SINGER
157-1 AND 157-2

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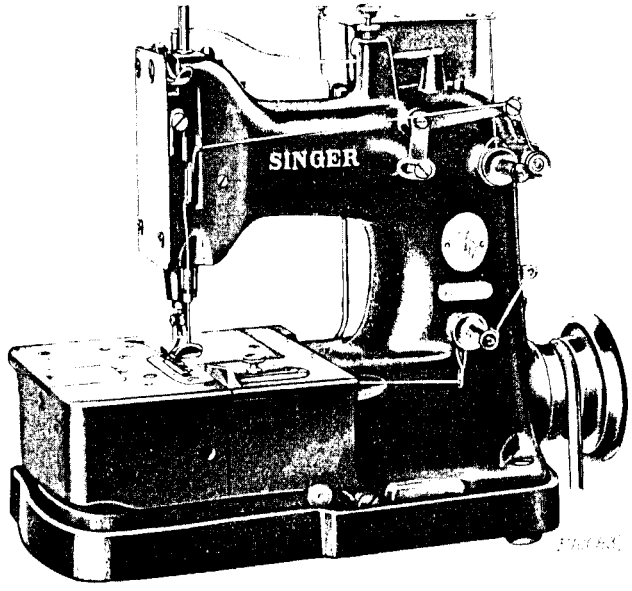
INSTRUCTIONS

FOR USING AND ADJUSTING

SINGER SEWING MACHINES



157-1 AND 157-2

FOR MAKING BAGS

AUTOMATIC OILING SYSTEM

THE SINGER MANUFACTURING CO.

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.

Genuine Singer Needles should be used in Singer Machines. These Needles and their Containers are marked with the Company's Trade Mark "SIMANCO." 1

Needles in Containers marked "For Singer Machines" are not Singer made needles. 2

DESCRIPTION

Machine 157-1 is especially designed for making bags from light and medium weight fabrics which are used for salt, sugar, rice, flour, etc. Bags made from clay-filled materials are also successfully sewn.

The presser foot has a lift of $\frac{5}{16}$ inch so that material up to $\frac{1}{4}$ inch in thickness can be sewn.

Machine 157-2 is intended for stitching heavy burlap bags which are used for coffee, potatoes, fertilizer, etc.

The presser foot has a lift of $\frac{7}{16}$ inch so that material up to $\frac{3}{8}$ inch in thickness can be sewn.

Each of the above machines has one needle and is regularly sent out fitted with looper and throat plate for making the two-thread chain stitch. An extra looper and throat plate are also sent with each machine for making the single thread chain stitch.

To Set Up the Machines

The iron base (U, Fig. 4) is provided for retaining the oil which drops from the machine. Place this base on the table and mount the machine on it so that the machine pulley will be in correct alignment with the transmitter pulley. Then carefully remove the machine from the base and mark on the table the location for the holes for the oil draining tube and the thumb screw which holds the base to the table. Remove the base and bore the holes for the oil draining tube and thumb screw, then securely fasten the base in position with the thumb screw and necessary washers.

Place on the iron base the two felt pads which are furnished and mount the machine on these felt pads. Three screws, provided with leather washers, are furnished for holding the machine in position on the base. Slip these washers on the screws up to the head and insert the screws in the three counterbored holes in the base of the machine and into the screwholes in the iron base. Tighten the screws firmly in position. This will allow the machine to "float" on the iron base. **Never clamp the machine tightly to the iron base. These instructions are important and must be followed when setting up the machine.**

CAUTION

After setting up, do not start the machine until it has been thoroughly oiled as instructed on pages 4, 5, 6 and 7.

To Oil the Machines

Each machine is equipped with an oil reservoir from which all the principal bearings receive a constant supply of oil, the oil flowing from the reservoir through tubes.

The excess oil drains into the machine base from which it may be drawn off through a petcock provided for the purpose.

In order that the oiling system may operate, it is absolutely necessary that the following instructions be observed to the letter. Failure to do this may result in serious damage to the machine.

CAUTION: Use only Singer "Manufacturing Sewing Machine Oil (Cloth and Leather)."

