INSTRUCTIONS

FOR THE USE OF THE

VIBRATING SHUTTLE

SEWING MACHINE.

ENTERPRISE

W. H. NICHOLLS & SON,

MARKET HALL, ROCHDALE.

13:484 engl. vibr.

Instructions

for using

The Vibrating Shuttle Sewing Machine.

The following directions have been found sufficient to explain the working of this machine without personal instruction It is best that the operator should perform the manipulations described, whilst a second person reads the directions aloud. Nothing shuld be hurried but everything thoroughly understood and practically carried out.

The machines are always properly set with the thread drawn through the needle before delivery, ready for use. When unpacking the machine take care to observe the manner in which it is threaded up, that you may repeat it.

1. THE BELT is passed up from behind inside the guard of the upper wheel, and its ends are led through both holes in the table, joined together and passed under the wheel. The belt communicates motion to the machine, and should always be tight enough to drive it without slipping, but not tighter than is required or it makes the machine run heavy. Should the belt become slack, it must be uncoupled and cut the desired lenght, then rejoined by the hook.

2. THE TREADLE. To enable the treadle to be worked, without injury to the machine, first raise the presser foot and then disconnect the upper wheel from the machine by loosening the disc in its centre and allow it to revolve loosely on the shaft.

It is very essential to work the treadle steadily, therefore it will be well to practise and thoroughly accustom the feet to its motion prior to working the machine. Take particular notice that the upper wheel must always turn towards you.

If the machine is worked, without any fabric being used, the presser foot should always be lifted by the lever, to prevent injury to the teeth of the feeder.

After having learnt to work the treadle, take a piece of shirting, put it under the presser foot, fasten the upper wheel and work the machine, **without having threaded the needle**, so as to learn to guide the fabric. Try first to guide the fabric along straight afterwards along curved lines.

3. THE NEEDLE. To set the needle proceed as follows: first raise the needle bar to its highest point and loosen the screw that clamps the needle. The needle is flattened on one side and this flat side must be placed to the right.

Pass the needle up under the clamp as far as it will go, then tighten the clamp screw and the needle will be fixed in the proper position. Please note, however, that the needle holder is gauged for our own needles only and will not fit other makes; moreover, it is of the highest importan

use needles of first class quality only and it is advisable, therefore, in order to avoid irregularities or trouble to get them where the machine was bought.

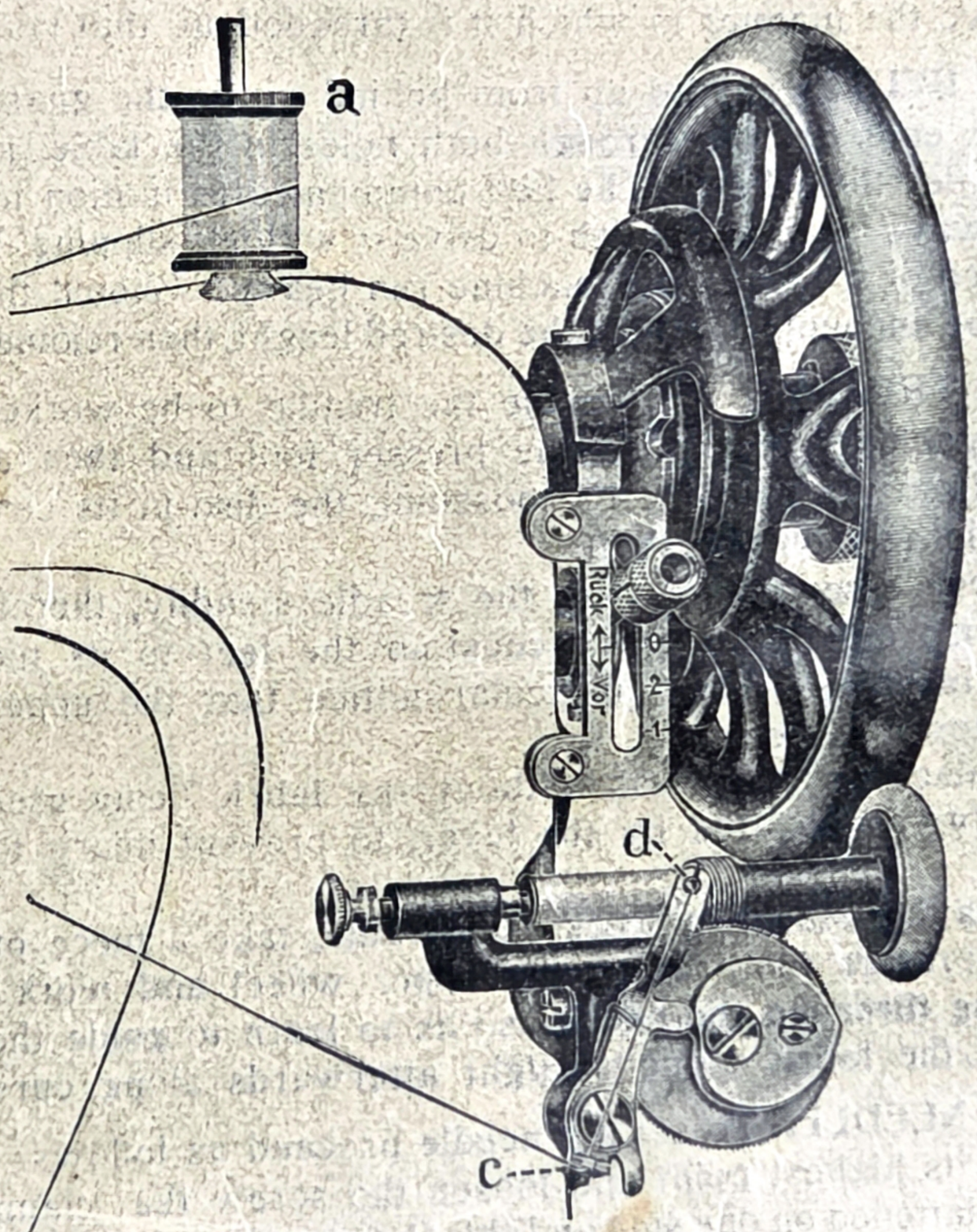
The condition and movement of the needle should be examined dally, and if the point be blund or rough, it should be replaced by a new one. The machine will never sew satisfactorily if the needle is not sharp and clean.

Should the eye of the needle be rough and cut the thread, draw through it, to and fro in all directions, a coarse thread saturated with oil and fine emery, until it is smooth. It is very important always to suit the thread to the needle, i. e. to choose a thread wich completely fils the groove in the needle as it passes through the fabric. (See table on page 16.) The lower thread should be somewhat finer than the upper one.

