



German Patent.

Austro-Hungarian Patent.

Swiss Patent,

English Patent.

Italian Patent.

Herewith is a sketch and description of an article which is an indispensable adjunct in every household, the

Automatic Needlework Holder,

patented in all manufacturing countries and which may be used in all cases where materials have to be tacked or sewn by hand. The loaded pin-cushion which in former days, when sewing was done by hand, served as needlework holder, has long ere now been almost universally discarded, and hence we see our house-wives frequently make shift by pinning the material to their dress over their bent knee, or adopting some other, equally inconvenient plan. All this is remedied, once for all, by the use of our Automatic Needlework Holder, which can readily be attached to any of our sewing-machines.

The material to be sewn should be inserted into the holder, from the side opposite to that on which the ball is fixed. On simply pulling the material with the left hand, it is sufficiently held fast in order to execute any kind of sewing with the right hand.

Whenever it is found desirable to shift the material it need only be moved forward to the desired position, without any need of raising the holder-head, and refixed by bolting as before.

This apparatus indisputably supplies a long-felt want in every family and in any place of business where sewing is done.





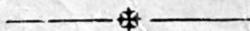
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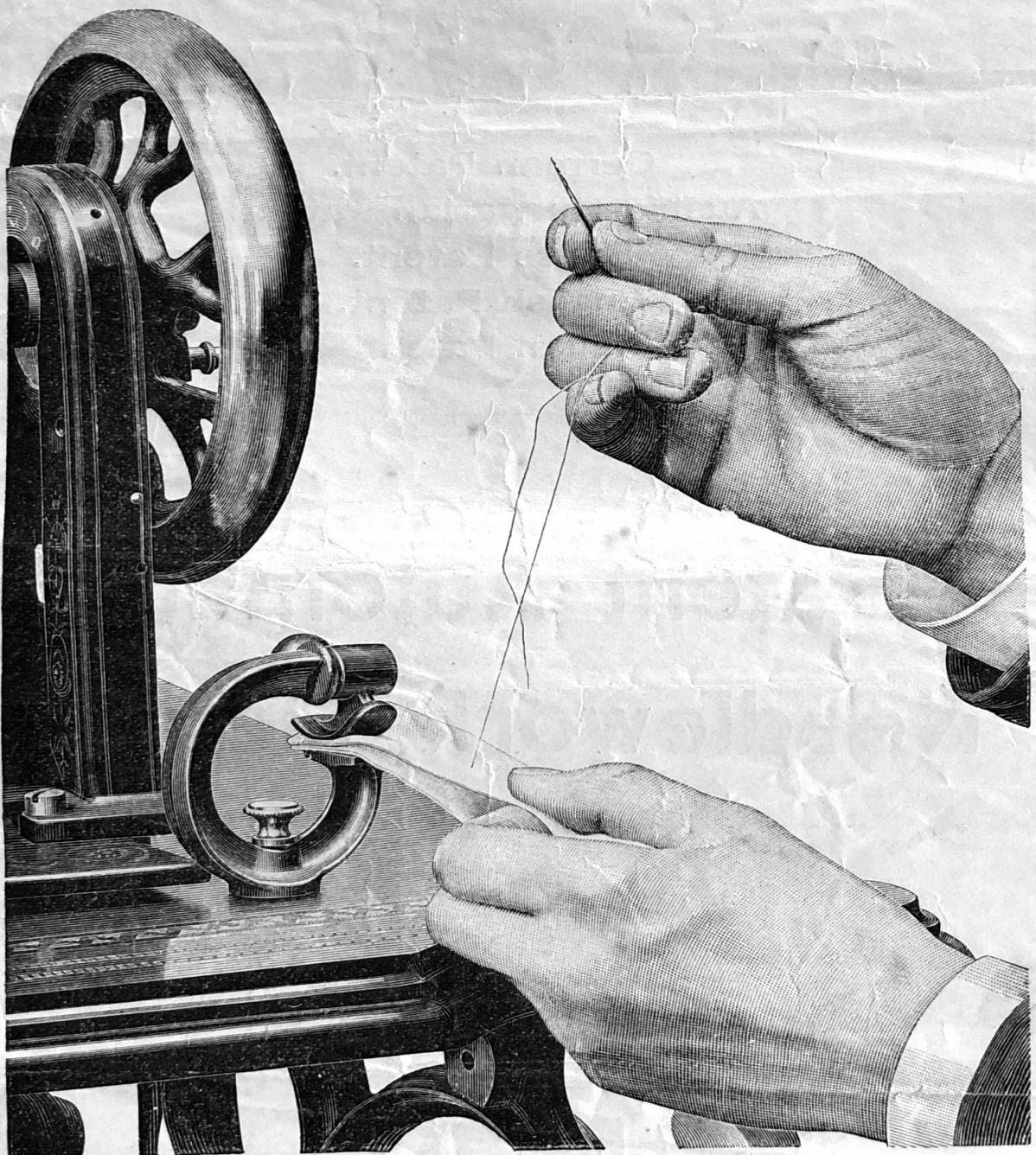
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Patent Automatic Needlework Holder.





