig. 11, **first** properly setting

it for height above the needle guard. If the needle comes too far above the heel of the looper, a shim may be taken out.

Note: On Machines 176-12, 176-13 and 176-14, which have two looper frame rockers, this height adjustment of the looper is made with the front rocker bracket only.

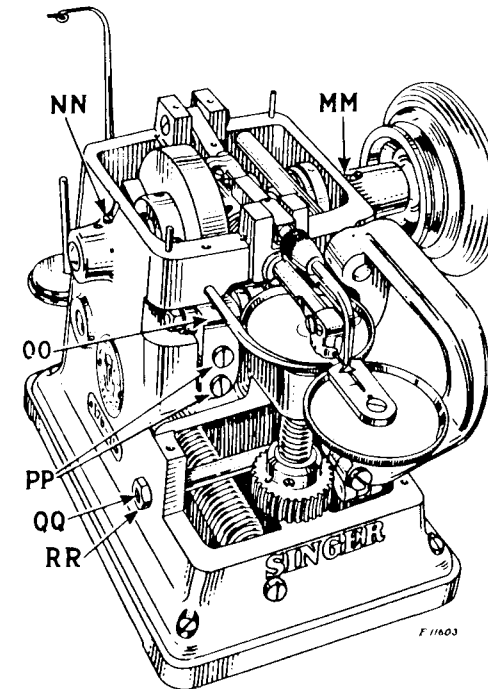


FIG. 12

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 on different skins and with different threads.

The post (GG, Fig. 11) may be moved in toward the machine for a later release or outward for an earlier release, after loosening the small set screw (FF, Fig. 11).

Adjustment for Wear in the Main Shaft

The main shaft bushings are tapered and split and can be adjusted for wear by loosening the screws (MM and NN, Fig. 12) and tapping the bushings in toward the center of the machine to take up the wear. The balance wheel must be removed to adjust the right hand bushing.

To Remove the Feed Clutch

First take the machine off the base plate, then remove screw (Q, Fig. 8). Loosen the small set screw (P, Fig. 8) and disengage the retaining dog (A2, Fig. 13 or D2, Fig. 14) from the rim of the gear, removing it through the bottom of the machine. Then loosen the lock nut (R, Fig. 8) and back out screw center (S, Fig. 8) until the gear with the clutch can be lifted out.

Adjustment of Feed Clutch

Machines 176-11 and 176-12. Loosen the set screw (XX, Fig. 13) and remove the collar (WW). Loosen lock nut (UU), lift the

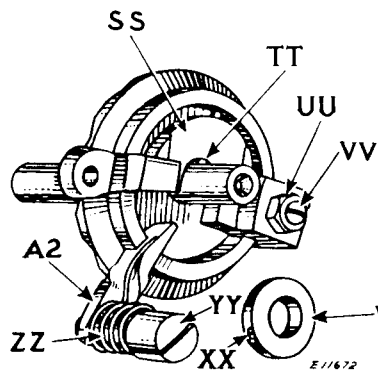


FIG. 13

clutch dog (SS) off the gear and remove the spring and plunger pin from the dog at TT, then replace the dog in the gear and set the clutch jaws so that there is only about $\frac{1}{32}$ inch clearance between the dog and the shaft at TT. To do this, hold the dog in the correct position and at the same time turn the jaws (VV) toward the right and tighten the lock nut (UU) firmly. Replace the plunger pin and its spring into the recess in the dog and, compressing the spring against the shaft, slip the clutch dog back into place. Replace the collar (WW) and tighten the set screw (XX).

Machines 176-13 and 176-14. Loosen the set screw (G2, Fig. 14) and remove the collar (H2). Loosen screw (K2) and lock nut (L2), which has a left hand thread; lift the clutch dog (B2) off the gear and remove the spring and plunger pin from the recess in the dog at C2, then replace the dog in the gear. The clutch jaws should be set so that there is about $\frac{1}{16}$ inch clearance between the dog and the shaft at C2; to do this, turn the jaws (J2) toward the left while holding the dog in the correct position, and clamp the jaws by tightening screw (K2). Then firmly tighten lock nut (L2), which has a left hand thread. Replace the plunger pin with its spring into the recess in the dog and, compressing the spring against the shaft, slip the clutch dog back into place. Replace collar (H2) and tighten set screw (G2).

To Replace the Feed Clutch and Gear

Place the feed clutch and gear back into the machine and adjust the screw centers (S, Fig. 8 and QQ, Fig. 12) until the gears mesh closely without binding and the gear shaft has freedom without end play. Then tighten the lock nuts (R, Fig. 8 and RR, Fig. 12). When replacing the same clutch gear in the machine, the left screw center (QQ, Fig. 12) need not be disturbed. However, with a new clutch gear, both screw centers should be adjusted as instructed above.

Insert screw (Q, Fig. 8) in the feed connection. Replace the retaining dog (A2, Fig. 13 or D2, Fig. 14) in operating position on the rim of the gear, and wind the spring (ZZ or E2) to a moderate tension by turning the stud a fraction of a turn with a screwdriver. Stud (YY) should be turned to the right, and stud (F2) should be turned to the left, being careful not to apply any end thrust which would jam the retaining dog against the gear; then tighten the set screw (P, Fig. 8) to hold the stud. The retainer (A2 or D2) should float free, except for spring tension, in order to adjust itself properly to the rim of the gear.

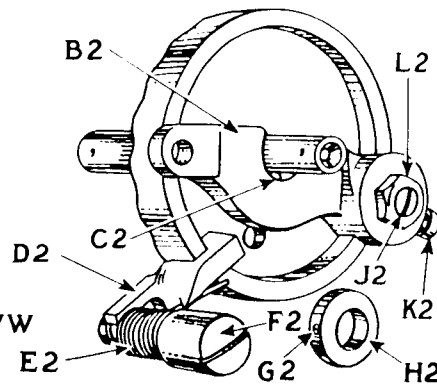


FIG. 14