

OILING AND THREADING INSTRUCTIONS

CAUTION! Oil has been drained from the main reservoir before shipment, so the reservoir must be filled before beginning to operate. Use a straight mineral oil of a Saybolt viscosity of 90 to 125 seconds at 100° Fahrenheit.

Oil is filled at the spring cap in the top cover and the level is checked at the lucite gauge on the front of the machine. The oil level should be maintained between the red lines on this gauge. Capacity of the oil reservoir is twelve ounces.

The lubrication, which is almost entirely automatic, requires a minimum of manual oiling. The oiling diagram (Fig. 1) is self-explanatory.

The main reservoir supplies oil to the looper drive eccentric, upper running feed drive eccentric and needle lever crank and the supply is registered at front gauge. The entire lower mechanism is served thru a system of channels and wicks in the main frame by this reservoir.

A daily check, before the morning start, should be made and oil added if required. Oil which has gone through the machine is filtered and pumped back into the main reservoir making too frequent oilings unnecessary. Excessive oil in the main reservoir may be drained at the plug screw in the main frame, directly under the handwheel.

Fig. 1 also shows the threading of these machines and the machines should be threaded accordingly.

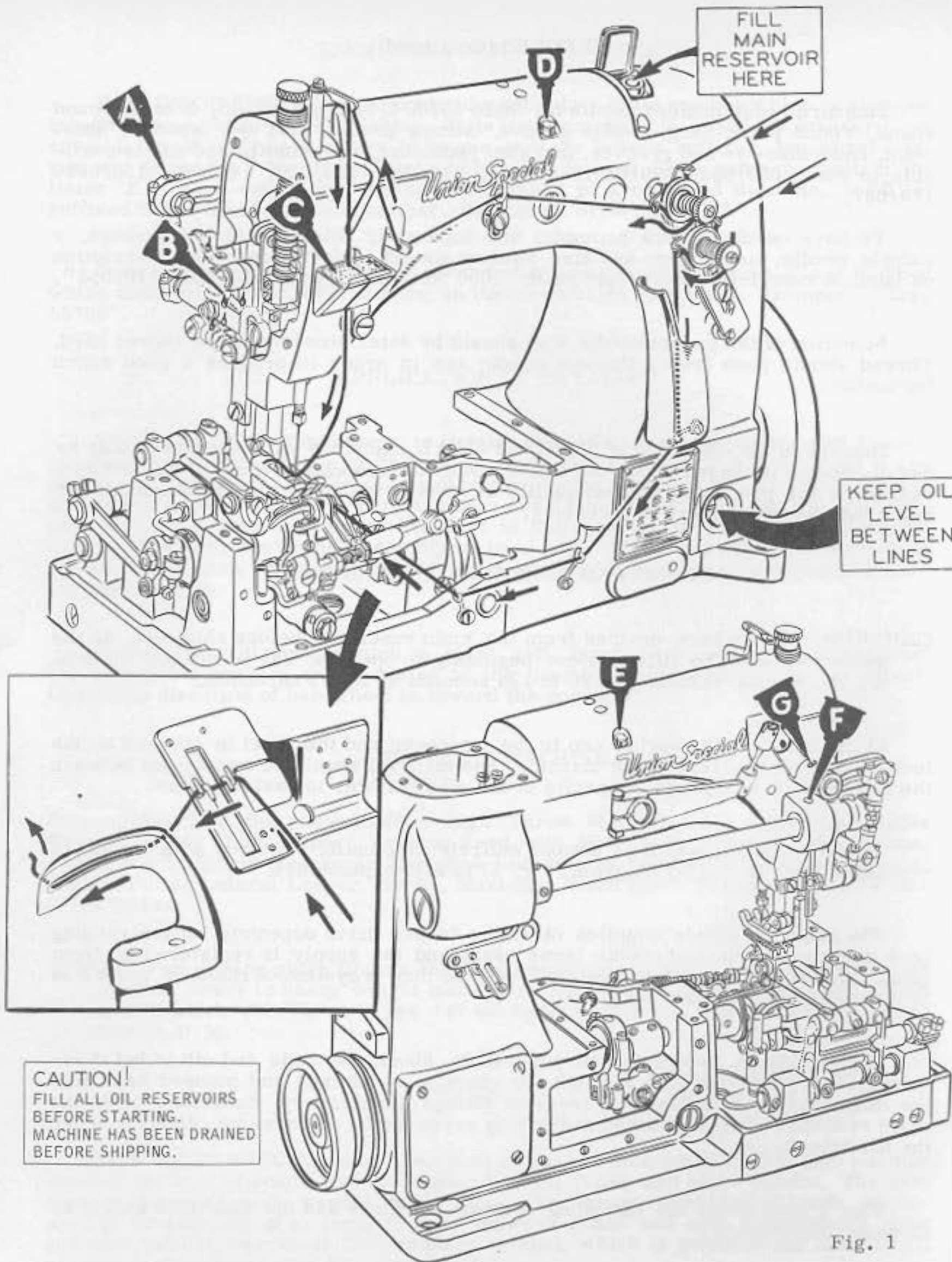


Fig. 1

SYNCHRONIZING LOOPER AND NEEDLE MOTIONS

Check the synchronization of the looper and needle motions, using gauge No. 21227 AC as follows:

Insert the pin, which is included with the gauge, in the looper rocker. Place the gauge plate on the throat plate seat using the throat plate screws for attaching. Place the indicator portion of the gauge in the needle thread take-up wire hole with the pointer to the right, but do not tighten the set screw at this time. Turn the handwheel in the operating direction until the pin in the looper rocker contacts the edge of the gauge plate and set the indicator so that the left end of the pointer rests against the top of the needle bar and the right end of the pointer rests at "0". Tighten the set screw and note indicator reading. Turn the handwheel in the reverse direction until the pin again contacts the plate. If the motions are in synchronization, the pointer of the indicator will return to the same reading. A variation of one graduation on the scale is allowable. If the reading is higher on the scale when the handwheel is turned in the operating direction, the looper drive lever rocker will have to be moved to the rear. If the reading is lower, the rocker will have to be moved to the front.