*Fig. 1.*

Treadle Sewing-Machine.

Manipulation of the Machine.

Instructions.

For mounting the machine.

Each machine before leaving the manufactory or the depot, is completely mounted and fitted, the needle threaded and placed in position so that sewing may be begun as soon as the unpacking is accomplished. A careful examination of the machine — before using it — will do much to make the explanations, regarding the threading and the position of the needle, easily understood.

For shipment and for very great distances only, the stand is taken to pieces and, like the upper part, packed in a box, in which case fig. 1 illustrates how the two parts are to be mounted.

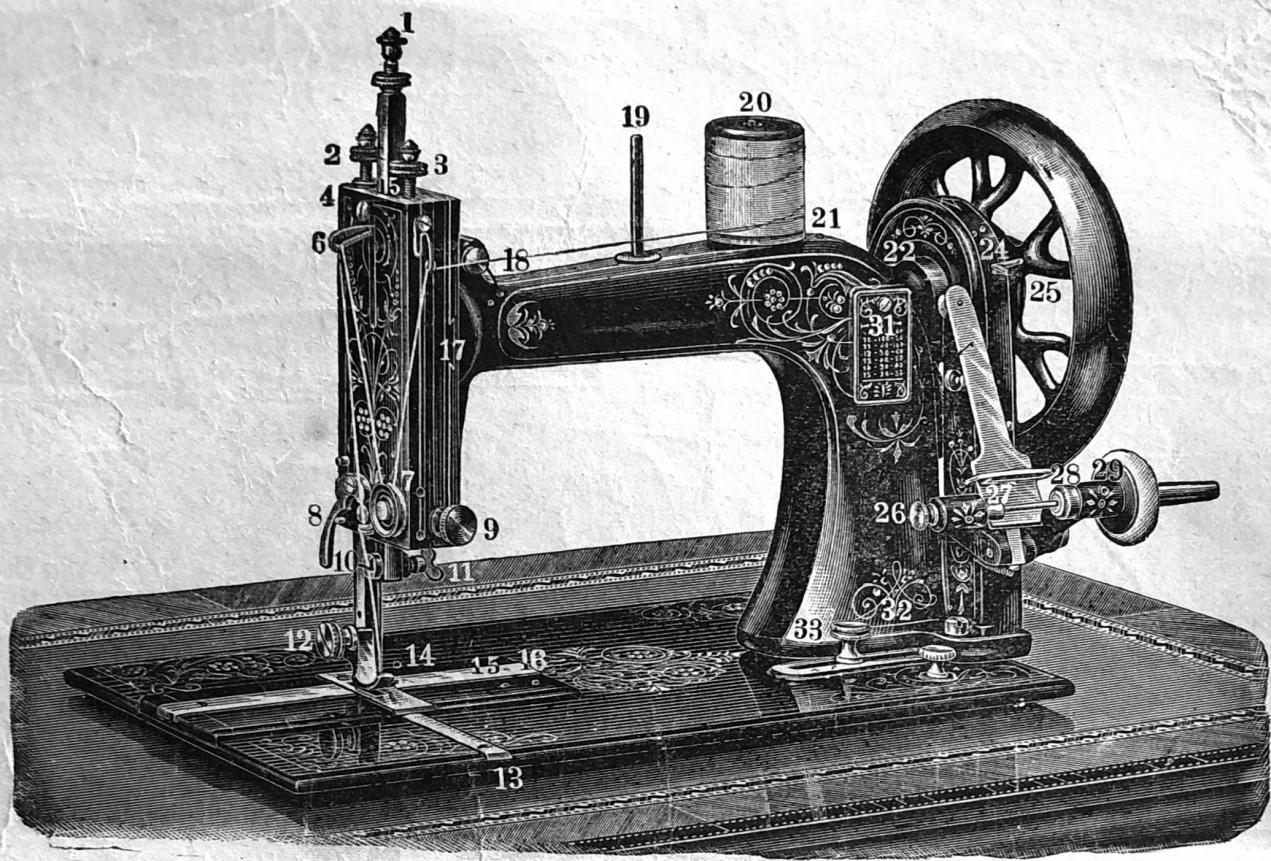


Fig. 2.
For the Treadle Sewing-Machine.

