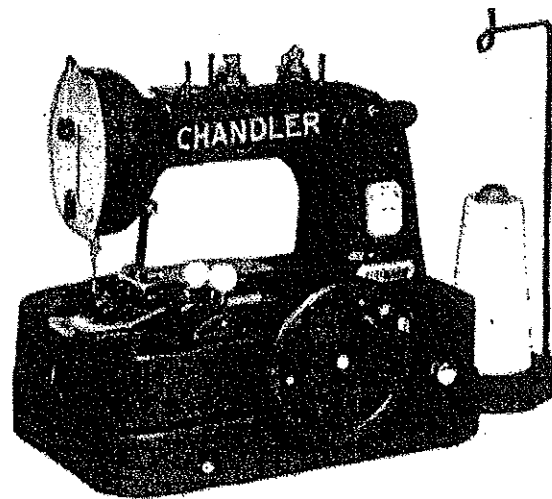


chandler  **WORLD FAMOUS**

MODEL

CM491

**BUTTON
SEWER**



INSTRUCTION MANUAL

KNOW YOUR MACHINE

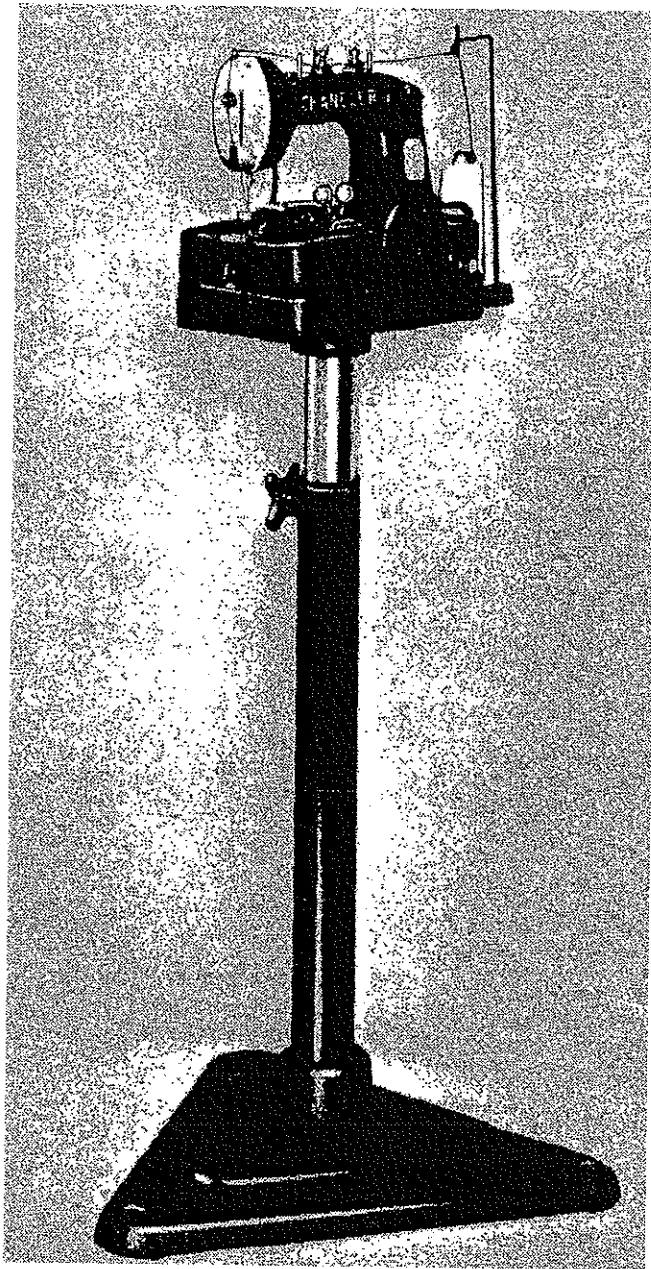
Read these instructions carefully and thoroughly so you fully understand your machine.



Fig. 1

- A - Front Thread Tension
- B - Rear Intermittent Tension
- C - Thread Slack Lever
- D - Thread Lock
- E - Needle Bar Thread Take-Up
- F - Face Plate Thread Guide
- G - Button Clamp Jaws

- H - Needle hole Plate
- I - Button Clamp Top Plate
- J - Hand Wheel Release Knob
- K - Clamp Lifter Knob
- L - Hand wheel Stop Pin
- M - Hand wheel
- N - Base Thumb Screw



Chandler CM 491 BUTTON SEWER with cast iron stand.

**This manual also applies to Models 401, 461, 471, 481,
as well as motorized Models 472, 475P, 485P.**

The Chandler Button Sewer is a single thread, hand operated machine. It is designed for use in such industries as laundries, coat and apron supplies, institutions, hospitals, hotels, dry cleaners, etc. It will handle either 2 hole or 4 hole buttons in any size from the smallest shirt button to those that are used on underwear, pajamas, coats, aprons, etc.

The Sewing cycle is fully automatic, the flywheel being blocked at the completion of the sewing cycle. Raising the button clamp to release the material automatically breaks the thread on the underside of the button.

The sewing cycle consists of 12 stitches, which includes the cross over (on a 4 hole button) and the tying, or locking stitch, at the very end of the cycle.

Double release controls are located to the right of the button clamp. The right hand button controls the lifting and lowering of the button clamp while the left hand button releases the hand wheel for the continuation to the next sewing cycle.

The thread stand at the rear of machine head provides for cones of thread up to the 12,000 yard size.