NOTE: If gauge No. 21227 AC is not available, synchronization may be checked as follows:

Insert the looper in the looper rocker and turn the handwheel in the operating direction until the point of the looper, moving to the left, is even with the left side of the needle. Note the height of the eye of the needle with respect to the looper point, then turn handwheel in the reverse direction until the looper point again moves to the left and is even with the left side of the needle. If the motions synchronize, the height of the eye of the needle with respect to the looper point will be the same. A variation of .005 inch is allowable. If the distance from the eye of the needle to the point of the looper is greater when the handwheel is turned in the operating direction, move the looper drive lever rocker to the rear. Moving it in the opposite direction acts the reverse. Moving of the looper drive lever rocker is accomplished as follows:

Remove the cloth plate, throat plate support, oil reservoir top cover and loosen the screws in the looper drive eccentric mechanism and move the eccentric as far to the right as it will go. Drive the rear bushing to the front or the middle bushing to the rear, as required. CAUTION: To avoid distorting the parts, remove the plug screw in the bed behind the rear bushing before driving to the front and place a horse-shoe shaped metal washer approximately 1/16 inch thick between the looper drive lever and adjacent bushing when driving the bushing to the rear. Correctly reposition the looper drive eccentric mechanism (per spot screws) and tighten all screws securely.

SETTING THE LOOPER

Insert a new needle, type and size as specified, with spot or scarf to the rear. With the looper (A, Fig. 2) at its farthest position to the right, its point should be 5/32 inch from the centerline of the needle. If adjustment is required, loosen nut (B) (it has a left hand thread) and nut (C) on connecting rod (D) and turn the connecting rod forward or backward to obtain the 5/32 inch dimension (Fig. 2). Looper gauge No. 21225-5/32 can be used advantageously in making this adjustment. Retighten both nuts, first nut (C), then nut (B). Make sure the left ball joint is in vertical position and does not bind after adjustment.

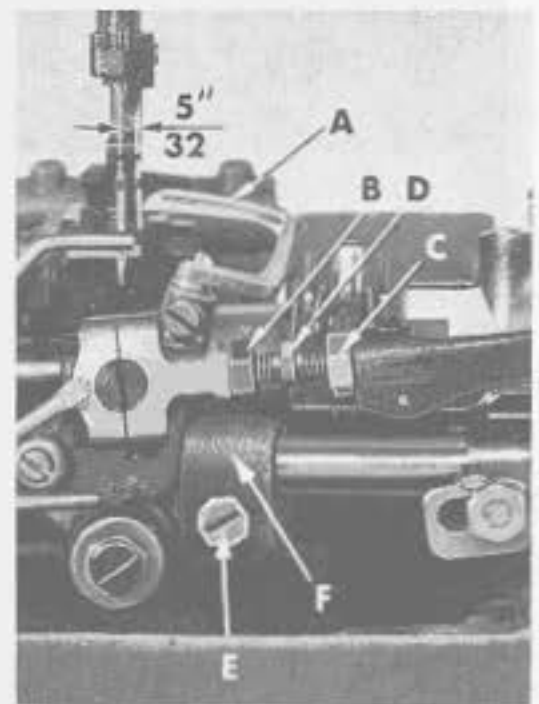


Fig. 2

SETTING THE LOOPER (Continued)

The looper is set correctly in-line-of-feed, as it moves to the left behind the needle, when its point passes as close as possible without contacting the needle. If adjustment is necessary, loosen screw (E, Fig. 2) in looper rock shaft arm (F), reposition looper as required and retighten screw (E).

