instruction manual

BERNINA

Model - KL 114

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Cleaning the Machine

During sewing, remnants of thread will remain, especially around the shuttle. Such remnants will hinder the machine to run smoothly, and the frequent removal of them is therefore essential. The needle plate should be unscrewed and removed from time to time, so that the fluff that has gathered below it can be cleared away.

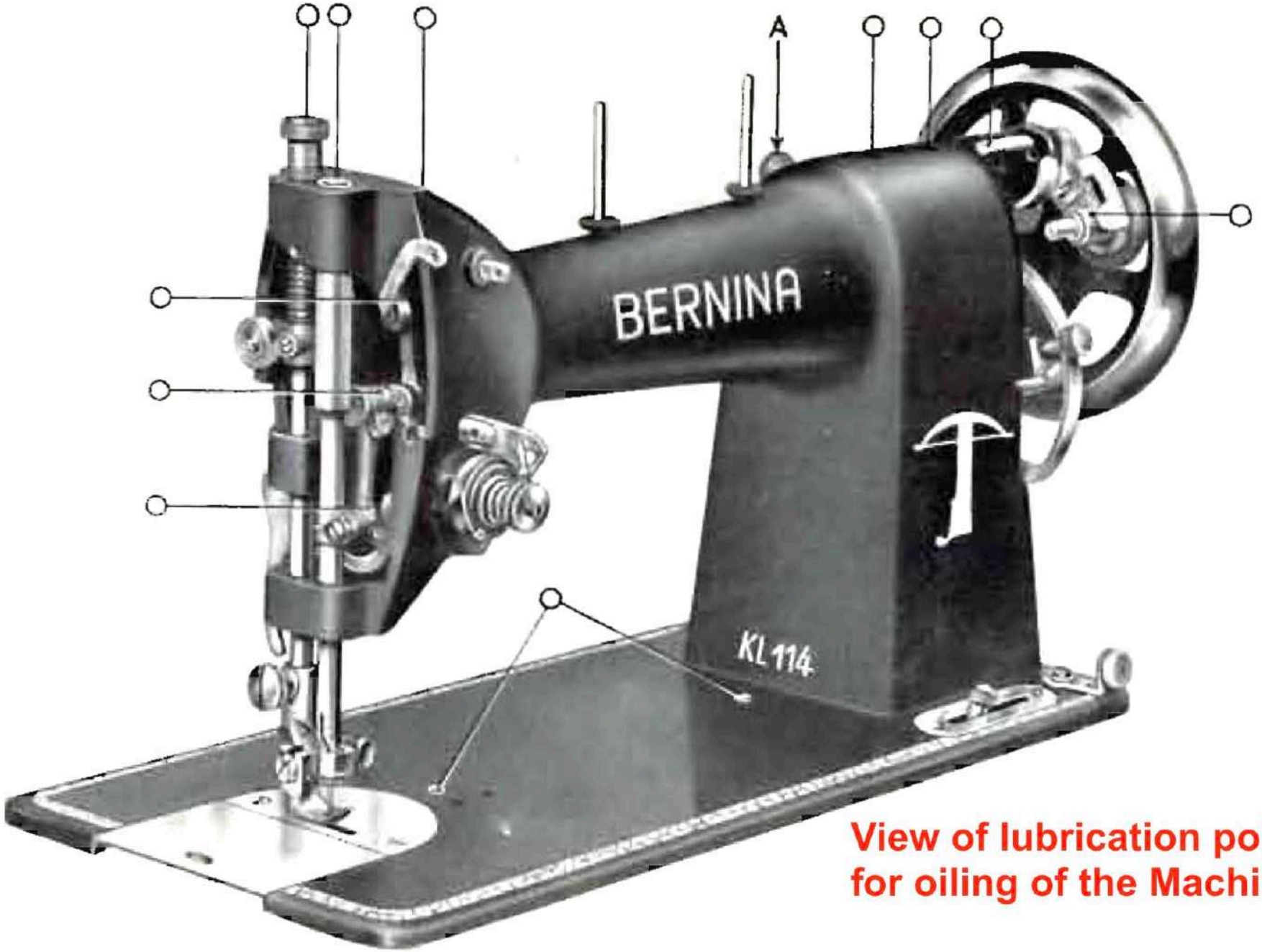
Oiling the Machine

The machine should be oiled frequently but not too copiously. A few drops of oil are sufficient to insure easy running and to prevent unnecessary wear of the parts. If too much oil is applied, the excess will drain off unused, and may soil the work. Always oil the machine before operating it, not afterwards. If the machine is used continuously, it should be oiled every day. Use only clear sewing machine oil, free of resin and acid. Such oil can be obtained from all official Bernina Agents. If bad oil is used, it will gum and get sticky and make your machine run hard.

In Fig. 1 and 2 the lubricating points are shown by indicator lines. At the back of the arm, under the circular lid A, is a friction surface (sliding piece) which cannot be oiled through the holes at the top, and it is therefore necessary to oil this surface direct. To oil parts located inside the head, remove the face plate. At the spot in the head where the needle bar moves up and down, lubricate with only one drop of oil, treadle the machine a few idle turns, and wipe off the excess oil. This will prevent oil stains on the work. To oil parts underneath the bed plate, throw off the belt, turn the head back and apply oil at the points shown in Fig. 2. The race in which the shuttle glides (position A) should be frequently oiled.

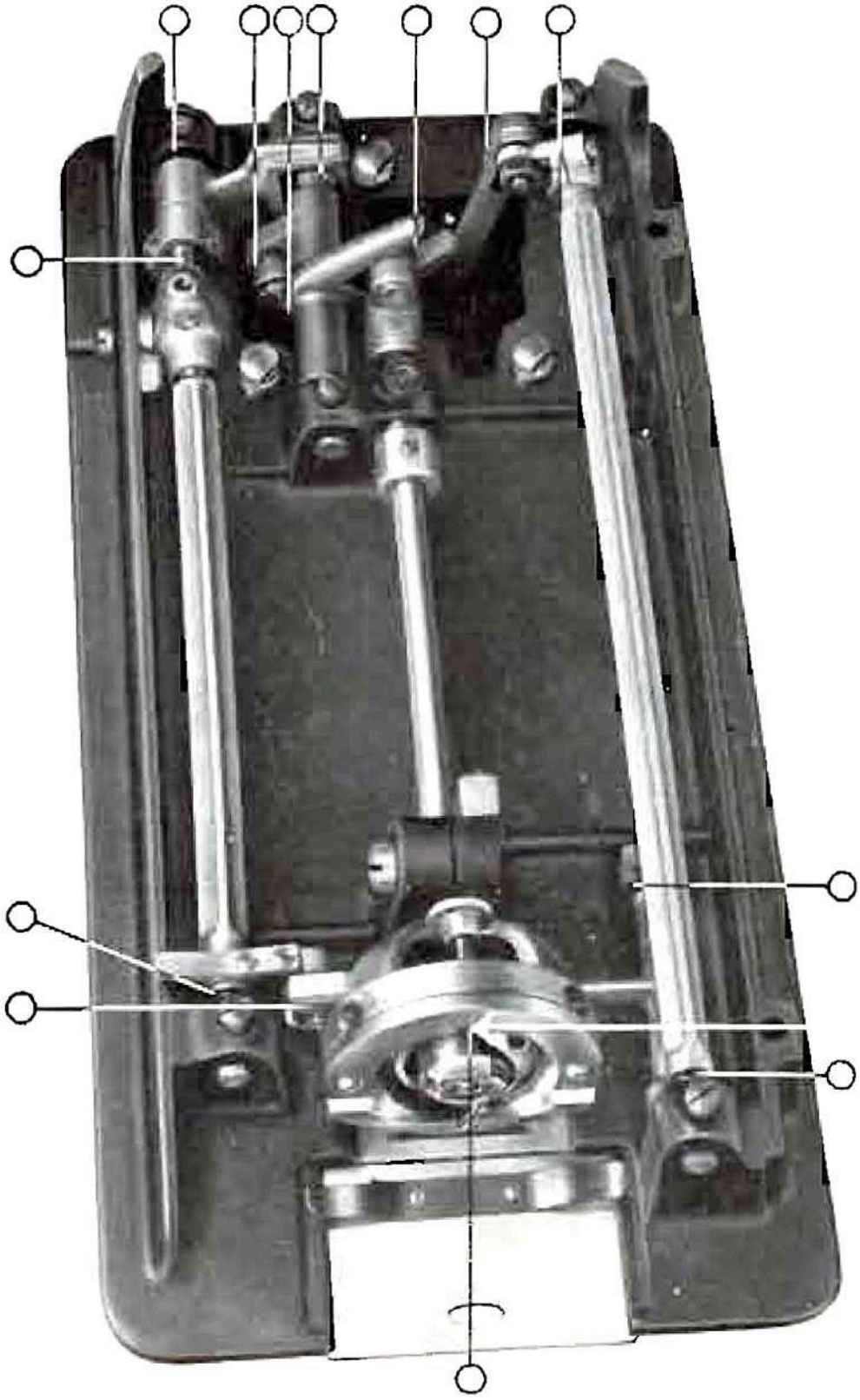
In case of treadle-operated machines, do not forget to apply from time to time some drops of oil to all the friction surfaces of the treadle mechanism.

Careful and correct oiling will keep the machine running easily and smoothly and prolong its life.



View of lubrication points for oiling of the Machine

view of lubrication points for oiling of the Machine



A

Fig. 2

Correct Needle and Thread Size

Only *system 705* needles should be used for the model 114 Bernina plain stitch sewing machine, and only needles and thread of best quality should be employed in order to obtain satisfactory results.

