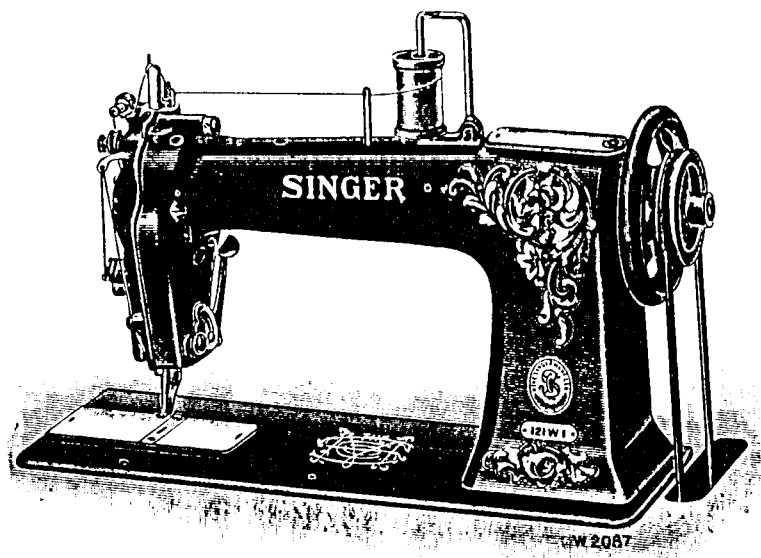


SINGER
121W & 122W

INSTRUCTIONS

FOR USING

Singer Sewing Machines



Machine No. 121 w 1

OF

CLASSES 121w and 122 w

The Singer Manufacturing Company

MACHINES OF CLASSES

121w and 122w

DESCRIPTION

Classes 121w and 122w are known as "Needle Feed Machines." The needle is assisted by a vibrating presser, actuated by a positive motion, alternating presser mechanism of great strength and rigidity, operating as follows: the vibrating presser moves forward, descends and clamps the work while the needle passes down through the presser and the work and the lifting presser rises, then the needle, vibrating presser and work move as one compact body, completing a stitch of the length measured by the position of the feed regulator attached to the inside of the arm head, thus producing work having the upper and lower pieces of the material even at the end of a seam.

This effectually prevents any dragging, slipping or uneven feeding and dispenses with hand basting.

The feeding direction of the material can be reversed so as to make fastening off stitches $\frac{1}{16}$ inch long at the end of a seam. Some of these machines are so constructed that the forward and reverse stitches may each be $\frac{1}{2}$ inch long, or shorter.

These machines are provided with a device for drawing the necessary length of under thread from the bobbin to set each stitch properly. This device is set correctly at the factory for all ordinary thicknesses of material, and should not be changed except for some unusually thin work, or if an accident should make an adjustment imperative.

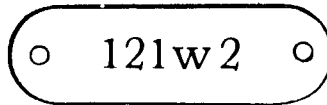
For sewing ordinary and medium grades of cloth and leather goods that will compress under the presser foot to a thickness of $\frac{3}{16}$ inch or less, and especially desirable for sewing seams when two glossy or plush surfaces are being stitched together, and when one piece of the cloth is bias and the other straight, as in pants and curved seams in coats, cloaks, mantels, binding awnings, horse clothing, mattresses, rugs, carpet covers, carpets,

PURCHASING OF PARTS AND NEEDLES

Supplies of parts and needles for Singer machines can be purchased at any Singer shop 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.

leather reins or lines, thick gloves, mackintoshes, carriage aprons, cording carriage cushions, and for piping the seams of military trousers, etc.

Machines of Class 122 w have two needles, otherwise have the same general construction as Machines of Class 121 w. They are especially desirable for felling curved seams in all kinds of goods, of ordinary and medium weight.



The specific designation of each Singer Sewing Machine consists of two numbers, separated by a hyphen or letter and stamped upon a number plate, which is attached to the machine, usually upon the arm.

The number before the hyphen or letter designates the **Class** to which the machine belongs, and the number after, the **Variety** of the machine in its Class.

When supplies for a machine are to be ordered and there is any uncertainty as to the correct numbers of needles or parts, the Class and Variety numbers of the machine, as shown on the number plate, should be given to ensure a correct understanding of the order.

Speed

The maximum speed recommended for these machines is 1700 stitches per minute.