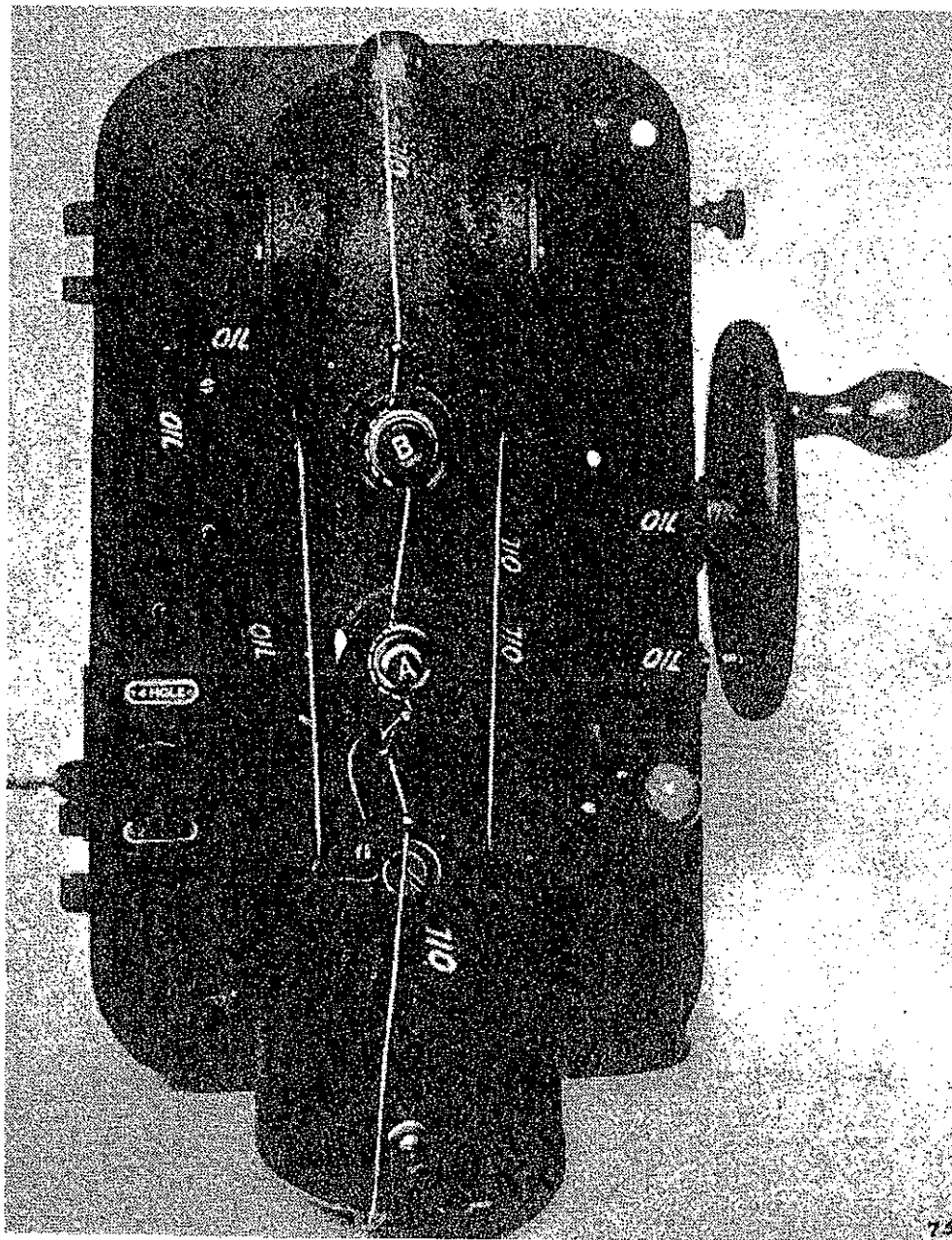


Fig. 2

THREADING

Threading is the first phase in the successful operation the Chandler Button Sewer, and usually the first step to consider after carefully unpacking the machine and setting it up for use.

Careful attention to the proper threading procedure is most important in order to be assured of perfect performance by the machine. Two views are shown outlining the proper threading procedure and to help make it clear, we outline the following steps:

1. From the spool pin pass the thread through the first guide pin which is located on the very rear of the top arm.
2. Pass it between the rear tension discs to the LEFT of the tension post and then to the RIGHT of the small pin located in the slot of the discs.

3. Carry the thread along to the front disc keeping it to the **LEFT** of the tension post and then to the **RIGHT** of the little pin in the slot of the discs (same as 2).
4. Pass thread through the hole of the thread slack pull off lever.
5. Then through front guide pin and
6. over to the hole in the top of the face plate.

For steps 1 - 6 refer to fig. 2

7. Then push the thread through the center of the thread lock which is located on the left center of the face plate (making sure the clamp that holds the button is down as otherwise the thread lock is closed).
8. From the thread lock catch the thread in the lower guide plate by merely pulling the thread up from underneath.
9. Insert the thread through the thread take-up on the needle bar passing it through from left to right.
10. Then guide the thread through the hole in the lower end of the face plate and pass the thread through the eye of the needle from **FRONT** to **BACK**.

For steps 6-10 refer to fig. 3

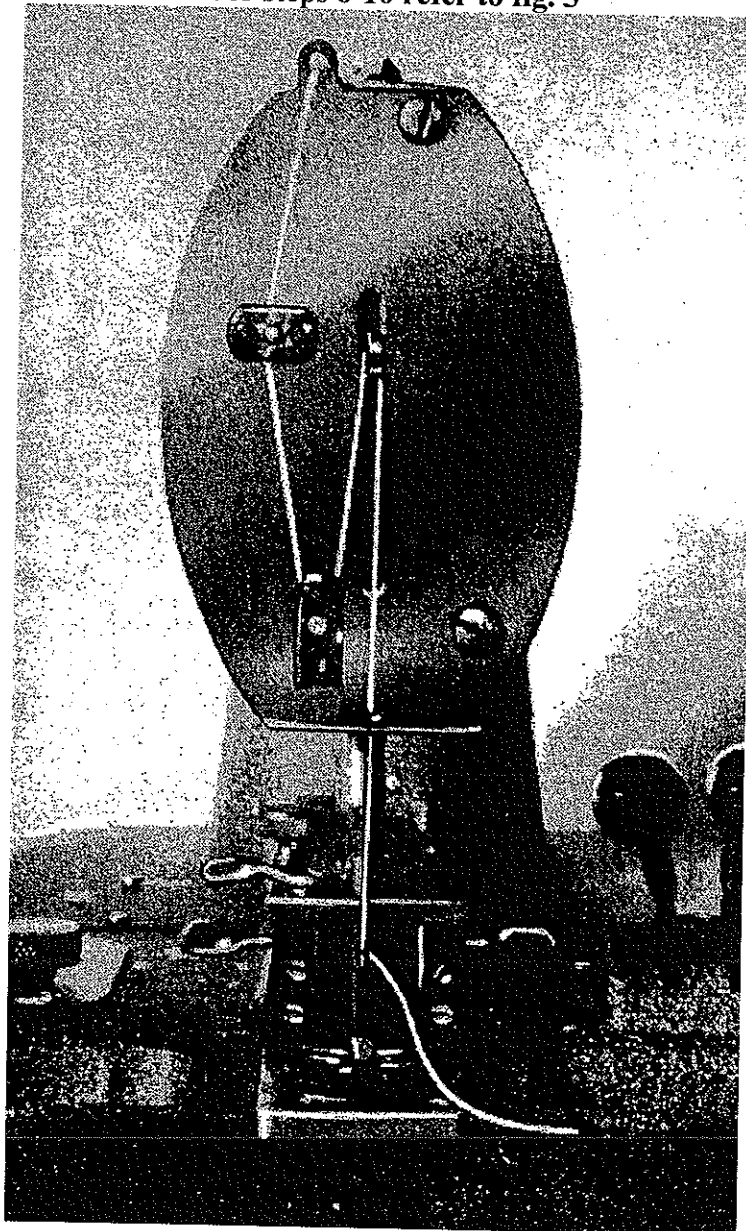


Fig. 3

TENSIONS

There are only two thread tension adjustments, both are at the top of the machine. The rear thread tension (see Fig. 1), is an intermittent tension and must be kept very tight, (This rear tension is locked in position by means of a set screw on the side of the thumb nut. It is "factory set" so do not change it for adjusting tension on the thread. This rear adjustment merely holds the thread before the end of a stitch to keep the looper from stealing more thread from the cone instead of pulling up the loop under the button).

The front tension "A" (Fig. 1) regulates the tightness of the stitch and is the most important. This tension should be light and can be determined by turning the machine until it stops (hand wheel is up against stop pin). In this position you will note that the rear tension is raised and thus released. At the same time lower the button clamp so the thread lock on the face plate is open (center plunger is loose). Then pull the thread at the needle to be sure it pulls free with only a slight tension. If the tension is too tight, loosen the FIRST tension "A", a half turn at a time until thread pulls freely through the needle. If too loose tighten it slowly.

If first tension "A" is too tight the looper will snap the thread. If too loose, the knots on the underside of the button will be loose, resulting in a loosely sewn button.

BE SURE YOU MAKE THESE THREAD TENSION ADJUSTMENTS ONLY WHEN THE HAND WHEEL IS BLOCKED BY THE PIN AND THE BUTTON CLAMP IS LOWERED.

SEWING PROCEDURE

Before the operator can sew on a button, the right hand control button (red, see Fig. 1) should be pulled forward as far as possible so that the thread slack pull off (see Fig. 1) lever on top of the machine is kicked over to the left. Then when the clamp is lowered, the proper slack in the thread is provided.