First, select the thread to suit the fabric; then the needle to suit the thread, according to the table below. The best test of suitability is to place the thread in the groove of the needle. If the thread can be pulled backwards and forwards in the groove without obstruction, the needle is of the correct size.

For *sewing*, numbers 8 to 10 are generally used, and for *darning* nos. 7 and 8.

Table of Needles and Threads

System 705 needle		*Sewing thread*		*Darning thread*
Former Numbers	New Numbers	6-ply (unglazed)	3-ply (unglazed)	2-ply
6	60	—	170—200	80—100
7	70	70—100	70—140	50— 80
8	80	50— 60	50— 70	30— 40
9	90	40— 50	30— 40	—
10	100	20— 30	—	—

Suitable Thread for Sewing and Darning

For *sewing:* Nos. 60 to 90, 3 and 6-ply, unglazed

For *darning:* Nos. 50 to 80, 2-ply.

Sewing and darning threads, and needles, are best bought from the Bernina dealer. He will not sell you anything that is unsuitable for the machine, and you will be sure of being able to work to your satisfaction.

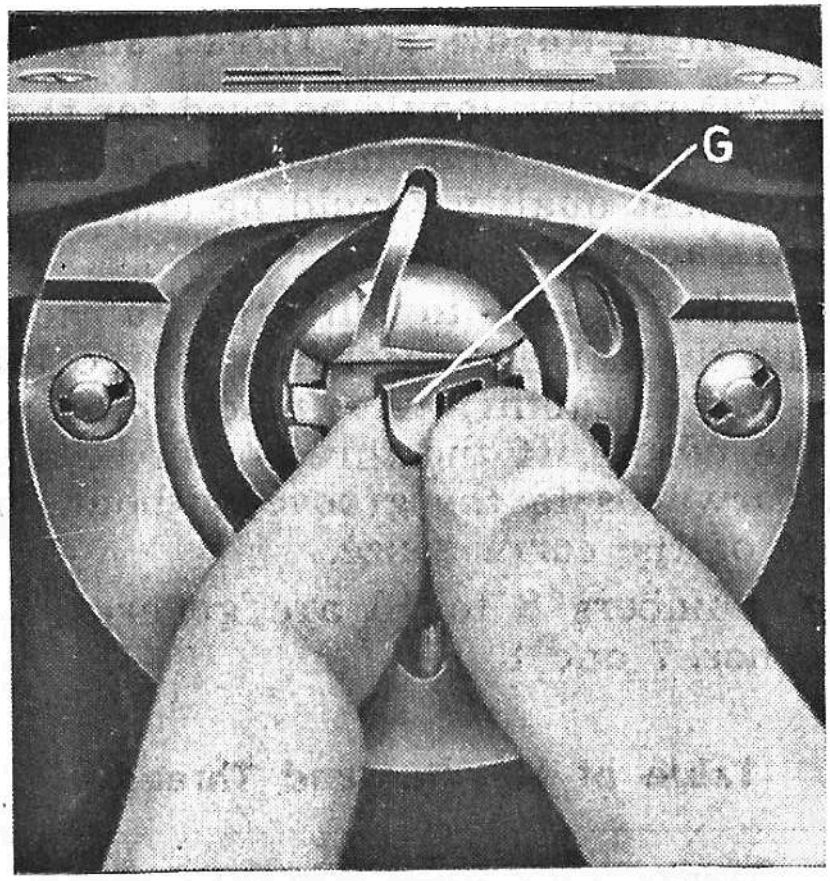


Fig. 3

Removing Bobbin Case and Bobbin

Move take-up lever C (Fig. 6) approximately to its highest position. Open hinged flap G with the forefinger of the left hand and withdraw the bobbin case with the bobbin. By letting go off the hinged flap, the bobbin is released and will now drop out of the bobbin case.

Bobbin Winder

To obviate the necessity of the entire machine running uselessly during bobbin-winding, hold the handwheel firmly with the left hand and turn the release knob P of the handwheel towards you, with your *right hand,* as far as it will go.

The thread coming from the spool K is first led through the thread guide L, then down between the two thread

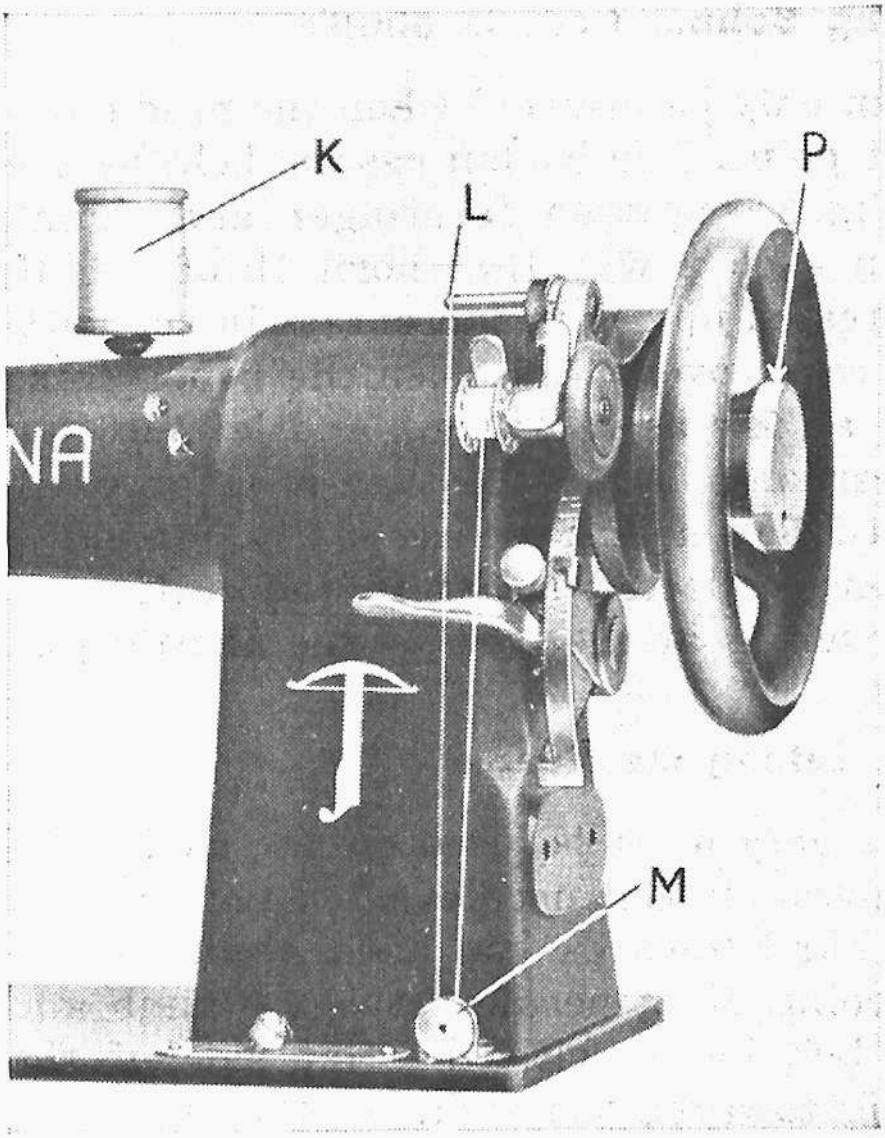


Fig. 4

tension discs M and from here directly on the bobbin, which is slipped on to the winder spindle and engaged with the drive dog.

The winder is set running by pressing on the winder-engaging lever. As soon as the bobbin is full the winder shuts off automatically.

The bobbin should not be wound quite to the edge.

Inserting Bobbin in Case, and Threading Bottom Thread

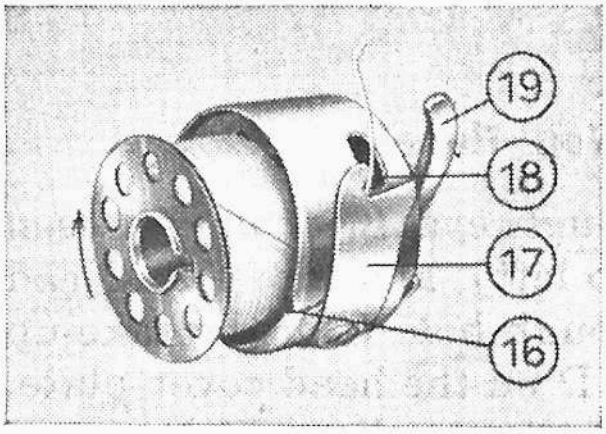


Fig. 5

When placing the bobbin in its case, make sure that it turns in the direction of the arrow when the thread is drawn off. After inserting the bobbin, bring the thread through the slot 16 and draw it under the tension spring 17 until it emerges at the end of the tension spring at 18.

Inserting Bobbin Case in Shuttle

The bobbin case can only be inserted when the needle bar is up to its highest point. The bobbin case is held by the opened flap G (Fig. 3) between forefinger and thumb of the left hand in such a way that horn 19 of bobbin case (Fig. 5) is directed upwards and enters in the cutting of the shuttle race cover. Now push the bobbin case on the shuttle pin as far as it will go, and let the flap drop back into position. Make sure that it is properly closed. If the hinged flap does not close easily, remnants of thread must have collected either in the cutting of the shuttle race cover or at the base of the shuttle pin.

Setting the Needle

System 705 needles only must be used on the model 114 Bernina. Blunt-pointed or bent needles must not be used. Turn flywheel by hand towards you until needle bar is up to its highest point. Hold needle between thumb and forefinger of the left hand, with the flat side of the needle shank facing towards the right, so that the long groove in the needle faces to the *left*. Now loosen needle clamp screw by turning it anticlockwise, and insert the needle. Put it up as high as it can go. Then tighten needle clamp screw by turning it clockwise. It is important to make sure that the needle is pushed up as far as it will go and is firmly held by the needle clamp screw.