Run the machine somewhat slower than this at first, and after the moving parts have become thoroughly glazed by their action together, increase the speed to the maximum stated.

Needles

Needles for Machines of Classes 121 w and 122 w are of Class and Variety 134 x 1 and are made in sizes Nos. 10, 12, 14, 16, 18, 20, 22, 23, 24, 25 and 26.

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 the letter x.

The following is an example of an intelligible order:

"100 No. 14, 134 x 1 Needles."

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

Thread

Left twist thread should be used in the needles. Either right or left twist thread can be used in the bobbin.

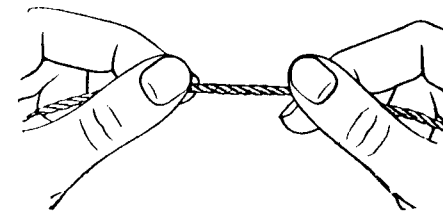


Fig. 2. How to Determine the Twist

Hold the thread as shown above. 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.

For ordinary stitching use thread of the same size for the needle and the bobbin.

RELATIVE SIZES OF NEEDLES AND THREAD

FOR LEATHER			FOR CLOTH	
SIZE NOS. OF NEEDLES	COTTON	SILK	COTTON	SILK
10	70	O	100-150	000-00
11	60	A	90-100	00
12	50	B	80-90	O
13	40	C	70-80	A
14	36	D	60-70	A
15	30	D	50-60	B
16	30	E	40-50	C
18	24	EE	30-40	C
20	20		24-30	D
22	16		20-24	E
23	12		16-20	EE
24	8		8-16	

To Oil the Machine

Good oil is the life of a machine and should be regularly used on any surface of metal which comes in movable contact with another surface.

The bobbin winder spindle should be oiled.

Oil the take-up lever bearing through the hole in the front of the arm head above the large screw, and oil the needle and presser bars.

On top of the arm head there are four oil holes. At the right of the needle bar, oil the feed and needle carrying frame hinge stud through the two oil holes over the stud, oil the arm shaft bushing (front) through the hole at the right of the collar, and when the needle bar is at its lowest position oil the groove in the take-up cam through the large hole near the front, above the cam. Oil the arm shaft bushing (back) through the hole near the balance wheel.

Oil the hook driving shaft bearing (back) through the oil hole near the base of the arm fronting toward the needle, remove the bed slide and uncover the hook (sewing), then oil the hook driving shaft bearing (front) through the oil hole in the saddle and oil the upper bearing of the vertical hook through the groove leading under the hook, and place a drop of oil on the hobbin case base flange.

Remove the screw in the face plate above the take-up lever and the screw at the lower side (back), thus removing the face plate, and oil all movable parts wherever there is friction.

Tip the machine back and oil the lower bearing of the vertical hook; the thread draw eccentric in the fork, and the small thread draw shaft at the back of the saddle.

When a machine has been neglected or becomes gummed, it should be soaked well with benzine and run for a short time, keeping all parts flooded with oil, until it runs freely, wipe thoroughly to remove all old oil and dirt, and oil as before directed.

To Set a Needle

See Fig. 4

In a two needle machine, turn the balance wheel until the needle bar is at its highest point, insert the inside needle in the needle clamp with the short groove (scarf) toward the inside hook, and insert the outside needle in the needle clamp with the short groove (scarf) toward the outside hook.

In a single needle machine, insert the needle in the needle bar with the short groove (scarf) toward the hook.

Be sure to push the needle as far up as it should go, then tighten the set screw firmly.

It may be necessary to turn the needle slightly to the right or left for some threads.

Operators are liable to use needles which are too fine. Better results usually follow the use of a larger size.