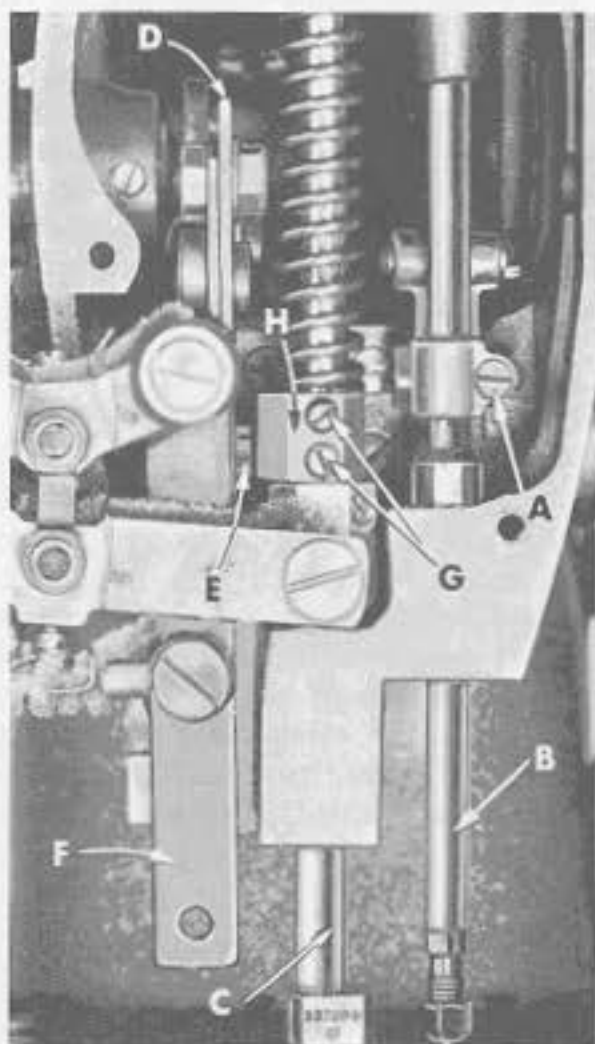


Fig. 3

needle. If adjustment is necessary, loosen screw (A, Fig. 3) and move needle bar (B) up or down as required and retighten screw (A).

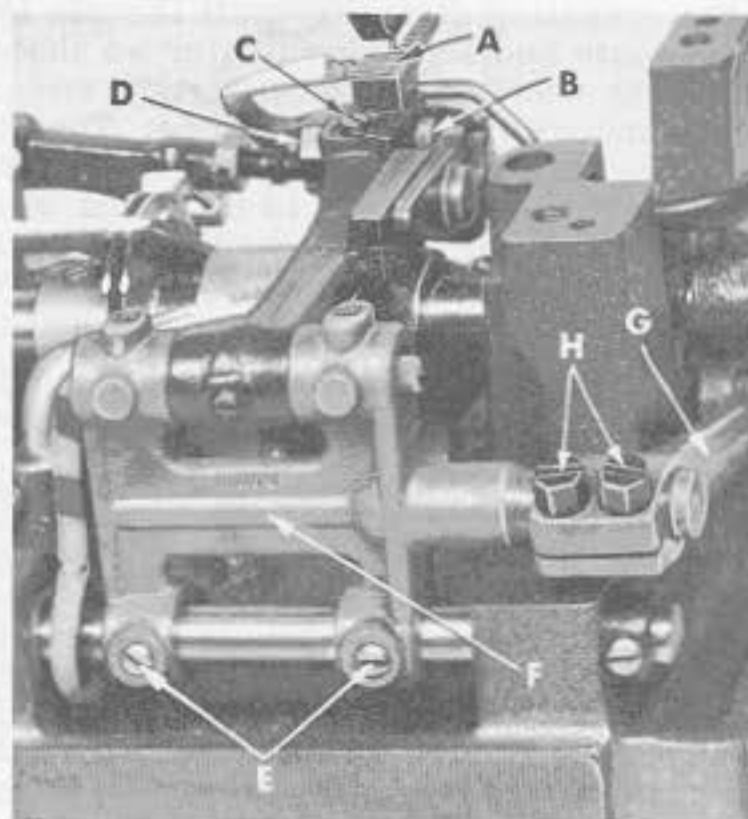


Fig. 4

SETTING HEIGHT OF NEEDLE BAR

The height of the needle is correct when the top of its eye is $1/64$ inch below the underside of the looper, when the looper point is flush with the left side of the