Threading the Top Thread

Lead thread from reel A through eye B, down between the tension discs (from right to left), and into the thread regulator spring, then up, through hole C in the take-up lever, down again through eye D on the head cover-plate, and through thread guard E to the needle, which should be threaded *from left to right*.

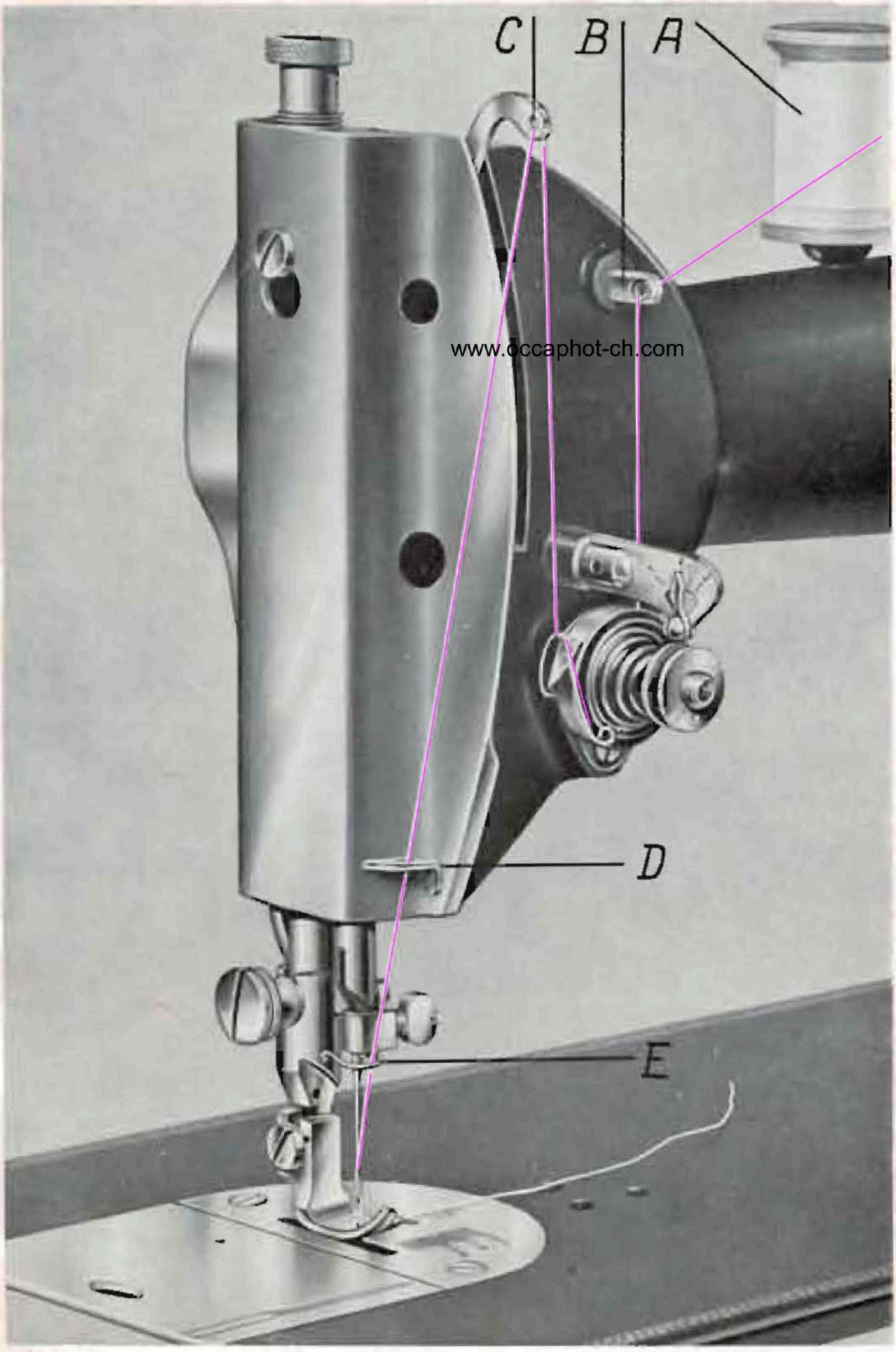
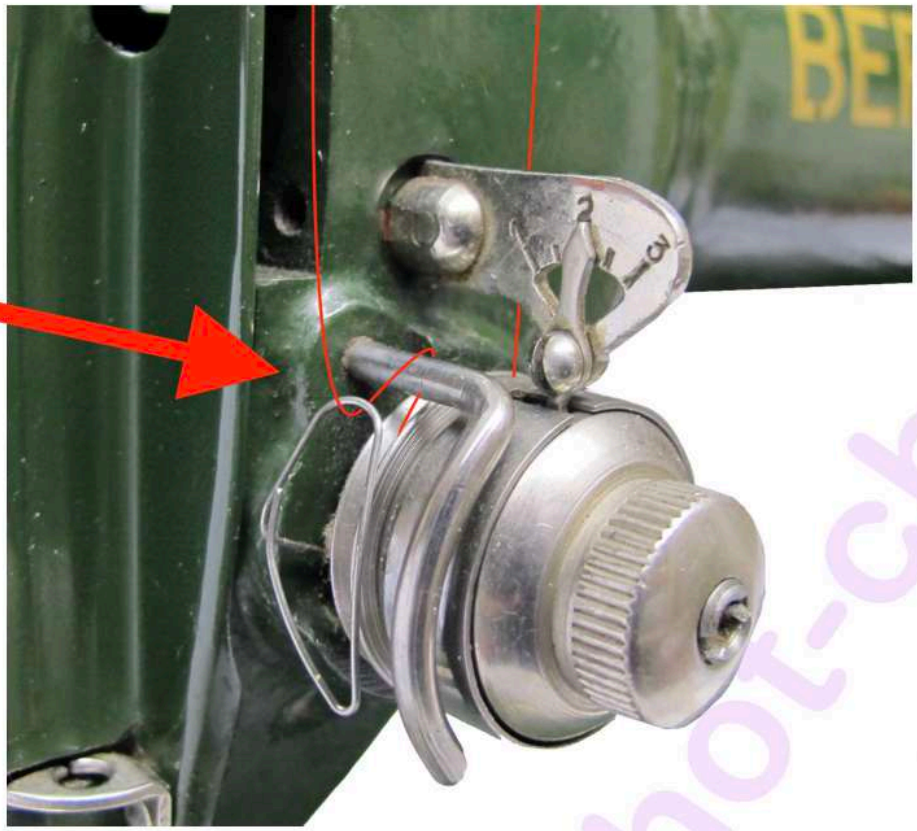
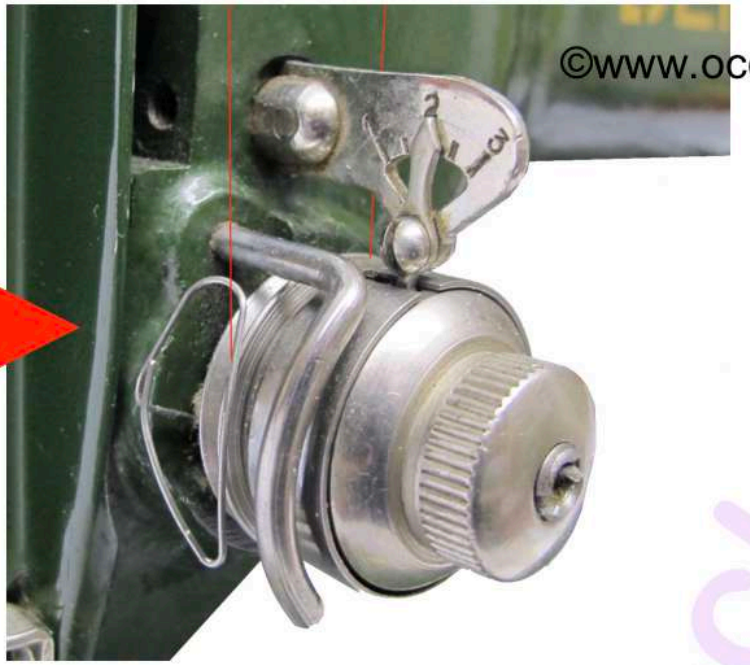