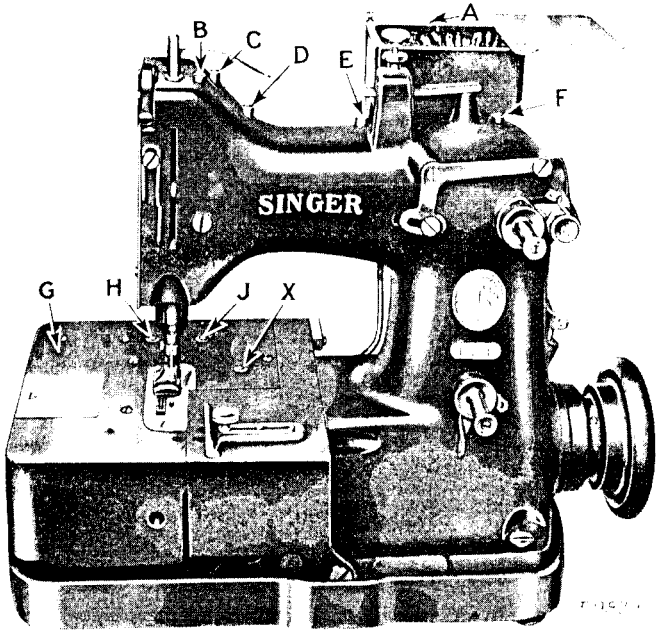


FIG. 2. OILING POINTS AT FRONT OF MACHINE

Before starting the machine, it must be serviced as follows:

Fill the oil reservoir (A, Fig. 2) until it stands **level full** of oil. This supply of oil must be maintained.

Fill the oil tubes (B, C, D, E and F, Fig. 2) and apply oil at the points (G, H, J and X, Fig. 2), (K, L, M, N, O, P and Q, Fig. 3) and (R and S, Fig. 4). **When the machine is in continuous use, all of these places must be oiled two or three times daily, or as often as may be required.**

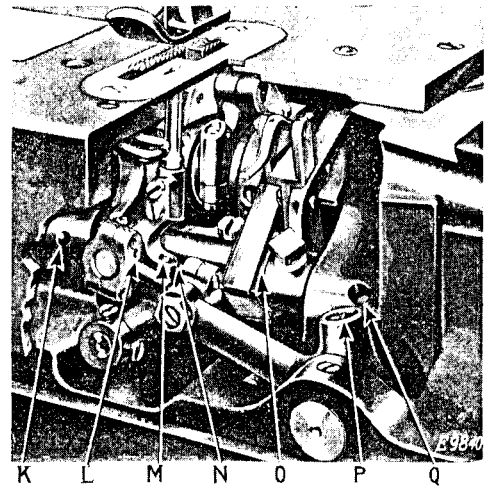


FIG. 3. OILING POINTS IN BED OF MACHINE

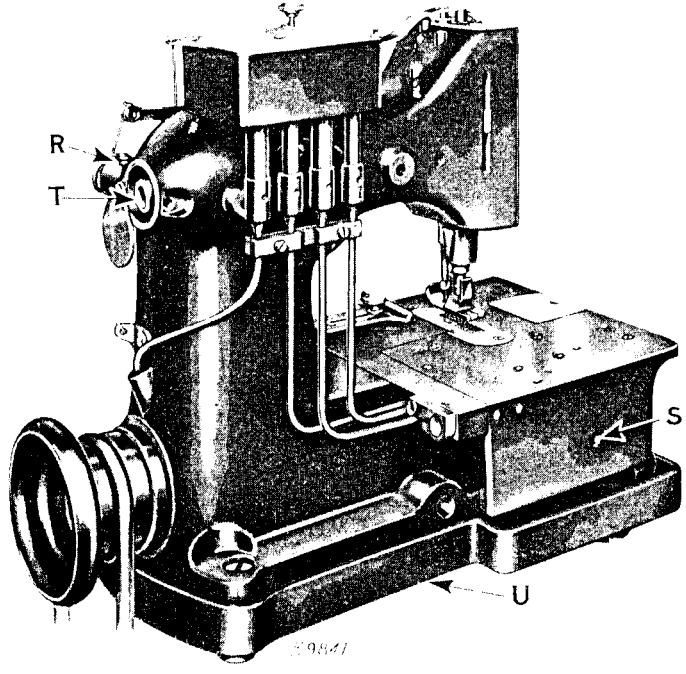


FIG. 4. OILING POINTS AT BACK OF MACHINE

Strands of Wicking

(See Fig. 5)

See that the strands of wicking are placed in the five tubes as shown, the necessary number of strands in each tube being indicated in Fig. 5.