SETTING THE FEED DOG

Set the feed dog (A, Fig. 4) in the throat plate so there is equal clearance on all sides. See that the tips of the teeth extend slightly less than the depth of a tooth above the throat plate and are parallel with the throat plate at high point of travel. Height can be set by loosening feed dog attaching screw (B) and adjusting feed dog supporting screw (C). Parallelism can be set by loosening nut (D) and rotating feed dog holder adjusting screw (A, Fig. 5), as required and retighten nut. Side clearance can be set by loosening screws (E, Fig. 4) and moving feed rocker (F) to the right or left, as required.

NOTE: Whenever the feed rocker has been moved, always check to assure that the feed rocker arm (G) does not bind.

End clearance can be set by loosening screws (H) in the feed rocker arm (G) and moving feed rocker (F) forward or backward as required.

INITIAL SETTINGS OF UPPER RUNNING FEED MECHANISM

The top feed eccentric assembly should be located on the main shaft so that the first screw in the eccentric will be in a perpendicular position to the main shaft when the needle bar has risen $1/4$ inch from the bottom of its stroke, with the handwheel turned in the operating direction.

NOTE: The next two paragraphs refer to the maximum height setting of the top feed mechanism which can be lowered later to suit sewing conditions.

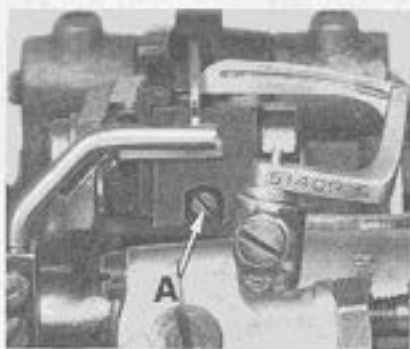


Fig. 5

Turn handwheel in the operating direction until the needle bar is at the bottom of its stroke. While holding the handwheel, position the upper feed lift driving lever (A, Fig. 6) after loosening nut (B) so the distance between the

centerline of the link pin (C) and the centerline of the upper feed drive rock shaft (D) is $7/8$ inch (Fig. 6). Retighten nut (B).

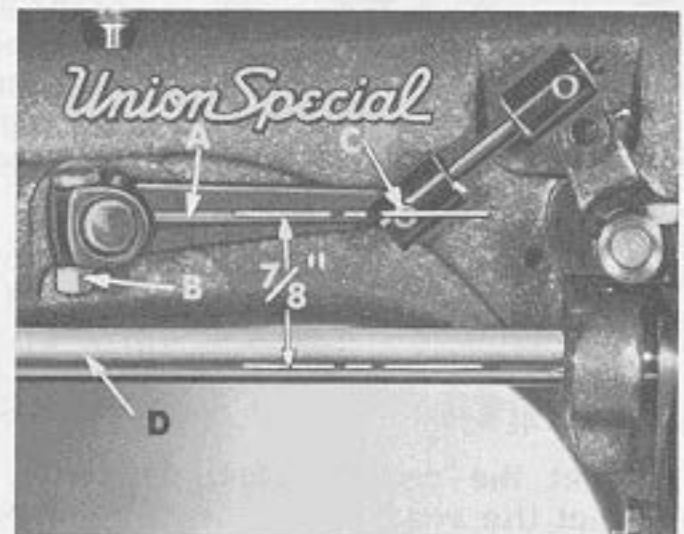


Fig. 6

The bell crank lever ball joint (A, Fig. 7) should be set all the way to the right in the slot of the upper feed bell crank lever (B). This connecting rod can also be lengthened or shortened to suit sewing conditions if required.



Fig. 7

As the needle bar just begins to rise from the bottom of its stroke, the distance between the rear of the needle bar (A, Fig. 8) and the front of the upper feed bar (B) should be $1 \frac{3}{32}$ inch (Fig. 8). Adjustment can be

made by loosening screw (C) in the upper feed driving lever (D) and moving it forward or rearward as required and retighten screw (C).