At the same time, the operator must see that there is at least 2 1/2" of thread projecting from the eye of the needle. **IF THERE IS NO SLACK IN THE THREAD AT THE TOP OF THE MACHINE AND NO EXTRA THREAD FROM THE EYE OF THE NEEDLE, THE LOOPER WILL NOT CATCH THE THREAD** and the machine will go through the full cycle of sewing without even making a stitch. (See Fig. 3, Page 6).

BUTTON CLAMP ADJUSTMENT

The button clamp can be opened to accommodate any size button. The small lever E, (Fig. 10, Page 23), on the top of the button clamp plate is to set the opening of the jaws to the smallest button you may use. The jaws should be adjusted so that they close a trifle smaller than the size of the button so when the button is inserted, the jaws will clamp the button with a little tension and hold it securely in place.

2 HOLE AND 4 HOLE BUTTONS

On the left side of the machine is a lever A, (Fig. 10, Page 23), and its locking thumb screw. Moving this adjustment clear forward towards the operator sets the machine for a two hole button. Moving it clear to the back sets it for a four hole button. After moving this adjustment be sure to tighten the thumb screw so the setting will not move while sewing.

NEEDLES

Needles must be inserted with the groove of the needle **FACING FRONT**. Be sure to insert the needle all the way up into the needle bar. Make sure no broken part of the old needle remains when inserting a new one. If the needle should become bent, replace it with a new one.



“A” needles are used for all Chandler Hand Button Sewers.

“B” needles are for 472P and 475P Machines.

“B” needles have a spear point, are one size heavier and are recommended for cuff tacking and sewing suit buttons.

“B” needles can be used on the hand machines for sewing buttons on heavy or highly starched material such as line supply or overall work. The needles illustrated are the exact length. Check your needle against the illustration if in doubt.

THREAD

A cone of the proper thread is sent with the machine. We suggest using a strong glazed, hard finished thread. If you use a soft thread you will get poor results and experience thread slippage and missed stitches. Best results can be obtained with Chandler Button-Sewing Thread.

BUTTONS

We suggest using 4-hole buttons. They spread the stitches over a wider area on the material and give the machine a much better chance to work as you are not trying to crowd all the stitches between two holes. A four hole button is a good selling point, it duplicates the original button on the shirt and helps eliminate the danger of the button pulling off, as the button is held on over a wider area of the material.

Use buttons where the spacing of the holes is the same for all sizes. Be careful with very large or very small buttons where the spacing is greater and may cause the needle to bend or break.

STARTING THE MACHINE

The left hand control button (blue, J Fig. 1) releases the machine for the next sewing cycle. To release the machine, pull this button forward. In the event that you wish to sew over a button a second time, do not pull back on the red button, merely pull back on the blue and turn the machine to repeat the sewing cycle. Do not repeat this cycle too often on a two hole button as this will put in too many stitches and plug the holes with so much thread that the needle will bend in trying to go through it.

ADDITIONAL INSTRUCTIONS FOR THE CLASS 472-P & 475-P MACHINES

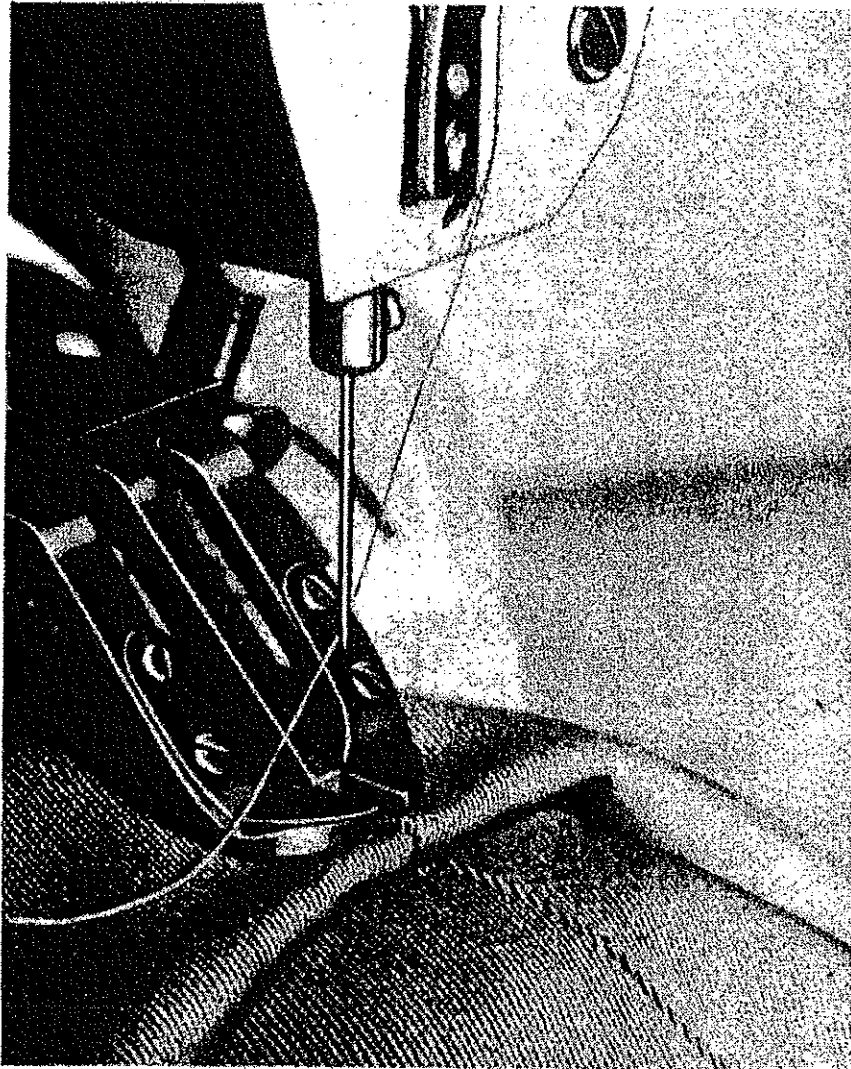


Fig. A

CUFF TACKING

This is done by placing the cuff under the regular button jaws. Be sure to spread the jaws so that the needle will not strike the top jaw clips. (See Fig A) On light weight trousers the tack can be made at the top of the cuff right on the seam. The operator can spread the seam so that the tack is drawn into the seam to make it invisible. For extremely heavy trousers or extra heavy cuffs it is best to tack off the seam where the material is not as thick. When tacking off the seam, fold back the top of the cuff and place it under the jaws so that the tack is made half in the cuff and half in the single layer of fabric of the trouser itself. This is called "blind" tacking. It takes practice to learn the exact location under the jaw to catch the tack at the edge of the fold so that it doesn't through to the front of the cuff. This method is preferable on heavy trousers to prevent the needle from bending and causing thread breakage. A neutral grey thread can be used regardless of the color of the trousers. For the "blind" tacking operation (See Fig. B).