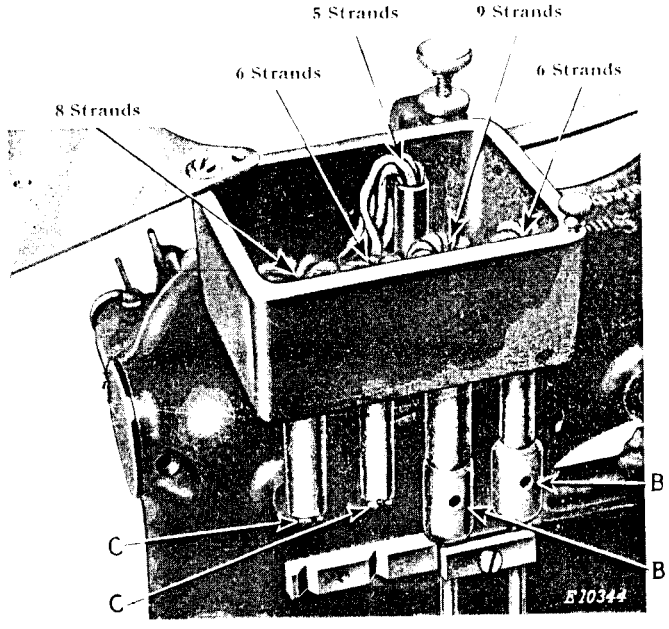


Fig. 5

If, for any reason, these strands are removed or are to be replaced, the strands should not be twisted nor forced through any of the tubes, but should be drawn through with a thin wire or a thread and trimmed, allowing not more than $\frac{1}{4}$ inch to project below the tubes as shown at CC.

Funnels at the top of the oil piping receive oil from the tubes and when placing the funnels in position see that the tubes do not enter the funnels (BB) more than $\frac{3}{16}$ inch. This allows free entry of air through the holes in the funnels and ensures the free flow of oil from the reservoir to the bearings.

Delivery of Oil to Crank Shaft

(See Fig. 6)

One section of the oil tubing conducts the oil to the bushing (A), the spiral channel in the shaft then carries the oil to the oil ring (B) and centrifugal force delivers the oil to the crank shaft bearing (C).

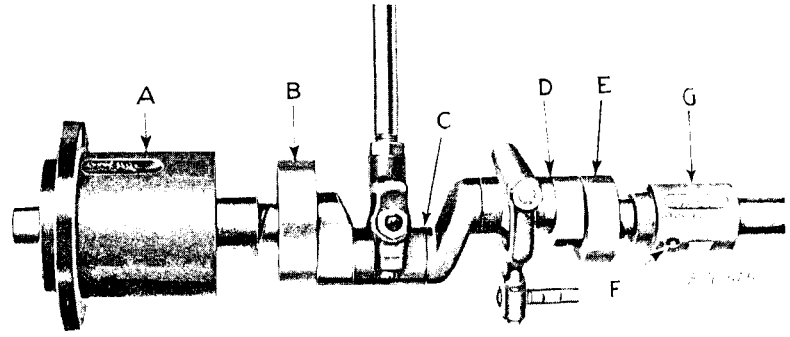


Fig. 6

It is necessary at all times to see that the ring (B) is securely fastened to the shaft. If the ring should become detached from the shaft, the oil holes will be out of alignment and the oil cannot reach the crank shaft bearing.

Bushing (G) at the other end of the shaft is lubricated in a similar manner. Oil is conducted to the oil hole (F) of the bushing, thence to the oil ring (E). From the ring the oil travels to the looper crank (D).