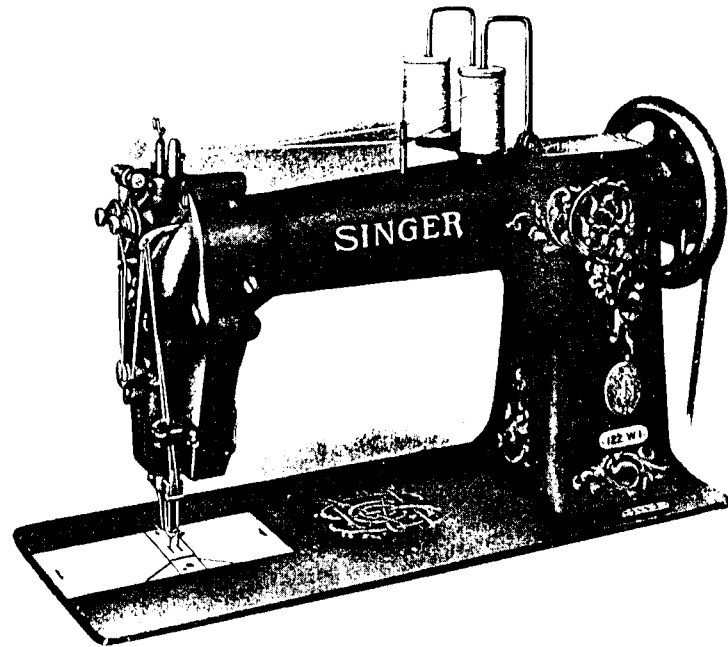


Fig. 3. Machine No. 122 w 1

To Thread the Needles

Lead the thread from the back spool through the lower thread eye in the post, through the back thread eyes on the arm head and presser bar, down under the wire and between the thread retainer and tension discs, in front of the thread pin on the face plate, down under the thread controller, up through the upper hole in the take-up lever and down through the inside guides, and thread the inside needle toward the inside hook.

Lead the thread from the front spool through the remaining guides and back of the thread pin on the face plate, and thread the outside needle toward the outside hook.

On a single needle machine the thread should lead from the spool down through the needle toward the hook, the same as the thread from the front spool above mentioned.

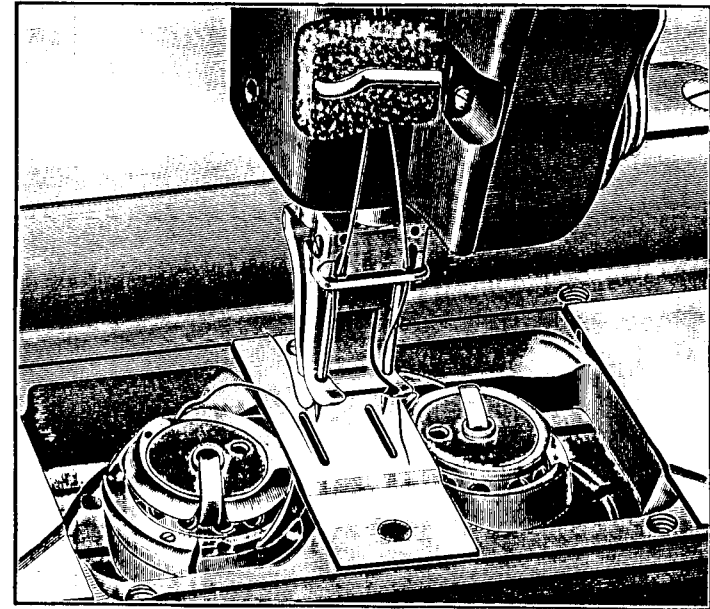


Fig. 4

To Remove the Bobbin

Push the bed slides off to uncover the hooks, raise the latch on the bobbin case and remove the bobbin.

To Thread the Inside Bobbin Case

Place the bobbin in the inside bobbin case so that as the thread is drawn off it will turn the bobbin in the direction that the hook runs, then guide the thread down into the notch at the back of the bobbin case, close the latch and draw the thread around toward the needle (see Fig. 4) until under the bobbin case tension spring.

To Thread the Outside Bobbin Case or a Single Needle Machine Bobbin Case

Place the bobbin in the outside bobbin case so that as the thread is drawn off it will turn the bobbin in the direction opposite to that in which the hook runs, then guide the thread down into the notch at the back of the bobbin case, close the latch and draw the thread around toward the needle (see Fig. 4) until under the bobbin case tension spring.