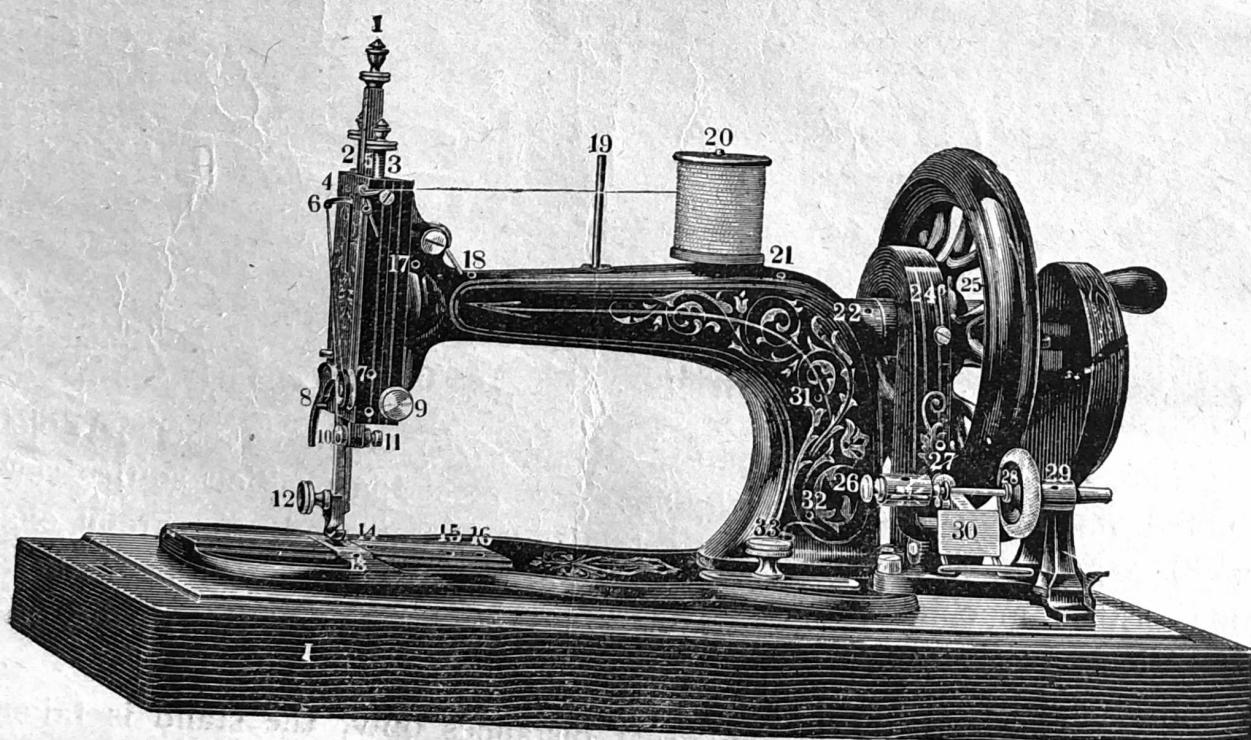


Fig. 2.
For the Hand-Sewing-Machine with hand-appliance.

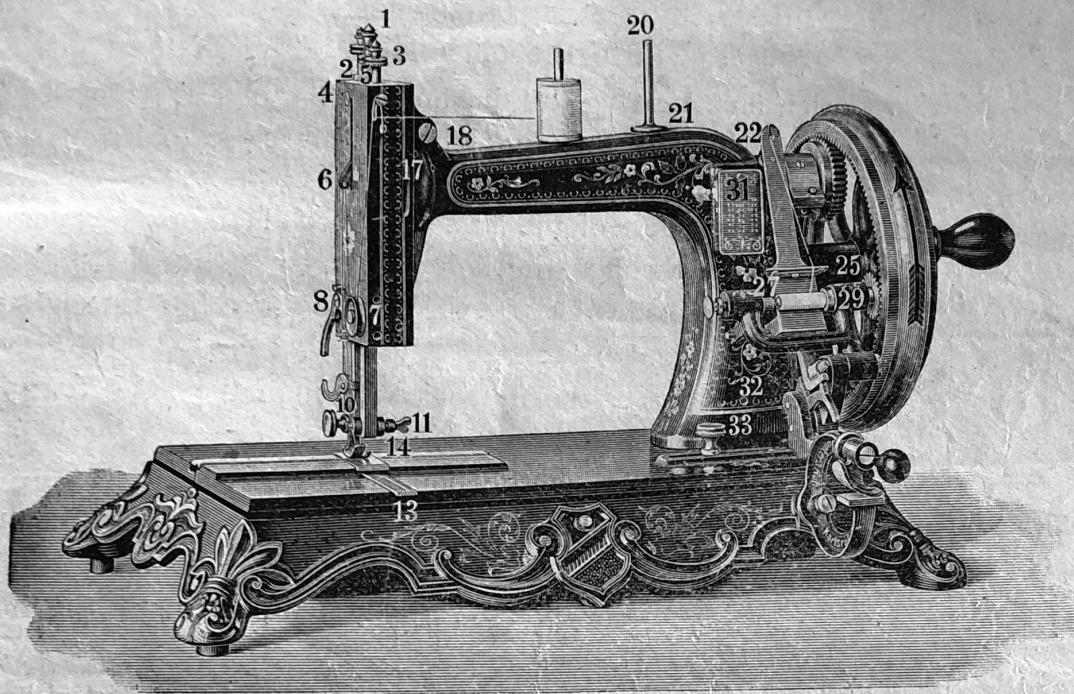


Fig. 2.

For the "Minerva" Hand-Sewing-Machine with cog-gear.

For oiling the machine.

In addition to keeping the machine clean, careful and regular oiling is of the greatest importance. A machine constantly in use should be oiled once or twice a day, but only with the best prepared sperm oil, as all vegetable oils contain more or less resinous matter.

Each machine is supplied with a small oil-can, the spout of which must be unscrewed to admit of its being filled. A slight pressure on the bottom of the can sends the oil out, drop by drop, from the spout.