If these instructions are carefully followed and "Singer Manufacturing Sewing Machine Oil (Cloth and Leather)" is used, there should be no lubrication trouble.

Speed

For Machine 157-1, the maximum speed recommended is from 3500 to 4000 stitches per minute, depending upon the nature of the material and thread being used and the length of stitch. Stitches varying in length from 3½ to 8 to the inch can be made.

For Machine 157-2, the maximum speed recommended is from 2000 to 3000 stitches per minute, depending upon the nature of the material and thread being used and the length of stitch. Stitches varying in length from 2 to 4 to the inch can be made.

Needles

For Machine 157-1, the needles are of *Class* and *Variety* 92x1 and are made in sizes 21, 22, 23, 24 and 25.

For Machine 157-2, the needles are of *Class* and *Variety* 124x2 and are made in sizes 25, 26, 27, 28, 29, 30 and 31.

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 successful use of the machine will be interfered with.

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

The following is an example of an intelligible order:

"100 No. 22, 92x1 Needles" if for Machine 157-1.
"100 No. 27, 124x2 Needles" if for Machine 157-2.

The best stitching results will be obtained when using the needles furnished by the Singer Sewing Machine Company.

Thread

As the requirements of bags to be made cover a large range, the choice of thread of suitable size and texture must be left to the manufacturer.

Either right or left twist thread can be used in the needle and the looper.

To Set the Needle

To set the needle, loosen the clamping nut at the lower end of the needle bar and put the needle up into the bar as far as it will go with the long groove of the needle toward you; then securely tighten the clamping nut.

Upper Threading of Machine 157-1

(See Fig. 7)

Pass the thread from the unwinder through the hole (1) in the cover of the oil reservoir, down and back of the controller

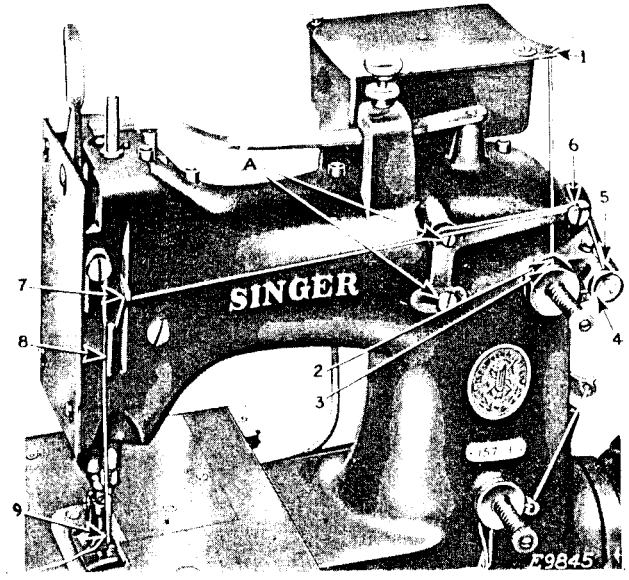


Fig. 7. Upper Threading of Machine 157-1

(6), through the tension thread guide (2), under and from left to right between the tension discs (3) and thread nipper (4), up and to the left of the wire guide (5), over from right to left through the controller (6), from right to left through the take-up eyelet (7), down and to the left of the controller wire (8) and from front to back through the eye of the needle (9). Draw about two inches of thread through the eye of the needle with which to commence sewing.

Upper Threading of Machine 157-2

(See Fig. 8)

Pass the thread from the unwinder through the hole (1) in the cover of the oil reservoir, down through the tension thread