4. TO THREAD THE NEEDLE. Lead the thread from the spool through the upper eye on the left hand side of the face plate down from right to left between the tension discs, through the eye of the little spring to the left of these at the base of the front plate, behind the hook on the needle bar and then from left to right through the eye in the needle.

Leave about 4" of thread protruding when the thread-lever is at its highest point.

TO WIND A BOBBIN disconnect the upper fly wheel and then place the bobbin in the winder, so that the little pin on the right hand side spindle



fits into the hole in the flange of the bobbin. The left hand spindle of the winder, acting upon a spring, gives way a little to admit of inserting the bobbin.

Lead the thread from the reel on top of the arm through the tension discs on the head of the machine and then down through the slottes holes "c"

and "g". Then fasten the thread by squeezing the end between the bobbin and the right hand side spindle, press the India rubber ring against the fly wheel, slightly oil the left end of the bobbin and everything is ready for winding.

Care should be taken to always start winding up the thread at the right hand side of the spool, and not to pass any knots. When completely filled the winder will automatically cease to work. To avoid constant interruption of the work it is advisable to wind several bobbins at a time.

6. TO THREAD THE SHUTTLE. Take it in the left hand between thumb and middle finger, insert the bobbin with the thread running off underneath to the left and pass the thread through the slit down towards the pointed end, taking care to close the opening with the forefinger whilst pulling, to prevent the bobbin from coming out again.





The thread will then come off under the little spring and the shuttle is ready for use with about 3" of thread drawn.

To regulate the shuttle tension turn the little screw near the pointed end of the shuttle

to the right if you want to increase,

to the left if you want to diminish the tension.

7. TO OIL THE SHUTTLE RACE. Underneath the front shuttle slide near the end of the race a little hole is provided for the reception of some cotton. This cotton must be kept well saturated with oil which oozes from here through a small channel in minimal quantities to the shuttle. By this method a constant and regular lubrication of the shuttle and shuttle race is obtained. Of course, if the cotton through long standing should have become hard and unfit for the purpose it must be renewed.

8. PUTTING THE SHUTTLE IN THE MACHINE AND TAKING IT OUT AGAIN.

In both cases bring the carrier, by turning the small wheel, right to the front.

Insert the shuttle with the spring on top and the pointed end towards the operator.

To remove it press the small stud on the base plate right under the winder forward which will lift the shuttle out of the carrier, but never attempt to lift it out by the spring as this would damage the shuttle tension.

9. THE LENGTH OF STITCH. After each stitch the feeder draws the fabric forward the length of a stitch. The length of the stitches can be altered by means of the screw "d" between base of arm and fly wheel, just above the winder; if this screw is turned to the right the stitches will be shortened, if turned to the left they will be lengthened.

The machines provided with reversible feed have a longer but smaller screw instead and the length of stitch is altered by screwing this in for smaller and screwing it out for larger stitches. This screw also controls the direction of the feeding movement; if it is pressed down the machine sews forward, and if it points upwards the movements of the feeder are reversed and the machine sews backward with the same sized stitch. In any case, however,

that is whether sewing forward a backward, the screw must be pressed down or pushed up as far as it will go.

Should this latter screw become too loose, it must be tightened again by turning the small screw close to it, at the left hand side, to the right.

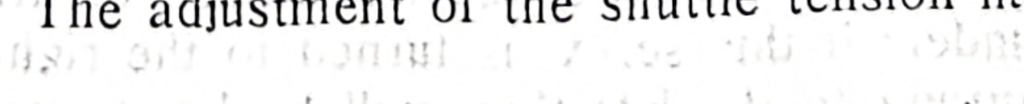
10. REGULATION OF THE PRESSER BAR is effected by the thumb screw on top of the face plate just behind the needle bar.

Thick and hard materials require a stronger pressure than thin, soft goods, and for such this screw must be turned to the right. To lessen the pressure loosen this screw somewhat by turning it to the left.

Care must be taken to always have the pressure properly regulated, as, if it be too strong on goods of fine texture, the latter would be crumpled, and on the other hand, if too loose for heavy goods, when going up the needle would also lift the presser foot.

11. TO SEW. When the threading of the upper and under threads is accomplished as described previously, hold the upper thread with the fore-finger of the left and lightly, whilst the wheel is turned once round with the right hand, until the needle has again reached its highest point. Now use the screw driver or any other suitable article to whisk out from under the presser foot the loop of the under thread which will have been drawn up by this time and lead both ends backward. Then place the material under the presser foot, lower the latter by means of the lever and commence to sew. When sewing through thick, hard material, turn the wheel gently with the hand to prevent the bending or breaking of the needle. If, after completing the work, it be desired to withdraw the material, raise the needle, lift the presser foot, disconnect the tension by pressing upon the catch of the tension discs, and pull out the material. This must never be done by pulling towards the operator but the threads must be drawn out **always under the presser foot from behind.** This point will have to be carefully attended to, as otherwise the needle will be bent or will come in contact with the needle plate, in consequence of which the machine will miss stitches and the needle will break. To obtain a faultless lockstitch, see to it that:

12. THE TENSION is always properly regulated, which means that the tension of the upper or needle thread shall invariably be as strong as that of the shuttle thread. A perfect stitch shows the same appearance on the upper and the lower side as below.



The tension of the upper thread is regulated by means of the milled-head tension nut acting directly upon the tension discs. If this nut is turned inwards i. e. to te right, the thread will tighten; and if outwards, it will, on the contrary, slaken. The adjustment of the shuttle tension has been described before.

After a few stitches are formed, stop and examine them.



Should there be loops projecting or a straight thread upon the lower surface, as above, turn the tension nut inwards, to tighten the tension of the

needle thread. If the thread lies straight upon the upper surface, as below, turn the tension nut outwards, to loosen the tension of the needle thread.



The secret of perfect sewing lies in so adjusting the tension of the needle thread, that it equals the tension of the shuttle thread. The adjustment of either may be regulated as before described.

To test the shuttle tension pull the thread slightly backwards — towards the open end of the shuttle, — and if it draws tightly without breaking it is right for goods of firm texture. Thin, soft goods requiere a looser tension.

In proceeding with the work care should be taken neither to draw nor push the material as this would break the needle.

It may be advantageous here to describe the manner in which the stitches are produced by this machine.

The needle passing through the fabric leads part of the upper thread below the needle plate. In rising, it forms a small loop in the thread which is caught and spread by the point of the shuttle passing the needle. This loop, through which the lower thread is carried by the shuttle, is then taken up by the thread lever, and tightened by the formation of the next stitch.

