SINGER
51W51,W52,W53

USE ONLY SINGER OILS and LUBRICANTS

They insure freedom from lubricating trouble and give longer life to sewing equipment

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"Singer Oil for High Speed Sewing Machines"
(Cloth and Leather)

For all manufacturing sewing machines except where a stainless oil is desired.

"Singer Stainless Oil for High Speed Sewing Machines"

For all manufacturing sewing machines where a stainless oil is desired.

"Singer Motor Oil"

For oil-lubricated motors, power tables, transmitters and machinery in general.

"Singer Stainless Thread Lubricant"

For lubricating the needle thread of sewing machines for stitching fabrics or leather where a stainless thread lubricant is required.

NOTE: All of the above oils are available in 1 quart, 2 quart, 1 gallon and 5 gallon cans or in 55 gallon drums, and can also be supplied in customer's containers.

"Singer Gear Lubricant"

This specially prepared grease is recommended for gear lubrication on manufacturing sewing machines.

"Singer Ball Bearing Lubricant"

This pure grease is specially designed for the lubrication of ball bearings and ball thrust bearings of motors and electric transmitters, ball bearing hangers of power tables, etc.

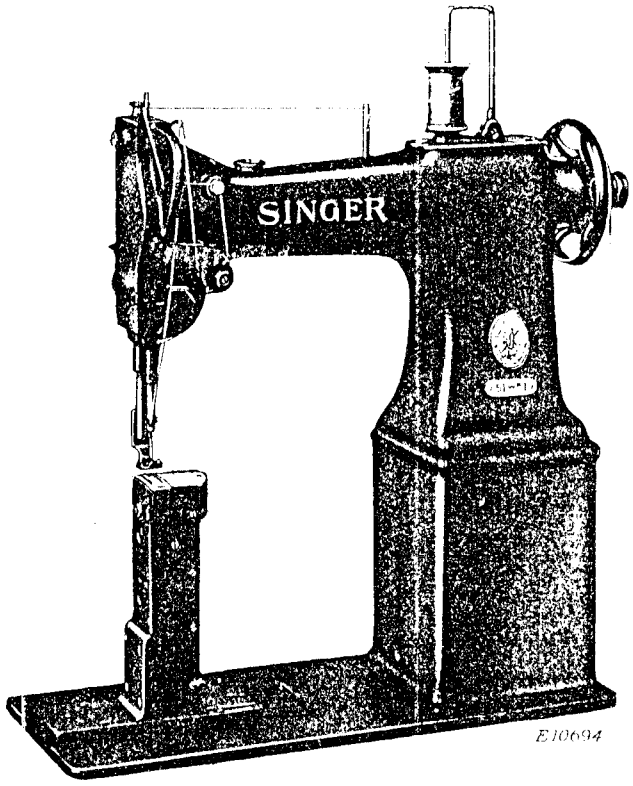
NOTE: The above greases are furnished in ¼ lb. tubes and 1 lb. and 4 lb. tins.

Form 2292w

INSTRUCTIONS

FOR USING AND ADJUSTING

SINGER SEWING MACHINES



Machine 51 w 51

MACHINES 51w51 AND 51w52

FOR TAILORING, ETC.

AND

MACHINE 51w53

FOR STITCHING SHOES AND LIGHT WEIGHT LEATHER

THE SINGER MANUFACTURING CO.

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.

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.

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

Machines 51w51, 51w52 and 51w53 each have one needle and a rotary sewing hook and make the lock stitch.

Machine 51w51 has hook post complete 241862, drop feed and presser foot and is adapted for closing shirts, trouser legs and other tubular work with a bag fell. It is also used for sewing underwear, corsets, etc. Hemming is also satisfactorily done on this machine by using hemmer feet which are furnished, on order, at an additional charge.

Machine 51w52 has hook post complete 241872, drop feed and alternating presser feet and is adapted for stitching coat edgings, strapping riding breeches, sewing on buckles, etc.