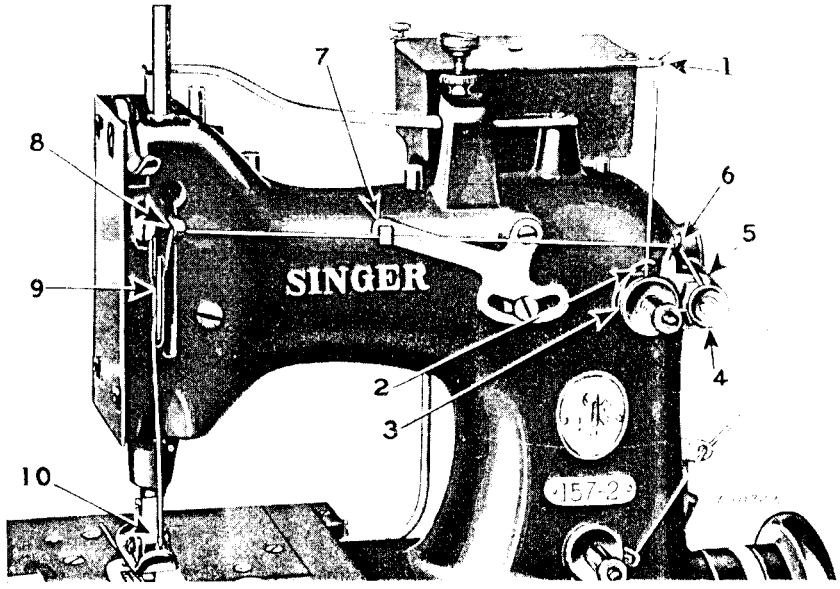


Fig. 8. Upper Threading of Machine 157-2

guide (2), under and from left to right between the tension discs (3) and thread nipper (4), up and to the left of the wire guide (5), from right to left through the thread guide (6) and controller (7), from right to left through the take-up eyelet (8), down and to the left of controller wire (9) and from front to back through the eye of the needle (10). Draw about two inches of thread through the eye of the needle with which to commence sewing.

Under Threading of Machines 157-1 and 157-2

(See Fig. 9)

Pass the thread from the unwinder from back to front through the eyelet (A), through the tension thread guide (B), over from

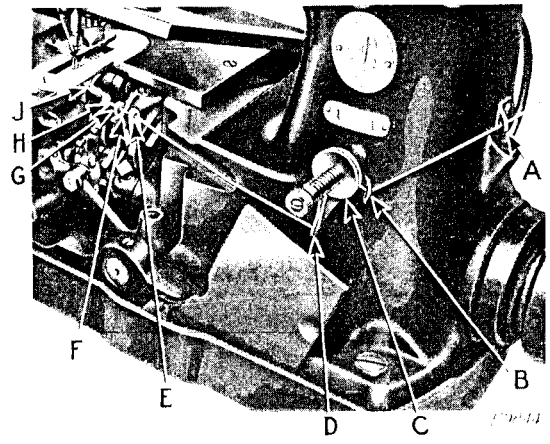


Fig. 9. Under Threading of Machine

right to left between the tension discs (C), down and from right to left through the thread guide (D), through the controller as indicated at E, F and G, then through the hole (H) in the heel of the looper and from front to back through the eye (J) near the point of the looper. Draw about two inches of thread through the eye of the looper with which to commence sewing.

To Regulate the Length of Stitch

The length of stitch is regulated by the large screw (C, Fig. 12) which projects beyond the body of the feed eccentric on the rotary shaft. To increase the length of stitch, loosen the lock screw (B, Fig. 12) and turn the large screw (C) over to the left or outwardly. To shorten the stitch, turn the large screw (C) over to the right or inwardly. When the desired length of stitch is obtained, securely tighten the lock screw (B).

When making long stitches, if either end of the feed dog touches the throat plate, loosen the screw (A, Fig. 12) (this screw is accessible through a hole in the top of the cloth plate) and push the feed bar in the required direction, then securely tighten the screw (A). When once correctly set, no further adjustment of the feed bar is necessary for either short or long stitches.

To Regulate the Tension on the Needle Thread

The tension (3, Fig. 7) should be adjusted to control the needle thread for all lengths of stitches with as light tension on the thread as is possible.

INSTRUCTIONS

FOR

ADJUSTERS AND MACHINISTS

To Set the Looper Thread Controller

The function of the looper thread controller (E, F and G, Fig. 9) is to keep the thread under control during the backward movement of the looper to prevent the skipping of stitches and also to provide the correct amount of thread to set the stitch.