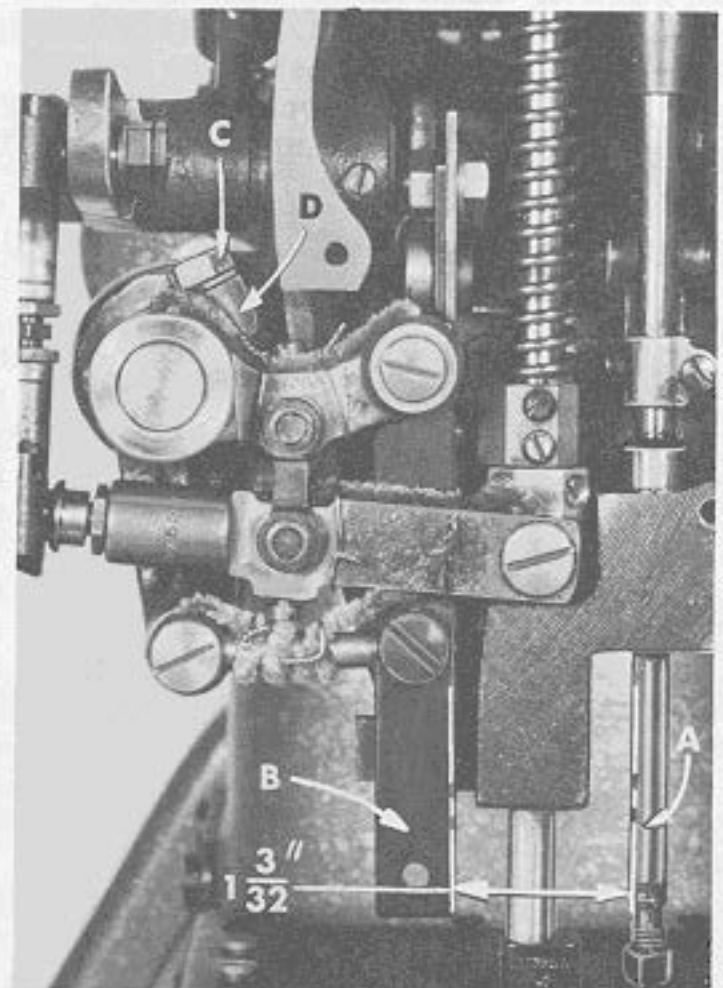


Fig. 8

INITIAL SETTINGS OF UPPER RUNNING FEED MECHANISM (Continued)

Synchronizing the upper feed with the lower feed can be accomplished by loosening nut (A, Fig. 9) and moving the ball stud in the upper feed driving shaft segment lever (B). Retighten nut.

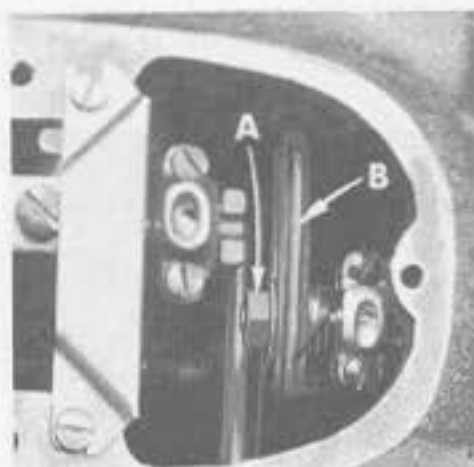


Fig. 9

CHANGING STITCH LENGTH

Set the stitch to the required length. This is accomplished by loosening locknut (A, Fig. 10) (it has a left hand thread) and turning the stitch adjusting screw (B). Turning screw (B) clockwise shortens the stitch and turning it in a counterclockwise direction lengthens the stitch.

NOTE: Any change in stitch length will necessitate a corresponding change in the rear needle guard setting and also synchronization of the upper running feed mechanism as described previously.

SETTING THE REAR NEEDLE GUARD

Set the rear needle guard (A, Fig. 11) horizontally so that it does not quite contact the rear of the needle (B) when at its most forward point of travel. A clearance of .005 inch is permissible. It should be set as low as possible, yet have its vertical face approach within about $3/64$ inch of the needle, until the point of the looper (C), moving to the left, is even with the needle. To move needle guard forward or backward, merely loosen screw (D), move needle guard as required and retighten screw (D). To raise or lower the needle guard, loosen screw (D) and turn screw (E) clockwise to lower or counterclockwise to raise. Retighten screw (D) after guard is properly set.