Machine 51w53 has hook post complete 241641, drop feed and alternating presser feet and is adapted for stitching operations in the manufacture of shoes and for gloves and other light weight leather.

Note: Each of the above machines can be instantly converted into a flat bed machine when desired, by attaching Work Plate Platform 213858. This platform fits on the top of the post. It is furnished, on order, at an additional charge.

Speed

The maximum speed recommended for Machine 51w51 is 3000 stitches per minute and for Machines 51w52 and 51w53, 2500 stitches per minute, depending on the material being stitched. When the machines are in operation, the top of the balance wheel must turn over toward the operator.

Needles

Needles for Machines 51w51, 51w52 and 51w53 are as follows:

Machine No.	Class and Variety Nos. of Needles	Sizes
51w51	128x3	9, 10, 11, 12, 13, 14, 16, 18, 20, 22, 23, 24 and 25
51w52	126x3	10, 12, 14, 16, 18, 20, 22, 23 and 24
51w53	128x4	9, 10, 11, 12, 13, 14, 15, 16, 18, 20, 22, 23 and 24

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. 12, 128x3 Needles," if for Machine 51w51.

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

To Oil the Machine

When the machine is received from the factory, it should be thoroughly cleaned and oiled.

USE ONLY SINGER "MANUFACTURING SEWING MACHINE OIL (Cloth and Leather)" for general use or "MANUFACTURING SEWING MACHINE OIL (Stainless for White Goods)" where a stainless oil is desired.

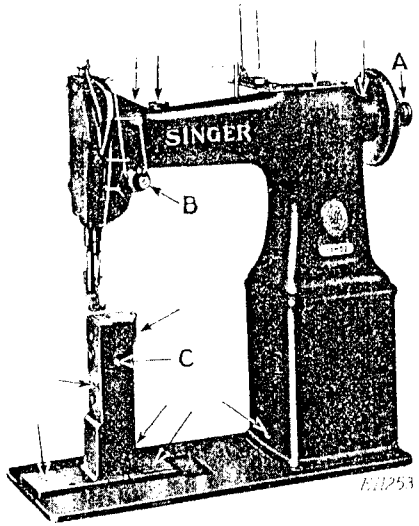


Fig. 2. Oiling Points at Front of Machine, also Adjustments on the Machine

Oil should be applied at the places indicated by arrows in Figs. 2, 3 and 4 and when the machine is in continuous use, it should be oiled at least twice a day.

Swing back the cover which is on the top of machine and oil the bearings and connections which are thus uncovered, then replace the cover.

To Adjust the Thread Lubricator on 51w53 Machine

To ensure satisfactory results, Singer Thread Lubricant should be used in the thread lubricator which is attached to the face plate on the 51w53 Machine.

When replenishing the lubricant supply, fill the reservoir to about $\frac{5}{8}$ inch below the filler hole.

The amount of lubrication of the thread is controlled by raising or lowering the felt pad holder above or below the level of the lubricant. For more lubricant, lower the felt pad holder. For less lubricant, raise the felt pad holder.

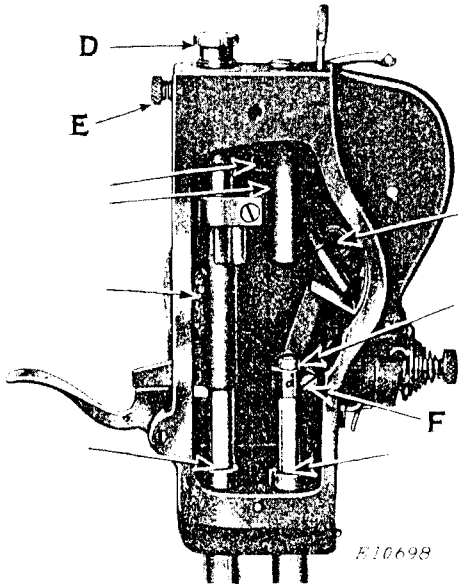


Fig. 3. End View of Machine, Showing Oiling Points, also Adjustments on the Machine

Loosen the thumb screw near the upper end of the face plate, pull out the lower end of the face plate, turn the plate upward and oil the wicks and bearings as shown in Fig. 3, then replace the face plate.