To set the looper thread controller, loosen the screw which holds the controller (F, Fig. 9) in position and move the controller backward or forward as required. The looper thread controller may be aided when making different lengths of stitches by increasing or decreasing the tension (C, Fig. 9). For short stitches, increase the tension and for long stitches, decrease the tension.

To Adjust the Needle Thread Controller

When making short stitches, the needle thread controller (6, Fig. 7) should be at its highest point. For the longest stitch, it should be at its lowest point. To make this adjustment, loosen the two screws (A, Fig. 7) and raise or lower the controller (6, Fig. 7) as required, then tighten the two screws (A).

The function of the needle thread controller (8, Fig. 7) is to assist in drawing up the thread. It should be set so that when the thread starts to become taut between the controllers (6 and 8, Fig. 7 on Machine 157-1) or (7 and 9, Fig. 8, on Machine 157-2) on the downward stroke of the needle bar, the needle thread around the looper should be just slipping off the point of the looper so that there is no strain on the needle thread.

To Adjust the Needle Thread Nipper

The nipper (4, Fig. 7) is provided to assist the tension (3, Fig. 7) in holding the thread when the stitch is being set. This nipper is correctly adjusted when the machine leaves the factory and no further adjustment is necessary. However, if for any reason the nipper is removed from the machine, when replacing it, the nipper cam (T, Fig. 4), on the end of the rock shaft, should be set so that the nipper will close just before the eye of the needle enters the goods. It should release the thread on the up stroke of the needle bar when the material being fed forward starts to draw the thread.

To Time the Machine

The needle and looper are driven by a crankshaft which is correctly timed at the factory and requires no adjustment.

The looper sidewise motion, the feed lifting motion and feed motion are also correctly timed at the factory; but, if for any reason these motions have to be retimed, this can be done as follows:

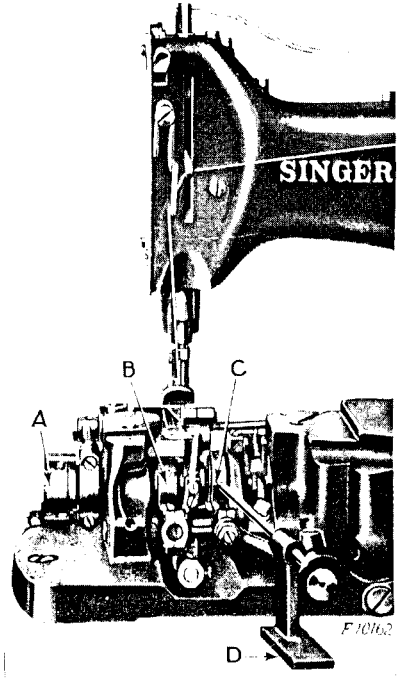


Fig. 10. Machine Correctly Timed

Remove the machine from the iron base and place it on any level surface. Turn the balance wheel **over from you** until the needle bar has reached its highest point and has descended $\frac{1}{2}$ **inch on Machine 157-1, and** $1\frac{7}{32}$ **inches on Machine 157-2.** Then place the gauge 130905 (D, Fig. 10), which is furnished for the purpose, on the table to locate the timing marks on the three eccentrics all in exact alignment with each other, as shown at A, B and C, in Fig. 10. When the machine is correctly timed with the needle bar down $\frac{1}{2}$ inch from its highest point on Machine 157-1, and $1\frac{7}{32}$ inches on Machine 157-2, the three timing marks (A, B and C) will be at the centre of the rotary shaft, which is $2\frac{3}{16}$ inches from the bottom of the base of the machine.

Although this timing is correct for the majority of work to be done by the machines, the timing of any of the above motions can be varied, if desired, to meet the requirements of special work.

The sidewise motion of the looper is controlled by the eccentric (C, Fig. 10). For less sidewise motion, loosen the two set screws in this eccentric and turn the eccentric over toward you. For more sidewise motion, turn the eccentric over from you. When the desired amount of sidewise motion of the looper is obtained, securely tighten the two set screws.