In the figures No. 2 and 3, the places are shown which are to be oiled carefully, after the cloth-presser has been raised, and dried up oil, dust and dirt have been wiped off with a soft rag.

Fig. 2, the needle bar No. 1, in the place 5, above the front plate, also just below it (in both places but very little),
 » » the cloth-presser-bar, through the hole No. 4,
 » » the pivot of the cloth-presser-lever No. 8 (very little and seldom),
 » » the transporter, through the hole No. 13,
 » » the shuttle-guide, through the hole No. 14.
 » » the heart in the front-plate through the hole Nr. 17, First however the needle bar must be raised as high as it

will go, by moving the wheel, so that the heart be brought before the oil-hole,

Fig. 2, the first bearing of the horizontal spindle, through the hole No. 18; and through the slit close to it, the axle of the thread lever,

- » » the cog-wheels of the first and second arbors, meeting in an angle, through the hole No. 2,
- » » the second bearing of the horizontal arbor through the hole No. 22.
- » » the bearing of the fly-wheel, through the hole No. 25 in the wheel-nave.
- » » the point of the shuttle bobbin,
- » » the bearing of the self-winder spindle, through the hole No. 29.
- » » the two bearings of the vertical shaft, through the holes No. 31 and 32.

Fig. 3, the feed-dog at the round end and between its guide,

- » » the feed-lever rod, at the points **b** and **c**, where it catches the feed-dog,

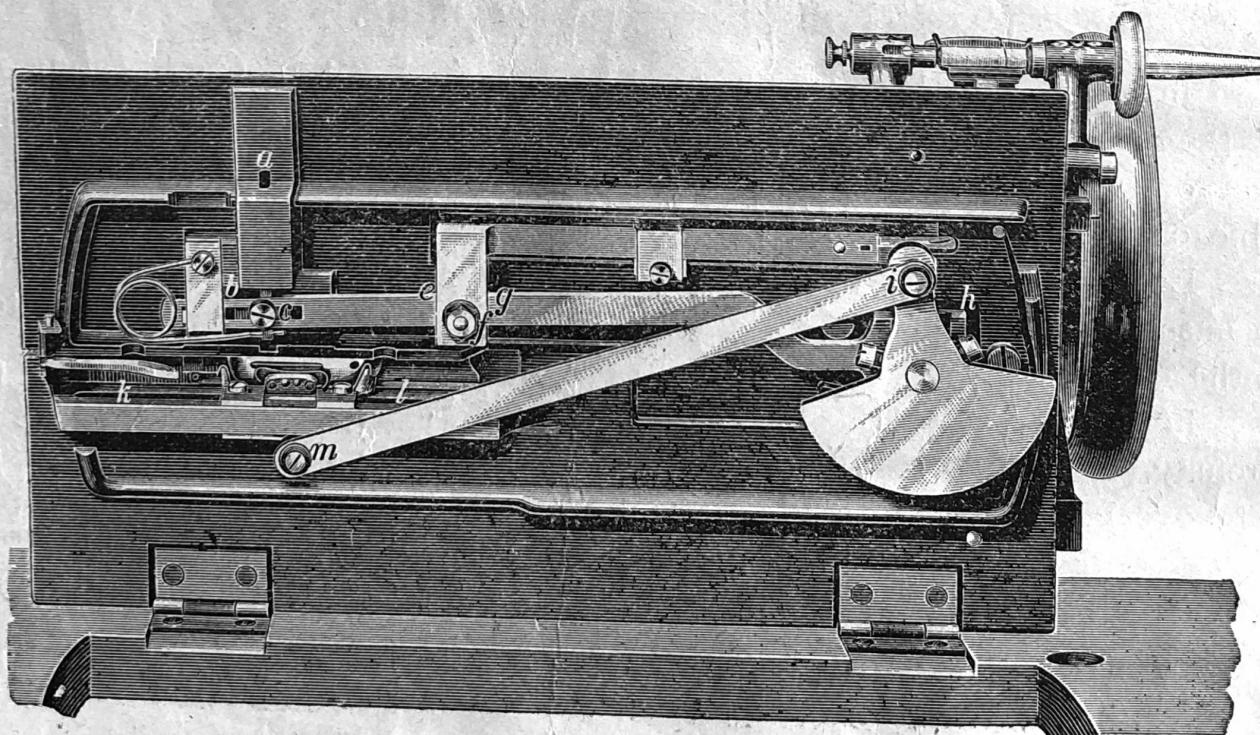


Fig. 3.

For the Treadle Sewing-Machine.

For the Hand Sewing-Machine with hand-appliance.