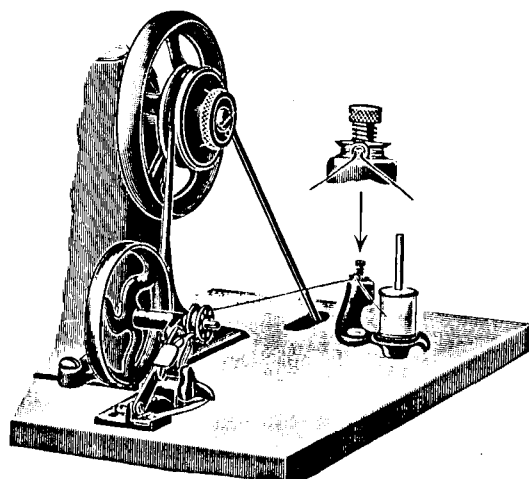


Fig. 5

To Wind the Bobbin Automatically while Sewing

Lead the thread from the spool under the guide wire, between the tension discs and again under the guide wire as shown in Fig. 5; connect the thread with the bobbin on the bobbin winder, push the bobbin winder up against the belt and as the machine sews the bobbin will be filled and thrown out of action automatically.

The bobbin winder should be placed so that the pulley will drop away from the belt when the bobbin is sufficiently filled.

The tension stud should be set at least nine inches on a direct line from the bobbin so that the thread will traverse evenly across the bobbin. If it does not, swing the spool holder to the right or left until the bobbin fills evenly.

See that the stop latch is set so that the bobbin will not fill more than three layers from its top edge before throwing the bobbin winder out of action.

Knee Lifter

The knee lifter is used for raising the presser foot by knee pressure against the knee plate, leaving both hands free to manipulate the work. If the knee lifter does not raise the presser foot satisfactorily, adjust the rod in the rock lever which connects with the rod in the arm of the machine to lift the presser foot.

To Commence Sewing

With the left hand take hold of the needle thread (leaving it slack between the hand and the needle), turn the balance wheel toward you until the needle moves down and the take-up lever rises to its highest point, thus catching the bobbin thread; draw up the needle thread and the bobbin thread with it through the needle hole in the throat plate and lay both threads back across the feed dog; then place the material beneath the needle and lower the presser foot upon it, turn the balance wheel toward you and commence to sew.

The Tension

To regulate the tension, please observe the following:

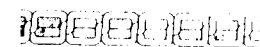


Fig. 6

The upper and under threads should lock in the center of the material as shown in Fig. 6.



Fig. 7

If the upper thread is held too tightly by its tension, or if the under thread is too loose, the thread will be straight along the upper surface of the material, as shown in Fig. 7.



Fig. 8

If the under tension is too tight or the upper too loose, the thread will be straight along the under side of the material, as shown in Fig. 8.

Upper Tension

Correctly made stitches, as shown in Fig. 6, can usually be obtained by regulating the upper tension only. Turn the tension thumb nut in front of the face plate toward you to tighten and from you to loosen the tension (see Fig. 3).

Caution. Do not try to adjust the upper tension when the presser feet are up, as the tension is then loose.

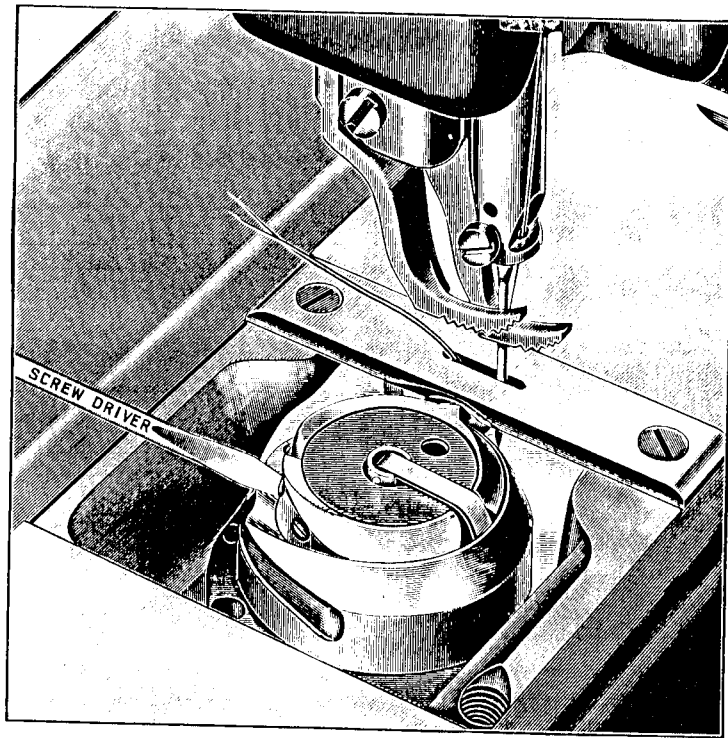


Fig. 9

To Change the Under Tension

Turn the balance wheel until the small screw driver can be placed in the slot of the bobbin case tension regulating screw through the middle of the bobbin case tension spring (see Fig. 9) on the bobbin case, and turn the screw slightly to the right to tighten or to the left to loosen the under tension.