13. TO CLEAN AND OIL THE MACHINE. When in constant use the machine should be thoroughly cleaned and oiled daily. Before oiling raise the presser foot and bring the needle up to its highest position, then be sure to remove with some small piece of soft cloth all the old oil, grit and dust that may have accumulated, so that every part is perfectly clean.

Besides all the holes which are provided for this purpose, leading to parts subject to friction, and of which there are 7 altogether:

1. 1 near the spool pin.
2. 2 on the top of the arm near the front end
3. 1 near the belt guard
4. 1 just above the tension discs
5. 1 in the upper fly wheel
6. 1 in the winder;

the following places are to be oiled:

7. the upper part of the needle bar
8. the cotton underneath the front-slide (see page 4)
9. the bearings of the shuttle lever — underneath the bed plate
10. the 2 endbearings of, and the stud of the pitman acting upon, the shaft in connection with the feeder
11. on the stand: all the bearing of the treadle, the driving wheel and the crank.

Should the machine run hard, one or the other of the parts requires oiling, or the oil used has been of an inferior quality and got sticky. In this case oil all the parts freely with benzine or petroleum, run the machine for a little while rapidly in both directions, wipe dry and then carefully oil with the best Spermoil specially prepared for sewing machines which, in fact, should always be used.

To make sure of procuring good oil, buy it where you bought the machine.

If always kept clean and treated properly the machine will wear but slightly and last a life time, although, of course, some of the parts specially

liable to wear and tear may in the course of time wear out. Such parts, however, can easily be replaced by new ones obtainable from the agent where the machine was bought, the construction of the machine being so simple that anybody can do it so that in such a case it would not even be necessary to send the machine out for repair.

But if the owner cannot put the machine in order he should unscrew it from the table and send it to the agents with all the fittings, together with a statement of the difficulty experienced.

Advice for keeping the machine in good running order.

Every machine is thoroughly tested before being sent out. Should one be found not to sew well, the cause will probably arise from an improper use. It is therefore recommended not to attempt any alteration to the machine, before being assured that the needle is properly set and the tension regulated.

Should the lower thread break:

1. The tension in the shuttle may be too great, or
2. There may be a sharp edge in the throat-plate, or there is
3. A rough edge on the shuttle.

Should the upper thread break, the reason may be that:

1. The tension is too tight, or
2. The needle is too fine for the thread, or
3. It is not set properly, or
4. It does not pass centrally through the hole in the throat-plate, so that is touches, or
5. The throat-plate is incorrectly placed. In changing the throat-plate care should be taken that after having screwed it down, it will be freely passed by the needle and that the needle in passing down does not touch the shuttle. To ascertain this, press the needle when down gently with the screw driver towards the shuttle. If it then lightly touches the shuttle the position is right; if, however, the point of the shuttle gets behind the needle, the throat-plate must be moved a little to the left.
6. The eye of the needle is sharp or the point blunt. The former is very propable if you find the needle unthreaded.
7. The feeder does not move the fabric regularly, its free action being hindered by dirt, pieces of thread, or want of oil,

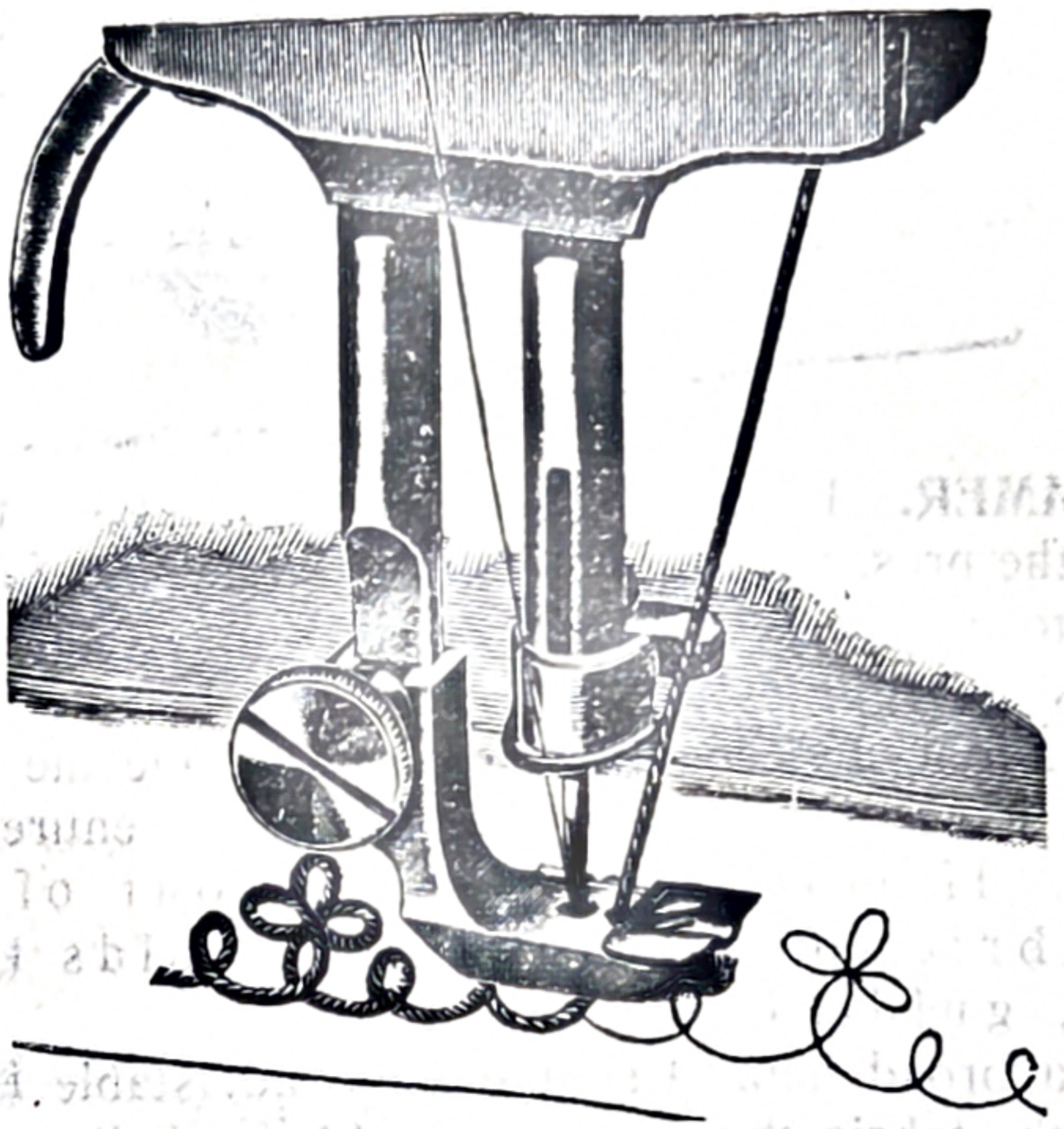
Should there be skipped or long stitches at intervals, the reasons may be that:

1. The needle is set too low, or
2. The needle has become bent away from the shuttle, or
3. It is too fine, or
4. The machine has an irregular action in consequence of dirt or want of oil.