Fig. 6





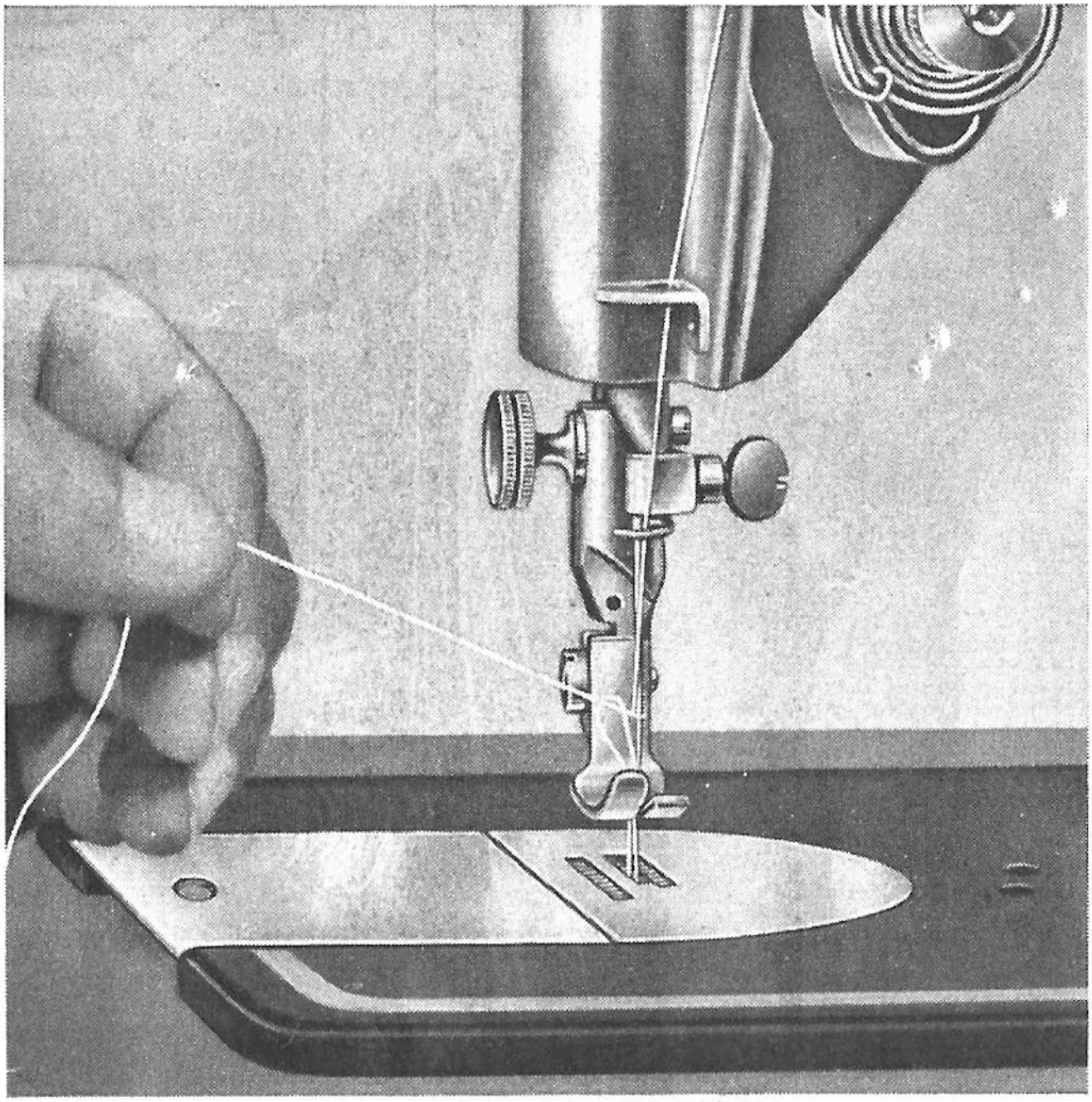


Fig. 7

Bringing up the Bobbin Thread

Hold needle thread (top thread) slightly between thumb and forefinger of the left hand and at the same time turn flywheel with the right hand towards you, until take-up lever is approximately at its highest point. Now pull slightly the top thread, which will bring up the bobbin thread. Lay top and bottom threads together and pull them back under the presser foot.

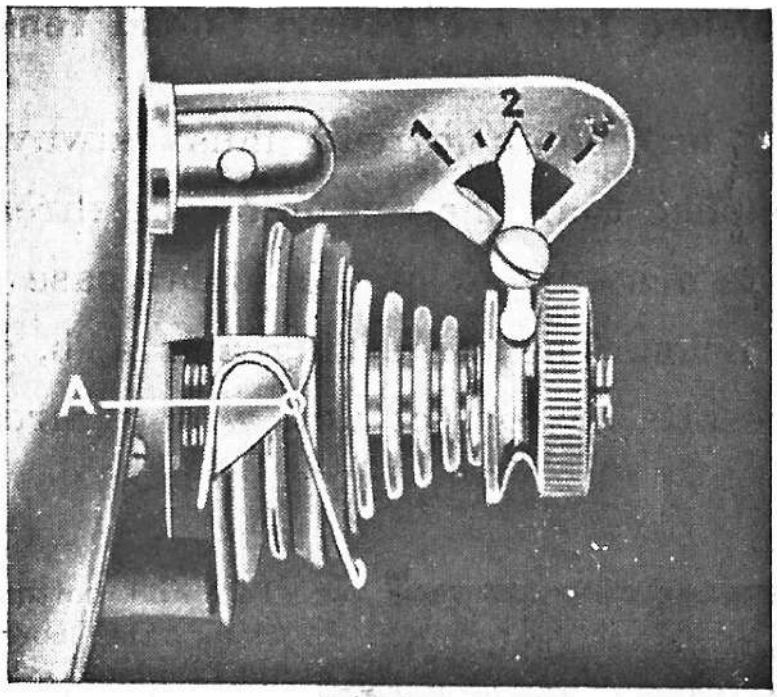


Fig. 8

Thread Tension Scale

The thread tension is provided with a scale graduated from 1 to 3. Its purpose is to enable the correct tension for sewing and darning, once ascertained by experience, to be set again at any time.

When the pointer is at 1, the tension is loose and is suitable for darning or for sewing with very thin thread.

With the pointer at 2, the tension is firmer and is in most cases just right for sewing.

Pointer-position 3 provides very firm tension suitable for sewing with strong thread.

Regulating Top and Bottom Thread Tensions

The bottom or bobbin thread must always be more loosely tensioned than the top or needle thread; it must be possible to draw it out of the bobbin case under light and even tension. The three diagrams a, b, and c illustrate the results of correct and wrong thread tension.

a

Top and bottom thread tensions are correct. Looping takes place midway between the two layers of fabric.

b

Top thread too tight or bottom thread to loose. Looping visible on the top surface of material.

c

Top thread too loose or bottom thread much too tight. Looping visible on the bottom surface of material.

Fig. 9

As a rule, tension of bottom thread need not be changed. To even out the stitch it is usually sufficient to reset the tension of the top thread. The stitch is generally better looking if bobbin thread is one number finer than top thread. The stitch should not be too short; stitches that are excessively short damage the material.

Sewing

For sewing purposes the machine should be set as follows (see Fig. 10):

1. Bring take-up lever 1 approximately to its highest position.
2. Regulate thread tension. Set pointer on thread tension scale, Fig. 8, between 1½ and 2½.
3. Thread needle from left to right.
4. Put knurled knob 4 over to left, i. e., into sewing position.
5. Set stitch regulating lever B slightly above zero. The lever can be set for the longest stitch by turning screw A to the left (see description in next section).

Be sure always to turn the handwheel *towards you*, i. e., in the direction of the arrow.

The presser foot should not be lowered except when material is below it. When the machine is not in use, a small piece of material should always be placed under the presser foot to prevent damage to the feed dog, and care should also be taken to remove the top thread from the needle.

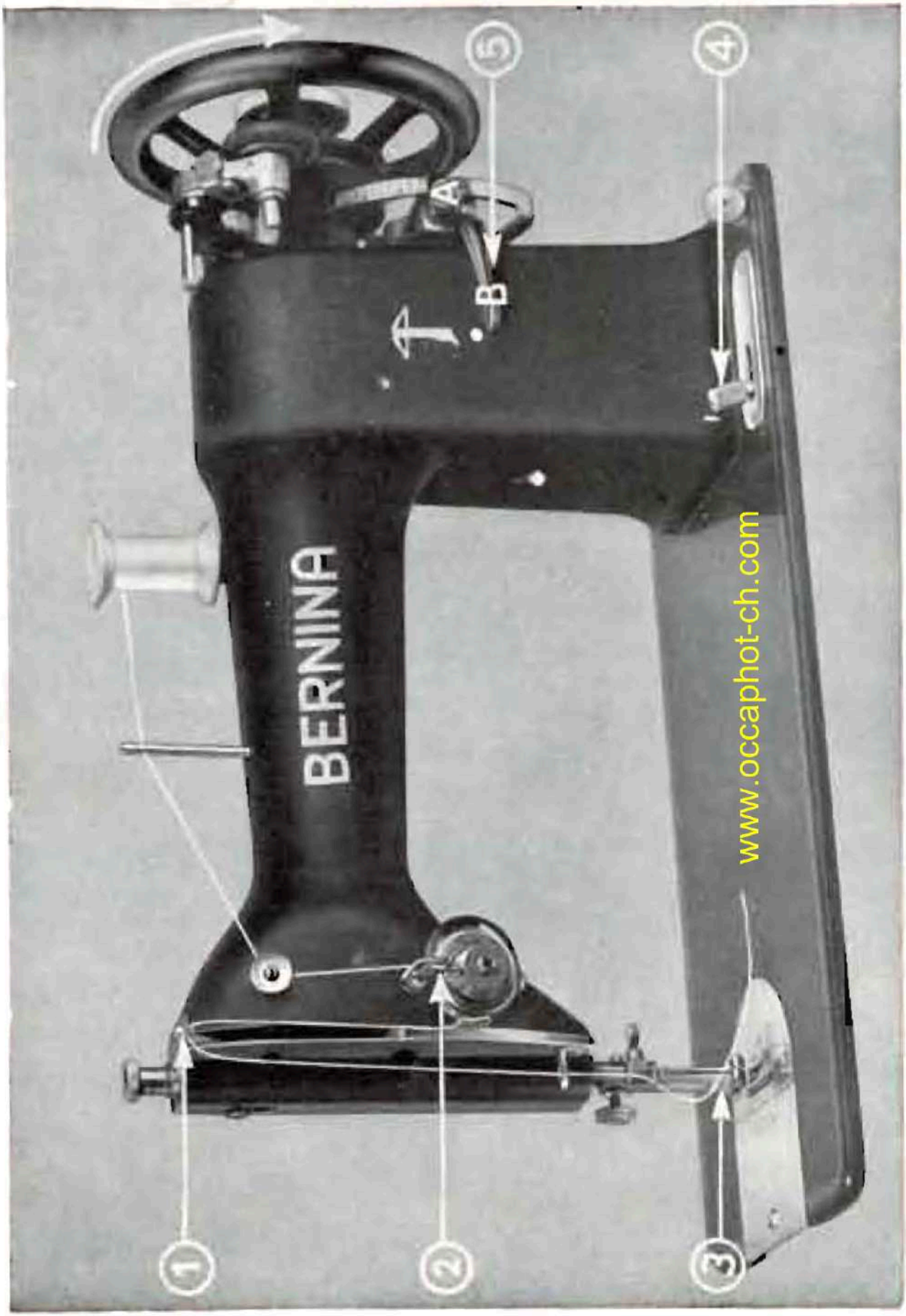


Fig. 10

Setting the Machine for Sewing

Regulating the Length of Stitch

The stitch regulator scale is fitted at the right end of the machine frame and so arranged that the pointer of the stitch regulating lever B (Fig. 10) glides along it. The scale is marked with graduations from 0 to 4 corresponding to the stitch lenghts. The further the lever B is moved upwards or downwards from the *zero* mark, the longer is the stitch produced.