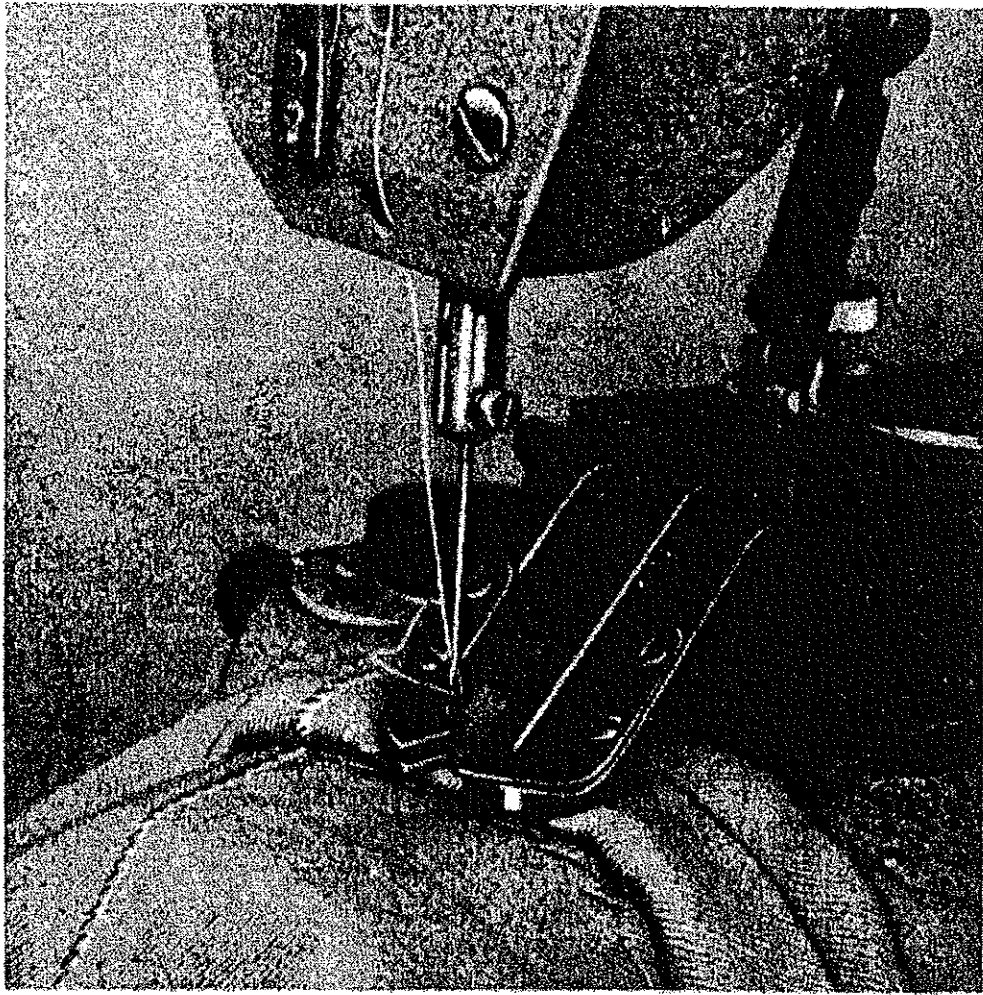


Fig. B

BLIND SEWING A BUTTON

In many cases it is desirable to sew on a button without the stitches showing on the underside of the cloth. To some Cleaners and Tailors this is very important on suit coats.



Fig. C

Fig. C illustrates a suit coat that has been turned under at the point where the button is to be attached. Place the folded material under the front half of the button only, or, in other words, under the first two holes only. The sewing will then be done in the fold of the cloth and will not show through the material. If the material is inserted more than halfway into the button there is a slight possibility that some part of the stitches may show through. This operation will take a little practice. Once it has been mastered, it can be successfully used for attaching buttons onto suit coats and suspender bands without any stitches showing on the under side of the material.

INSTRUCTIONS

for

TIMING, ADJUSTING, AND CHECKING THE MECHANICAL SETTINGS

All mechanical settings should not be tampered with. The following pages are only for those occasions when essential parts must be replaced or for those operators that have experienced trouble in operating the machine and wish to double check the settings to see if the machine is properly adjusted. Important replacement parts can be found in the parts list at the end of this manual.

THREAD BREAKAGE

1. Turn the machine over and remove any loose strands of thread that may be wound around the looper. Use your finger, never a screw driver. **BUT NEVER LOOSEN OR TAKE OUT THE LOOPER TO REMOVE THREAD.**
2. Check the threading of the machine to see that the thread hasn't jumped out or wound around some part. **COMPARE IT WITH ILLUSTRATIONS FIG. 2 & FIG. 3.** Make sure the thread pulls through the needle smoothly.
3. Check your thread tensions as previously outlined.
4. **EXAMINE YOUR NEEDLE TO SEE IF IT IS BENT, BURRED, OR PUT IN THE WRONG WAY.** When in doubt always put in a new needle.
5. With a **NEW** needle in your machine, crank it slowly to see whether the buttons you are using are deflecting the needle. Even a small amount of deflection will cause trouble. Try other types of buttons and compare the results.

NEEDLE BREAKAGE

In the event that needles are breaking repeatedly, try the following suggestions:

1. Looper striking the needle or being too close, causing the looper to hook the needle upon a slight deflection. (See paragraph "Setting the Looper").
2. Needle striking the finger-timing may be off. (See paragraph "Timing the finger").
3. Needle striking the looper-Needle Bar may be too low-(See paragraph "Setting the Needle Bar"), or needle may not be fully inserted into the Needle hole. Clean out any part of an old needle that may be left in the hole.
4. Needle may not line up with the holes in the button— (see paragraph "Aligning Button Clamp").
5. Incorrect Needle-make sure you are using the proper needle.
6. Clamp Movement out of sequence-(see paragraph "The Cams").

TIMING THE FINGER

The thread finger timing is one of the most important settings on the machine. An improperly set finger will cause the machine to break thread, miss stitches and cause no end of trouble.

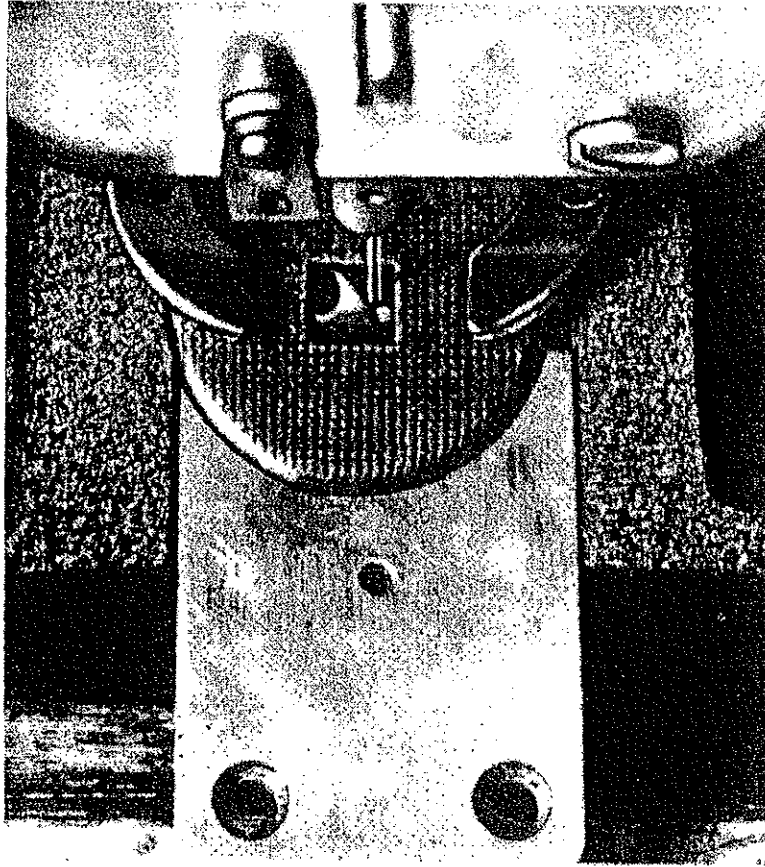


Fig. 4

This view shows Needle Plate pulled away to reveal Finger.
Note that the Finger position is at its furthest stroke.