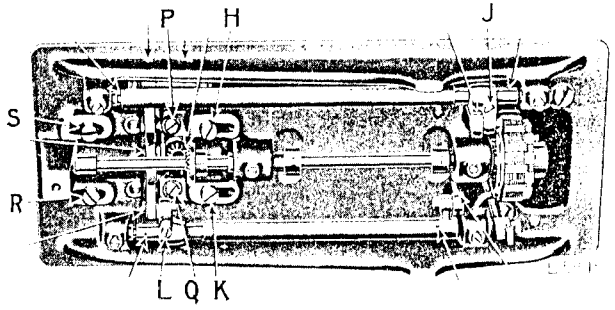


Fig. 4. Oiling Points in Base of Machine, also Adjustments on the Machine

Turn the machine back on its hinges and apply oil at the places shown in Fig. 4, then bring the machine forward into place.

The small felt pad on the side of the bobbin case should be kept wet with oil to lubricate the hook race.

Thread

Use left twist thread for the needle. Either left or right twist thread may be used for the bobbin.

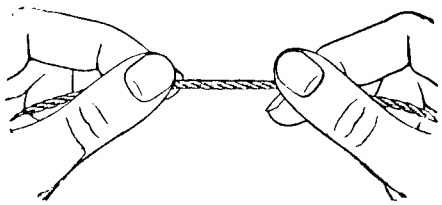


Fig. 5. How to Determine the Twist

Hold the thread as shown above. Then turn the thread over toward you between the thumb and forefinger of the right hand; if left twist, the strands will wind tighter; if right twist, the strands will unwind.

Relative Size of Needles and Thread

The following sizes of needles and thread are recommended:

Sizes of Needles	Cotton	Silk	Sizes of Needles	Cotton	Silk
9	150		16	40, 50	B, C
10	100 to 150	OOO, OO	18	30, 40	C
11	90, 100	OO	20	24, 30	D
12	80, 90	O	22	20, 24	E
13	70, 80	A	23	16, 20	EE
14	60, 70	A	24	8, 16	
15	50, 60	B			

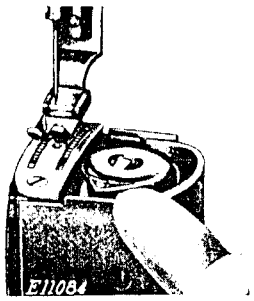


Fig. 6. Taking Out the Bobbin

To Remove the Bobbin

Draw out the slide plate on the top of the post. Turn the balance wheel over toward you until the needle bar moves up to its highest point. Place the thumb or finger under the projection on the side of the bobbin case cap, as shown in Fig. 6, then lift the cap and remove the bobbin.

To Wind the Bobbin

(See Fig. 7)

Fasten the bobbin winder to the table with its driving pulley in front of the machine belt, so that the pulley will drop away from the belt when sufficient thread has been wound upon the bobbin.

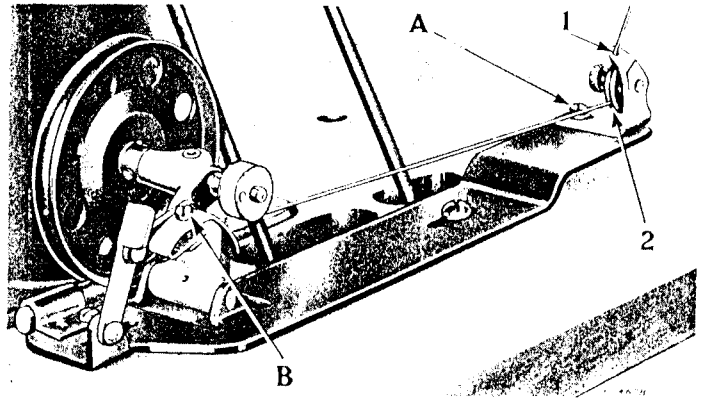


Fig. 7. Winding the Bobbin

Place the bobbin on the bobbin winder spindle and push it on as far as it will go.