Directions for using the attachments.

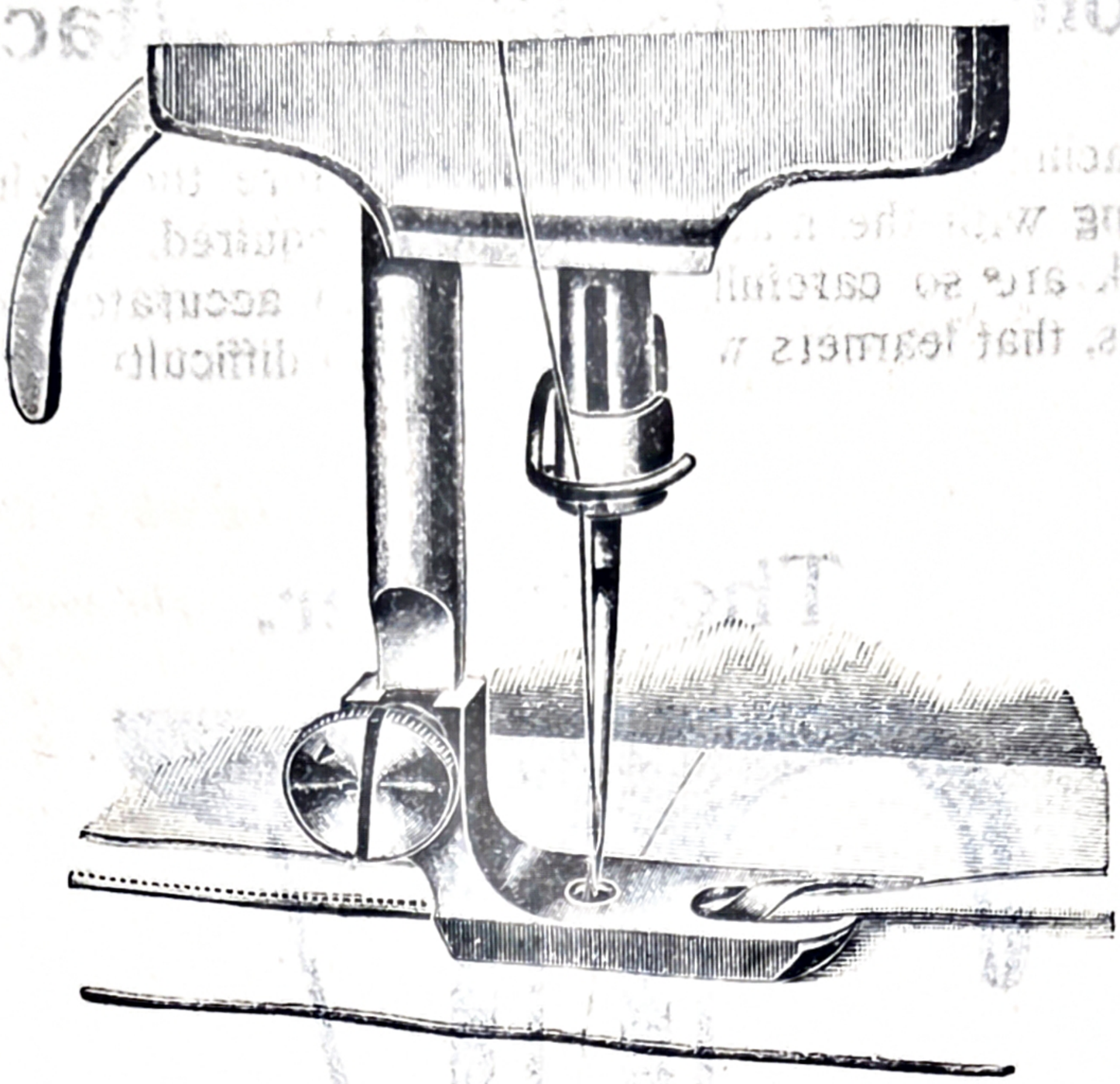
The attachments should not be used before thorough proficiency in ordinary sewing with the machine has been acquired. The various fittings for other work are so carefully described and accurately depicted in the following pages, that learners will experience no difficulty in the use of them.

The Braider.



THE BRAIDER is a presser foot which has a slot in front of the needle hole. It is be attached to the presser bar. A wooden spool upon which the braid is evenly wound is placed upon one of the pins on top of the arm. The end of the braid is passed through the eyelet on the left hand side of the face plate, then through the slot in the braider and drawn back, so that it lies right under the needle. The slot can be regulated according to the thickness or width of the braid. It is only necessary to guide the fabric properly to sew down the braid to any previously designed pattern.

The Hemmer.



THE HEMMER. To make a narrow hem: Attach the hemmer to the presser bar, lift the presser foot, commence the hem by folding it at the end, attach a thread to it with a needle, draw the thread and the fabric into the hemmer (or pass the edge of the fabric into the hemmer without a thread), lower the presser foot, and commence to sew, guide the edge of the fabric with the right hand taking care that the fabric entirely fills the mouth of the hemmer. If the edge unfolds out of the hemmer, guide the fabric to the right; if it folds too much into the hemmer, guide it to the left.

To make a broad hem: Use the wide adjustable Hemmer as shown in diagram, fold the fabric the desired breadth (including the plait) and pass it through the hemmer in the same way.

To make a broad hem with a thicker fabric, use the ordinary presser foot fold the fabric twice to the desired breadth bringing the inner side under the presser foot, so that the edge of same serves as guide.