See that there is no lint or dirt under the tension spring.

To Regulate the Length of Stitch

To lengthen the stitch, push the feed regulating lever attached to the right side of the arm head from you, and to shorten the stitch draw the lever toward you. The lever can be drawn sufficiently toward you to cause the feeding direction of the material to be reversed so as to make fastening off stitches $\frac{1}{16}$ inch long at the end of a seam. Some of these machines are so constructed that the forward and reverse stitches may each be $\frac{1}{2}$ inch long or shorter.

The Pressure on the Material

The pressure of the presser feet should be only heavy enough to prevent the work from rising with the needle; if too heavy it will make the machine run harder and be of no benefit.

To Regulate the Pressure of the Presser Feet on the Material

Remove the position screw from the lifting presser bar sleeve screw nut on top of the back part of the arm head, then turn the lifting presser bar spring follower screw inwardly to increase or outwardly to decrease the pressure of the presser feet on the material. Locate the slot of the follower screw opposite the hole for the position screw in the nut and replace the small position screw.

To Remove the Work

Have the take-up lever at its highest point; raise the presser feet, draw the work back and to the left about three inches, then cut the threads near the work.

For convenience in taking out the work, the tension of the upper thread is released by raising the presser feet with the lifter, but is not released by thick goods or seams passing under the presser feet.

Causes of the machine not working properly will usually be found in the tension not being correctly adjusted, or its discs may be clogged with lint or knots of thread, or the thread may be too

coarse or too fine for the throat plate or the needle bent or blunt. See that a straight needle is pushed up in the needle bar as far as it should go; any particle of lint or dirt which prevents it from going up can be removed through the cross hole in the needle bar.

INSTRUCTIONS FOR ADJUSTERS AND MACHINISTS

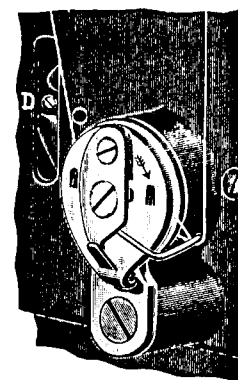


Fig. 10

Thread Controller

The function of the thread controller spring is to hold back the slack of the upper thread until the eye of the needle reaches the goods in its descent.

The thread controller stop is in the form of a crescent; push on the upper end of the stop for less controller action and on the lower end for more controller action on the thread.

It may be found advisable to increase the tension of the spring for coarse thread, or to lessen it for fine thread.

To vary the tension of the thread controller spring, remove the face plate and loosen the small set screw (see Fig. 10) at the right of the controller, which sets the thread controller stud, then from the inside turn the stud forward or backward as required, and retighten the set screw. In any case when an unusually light tension is used, the tension on the spring should be correspondingly light. The coils of the spring should be oiled occasionally.

To Place a New Thread Controller in Position. Remove the entire thread controller by taking out the largest screw (see Fig. 10) and release the spring by removing the middle screw. (Be careful not to lose the small roller.) Place the new spring, roller and screw in their positions. Next put the entire thread controller on the face plate, taking care to slide the little tail, on the coil of the spring, into the notch in the stud over which the coil slides.

Oil the small roller occasionally.