Forward and Backward Sewing

According to the position of the lever B, the machine sews forwards or backwards. If the lever is moved *upwards* from zero, the machine sews *forwards;* if it is moved *downwards* from zero, the machine will sew *backwards*. The purpose of this facility for reversing the direction of sewing is to enable certain areas of the material to be reinforced and the ends of the thread secured.

To ensure that the backward and forward stitches are all of the same length, e. g., when securing the ends of seams, the limiting screw A, to the left of the stitch regulator scale, is used. By means of this screw the upward and downward movements of the lever B from zero can be limited. If the screw is turned to the right (i. e., clockwise), the range of movement of the lever B is reduced, whilst if the screw is turned to the left, the lever will move further.

Removing the Work from the Machine

Raise the take-up lever C (Fig. 6) approximately to its highest point. Now lift the presser foot by means of its lever. The tension of the needle thread is thereby quite relaxed, so that the work can be easily withdrawn *to the rear* without any preliminary pulling the thread.

Be sure always to withdraw the work *to the rear* from the presser foot, as otherwise the needle will be bent and the machine will subsequently skip stitches. With treadle-operated machines, the take-up lever should never be brought up to its highest position by *treadling*, but only by *turning the flywheel by hand* towards oneself. If this precaution is not observed there will be a risk of the mechanism of the machine running in the wrong direction, in which event the top and bottom threads may get caught in the shuttle race and cause the machine to jam.

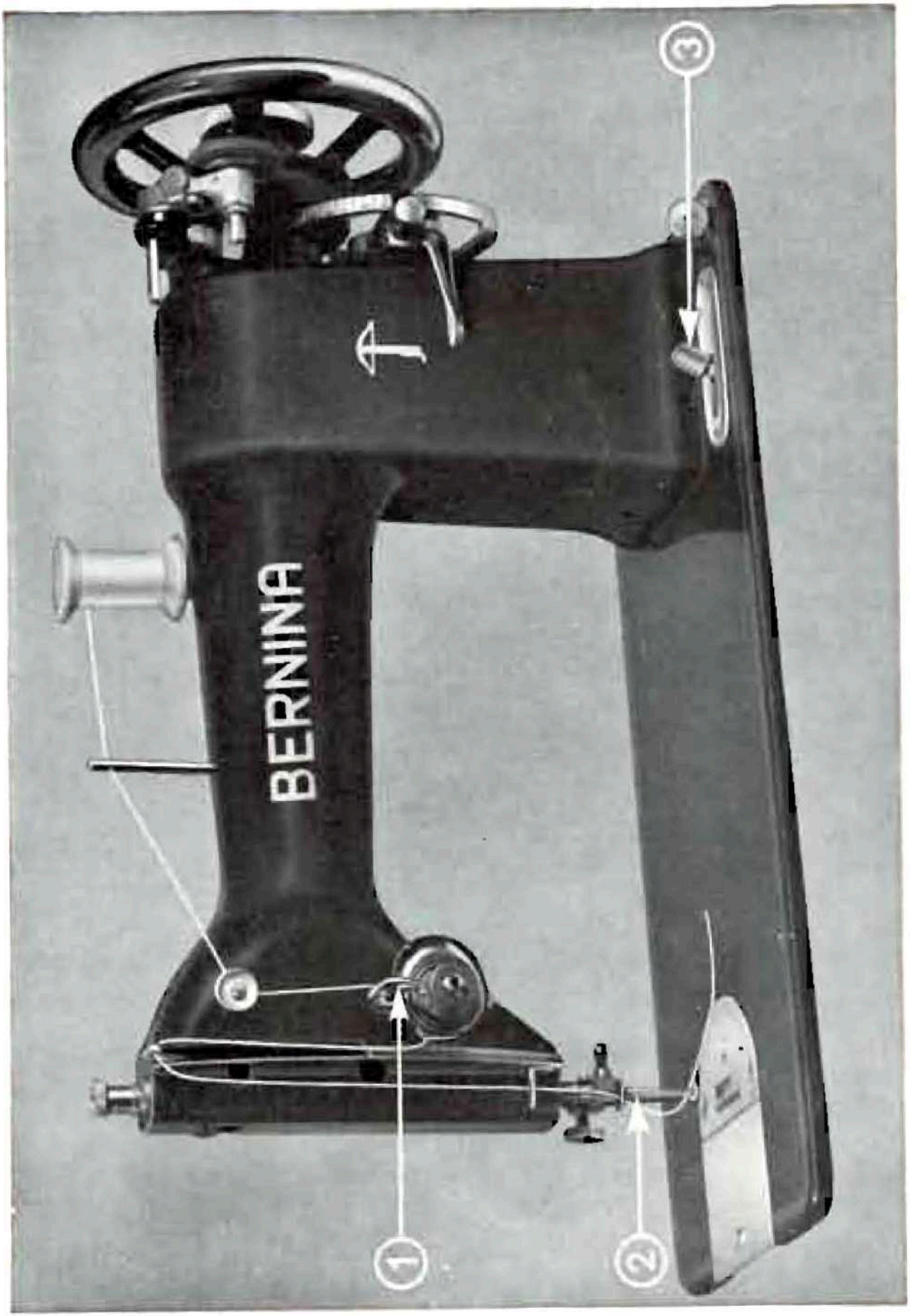


Fig. 11 **Setting the Maschine for Darning**

Turning Corners

When turning a square corner, turn the flywheel by hand towards you until the take-up lever is at its highest position. Then continue turning until the point of the needle has pierced the material and entered the hole of the needle plate by about a tenth of an inch. Now lift the presser foot and turn the material around the needle. (In other words, do not turn the material when the needle is lifting, but when, in its downward movement, the needle point has already completely pierced the work.) Then lower the presser foot and continue sewing.

Darning

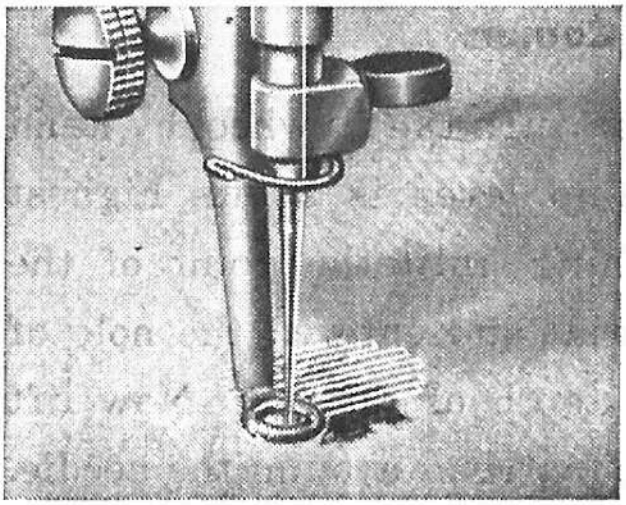
When changing over from sewing to darning, the machine should be set as follows (see Fig. 11):

1. Relax thread tension (set pointer on thread tension scale, Fig. 8, at 1 or $1^1/_2$).

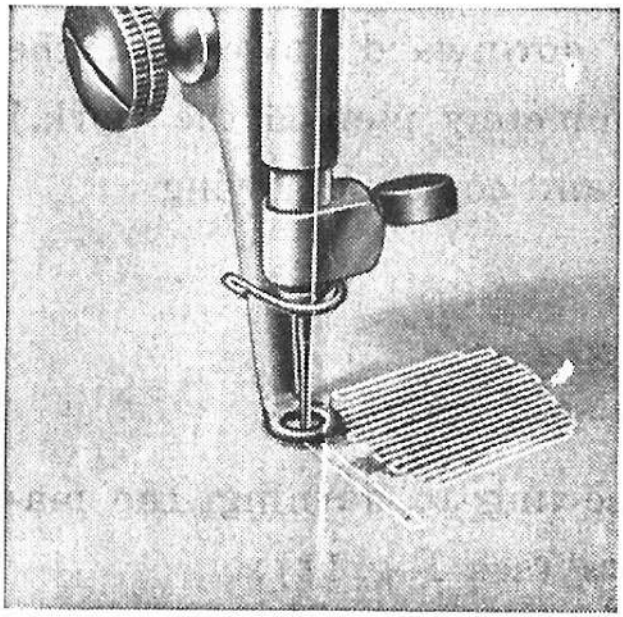
2. Remove presser foot with extension and replace it with the darning foot.