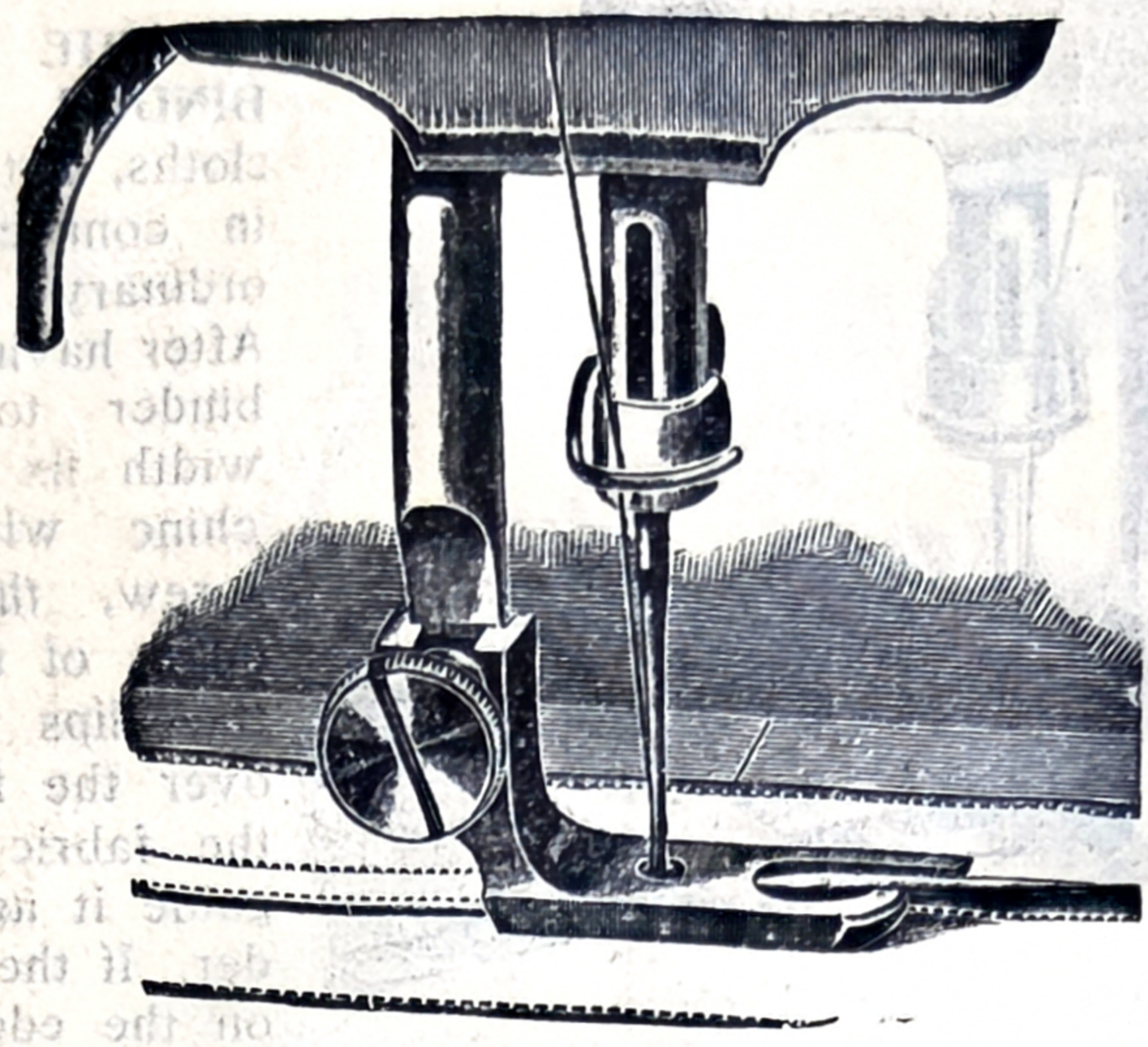
The Corder for Piping.

This corder is to be fixed in the place of the ordinary presser foot and serves for sewing cords into shirt collars, wrist bands etc. This apparatus has two prongs, the smaller one of which is adjustable, which serve to guide the cord to be sewn in between them, at the same time pressing down the material lightly over the cord so as to bring the latter out into bold relief.

The cord is laid in with the hand and pressed down with any kind of tool; of course, care is to be taken that it always runs between the prongs.

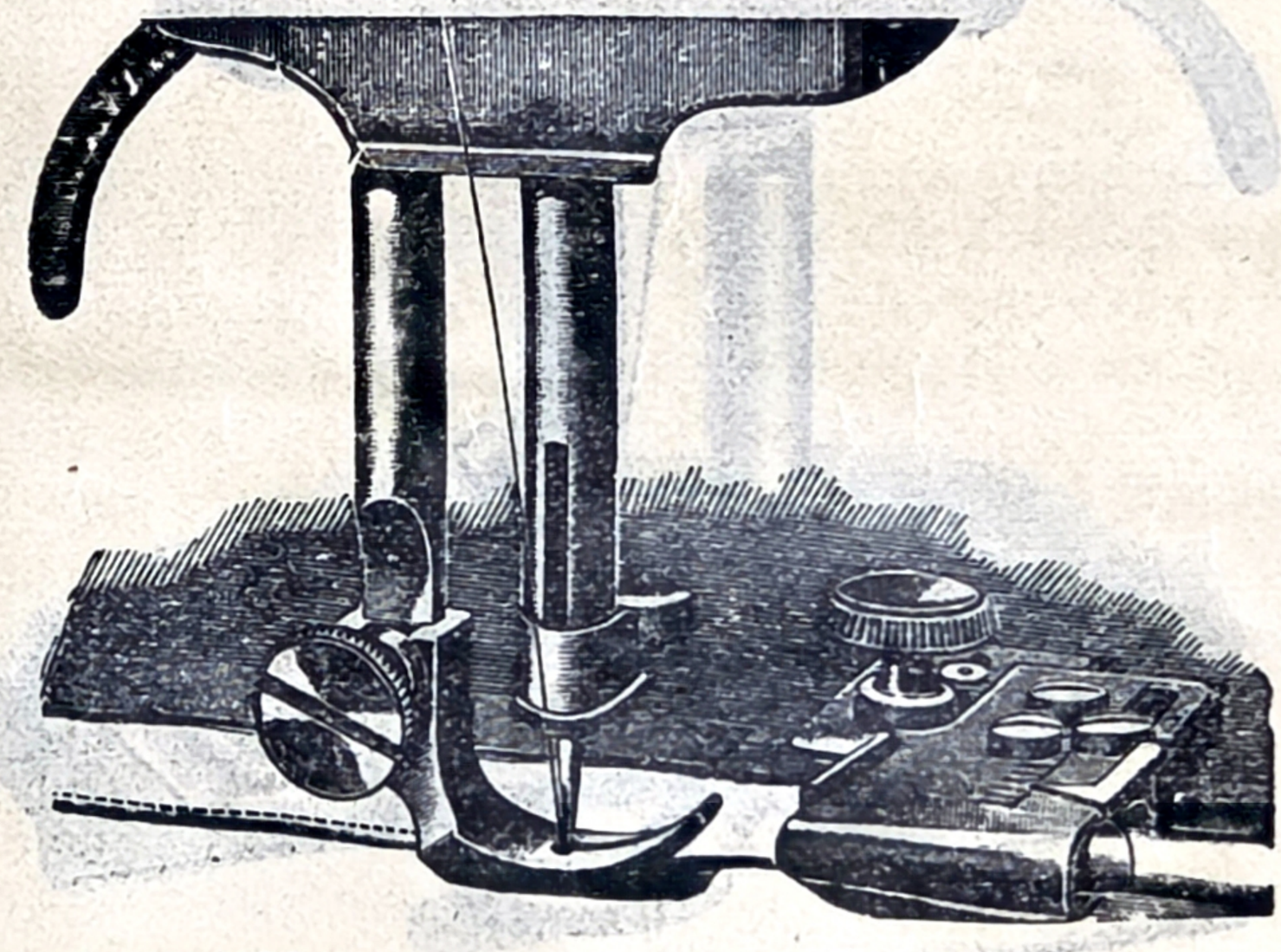
If several cords are to be put on in adjacent rows, the finished cord could run right along the edge of the small prong so as to serve as guide for the next one.