Pass the thread down through the thread guide (1) in the tension bracket, around the back and between the tension discs (2). Then wind the end of the thread around the bobbin a few times, push the bobbin winder pulley over against the machine belt and start the machine.

When sufficient thread has been wound upon the bobbin, the bobbin winder will stop automatically.

If the thread does not wind evenly on the bobbin, loosen the screw (A) in the tension bracket and move the bracket to the right or left as may be required, then tighten the screw.

The amount of thread wound on the bobbin is regulated by the screw (B). To wind more thread on the bobbin, turn the screw (B) inwardly. To wind less thread on the bobbin, turn the screw outwardly.

Bobbins can be wound while the machine is stitching.

To Thread the Bobbin Case Cap

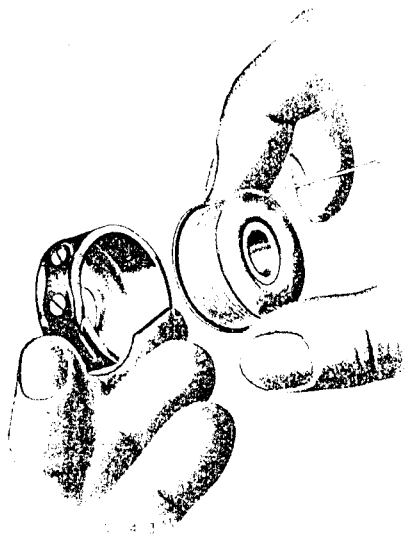


Fig. 8

Hold the bobbin between the thumb and forefinger of the right hand, the thread drawing on the top from left to right.

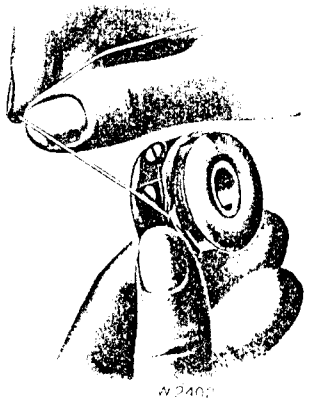


Fig. 9

With the left hand hold the bobbin case cap as illustrated (see Fig. 8), and place the bobbin into it.

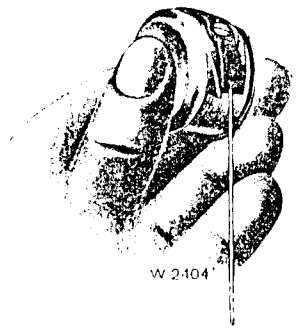


Fig. 10

Then pull the thread into the slot in the edge of the bobbin case cap (see Fig. 9), and under the tension spring as shown in Fig. 10.

To ensure the correct tension draw the thread under the tension spring once or twice; this will remove any lint which may become lodged under the spring.

To Replace the Bobbin Case Cap

After threading, take the bobbin case cap in the right hand, holding the bobbin in the cap with the forefinger, and place it

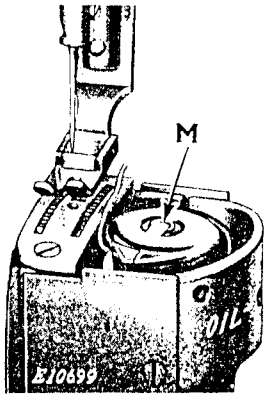


Fig. 11. Bobbin Case Cap Threaded and Replaced

on the centre stud of the bobbin case base, then push down the latch (M, Fig. 11) having the thread at the left of the projection as shown in Fig. 11, and replace the slide plate.

To Set the Needle

Turn the balance wheel over toward you until the needle bar moves up to its highest point; loosen the set screw in 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 the left and the eye of the needle directly in line with the arm of the machine, then tighten the set screw.