To check this setting, loosen the base clamping screw and turn the machine over on its hinges as this adjustment is all made from underneath the machine. Rotate the machine very slowly in the proper direction (careful; not backwards) until the finger cam throws the finger itself as far forward as it will go. At this point, the finger should have gone beyond the needle hole of the plate so that the needle comes down toward the looper, the back curve of the finger should clear the needle by about $1/16'$. See Fig. 4 and Fig. 5.

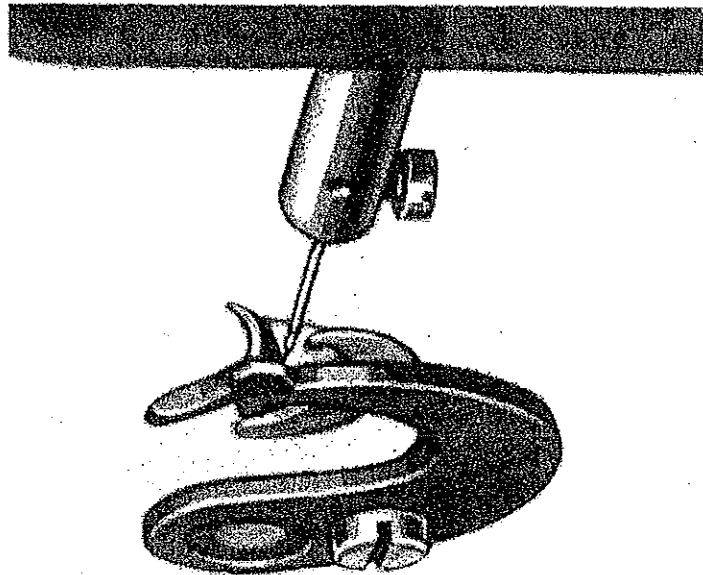


Fig. 5

Fig. 5 is a cutaway view showing position of Finger to Needle when Finger is clear forward.

Should the finger go too far beyond needle, or not far enough, loosen clamp screw 8, Fig. 6 and move finger into correct position, tightening the clamp screw after making the adjustment. **THIS IS THE FIRST STEP IN MAKING THE FINGER ADJUSTMENT.** The finger must be adjusted sideways in relation to the needle and needle plate hole. Proper adjustment is when the needle is about 1/16" from the flat face or side of the finger. (The curve at the front of the finger should center with the needle plate hole). Should the finger need a sideways adjustment, loosen set screw holding the finger bushing and tap the whole assembly in the direction desired, making certain that the cam follower does not ride or contact the hub of the cam. **THIS IS THE 2nd STEP IN THE ADJUSTMENT OF THE FINGER.** (See Fig. 6)

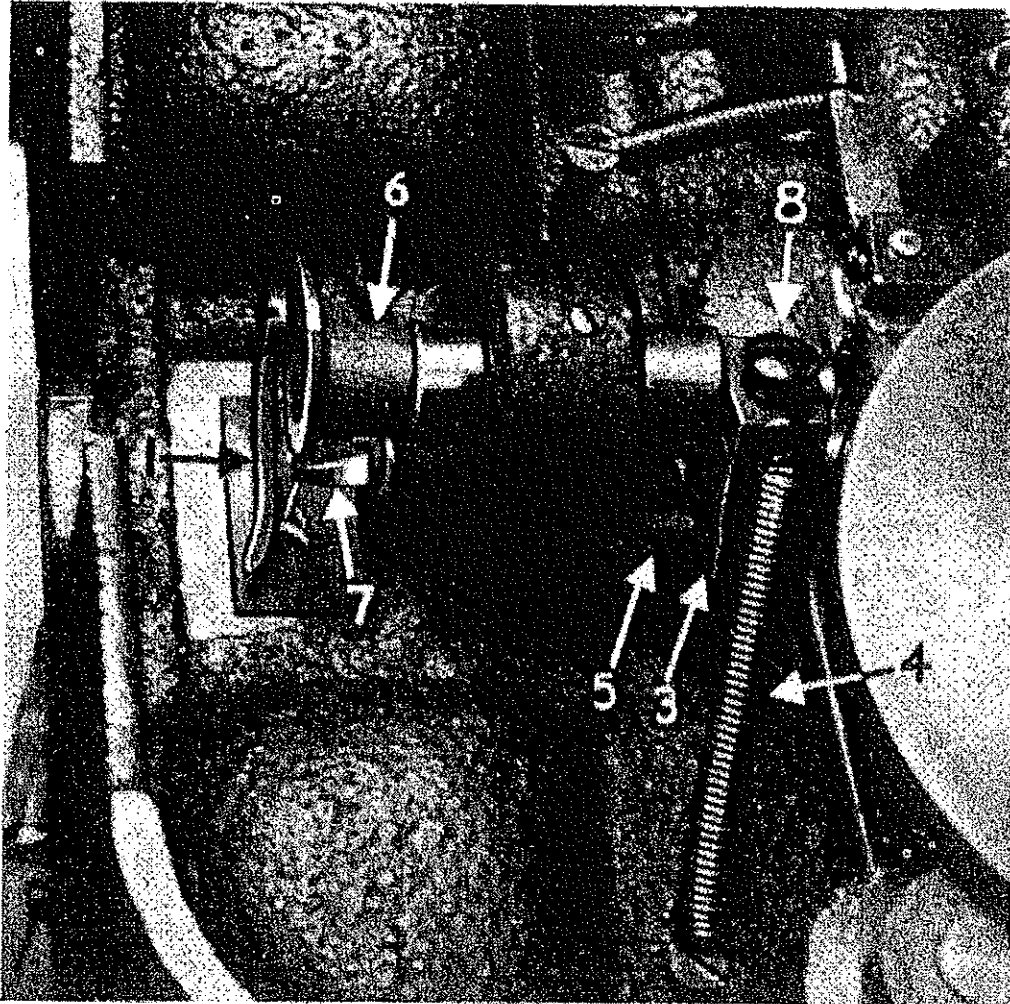


Fig. 6

1. Thread Finger
2. Finger Shaft Bushing
3. Finger Cam Follower
4. Cam Follower Spring

5. Finger Cam
6. Finger Support
7. Looper
8. Cam Follower Clamp Screw

After properly positioning the finger as shown, turn the machine slowly, watching finger and needle very closely. The needle must be on its upstroke and the point of the needle should be passing through the needle plate hole as the finger begins to move backward. Should finger move backward too fast, the back of the finger will hit the needle causing the needle to bend, burr or scratch the smooth finger surface. If the finger moves too slowly the needle will have moved up past the needle plate, the thread will be tight and the hook of the finger may snap the thread. To adjust the oscillation of the finger, delay or advance the finger cam according to the adjustment required. Three set screws hold the cam to the shaft. The timing of the finger is controlled by this cam. **THIS IS THE THIRD AND FINAL STEP IN ADJUSTING THE FINGER.** See Fig. 6.

To repeat: the **POSITION** of the finger to the needle is controlled by adjusting cam follower on the finger shaft. **TIMING** of the finger to the stroke of the needle is controlled by adjusting finger cam on the main shaft. **SIDEWAYS** adjustment is controlled by moving entire assembly in the bearing block.

SETTING AND TIMING THE LOOPER

Should it become necessary to replace the looper, note that the looper is provided with a flat surface on the shank of the looper. The looper set screw must always be situated against this flat part of the looper shank. There are two adjustments to consider in checking the timing of the looper. One is in relation to the upstroke of the needle and the other is the distance, sideways, from the needle.