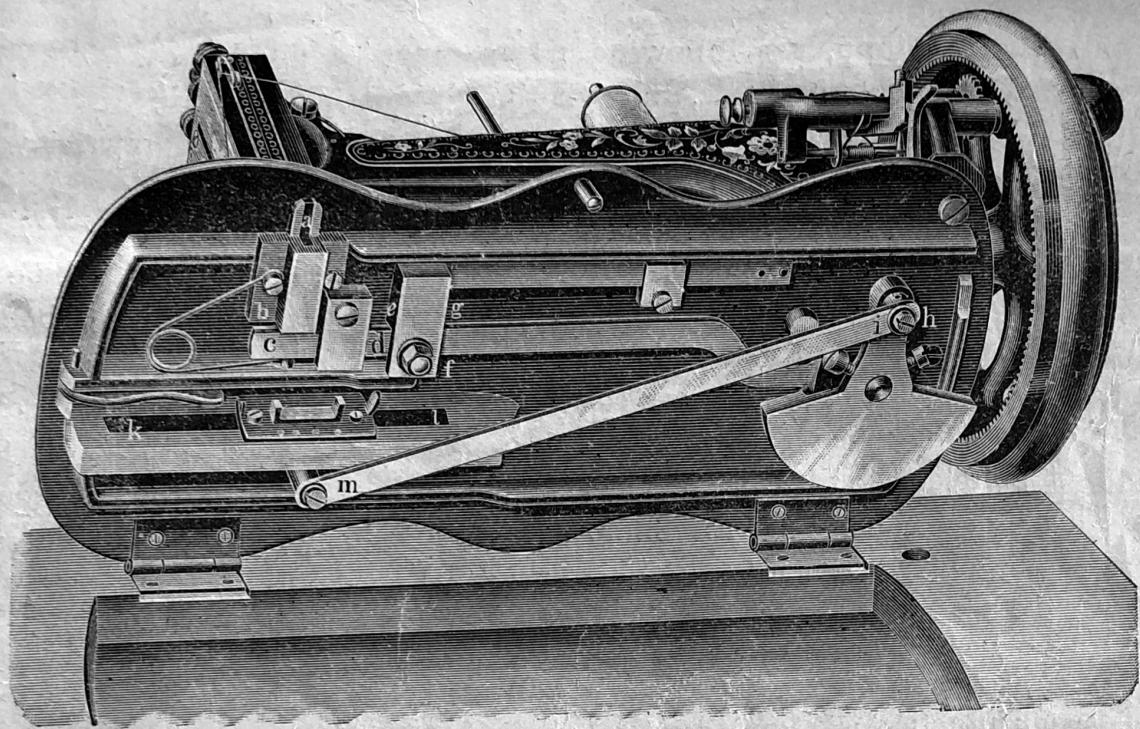


Fig. 3.

For the «Minerva» Hand-Sewing-Machine with cog-gear.

- Fig. 3, the bearing of the feed-lever rod d,
- » » the feed-lever rod at the guide e, f, g,
- » » the feed-lever rod at h, where the eccentric crank catches,
- » » the shuttle-carrier pitman in the place i, where it is connected with the eccentric crank,
- » » the shuttle-race k, l, which should, however, be but slightly touched with oil, as too much oil will interfere with the formation of the loops,
- » » the shuttle-carrier pitman at m, where it is attached to the shuttle-carrier.

The following places in the Hand-Sewing-Machine with hand appliance should also be oiled:

- the bolt or pin of the large hidden cog-wheel of the hand appliance, through the oil-hole in the nave at the right;
- the bolt or pin of the small hidden cog-wheel of the hand appliance, through the oil-hole in the nave at the left.

The following places in the Hand-Sewing-Machine with cog-gear:

- Fig. 2, the bearing of the thread-guide bridge plate of the Minerva spooler (very little and seldom),
- » » the pin or bolt on which the upper part of the spooler is pivoted (very little and seldom).

In the stand, the following parts must be oiled:

the wheel-axle, through the oil-hole in the nave,
the upper and the lower turning-points of the drawrod with
the treadles,
the two turning-points of the treadle.

All having thus been oiled, take out the shuttle, set the machine in motion and work it for a few minutes, remove all superfluous oil, before you begin sewing.

If the machine does not work easily, it is evident that the oiling of some part of it has been neglected, or that the oil has become too thick. A few drops of petroleum or benzine upon such places will remove the thickened oil. Then, set the machine in motion, clean it carefully, and oil all the said parts again. Very regular and easy work will be the result.

Treadle motion of those machines mounted on a stand.

Some practice is required to act the treadle regularly. Therefore it is necessary to learn the treading well, before you begin to sew. You must be able to set the machine in motion without any difficulty, and to tread fast or slowly, as it may be required.

First of all, you must make sure that the belt round the fly-wheel be tight enough; else it will slip around without moving the machine, in which case you have to shorten it by cutting off a piece and sewing the two ends together again. Take out the shuttle, raise the cloth-presser that it may not touch the teeth of the feeder and blunt them; put both your feet on the treadle in such manner that heel and toes can act with equal force, and turn the large fly-wheel with your right hand in the direction indicated by an arrow on the rim of the wheel, never in an opposite direction. After this, begin to practice constant and regular treading, which you continue, until the practice has grown into a habit.

The spooler is self acting and stops by itself.

Fig. 4.

For the treadle sewing-machine.

For the hand-sewing-machine with hand appliance.