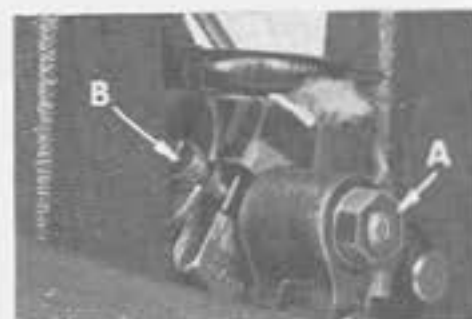


Fig. 10

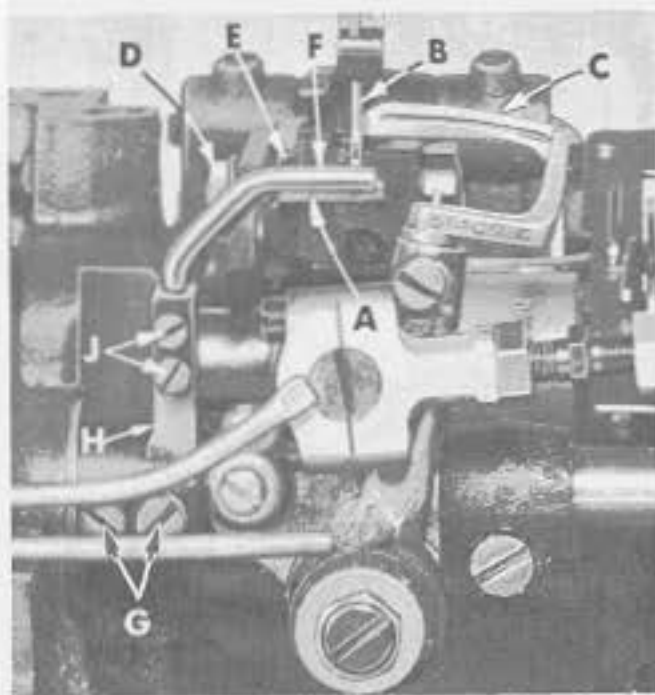


Fig. 11

SETTING FRONT NEEDLE GUARD

Set the front needle guard (F, Fig. 11) so that it barely contacts the needle (B) until the point of the looper (C), moving to the left, is just past the left side of the needle. The looper may brush, but not pick at the needle. The front needle guard should be set as low as possible to meet this condition yet not contact the rear needle guard or looper at any time. To move needle guard forward or rearward, loosen screws (G), rotate needle guard holder (H) as required and retighten screws (G). To raise, lower or rotate needle guard, loosen screws (J), reposition as necessary and retighten screws after guard is properly set.

THREAD TENSION RELEASE

The thread tension release is set correctly when it begins to function as the presser foot is raised to within $1/8$ inch of the end of its travel and is entirely released when the presser

foot has reached its highest position.

THREAD TENSION RELEASE (Continued)

If adjustment is needed, loosen tension release lever screw (A, Fig. 12), located at the back of the machine and move tension disc separator as required. Retighten screw. After adjustment there should be no binding at any point.

SETTING HEIGHT OF PRESSER BAR

The height of the presser bar (C, Fig. 3) is set correctly if it is possible to remove the presser foot when the foot lifter lever (B, Fig. 12) is fully depressed. Also, there should be approximately 1/16 inch clearance between the bottom end of the slot of the lifter link (D, Fig. 3) and the stud (E) located in the upper feed bar (F) when the foot lifter lever is released and the presser foot resting on the throat plate, with the feed dog down below the throat plate.

If adjustment is necessary, turn handwheel in operating direction until the needle bar is in the low position. Loosen screws (G, Fig. 3), then, while holding presser foot down on the throat plate surface, pry up presser bar connection and guide (H) with a screwdriver to obtain the 1/16 inch setting and retighten screws.

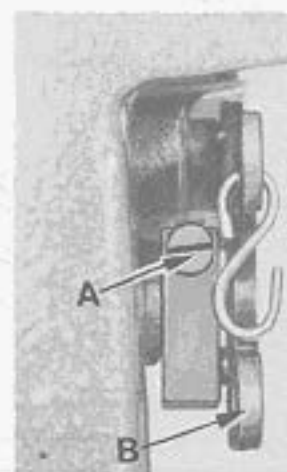


Fig. 12

THREADING

Draw the looper and needle threads into the machine and start operating on a piece of fabric. Refer to threading diagram (Fig. 1) for manner of threading these machines.