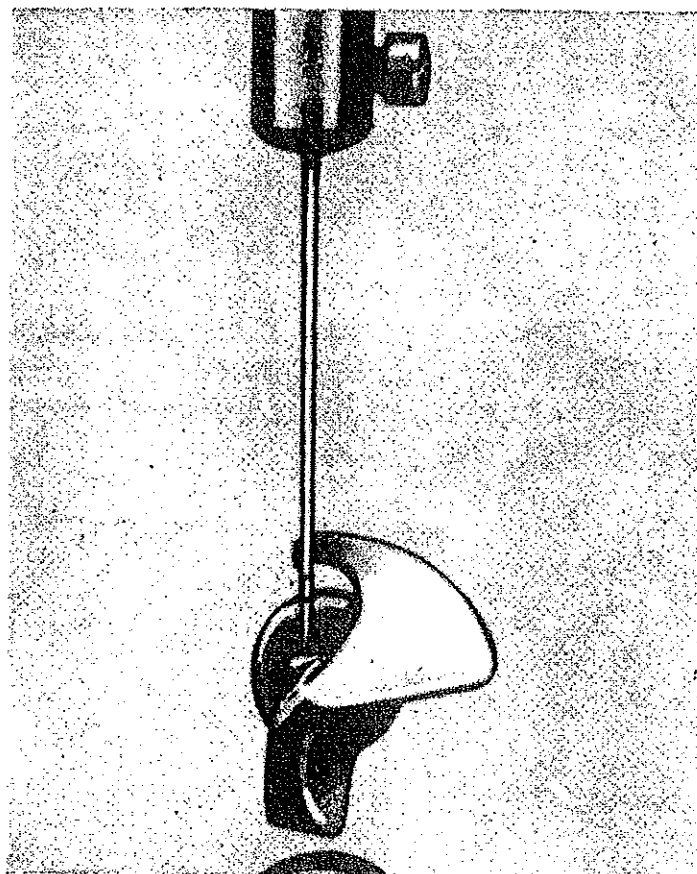


Fig. 7

The hand wheel should be turned in the proper direction (clockwise), until the needle bar is at its lowest point. Place a ruler on the top side of the thread take up eye (the one that projects through the long slot in the faceplate) so that a reading may be obtained (usually against the top edge of the faceplate) then continue to turn the hand wheel until the take up eye has moved up $5/32$ ". At this position the point of the looper should be just beginning to show from behind the needle (see figure 7).

For Class 401 and 461 machines the actual "timing" in relation to the looper and needle is controlled by advancing or delaying the small spiral gear on the main shaft towards the back of the machine. This gear drives the vertical shaft running through the upper arm of the machine. The gear is spotted on the shaft at the factory, and should not be moved by anyone other than a mechanic thoroughly trained in adjusting these machines. For Class 471 machine (or older models that have been upgraded) the actual timing is made by advancing or delaying a separate looper holder sleeve attached separately on the front end of the main shaft. Two small set screws on the enlarged shoulder of the disc sleeve, (located on inside face of front bearing and finger bearing supports), hold this sleeve in place. Loosen both screws to time the looper, securely retightening the screw after the proper adjustment has been made. In setting the clearance between looper and needle, have the very point of the looper about $1/64$ " from the needle, or just enough that there is a space of light between the point of the looper and the needle. See Fig. 8.

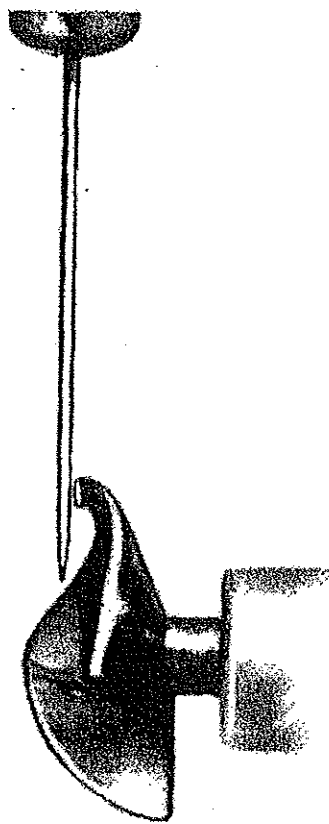


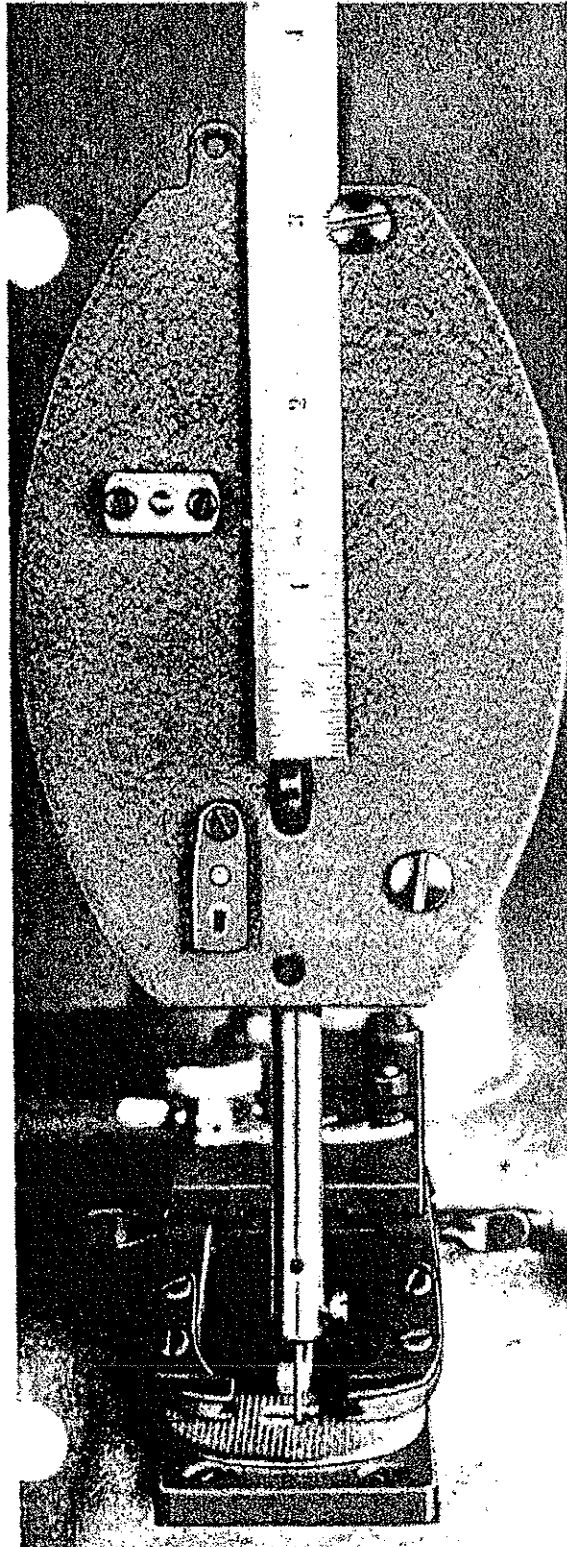
Fig. 8

IN CHECKING THE LOOPER AGAINST THE NEEDLE, BE SURE TO USE A NEW NEEDLE. DO NOT CHECK THESE SETTINGS IF A BENT NEEDLE IS IN THE MACHINE. MAKE SURE THE NEEDLE IS ALL THE WAY UP IN THE NEEDLE BAR HOLE.