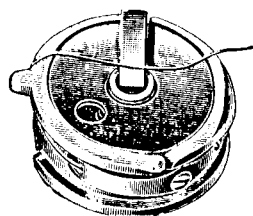


Fig. 11. Bobbin Case
for 121w and Outside
Hook of 122w
No. 213689

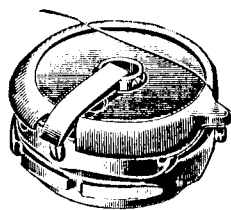


Fig. 12. Bobbin Case
for 122w Inside Hook
No. 213703

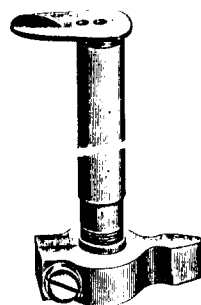


Fig. 13. Bobbin Case
(opening) Lever and Arm

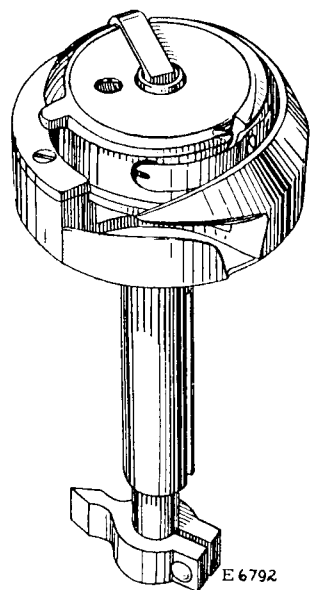


Fig. 14. Hook, Bobbin Case,
Bobbin Case (opening) Lever and Arm

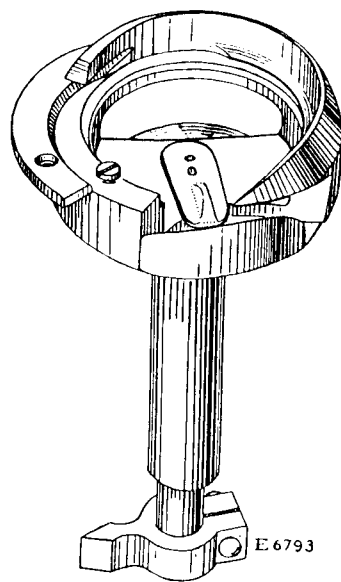


Fig. 15. Hook, Bobbin Case (opening)
Lever and Arm

Bobbin Case (Opening) Lever Device

There is a bobbin case (opening) lever under the bobbin case, projecting into a slot in the bobbin case and having a stem hole in the hook (see Fig. 13) extending down through an eccentrically located hole in the hook (see Fig. 15). The stem is clamped by a bobbin case lever arm (see Fig. 14) extending to a bobbin case lever (stop) bracket, which prevents the stem from rotating. The rotation of the hook gives this eccentrically held (opening) lever (see Fig. 15) a vibratory motion which moves the bobbin case slightly, causing an opening between the stops on the bobbin case and throat plate, when the upper thread loop is across the bobbin case and passing outwardly between the stops.

If the upper thread should break frequently, remove the bobbin and see if the upper thread passes freely between the (opening) lever projection and the bobbin case. If it does not, loosen the pinch screw at the base of the hook (see Fig. 14), and for the hook of Machines of Class 121 w, and the outside hook of Machines of Class 122 w, turn the balance wheel until the point of the hook is half way around from the needle toward the end of the machine, then with a small screw driver push the projection of the lever from you against the bobbin case and retighten the pinch screw. For the inside hook of Machines of Class 122 w, turn the balance wheel until the point of the hook is half way around from the needle toward the upright part of the arm, then with a small screw driver push the projection of the lever toward you against the bobbin case and retighten the pinch screw.

Thread Draw Device

The thread draw consists of a vibrating steel finger which extends up past the hook, nearly to the throat plate, and strikes the under thread on its way to the throat hole and material, drawing enough thread from the bobbin into the seam to set well formed stitches in thick material.

The thread draw (finger) is held in a Y-shaped thread draw lever which has an adjusting screw in each branch of the Y, and is attached to a small thread draw driving shaft through the end of the stem. The small shaft receives its vibratory motion from a thread draw driving fork-lever having a carrier bar, extending between the branches of the Y, and is driven

by a thread draw driving fork-lever eccentric on the hook driving shaft. The fork-lever carrier bar, in connection with the adjusting screws in the branches of the Y, controls the length of thread that the thread draw (finger) can draw from the bobbin.

To See if the Thread Draw is Properly Set. The thread draw (finger) if in correct time, will finish its movement toward the front when the take-up lever has moved down $\frac{1}{4}$ inch from its highest position.

For Machines of Class 121 w and the outside hook in Machines of Class 122 w, the extreme forward position that the thread draw (finger) should reach, is the center of the slot between the bobbin case stops on the throat plate.

For the inside hook in Machines of Class 122 w, the extreme forward position that the thread draw (finger) should reach, is in line with the bobbin case stop (front), the finger obscuring the stop slot from view.