Upper Threading
(See Fig. 12)

Pass the thread from the spool from back to front through the lower hole (1) in the pin on top of the machine, then from

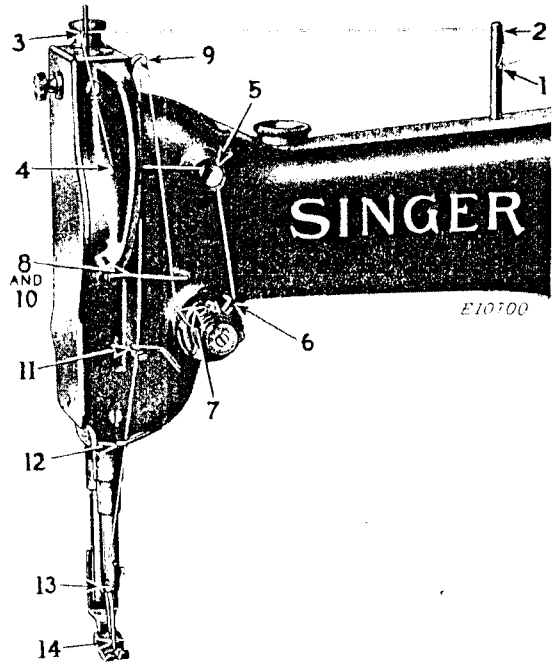


Fig. 12. Upper Threading

right to left through the hole (2) in the pin, through the thread guide (3), from left to right through the hole (4), over the top into the thread retainer (5), under from right to left between the tension discs (6), up into the fork (7) of the thread controller against the pressure of the thread controller spring, up through the wire guide (8), from right to left through the hole (9) in the end of the thread take-up lever, down through the wire guide (10) again, through the thread guides (11 and 12), through the hole (13) in the lower end of the needle bar and from left to right through the eye of the needle (14). Draw about two inches of thread through the eye of the needle with which to commence sewing.

To Prepare for Sewing

With the left hand hold the end of the needle thread, leaving it slack from the hand to the needle, turn the balance wheel over toward you until the needle moves down and up again to its highest point, thus catching the bobbin thread; draw up the needle thread and the bobbin thread will come up with it through the hole in the throat plate. Lay both threads back under the presser foot.

To Commence Sewing

Place the material beneath the presser foot, lower the presser foot and commence to sew, turning the balance wheel over toward you.

Tensions

The needle and bobbin threads should be locked in the centre of the thickness of the material, thus:

Fig. 13. Perfect Stitch

If the tension on the needle thread is too tight, or if that on the bobbin thread is too loose, the needle thread will lie straight along the upper surface of the material, thus:

Fig. 14. Tight Needle Thread Tension

If the tension on the bobbin thread is too tight, or if that on the needle thread is too loose, the bobbin thread will lie straight along the under side of the material, thus:

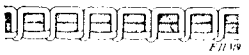


Fig. 15. Loose Needle Thread Tension

To Regulate the Tensions

The tension on the needle thread is regulated by the thumb nut (B, Fig. 2) at the front of the tension discs on the front of the arm of the machine. To increase the tension, turn this thumb nut over to the right. To decrease the tension, turn the thumb nut over to the left.

The tension on the bobbin thread is regulated by means of the screw nearest the centre of the tension spring on the outside of the bobbin case cap.

To Regulate the Pressure of the Presser Foot on the Material

The pressure of the presser foot on the material is regulated by the thumb screw (D, Fig. 3) at the top of the machine. To increase the pressure, loosen the lock screw (E, Fig. 3) and turn the thumb screw (D) over to the right or downwardly. To decrease the pressure, turn the thumb screw (D) over to the left or upwardly. When the desired pressure of the presser foot on the material is obtained, securely tighten the lock screw (E).

To Remove the Work

Stop the machine with the thread take-up lever at its highest point, raise the presser foot, draw the work back and cut the threads close to the goods.

To Regulate the Length of Stitch

The length of stitch is regulated by the thumb screw (A, Fig. 2) at the right of the balance wheel.