3. Lower feed dog by putting knurled knob 3 over to right, i. e., to darning position.

4. Set stitch regulating lever B, Fig. 10, at zero so that the feed dog will not be unnecessarily set in motion.



a



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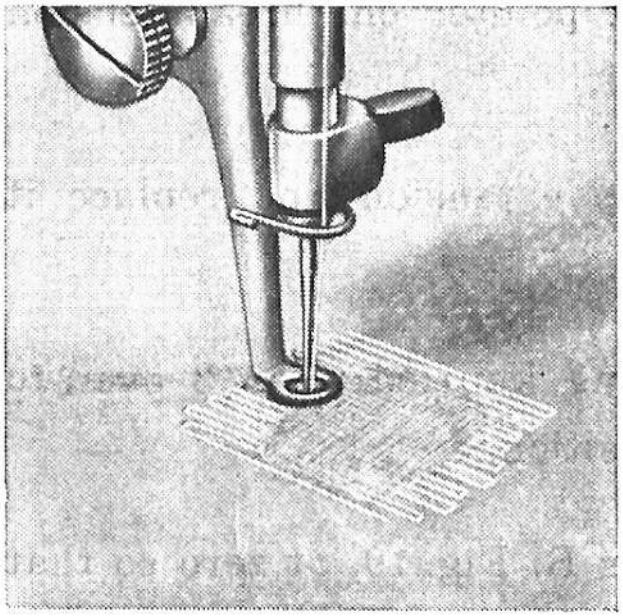


c

Fig. 12

Darning Underwear and Household Linen

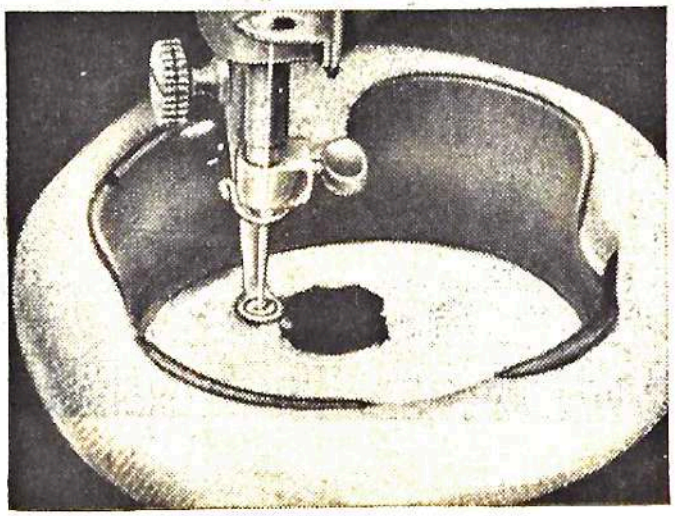
Darning household linen and underwear on the Bernina is child's play thanks to the patented hopper darning foot. Begin by stretching threads from left to right and vice versa (Fig. a). These stretched threads should be parallel and as close together as possible. The threads should not be taken farther beyond the edge of the damaged area than is absolutely necessary to give them a firm hold. It is advisable to make the stretched threads of varying length so as to prevent the material from subsequently tearing, in use, at the edge of the darn. Then begin covering the threads stretched from side to side with backward - and - forward rows. The first few of these rows should be located somewhat outside the outermost stitches of the side-to-side rows (Fig. b) so as to produce a uniform and firm darn. These covering rows of stitches should be parallel and as close as possible. For this purpose, one or two sideward stitches, at

right angles, are made at the end of each row, so that straight lines of stitches can be made. Now fill in the small intermediate spaces in the darn by means of a few more covering runs, which should not, however, be made beyond the edges of the original hole (Fig. c). If a darning ring is used, the outside ring should be wrapped round with stuff so as to stretch the fabric better and more tightly. The inner ring should be forced *well through*, so that the fabric lies *directly* on the throat plate (i. e., no space is left between the throat plate and the material being darned). The material must be firmly and tightly stretched.

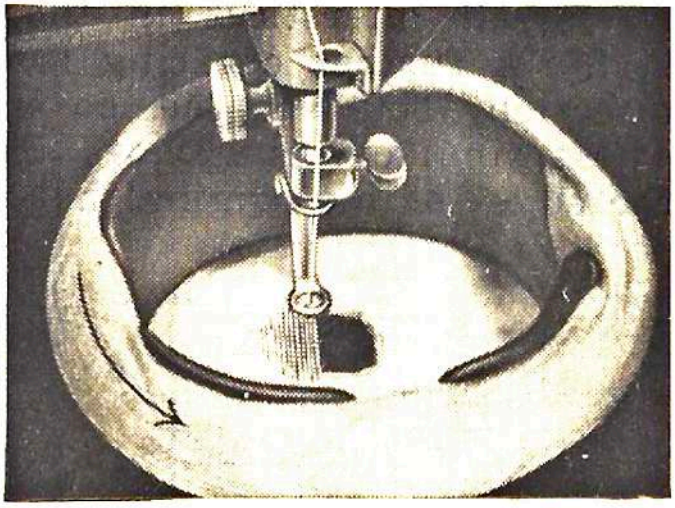
Darning Stockings

For darning stockings, use the darning apparatus, on which the stocking is rolled up in such a way that the damaged area is located in the centre of the apparatus.

Now place the stocking, fitted to the apparatus, under the darning foot and sew an ordinary seam round the damaged area; this will prevent any ladders (Fig. a). Then run parallel rows of stitches backwards and forwards, at right angles to the laddering direction of the stocking (Fig. b). The darning seams should be made about one fifth of an inch beyond the edges

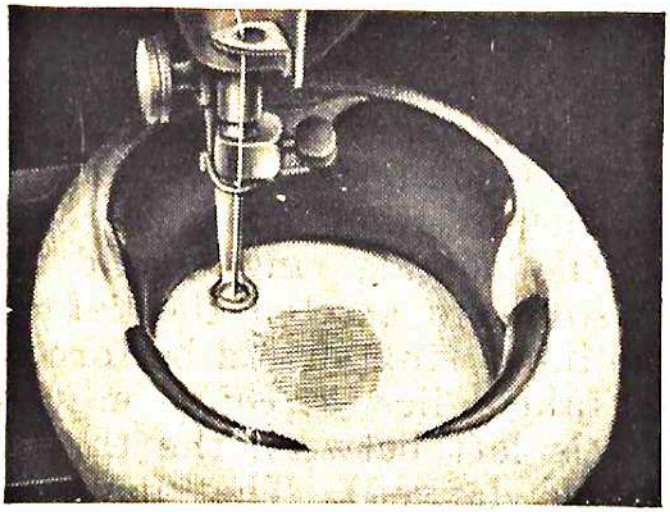


a



b

Fig. 13



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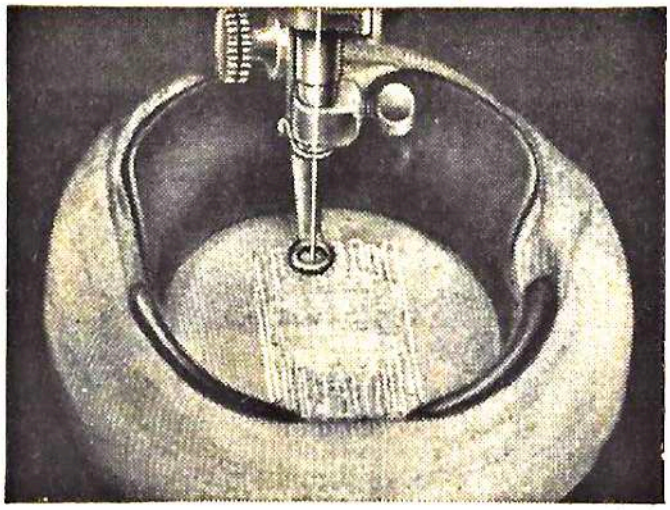
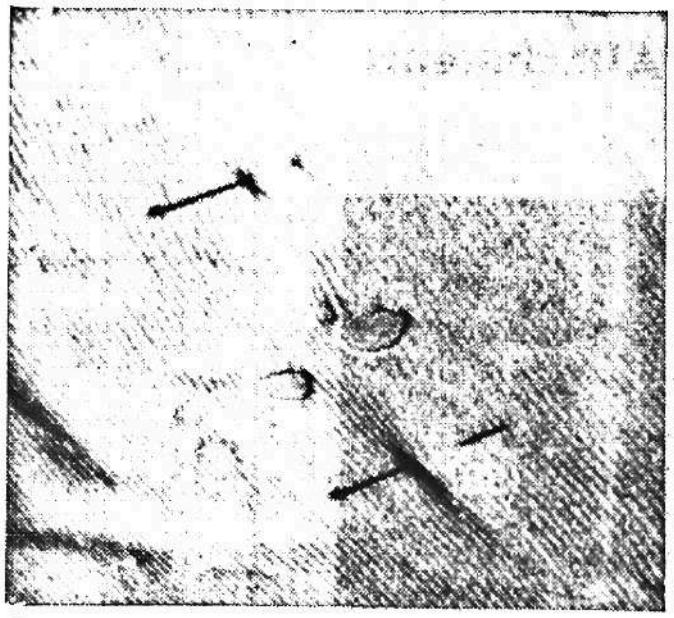


d

Fig. 13

of the damaged area, care being taken not to finish all the rows level with each other.

Now turn the darning apparatus a quarter of a turn in the direction of the arrow (Fig. b) and start covering the rows of stitches just laid. To make these cover seams less visible, they are laid in the laddering direction of the stocking; begin slightly beyond the outermost stitches (Fig. c). The covering rows of stitches, which rows should be irregular as to length, should be parallel to each other and run with the mesh of the stocking. To this end the darning device is moved not only up and down, but a few stitches are made sideways, at right angles, at the end of each row (Fig. d). Now fill in the small interstices in the actual darning area by laying a further covering row of stitches, in the same direction, between the covering rows already sewn. These final covering rows should not be made beyond the edges of the original hole.