SETTING NEEDLE THREAD TAKE-UP WIRE AND FRAME EYELET

Set the needle thread take-up wire (A, Fig. 13) so that its upper surface is even with the top of the hole in the needle bar thread eyelet (B) when the needle bar is at the bottom of its stroke. Lower this setting for a smaller needle thread loop or raise it for a larger loop.

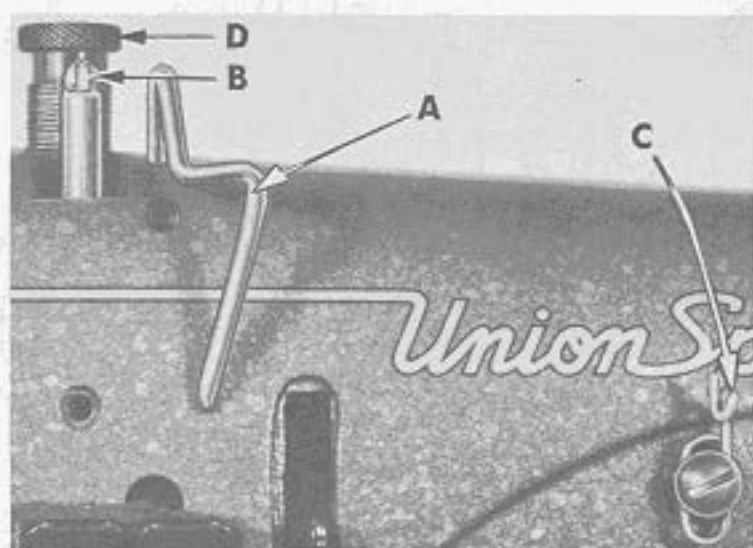


Fig. 13

Set the needle thread frame eyelet (C, Fig. 13) perpendicular to the machine base and midway in its mounting slot. Lower if more needle thread is desired in the stitch or raise for less.

SETTING LOOPER THREAD TAKE-UP

The looper thread retainer finger (A, Fig. 14) should be set so that the looper thread is cast-off just after the eye of the needle comes up out of the material. Co-ordinated positioning can be acquired by loosening screws (B and C). After looper thread retainer finger has been properly set, retighten screws.

PRESSER FOOT PRESSURE

Regulate the presser spring regulating screw (D, Fig. 13) so that it exerts only enough pressure on the presser foot to feed the work uniformly when a slight tension is placed on the fabric. Turning it clockwise increases the pressure, counterclockwise acts the reverse.