There is a notch in the hub of the balance wheel and the number appearing in the notch shows the number of stitches to the inch that the machine is ready to make.

To lengthen the stitch, turn the thumb screw (A) over toward you. To shorten the stitch, turn this thumb screw over from you.

INSTRUCTIONS

FOR

ADJUSTERS AND MACHINISTS

Thread Controller

The function of the thread controller spring is to hold back the slack of the needle thread until the eye of the needle reaches the goods in its descent, as without this controlling action of the spring, the slack thread or silk (more especially silk) will sometimes be penetrated by the point of the needle as the needle is descending.

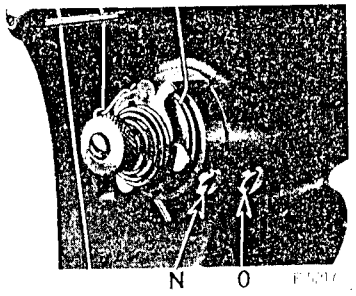


Fig. 16. Adjustments on Thread Controller

For more controller action on the thread, loosen the stop screw (N, Fig. 16) at the right of the tension and set the stop lower, and for less action set the stop higher, then tighten the stop screw (N).

To strengthen the action of the controller spring on the thread, loosen the tension stud screw (O, Fig. 16) at the right of the stop screw and turn the tension stud slightly to the left with a screwdriver, or to lighten its action turn to the right and tighten the tension stud screw (O).

To Raise or Lower the Feed Dog

Tip the machine back and turn the balance wheel toward you until the feed dog is at its highest position. Loosen the pinch screw (L, Fig. 4) in the feed bar slide block crank on the feed lifting rock shaft and move the crank up or down until the feed dog is at the desired height, then retighten the pinch screw (L).

If the feed dog strikes the end of the feed dog slot in the throat plate, loosen the pinch screw (J, Fig. 4) of the feed driving connection crank at the right hand end of the rock shaft, then set the feed dog so that it will not strike when the longest stitch is taken, and retighten the pinch screw (J).

To Set the Needle Bar

The needle bar which is in the machine, when shipped from the factory, has upon it (about two inches from the bottom) two lines $\frac{3}{32}$ inch apart. When the needle bar is at its lowest point, loosen the needle bar connecting stud pinch screw (F, Fig. 3) and set the needle bar so that its highest mark is even with the bottom of the needle bar bushing.

To Set a New Needle Bar Which Has no Mark. Set the needle bar so that when it rises $\frac{3}{32}$ inch from its lowest position, the point of the hook will be at the centre of the needle and about $\frac{1}{16}$ inch above the eye.

To change a machine fitted with the 128x to use a 126x needle it is necessary to set the needle bar $\frac{3}{16}$ inch higher, as the 126x is $\frac{3}{16}$ inch longer than the 128x needle.

Needle Guard

The function of the hook washer (which is attached to the bottom of the sewing hook) is to prevent the point of the hook from striking the needle, if, when passing through the material, the needle is deflected towards the hook.

The upright portion of the hook washer should be sprung with a screwdriver or other instrument until it prevents the hook point from striking the needle, it should not however be sprung outwardly enough to deflect the needle from its normal path.

To Time the Hook

To See if the Hook is in Correct Time. Remove the slide and throat plate and turn the balance wheel toward you until the needle bar has passed its lowest position and risen so that the lower mark on it is even with the underside of the arm head. If in correct time the point of the hook will be at the centre of the needle and about $\frac{1}{16}$ inch above the eye; if not, loosen the screws in the bevel gear on the shaft under the hook and turn the gear forward or backward slightly until the hook is in time as instructed above, then retighten the screws. On very heavy work it may be necessary to set the needle bar a little lower and the hook slightly slower than the above rule.

To Adjust the Sewing Hook

The sewing hook can be moved to or from the needle by loosening the screw (C, Fig. 2) at the front of hook post and the two screws (H and K, Fig. 4) underneath the bed of the machine and moving the hook post to the right or left as may be necessary to bring the hook into proper relation with the needle. When the sewing hook is correctly adjusted, firmly tighten the three screws (C, H and K).