The Fell Seamer.



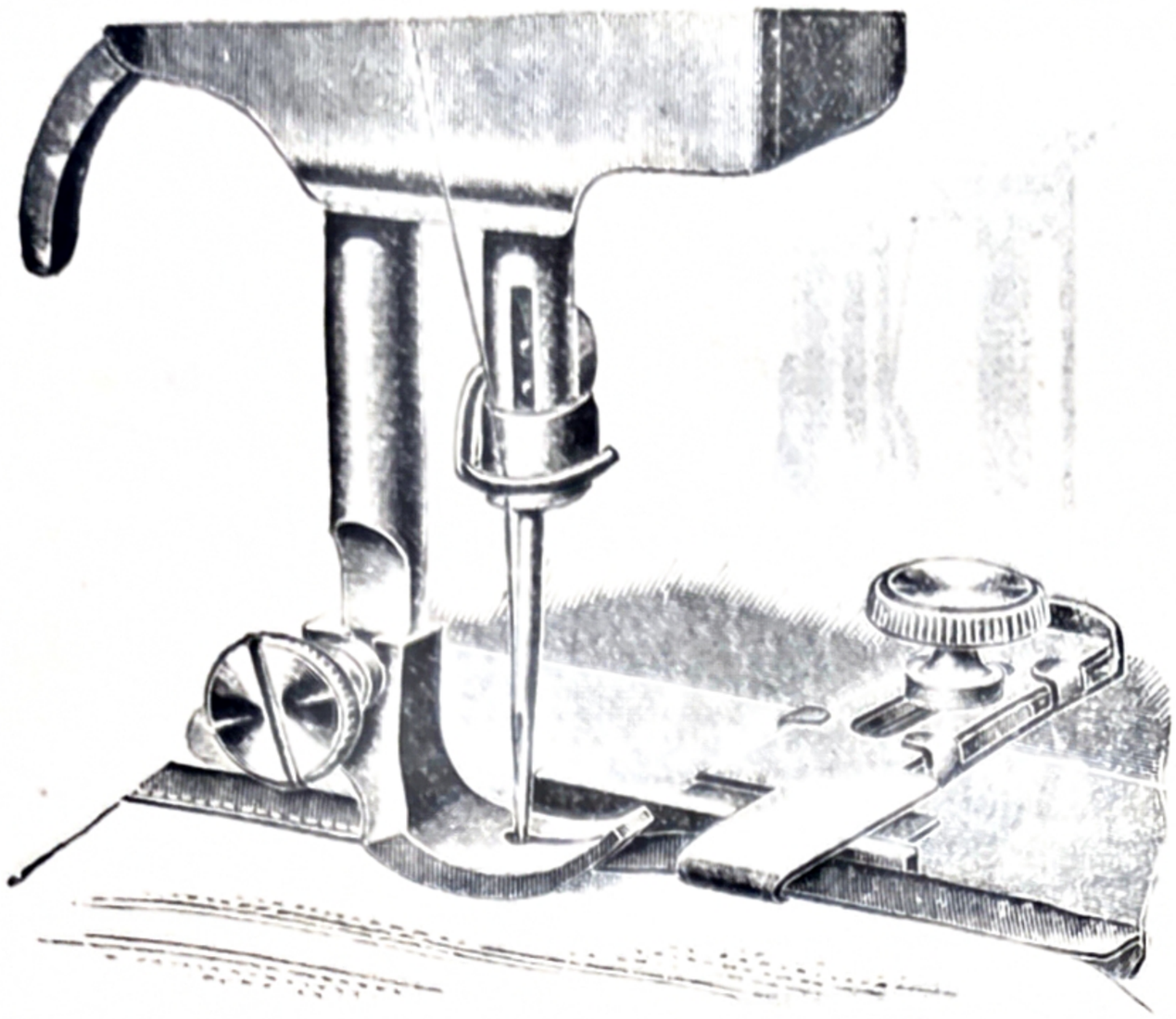
THE FELL SEAM FOOT is attached and used similarly to the foregoing hemmer. To make a fell seam, join the two edges of the fabric by a seam about three eighths of an inch from the edge, then open out the seam, turn one into the hemmer to turn the fell.

The Adjustable Hemmer.



THE ADJUSTABLE HEMMER for hemming towels, napkins table cloths and other coarse fabrics enables the operator to make hems of various widths. Adjust the hemmer to fold the desired windth of hem, fix it firmly to the machine with the thumb screw, then turn down the edge of the fabric one fold only, and pass it into the hemmer with a double fold to complete the hem. If the sewing is not on the edge of the hem, loosen the screw and move the hemmer a little to the right or left, until it is in the right position.