First set the fly-wheel free by drawing out and turning a little the button p, Fig. 4, in such a manner, that the little pin be lifted on the projecting cone of the fly-wheel. Make sure that the elastic on the apparatus does not touch the wheel, which will be obtained by clapping the spooler down to the front. Turn the tongue on the spooler back and, with your left hand, pull the spring-bolt of the apparatus, near the little knob q,

back; place the spool in the apparatus so as to see the pin, which is in the groove next to place *t*, entering the hole in the brass spool disc, and put the other end of the spool into the hole of the spring-bolt, held back with your left hand, which you make free now. Lead the thread from the cotton-reel *n* through the ear *s*, from there between the tension discs *o* and through the slit *r* and finally across the bridge *u*, where you pinch its end near *t* between the little brass-disc of the spool and the frictionroll, lifting

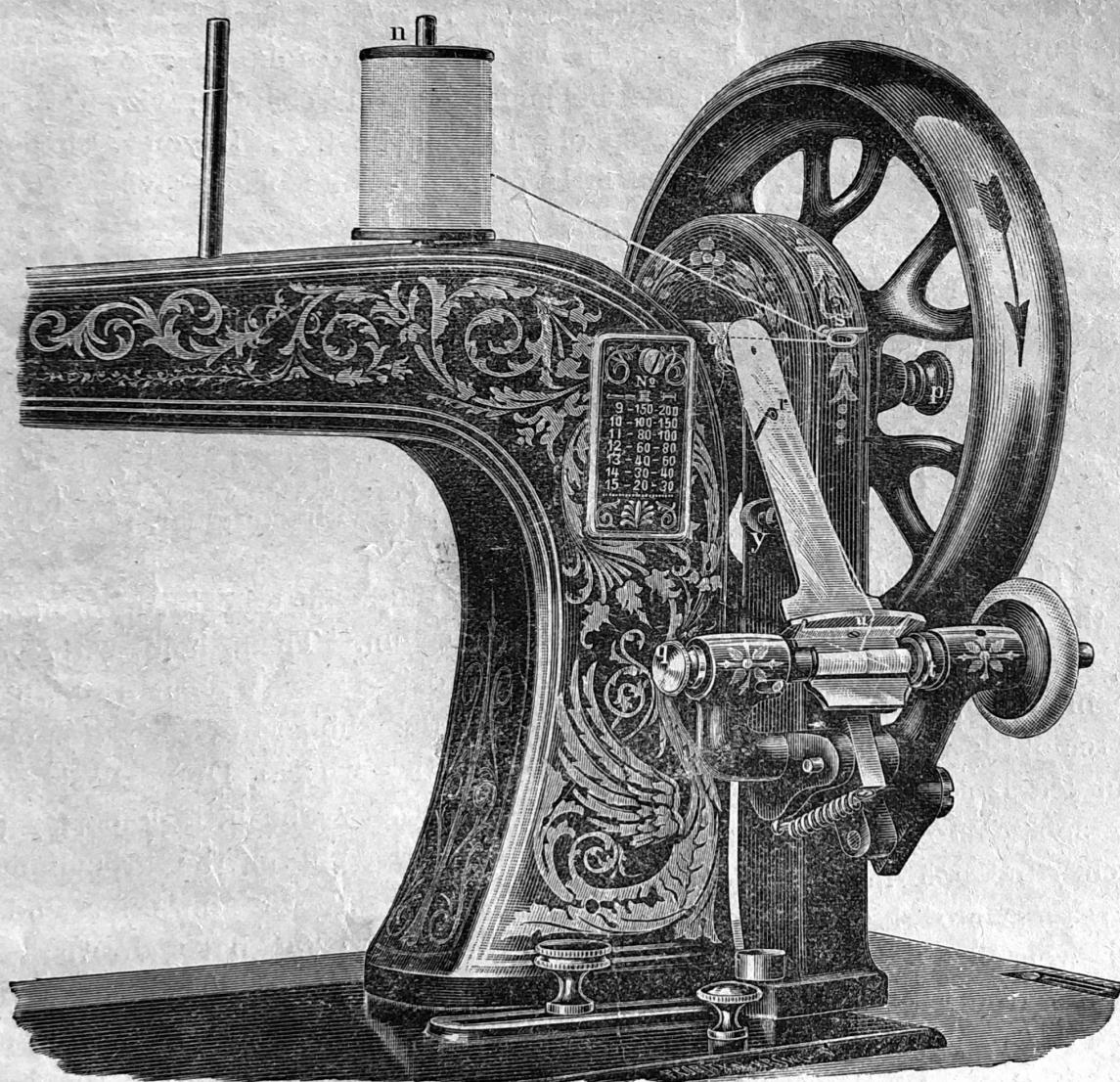


Fig. 4.

For the Treadle Sewing-Machine.