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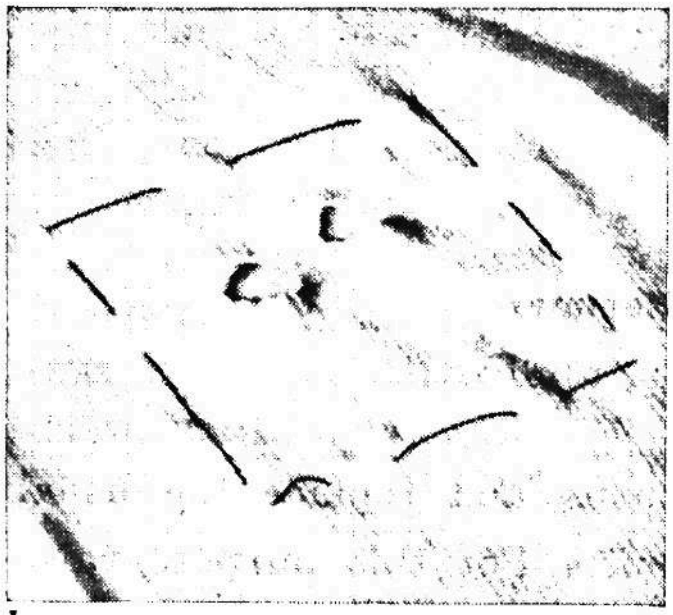

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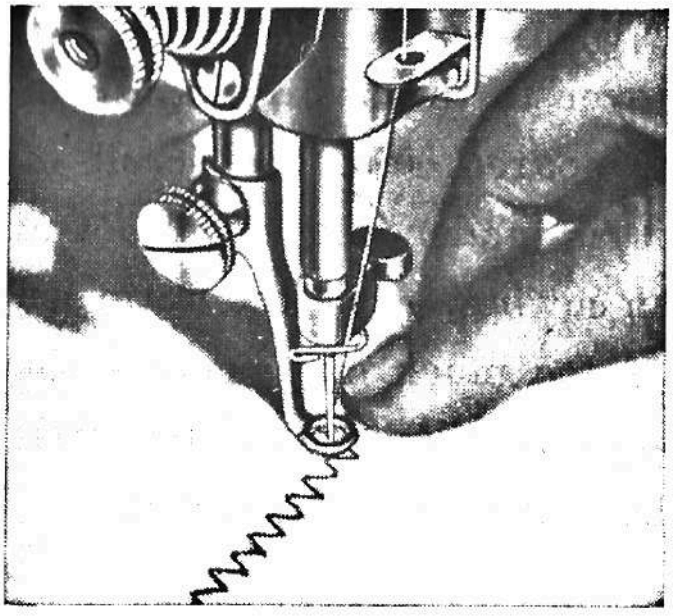


c

Elastic Mending of Stockinet

To mend stockinet, the hopper darning foot is used instead of the sewing presser foot.

The patch of stockinet material is cut to the desired shape and size, placed under the damaged area so that its meshes run in the same direction as those of the fabric to be mended, and tacked with a few stitches; the wrong side of both patch and fabric should be on the top side. Now sew the edge of the patch to the work with zig-zag stitches of medium length, guiding the work by hand, and then unpick the tacking. The zig-zag seam is best produced by sewing to and fro, changing direction again at every third or fourth stitch. About $^{2}/_{5}$ inch away from this first zig-zag seam, a second one should now be made. Finally, the damaged part of the fabric is cut away along the inner seam.

Fig. 14

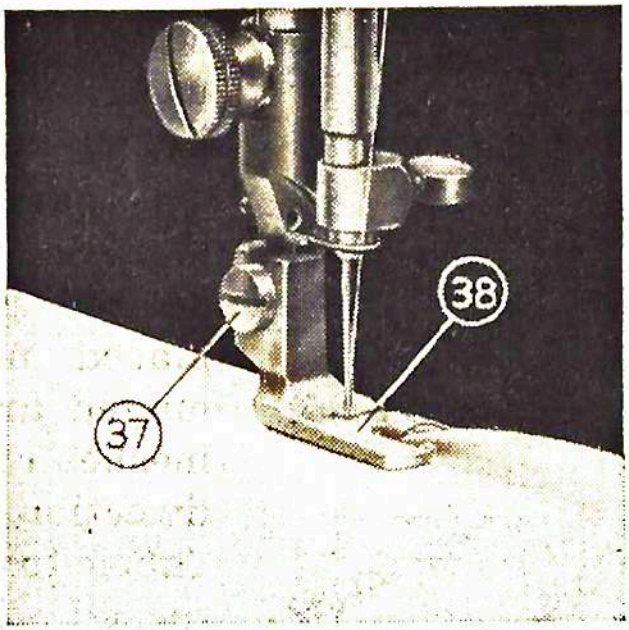


Fig. 15

The Hemmer

(width of hem, approx. 1/6″)

Loosen screw 37 a few turns and replace the usual presser foot with the hemmer. For this purpose raise the presser foot bar until the foot to be fitted can be easily inserted.

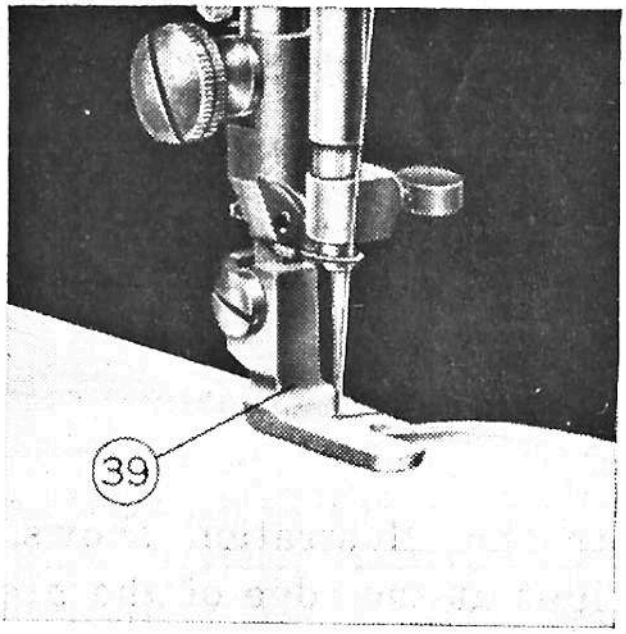
Fold the edge of the cloth over to the desired width of hem, push the fabric, so prepared, into the scroll of the lifted hemmer until it is under the needle, and lower the presser foot. When sewing, guide the upturned edge of the cloth lightly. If too much cloth enters the hemmer, the hem will be bulgy and uneven; if too little enters, the hem will not be taken in far enough.

The Lap Hemmer (Feller)

The lap hemmer is similar in shape to the hemmer just described, but has no scroll. Lap hems are used for very firmly joining two pieces of cloth ; they are produced in two operations, as follows :

First Operation:

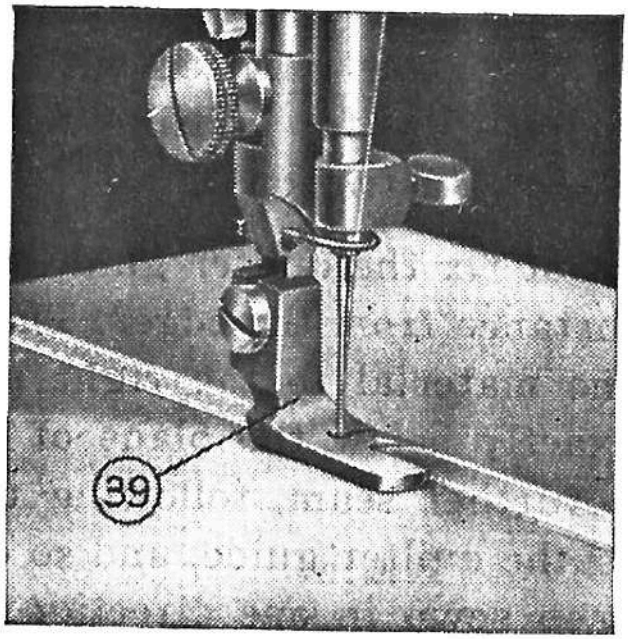
Place the pieces of fabric to be joined one on top of the other in such a way that the lower piece projects slightly, guide both pieces into the feller as when hemming, so that they are turned down. When sewing, take care that the same width of material always enters the feller.



a

Second Operation:

Unfold and lay flat the two pieces of fabric with the hem standing up like a small pleat. The projecting pleat is now guided through the feller, *in the same direction as before*, so that it is laid down and sewn on.