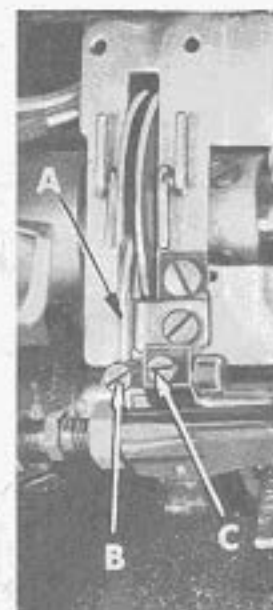
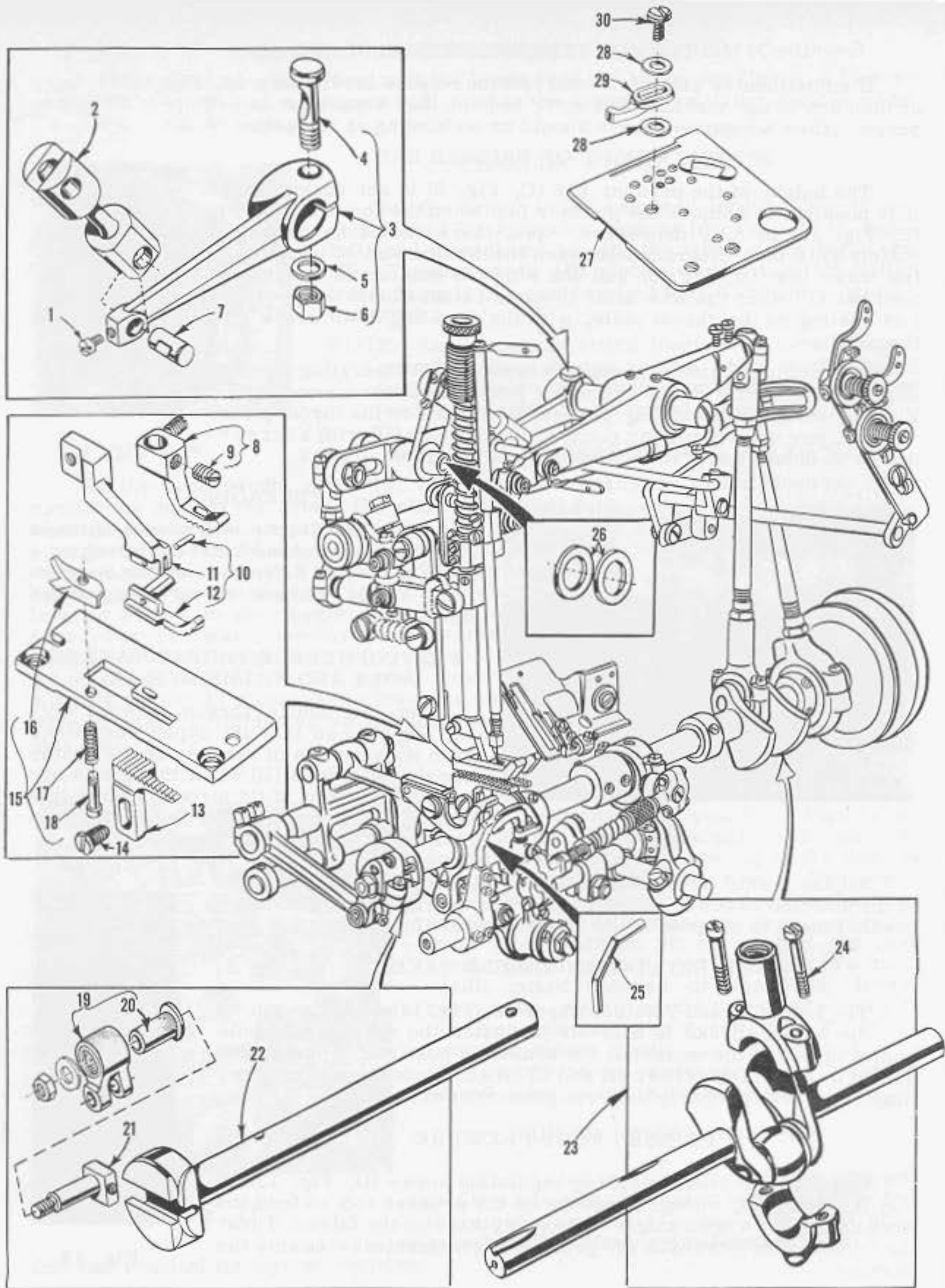


Fig. 14



The parts illustrated on the preceding page and described below represent the parts that are used on Style 53700 C, but not used on Style 53700 B.

Those parts shown in phantom views and bearing no reference numbers are common to Styles 53700 B and C.

Use Catalog No. 100 L (Style 53700 B) for all parts not illustrated or described in this catalog.

Reference numbers that are inside a bracket or box on the picture plate and have indented descriptions, indicate they are component parts of a complete part or assembly.

Ref. No.	Part No.	Description	Amt. Req.
1	77	Screw, for link pin No. 41336 C -----	1
2	53754 K	Upper Running Feed Lift Driving Link -----	1
3	53754 J	Upper Running Feed Lift Driving Lever-----	1
4	55235 D	Locking Stud-----	1
5	6042 A	Locking Stud Washer -----	1
6	55235 E	Locking Stud Nut -----	1
7	41336 C	Link Pin -----	1
8	53720 B	Presser Foot -----	1
9	78	Screw-----	2
10	53726 E	Top Feed Dog Assembly -----	1
11	53753 J	Top Feed Dog Shank -----	1
12	53726 D	Top Feed Dog, marked "FH"-----	1
13	53705 B	Lower Feed Dog, 14 teeth per inch-----	1
14	376 A	Screw, for feed dog -----	1
15	53724 B	Throat Plate-----	1
16	53770	Chain Cutting Knife, marked "L" -----	1
17	21-335	Spring -----	1
18	22799	Screw-----	1
19	51236 E	Feed Crank Link Assembly-----	1
20	51236 F	Ferrule-----	1
21	51236 G	Feed Crank Stud -----	1
22	53722 A	Main Shaft-----	1
23	29476 DD	Crank Shaft Assembly, .990 inch throw-----	1
24	22559 E	Screw-----	2
25	51325	Looper Needle Guard-----	1
26	51242 L	Washer, for No. 53754 F -----	2
27	51281 U-207	Cloth Plate Cover-----	1
28	21657 E	Washer -----	2
29	24 S	Edge Guide -----	1
30	22517 B	Screw, for edge guide -----	1
-	53701 A	Cloth Plate (not shown on picture plate)-----	1