For the Hand-Sewing-Machine with hand appliance.

the spool a little, with a direction to the left. Tighten the thread by turning to cotton-reel, taking care at the same time that it reach the spool close by

the little brass disc of the latter, near the place **t**, forming a right angle on its way. Let the tongue on the spooler return to its original position; the square plate on it must then be touching the spool. The apparatus is now to be pressed against the fly-wheel of the machine. Set the wheel in motion according to the direction of the arrow on its frame, and go on spooling until the apparatus leaves off by itself. The elastic band becoming worn, the screw **y** has to be unscrewed from time to time, but very little only, otherwise the apparatus would leave off working, before the spool is completely wound. The screw **y** must be placed so as to allow the apparatus to stop as soon as spooling be done. To take the wound spool out, do as we have said at the beginning of this chapter; viz; turn the tongue on the spooler back, the spool will then be free. If you wish again to sew turn the knob **p**, until the little pin catches its place, giving a slight click.

Automatic and Self-Stopping Spooler.

Fig. 4.

For the Minerva hand-sewing-machine with cog-gear.

Throw the fly-wheel out of gear by withdrawing the lever **p**, fig. 4, in the same way as if you were cocking a gun. Then, hold with your left hand part **r** of the spooler frame, and depress with your right hand the bridge **u**, as far as it will go, whereby the rubber-tire of the spooler is removed a little from the periphery of the wheel. Draw back with your left hand, the spring-bolt of the apparatus, by the little knob **q**; put the spool into the apparatus, so that the little pin in the groove at **t** catches the hole in the brass disc of the spool, and put the other end of the spool into the hole of the spring-bolt, which you have drawn back with your left hand and which you will now release. Then draw the thread, from the reel **n**, upwards through the tension discs **o**, through the slots **r**, over the bridge **n**, and jam its end at **t** between the brass disc of the spool and the friction-pulley, easing the spool a little to the left. Take up the slack of the thread by turning the reel, and take care that it runs, from the bridge, close beside the brass disc of the spool at **t**, at a right angle to the latter. At the same time, depress the levers until its square plate presses against the spool. Now, set the fly-wheel in motion, in the direction of the arrow on the periphery of the wheel, and

wind the spool until the spooler stops of its own accord. In taking out the spool, proceed as described at the commencement of this chapter, i. e. press part **r** back as far as possible.

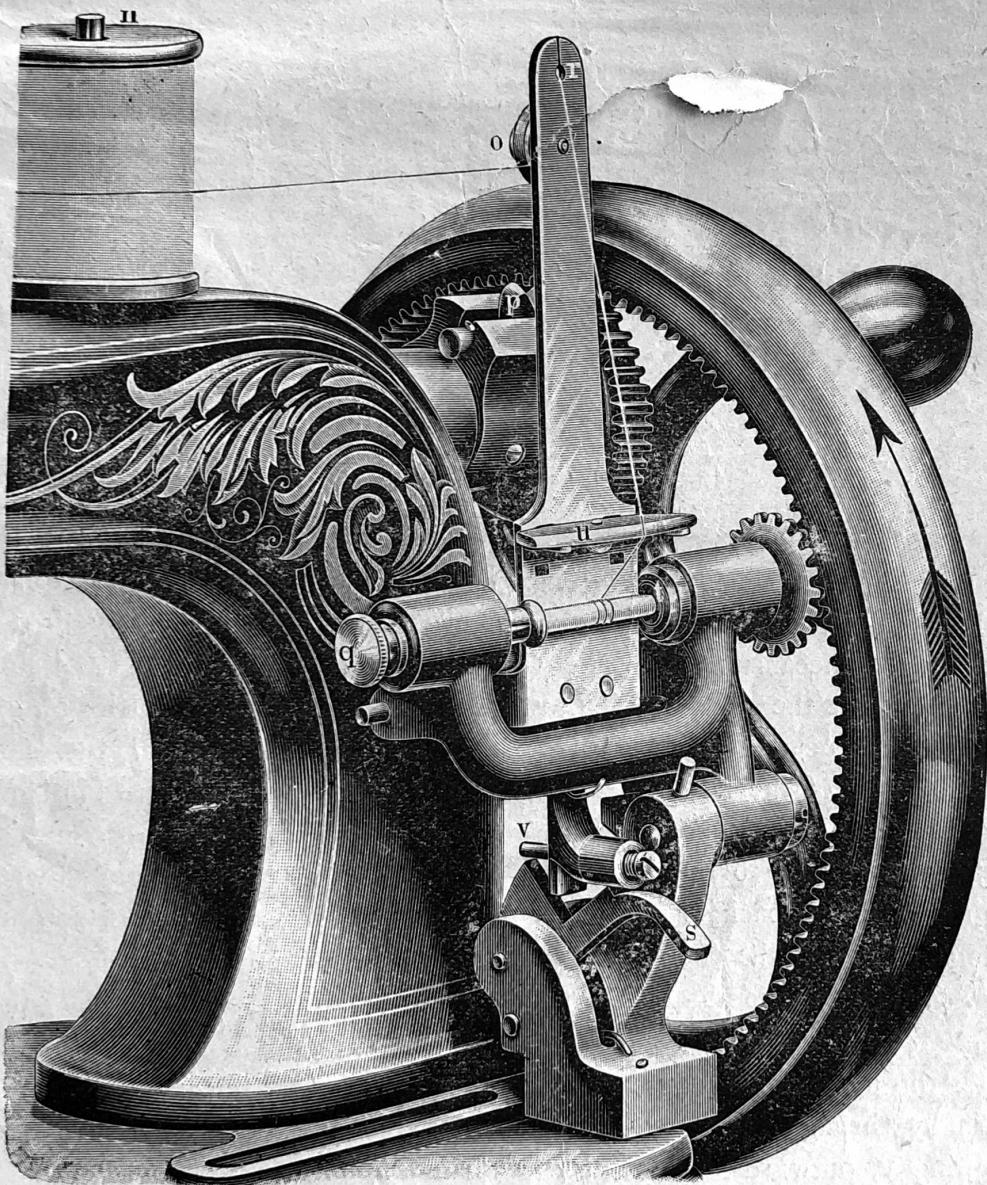


Fig. 4.