b

Fig. 16

Edger with Quilter Guide

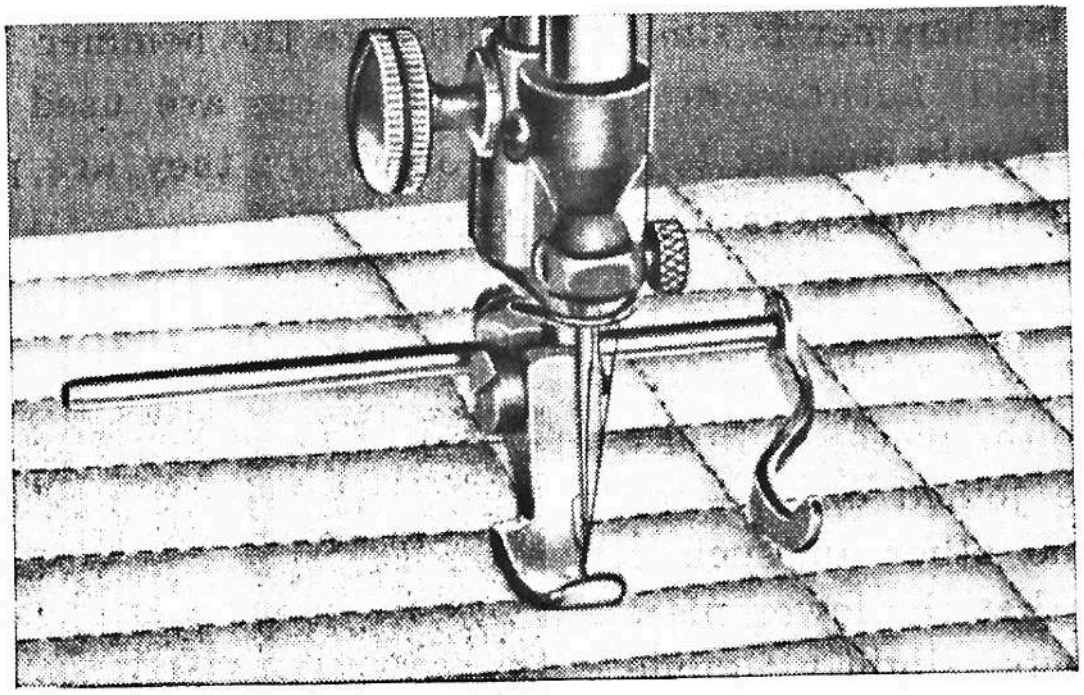


Fig. 17

As the illustration shows, the stitch hole is located right at the edge of the presser foot. This presser foot, without guide, is therefore suitable in particular for sewing directly along the edge of the cloth.

If the edger is fitted with the quilter guide, it will be found ideal for quilting work, as will be seen from the above illustration.

First fix the quilter guide with the blade at the desired distance from the edger. Then machine a seam and shift the material to the right until the seam just sewn is exactly below the blade of the quilter guide. Now run a further seam, following the first one with the blade of the quilter guide, and so on. When all the seams have been sewn in one direction, the same procedure is followed in the transverse direction.

The Ruffler

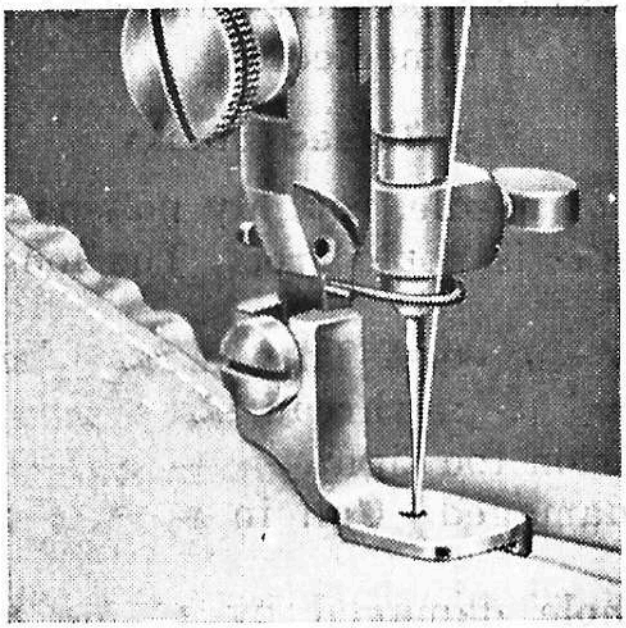


Fig. 18

Of *two pieces of material,* that which is to be pleated is placed under the *ruffler* and the presser foot lever lowered. Now insert the top material, which is to remain smooth, into the side slot of the ruffler, from the left. The more the smooth layer of cloth is held back during sewing, the larger and closer will be the pleats on the lower material.

If a *single* piece of material is to be pleated, place it under the ruffler (not in the slot of it). The pleats will vary according to the length of stitch used.

Pleats can also be produced as follows:

Charge the bobbin with thick thread (30/6). Loosen the top thread tension and sew with a long stitch. This incorrect tension will result in the formation of pleats, which can be slid as desired along the strong bottom thread. Then, with plain stitch, sew the pleats on the fabric, using a normal top and bottom thread tension, and a normal thread size. For this latter method of making pleats, the usual presser foot may be used.

Useful Hints for Remedying Troubles

We list below various possible causes of slight troubles which can be easily remedied.

Top Thread breaks

Inferior grade of needle, roughly polished.
Position of needle is not correct. The long groove must face to the *left*.
Needle wrongly threaded. Thread from left to right.
Needle too fine for the thread used.
Top thread tension too tight.
Shuttle point damaged. Call in a sewing machine mechanician!
Throat plate hole damaged by needle and needs repolishing.
Poor quality thread, or knots in thread.
Thread dried out through being stocked too long. Never keep your sewing and darning threads in heated rooms!

Bottom Thread breaks

Bottom thread tension too tight.
Bobbin crushed or otherwise jammed in its case.
Needle not sharp enough.
Needle plate hole damaged. Screw off needle plate and have it repolished.

Skipping stitches

Low-grade needle, roughly polished.
Needle bent or blunt.
Wrong needle system used. Use system 705 needles only.
Needle wrongly threaded.
Position of needle is incorrect. The long groove must face to left.
Needle not pushed right up.
Needle size unsuitable for thread.
Presser foot does not bear correctly on throat plate.
Stretch the material somewhat over seams, i. e. stretch it slightly at front and back.

Needle breaks

Low-grade needle.
Needle bent.
Needle too fine for the thread used.
Top thread tension too tight.

Cheap thread used which is unevenly twisted or perhaps even knotted. *One single knot* on a reel of thread may break the needle and possibly damage the throat plate, so that the saving realized by purchasing cheap cotton is highly problematical.

If the work is withdrawn *towards you* from the presser foot, the needle will frequently be bent. At the next stitch made the needle may strike the throat plate and break. Therefore, always pull the work away from the presser foot *in a rearward direction.*

Whilst sewing, however, the fabric should not be pulled backwards *too much.*

Work puckers

Presser foot not lying even on the throat plate. Call a sewing machine mechanician!

In the majority of cases, too tight tension in relation to the fabric is the cause (regulate tension as per instructions on page 12).

When sewing stockinet, never pull the work backwards with your hands, as the stockinet will pucker if you do so. On the contrary, it is better to help to feed the work by pushing it slightly with your hands whilst sewing.

Machine runs hard

If the machine has been left unused in a damp room for a long time, or if inferior-grade oil resinifies when the machine is left idle for a protracted period, the machine will run hard. If this occurs, squirt paraffin oil into all the lubricating holes, let the machine run for a time until the gummed oil residues have dissolved, and then oil again. This procedure should be repeated until all the resinified oil has been flushed out of the bearings. In particularly bad cases of oil gumming it will be necessary for a sewing machine mechanician to take to pieces the machine completely and clean it.

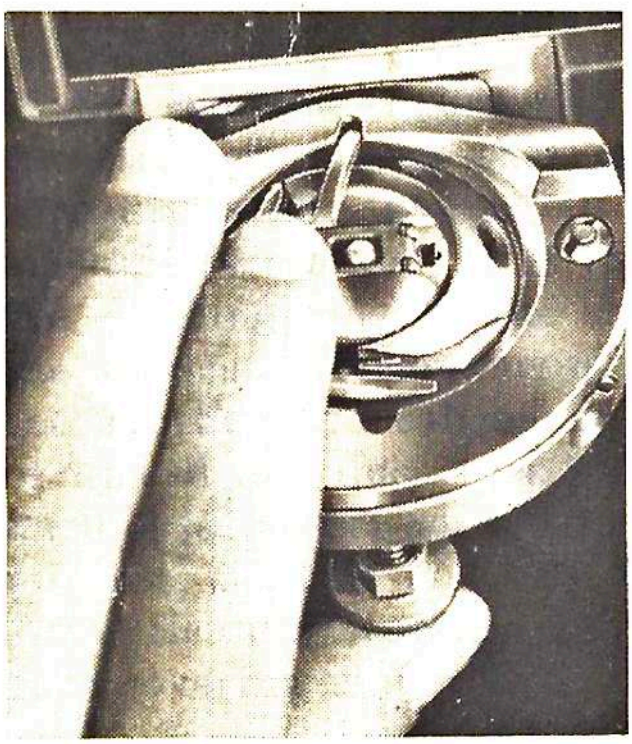


Fig. 19

Shuttle is blocked

If the machine refuses to run either forwards or in reverse, or if an unusual noice is noticed, this means that thread has got jammed in the shuttle race owing to incorrect operation of the machine. It is necessary therefore to take out the shuttle and to clean its race with a small brush. Do not use hard tools for this purpose, such as scissors, screwdrivers, etc., as you may damage the shuttle race. The way to remove the shuttle is very easy. Put the index of the left hand on the bobbin case and with the thumb press on the button at the back of the shuttle race, in order to reject the shuttle covering ring. Now, you can easily take out the shuttle together with the bobbin case. After having cleaned the shuttle race, first insert the shuttle, then its covering ring and at last the bobbin case.

Standard Accessories

for the Model 114 Bernina Sewing Machine

Part.No.	**On the machine**
851	1 sewing presser foot, hinged
1015	1 presser foot extension
	In the Spares Box
865	1 wide hemmer
862	1 lap hemmer (feller)
863	1 edger with quilter guide
804	1 darning foot
134	6 bobbins, including one fitted in machine
1339	1 oilcan
176	1 screwdriver, large
178	1 screwdriver, small
	1 packet of assorted needles, system 705
	Further accessories
715	1 extension plate
	1 instruction book
	Supplied at extra charge
866	ruffler
861	narrow hemmer
	embroidery ring
	darning apparatus for stockings