To Remove the Hook from the Machine

Remove the hook gib screw at the heel of the hook and move the gib aside to allow the base of the bobbin case to be taken out, after which remove the screw, shown in Fig. 17, from the centre of the hook. Tapping the hook lightly on the bottom of its rim will force it from its socket. Do not try to pry it out, as prying may bend the shank of the hook. In replacing the hook, be sure that the pin on the underside properly enters the slot at the top of the socket, otherwise the hook will be out of time.

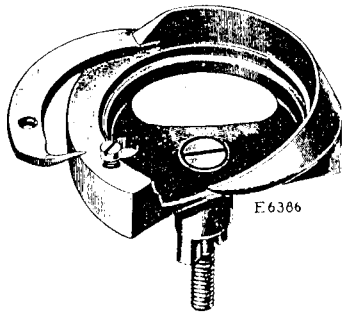


Fig. 17

To Remove the Belt from Within the Arm

Slide the arm shaft connection belt off the lower pulley, remove the feed regulating spindle and balance wheel from the end of the arm shaft, loosen the arm shaft bushing (back) screw at the back of the arm and remove the bushing, lift the belt up through the arm cap hole as far as possible and draw it out through the space normally occupied by the bushing.

In replacing the belt see that the hook (sewing) and needle are in correct time before running the belt on the lower pulley, and verify the correctness of the timing before commencing to sew.

To facilitate the replacing of the belt on the lower pulley, use belt replacer 241538 (A, Fig. 18). Rest the replacer in the loop of the belt as shown in Fig. 18, having the notches in the replacer engage the two set screws in the hub of the pulley. Turn the balance wheel toward you until the belt is fully over the pulley, then remove the replacer.

Note: As belt replacer 241538 will serve for several machines, it is not regularly furnished with the machine, and must be ordered separately.

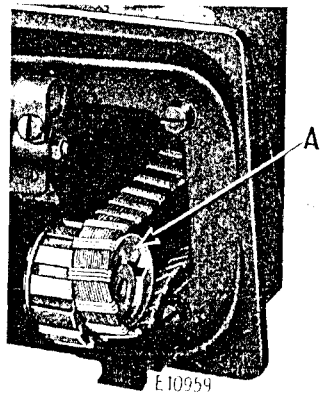


Fig. 18. Putting Belt on Lower Pulley with Belt Replacer 241538

To Adjust the Mechanical Opener

The bobbin case lever (A, Fig. 19) at the left of the hook, actuated by the eccentric on the hook shaft, strikes the pro-

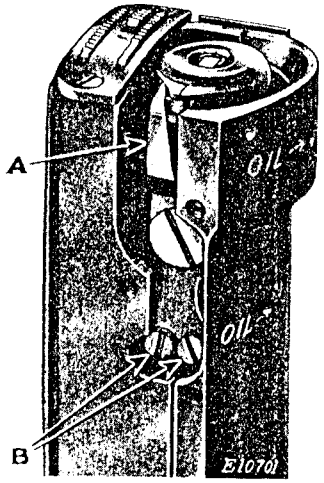


Fig. 19. Adjustment of Mechanical Opener

jection on the bobbin case stop and turns the bobbin case slightly, making an opening between the bobbin case stop and the stop on the throat plate when the thread is across the bobbin case and passing between the stops.

The bobbin case lever (A) may be adjusted by loosening the bobbin case lever screws (B, Fig. 19) and moving the bobbin case lever forward or backward.

This adjustment should be made so that the opening between the lever and the edge of the bobbin case is just perceptible when the bobbin case lever has opened the bobbin case all the way.

If the bobbin case lever is set to open the bobbin case too far, it will cause a bind between the bobbin case bearing and the hook bearing, and care must be exercised to see that this condition does not prevail. After the correct adjustment is made, firmly tighten the two screws (B, Fig. 19).