To Change the Position of the Looper in Relation to the Needle

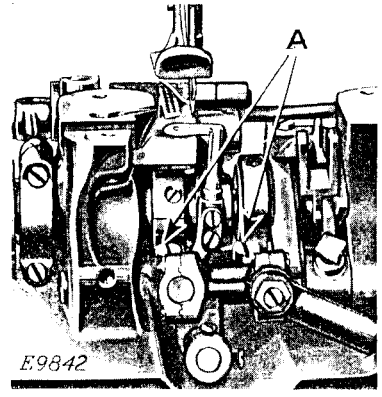


Fig. 11

Each looper is made with a flat to ensure the correct angle of the looper in relation to the needle when the looper is fastened in position in the looper carrier by the two set screws. If, for any reason, the looper may be too near or too far away from the needle, loosen the two screws (A, Fig. 11) in the looper carrier holder and move the looper as required, then tighten the two screws (A) in the looper carrier holder.

To Adjust the Needle Guard

The needle guard (D, Fig. 12) may be adjusted slightly, according to the diameter of the needle which is being used.

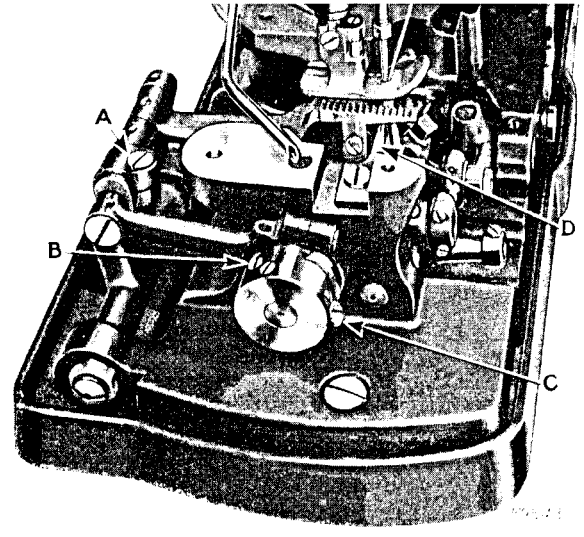


Fig. 12. Adjustments on the Machine

To Set the Feed Dog

Best results are obtained when the feed dog, at its highest point, lifts the presser foot from .085 to .090 inch above the throat plate on Machine 157-1, and from .095 to .110 inch on Machine 157-2. This may be varied slightly if desired.

Lift of Presser Foot

On Machine 157-1, the presser foot should be set to lift $\frac{23}{64}$ inch above the throat plate.

On Machine 157-2, the presser foot should be set to lift $\frac{7}{16}$ inch above the throat plate.

To Remove the Arm Rotary Shaft Flanged Bushing

(See Fig. 13)

When it is necessary to remove the arm rotary shaft from the machine, the arm rotary shaft flanged bushing (B) should be removed from the machine as follows:

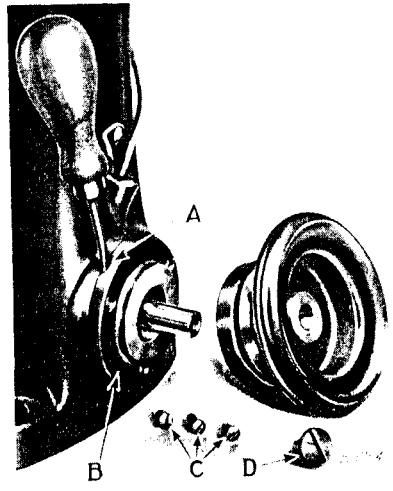


Fig. 13. Removing Arm Rotary Shaft Flanged Bushing from Machine

Loosen the two set screws in the belt groove of the balance wheel. Remove the large screw (D) at the right of the balance wheel and remove the balance wheel from the arm rotary shaft.

Remove the three screws (C) which fasten the bushing (B) in position. Then insert a screwdriver in the notch in the edge of the bushing, as shown at A in Fig. 13, and pry off the bushing.

When replacing the balance wheel on the arm rotary shaft, be careful to see that the two set screws enter the grooves in the shaft.