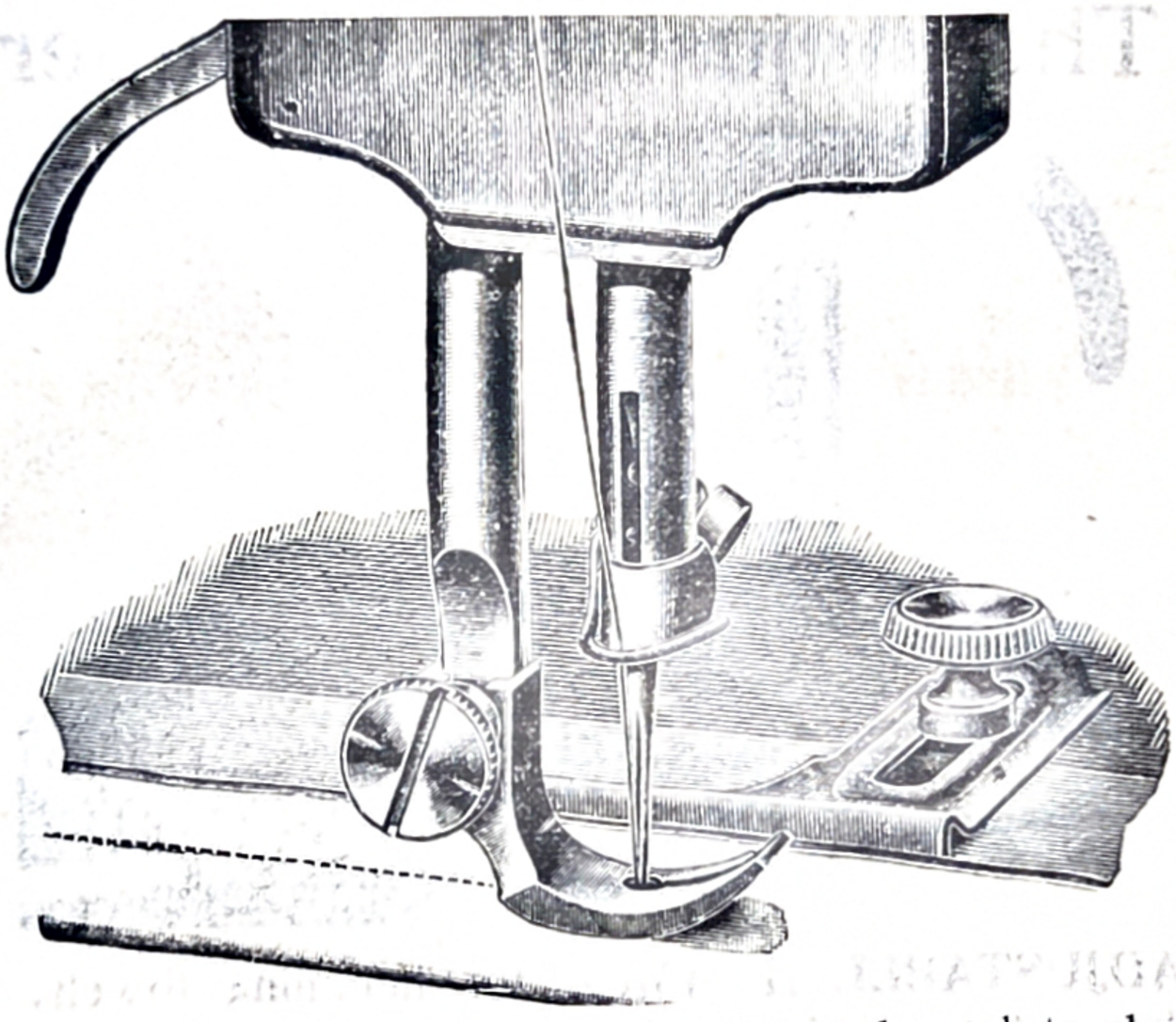
The Adjustable Binder.



THE ADJUSTABLE BINDER for binding cloths, hats, etc. is used in connection with the ordinary presser foot. After having adjusted the binder to the desired width fix it to the machine with the thumb screw, then place the edges of the tape under the clips with the ends over the feed point, put the fabric between and guide it against the binder. If the sewing is not on the edge of the tape the screw must be loosened a little and the apparatus can then be moved in either direction.

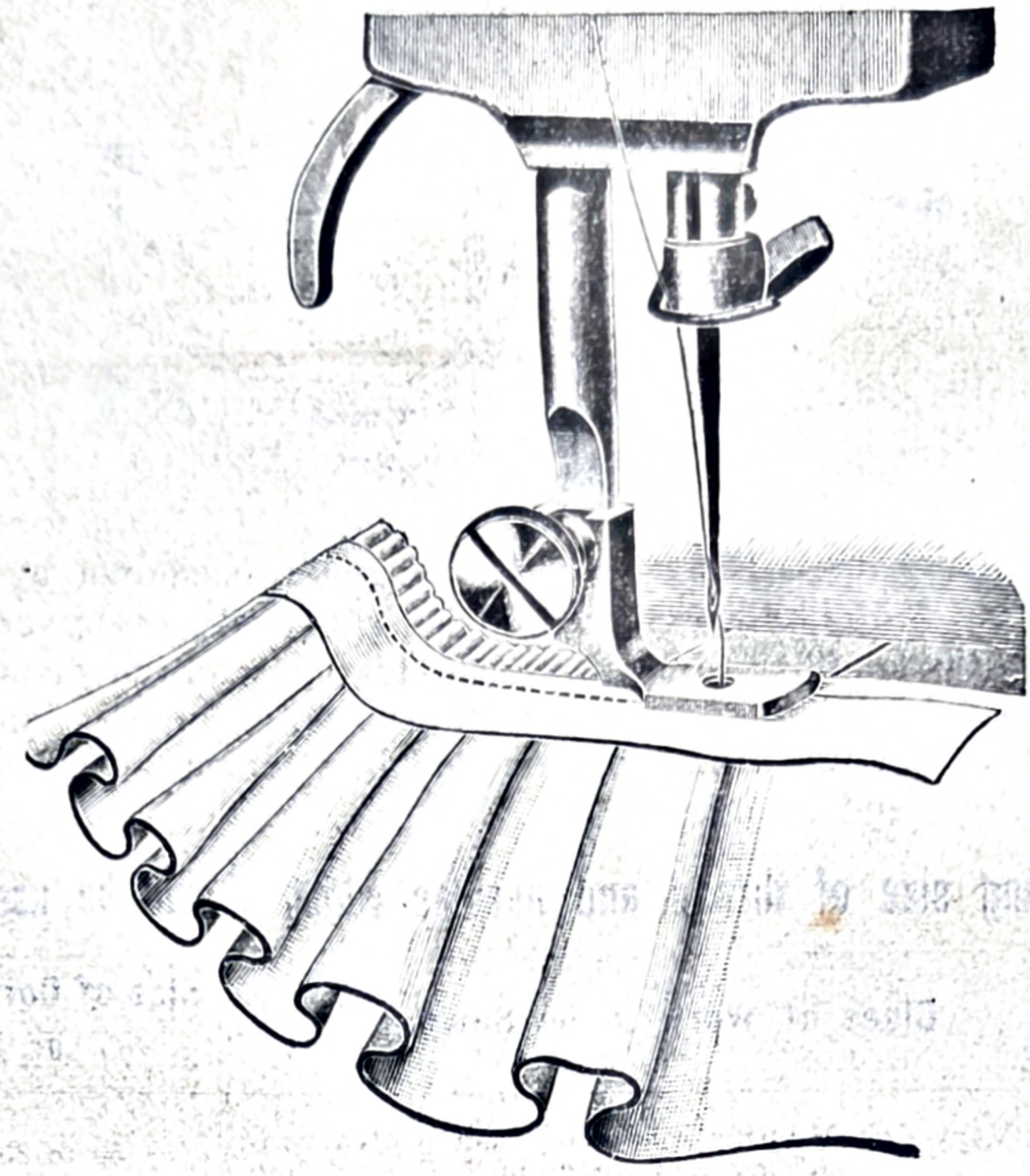
The underclip may be adjusted to fold the under side of the binding wider than the upper.