SETTING THE NEEDLE BAR

The needle bar may need replacing and in such an event the new one must be replaced with the proper adjustment and in proper relation to the other mechanisms. The following points must be observed:

1. Insert the new needle all the way up into the needle bar hole, making sure that there is no part of an old needle stuck up in the needle hole. 2. Providing the looper is properly timed in relation to the upstroke of the needle, (see preceding pages "Setting and Timing the Looper") the proper height, location, or position of the needle bar is determined by turning the machine until the looper point just begins to project from behind the needle, then raise or lower the needle bar so that the top of the eye of the needle is $\frac{1}{32}$ " (or $\frac{3}{64}$ ") below the lower edge of the looper. (See figure 7).



3. The needle bar must be in line so that thread take-up eye is in line with the slot in the face plate, and does not rub on the sides of the slot as the needle bar moves up and down. Otherwise it may bind, impeding the hand wheel and not allowing it to turn. 4. Tighten set screw in needle bar clamp stud.

BUTTON CLAMP ADJUSTMENTS

At some time it may be necessary to change the stroke of the button clamp to accommodate larger or smaller spaced holes in buttons. In such a case, the back and forth stroke of the button clamp is controlled by an adjustment under rear cover plate, and marked "C" in Fig. 10. Loosening the adjusting nut and moving it towards center of the machine increases the stroke on the clamp. Moving the nut towards the outer edge of the machine decreases the stroke of the clamp. Tighten the adjusting nut after moving it to the desired position. The sideways stroke of the clamp for the 4 hole button only, is controlled by stop nut "B" Fig. 10, located under the first cover. If a greater cross stroke should be necessary, move the stop nut back and away from the front of the machine. Be sure to tighten the stop nut securely after making the adjustment.

BUTTON CLAMP ALIGNMENT

At some point it may be necessary to re-align the clamp to position the button to align it with the needle. The needle should enter the center of all holes without striking the sides or solid part of the button. If the needle strikes the button itself and must bend in order to enter the hole, the clamp is out of line and should be adjusted to the center of the hole of the button with the needle as outlined below.

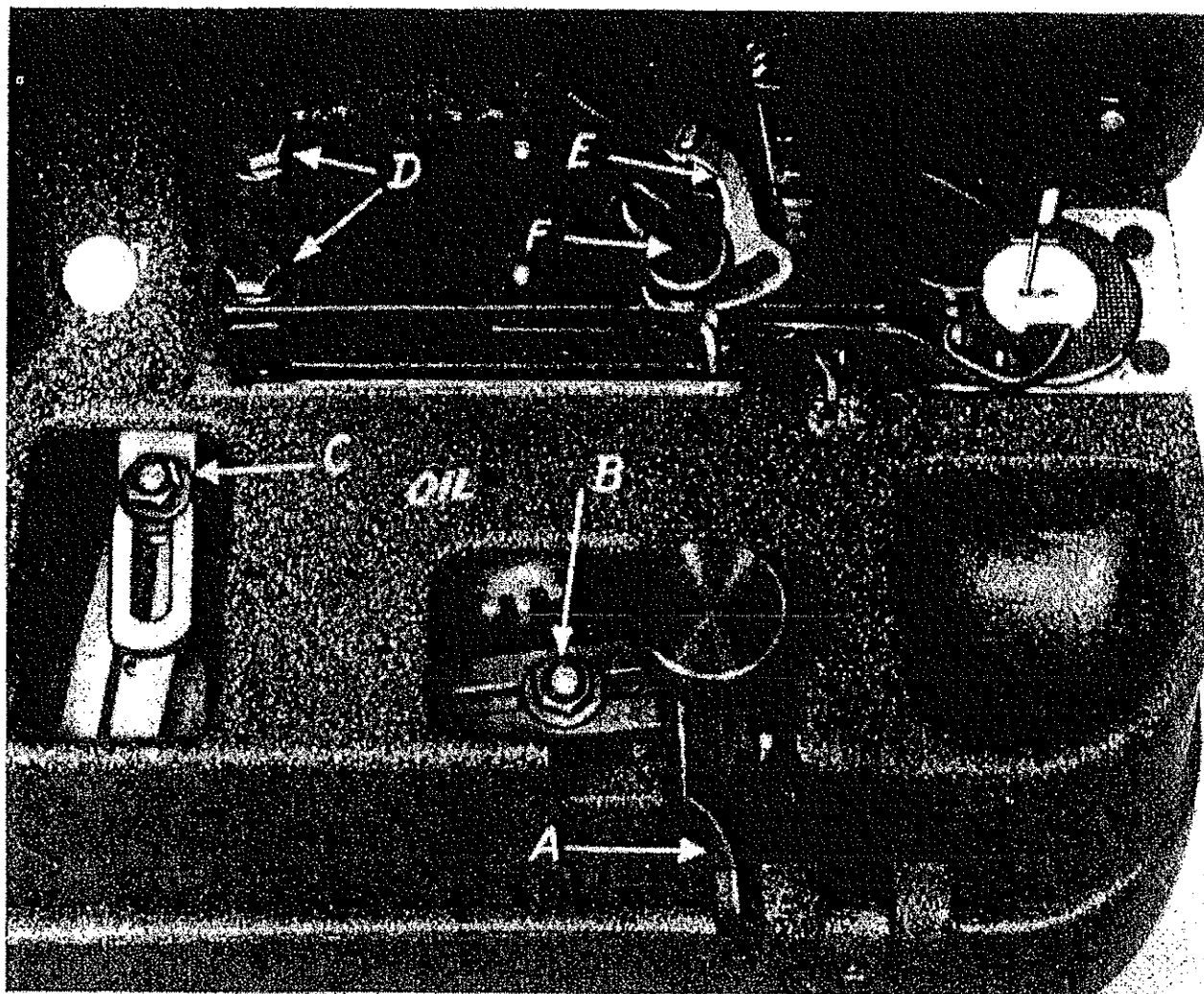


Fig. 10

Before proceeding with any button clamp adjustment, be sure to insert a **BRAND NEW NEEDLE** so no adjustment is made with a crooked or bent needle. Do not thread the needle so that the adjustments can be made without the thread getting in the way. The button clamp is held firmly in place by 2 hex head screws ("D" Fig. 10) at the rear of the top plate. Loosen these screws just enough to loosen the plate. Then insert a 2 hole button in the jaws and turn the machine until the needle enters the buttonhole. Move the clamp so that the needle is centered both ways; see Fig. 10 and Fig. 11.