To Draw More Thread. Turn the thread draw fork-lever adjusting screw in the back branch of the Y outwardly and turn the one in the front branch of the Y inwardly until the finger draws the necessary length of thread, then tighten the screw in the back branch firmly against the carrier bar as there must be no lost motion between the screws and bar.

To Draw Less Thread. Turn the adjusting screws in the reverse direction from the above.

To Time the Hook

To See if the Hook is Correctly Timed. Remove the bed slides and throat plate; turn the balance wheel toward you until the lower mark across the needle bar, as it is going up, is just visible at the end of the needle bar frame, if the needle bar and hook are in correct time, the point of the hook will be at the center of the needle and about $\frac{1}{4}$ inch above the eye.

Caution. One part of the shank of the hook is quite thin so that one of the screws in the hook gear if set firmly may cause an indentation and bind the stem of the bobbin case (opening) lever within the eccentrically located hole through the hook; therefore tighten the hook gear set screw moderately against the

thin part of the hook and tighten the other screw firmly against the thick part of the hook.

Note. See that the thread draw is in correct time before attempting to time the hook.

To Time the Hook. Loosen the screws in the hook gear under the hook and turn the balance wheel toward you until the needle bar goes to its lowest position and upward until the lower mark across the needle bar is just visible at the end of the needle bar frame, hold the balance wheel firmly while you turn the hook until its point is at the center of the needle and $\frac{1}{4}$ inch above the eye and retighten the screws in the gear.

To Set the Needle Bar

The needle bar which is in the machine when shipped from the factory has upon it (about $1\frac{3}{4}$ inches from the bottom) two lines $\frac{3}{16}$ inch apart. When the needle bar is at its lowest position, set it so that its highest mark is even with the lower end of the needle bar frame.

To Set a New Needle Bar

To set a needle bar which has no mark, set the needle bar so that when it rises $\frac{3}{16}$ inch from its lowest position the point of the hook will be at the center of the needle and $\frac{1}{4}$ inch above the eye.

To Change from a Wide to a Narrower Gauge

Change the needle clamp, lifting and vibrating presser feet and throat plate to the gauge desired, leaving the throat plate loose. Tip the machine back and loosen the two front screws in each of the thread draw levers and move them toward each other, until in line with the grooves in the throat plate prepared for the thread draws (fingers), then retighten the thread draw lever screws and move the thread draw shaft collars against the bearings to prevent end play. Loosen the hook saddle screws and the set screws in the hook driving gears on the hook driving shaft and carefully drive each saddle until the point of the hook

runs as close to the needle as desired, and retighten the saddle screws. After setting the hook driving gears in proper mesh with the hook gears, retighten the gear set screws.

To Change from a Narrow to a Wider Gauge. Loosen the set screws in the thread draw driving shaft collars and set the thread draws (fingers) and the hook saddles farther apart; otherwise follow the above directions.

To Eliminate End Play of the Hook Driving Shaft

Set the hook driving shaft collar against the hook driving shaft bearing (back), as there should be no lost motion between the collar and the hook driving shaft connection belt pulley.

To Remove the Arm Shaft Connection Belt from Within the Arm

Slide the belt off the lower pulley, remove the balance wheel, loosen the arm shaft bushing (back) position 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 where the bushing was.

In replacing the belt, see that the hook 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 Remove the Arm Shaft

Remove the arm shaft connection belt from the pulley in the arm, loosen the position screw and the set screw of the pulley, loosen the set screw of the arm shaft counterbalance on the arm shaft near the center, remove the position screw and loosen the set screw of the take-up cam and draw the shaft out by the balance wheel.

To Remove the Arm Shaft Bushing (Front)

After the take-up cam has been removed, loosen the bushing position screw at the back of the arm, move the arm cap aside and drive the bushing out.

To Remove the Arm Shaft Bushing (Back)

Loosen the bushing position screw at the back of the arm, remove the balance wheel, move the arm cap aside and drive the bushing out.

To Set the Arm Shaft Counterbalance

Remove the face plate and observe the feed eccentric on the face of the take-up cam. Insert a screw driver in the hole through and near the center of the arm and loosen the counterbalance screw, retain the screw driver in the slot of the screw and turn the balance wheel towards you until the bulge of the eccentric is at its lowest position, then tighten the counterbalance screw and replace the face plate.