The Straight Guide.



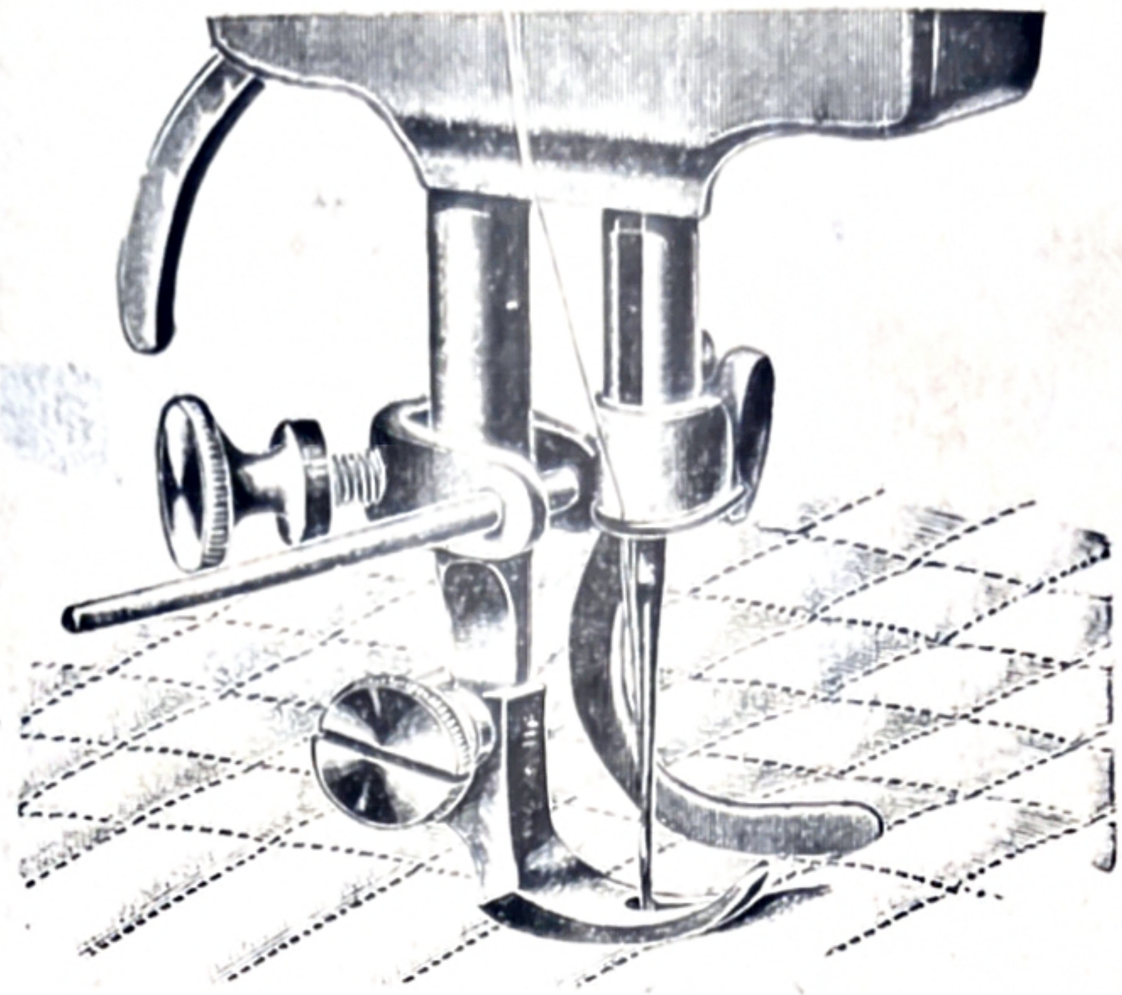
THE STRAIGHT GUIDE is fastened to the plate by the thumb screw if a seam is to be made parallel to an edge. The straight edge of this guide is fixed so far from the needle that the stitching is formed the desired distance from the edge of the fabric. This guide also serves to sew frills and borders, also the sew in a straight line and at an equal distance from other seams. It aves the trouble of draving lines.

The Ruffler.



THE RUFFLER. By means of this simple apparatus the lower one of two overlying folds of material can be ruffled whilst the upper layer remains smooth and even. The fitting on to the machine is effected in the same way as in the case of all the other special attachments. Bring the material which is to be ruffled under the apparatus upon the feeder and that which is to remain smooth over it, into the incision of the apparatus. The feeder now will act only upon the under layer of cloth, while the upper is being comparatively retarded in its course between the two plates, and this will cause the under layer to crumple up in small frills. The wider the stitches, the larger will be the gathers. Closer tucks can be made by stopping the upper layer of material in its course. The management of this apparatus requires some practice.

The Quilting Guide.



THE QUILTING GUIDE: Attach the guide as shown by the engraving, make a straight line upon the fabric with chalk or by creasing, and stitch upon it; then adjust the gauge arm to the required distance for the next line of stitching, and guide the fabric with the line already sewn directly under the gauge arm. This second line serves in like manner as a guide for the third and so on.

Table indicating size of thread and needles which should be used together.

Size of Needle.	Class of Work to be Sewn.	Size of Cotton, Thread or Silk.
8	Very fine Muslins, Cambrics, Linen etc., Tucking and Stitching.	150 to 300 Cotton.
9	Very fine Calicoes, Linen, Linen-Shirtings, fine Silk Goods etc., Tucking, Hemming and Stitching.	80 to 150 Cotton. 30 to 36 Silk Twist.
10	Shirtings, Sheetings, Bleached Calicoes, Muslins, Silks and General Domestic Goods, and all classes of General Work.	60 to 80 Cotton. 24 to 30 Silk Twist.
11	All kinds of heavy Calicoes, light Woollen Goods, heavy Silks, Seaming, Stitching etc.	40 to 60 Cotton. 20 to 30 Silk Twist.
12	Tickings, Woollen Goods, Trousers, Boys'-Clothing, Corsets, Cloaks, Mantles etc.	24 to 40 Cotton. 16 to 24 Silk Twist.
13	Heavy Woollen, Tickings, Bags, heavy Coats, Trousers etc., heavy Clothing generally.	10 to 24 Cotton. 60 to 80 Thread.
14	Bags, coarse Cloths, heavy Goods of any texture.	40 to 60 Thread, very coarse Cotton or Silk.

Use needles only which bear the No. on their top end, and buy them where you got the machine; when ordering always state size required.

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