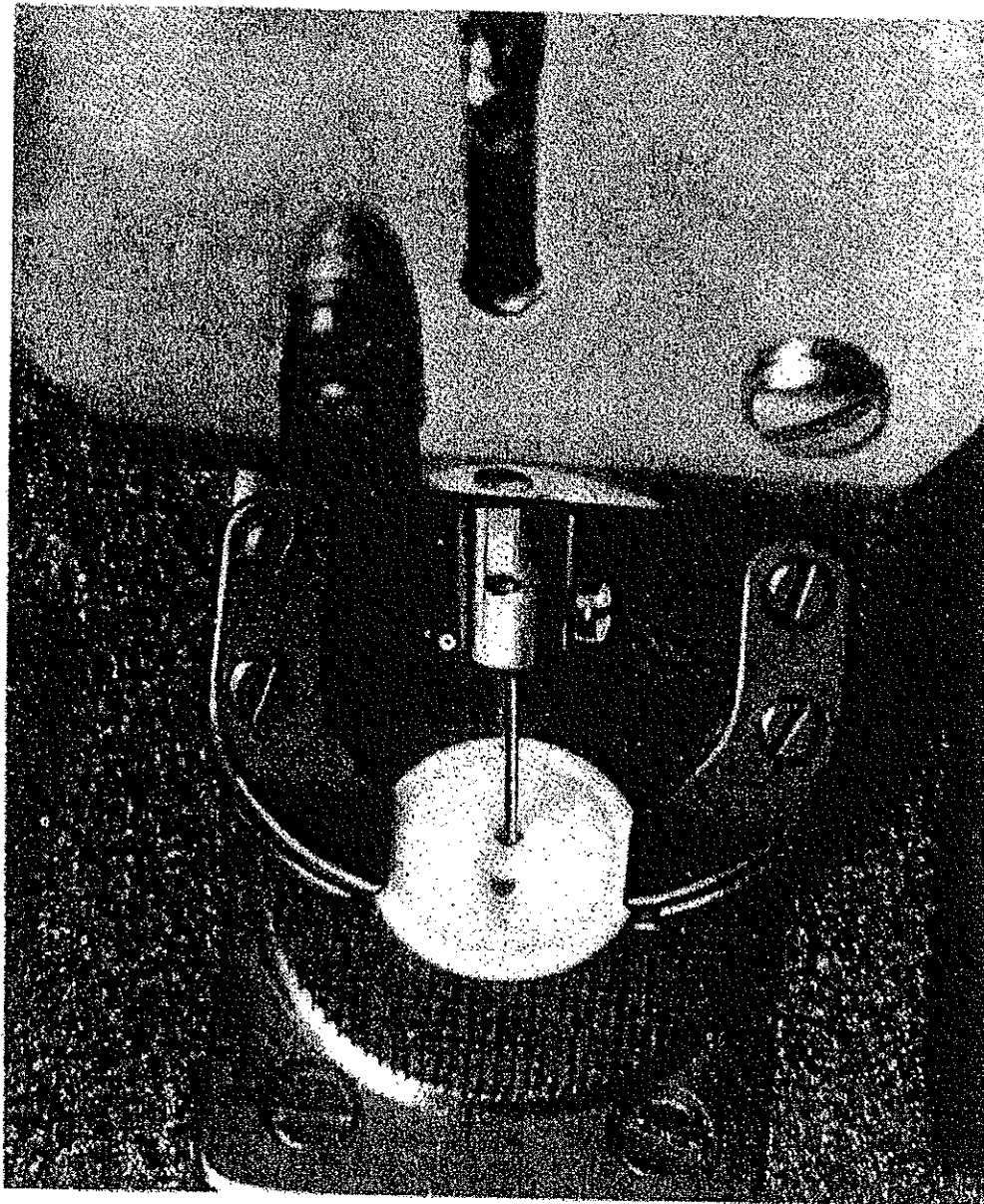


Fig. 11

Now tighten one clamp binding screw and turn machine over slowly by hand, making sure that the needle enters the center of the other hole. Be sure that the needle does not touch any side of the buttonhole; otherwise the needle will be deflected causing missed stitches, thread breakage and possibly broken needles. When you are certain the clamp is properly adjusted, tighten both holding screws. When this clamp adjustment is made on the 2 hole button it should automatically line up the clamp for a 4 hole button.

THE CAMS

The cams must be adjusted so that the clamp and button has completed its shift before the needle enters the button or does not move until after the needle has come up out of the button. These cams are set at the factory, but to double check the setting, turn the hand wheel until it is blocked by the stop pin. At this point the line on the outer rim of the cam should mark or be opposite the line stamped on the edge of the machine frame.

AUTOMATIC TENSION RELEASE

In the top arm of the machine is a Cam that controls the automatic release of the rear tension ("B"-Fig. 1). Function of this automatic intermittent tension is described in first paragraph under "Tensions."

The proper timing is when the thread is released 5/32" BEFORE the needle bar reaches the highest point of its stroke. To advance or delay this timing, adjust the Cam on the top shaft of the machine. A hole for a screw driver is located on left hand side of machine close by the Arm hole cover. Do not move cam sideways, otherwise the release pin will drop out of tension post. The cam has 3 set screws. Loosen 2 and after loosening the 3rd, hold it with screw driver, and turn machine hand wheel to adjust backwards and forwards. Space does not allow room for fingers, so cam must be held by a screw driver in 3rd set screw and adjusted accordingly. When cam is loose turn the handle in clockwise to make the thread release late or turn hand wheel backward to make thread release earlier.

**SPECIAL
PARTS LIST**



BS-93-W



BS-93



BS-94



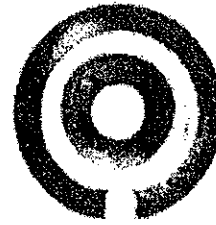
BS-95



BS-95-T



BS-97



BS-96



BS-144-B



BS-144-A



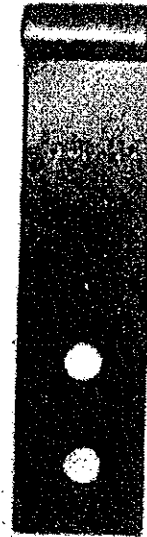
BS-35



BS-169

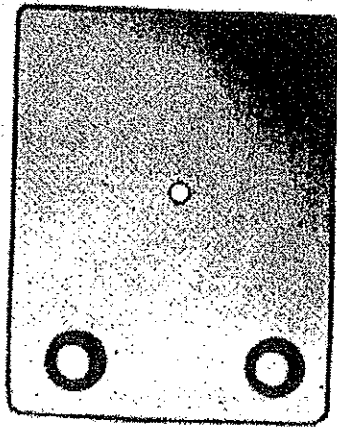


BS-163

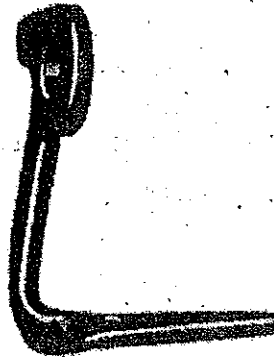


BS-166

B-S 93W	Thread Tension Release Washer
BS-93	Rear Thread Tension Release Stud
BS-94	Rear Thread Tension Release Pin
BS-95	Front Tension Stud
BS-95T	Thread Tension Spring
BS-97	Thread Tension Bottom Disc
BS-96	Thread Tension Top Disc
BS-144A	Thread Tension Thumb Nut-Front
BS-144B	Thread Tension Thumb Nut-Rear
BS-35	Cam Roller
BS-169	Needle Set Screw
BS-163	Button Clamp Lifter Lever Spring



BS-88



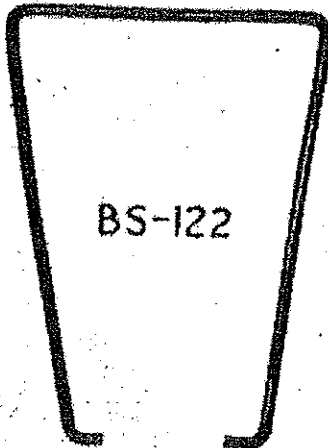
BS-99



BS-105



BS-48



BS-122



BS-47



BS-160



BS-62



BS-161



BS-44

BS-88	Needle Hole Plate
BS-99	Thread Slack Take-up Lever
BS-105	Needle Bar Thread Guide and Take up
BS-122	Button Clamp Jaw Spring
BS-47	Thread Finger
BS-48	Thread Looper
BS-62	Hand Wheel Stop Pin
BS-161	Stop Arm Spring
BS-44	Thread Finger Cam Follower
BS-160	Thread Finger Cam Follower Spring



MAIN office

131 W. 25th Street
New York, NY 10001
Tel: 212-741-7788
Fax: 212-741-7787

Miami, FL

4013 N.W. 79th Avenue
Miami, FL 33166
Tel: 305-471-0200
Fax: 305-471-0243

Los Angeles, CA

2320 South Hill Street
Los Angeles, CA 90007
Tel: 213-745-8844
Fax: 213-745-8855