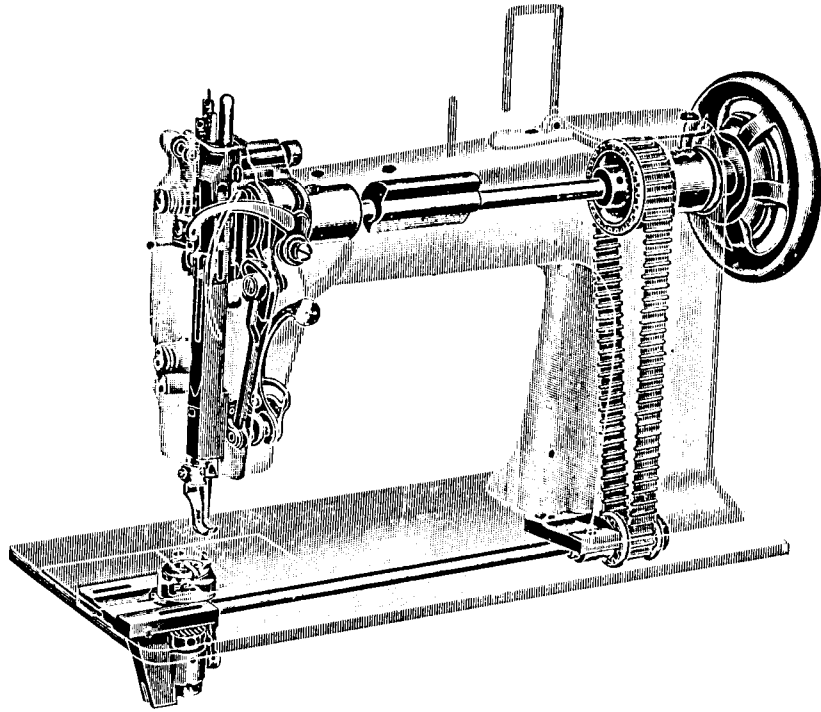


Fig. 16. Machine No. 121 w 1. Phantom view showing interior placement of the working parts in a finished machine

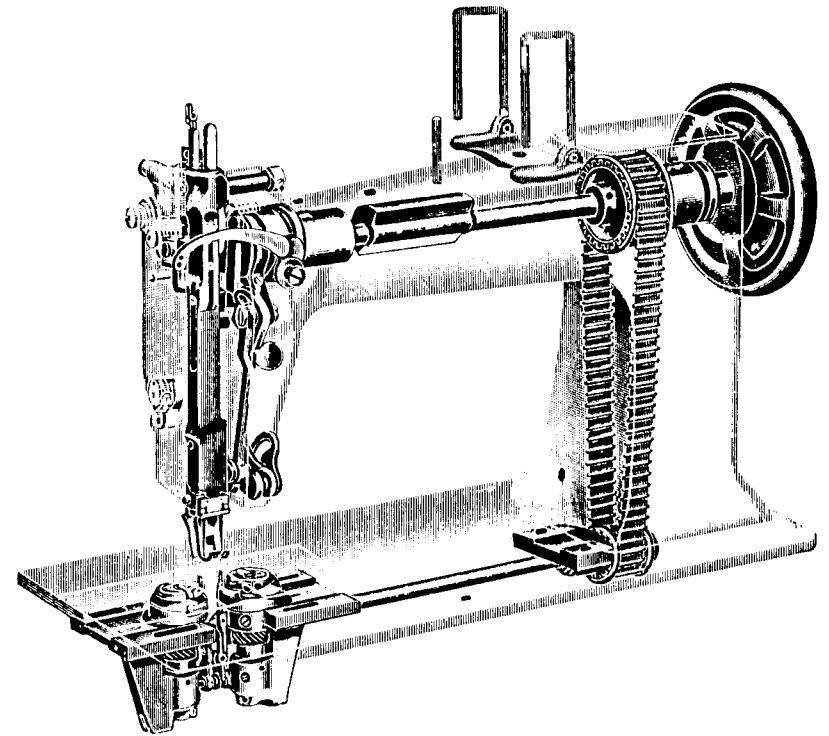


Fig. 17. Machine No. 122 w 1. Phantom view showing the interior placement of the working parts in a finished machine