For the Minerva Hand-Sewing-Machine with cog-gear.

If you wish to sew again, depress the lever **p**, and turn the wheel slowly, until the lever catches in its notch with a slight click.

It is best to oil the spooler according to the directions given in the preceding chapter, immediately before using it.

**For removing and replacing the shuttle.
For threading the shuttle.**

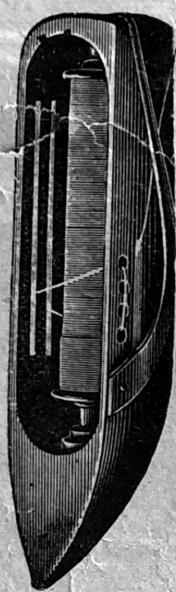


Fig. 5.

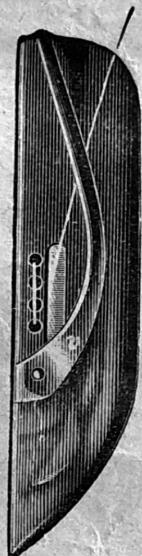


Fig. 6.

The shuttle can easily be removed by drawing out the throatplate at the left, and turning the wheel slowly till the shuttle is entirely free and lifted by the mechanism. To take the spool or bobbin out of the shuttle, press it against the centre-spring towards the point of the shuttle, and take it out of its bearings. To replace the filled bobbin within the shuttle, turn the point of the latter towards you and put one end of the bobbin into the above mentioned centre in such a manner that the thread runs, as in fig. 5, upwards and to the left; then, press the other end slowly down into the groove at the back part of the shuttle, till the bobbin springs in its bearings with a slight click. This done, the thread is to be led, according to fig. 5, through the slit below to the left, outwards, then again inwards through the slit above; through the hindmost opposite hole outwards; again inwards through the foremost hole, which is nearest to the point of the shuttle; and finally through the slit underneath the holes, as in fig. 6, passing under the spring **v**, outwards.

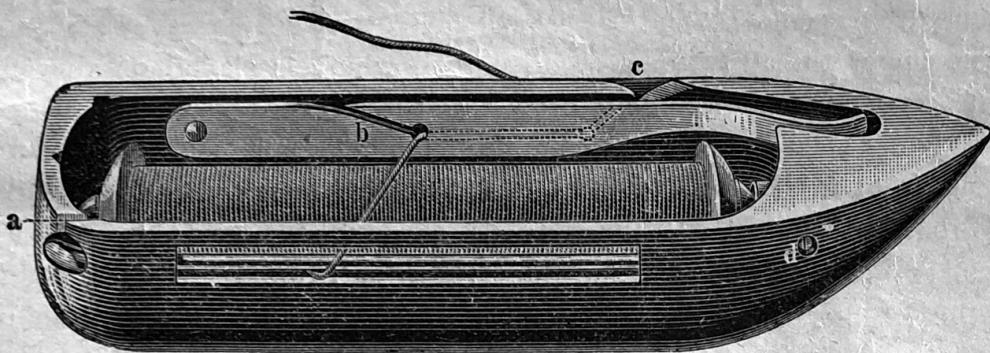
This way of threading gives to the thread the ordinary tension which can, however, be increased by passing the thread through some more holes always observing the above instructions with regard to the hindmost and foremost holes.

Draw about three inches of the thread out of the shuttle, and place the latter, with its point to the right, and the spring **v** upwards, into the shuttle-holder.

The points of the spool should be oiled from time to time.

To remove and to replace the spool in the shuttle.

To thread the shuttle.



The shuttle is visible and easily made free by drawing out the steel slide on the left and slowly turning the wheel until the shuttle is seen lying in the opened way and raised by means of the lift.

To take the spool out of the shuttle, press it against the spring in the pointed end of the shuttle and then remove it.

To place the spool with the thread in the shuttle, turn the pointed end of the latter towards you, put one end of the spool into the pointed part of the shuttle and fasten the other end carefully in the groove on the opposite side. You will hear the shuttle giving a slight click when reaching its place.

The spool must always be placed in such a way that the thread comes out from below, on the same side where the round little bridge is to be seen.

The thread must be laid, as clearly shown by the illustration above, first into the slit a, round the end of the bridge, so as to lie over it.

Draw the thread along the spool, through the slit b, towards the pointed end, and through the slit c, towards the opposite end of the shuttle: loop it under the loose end of the spring outside.

The shuttle being then completely threaded, is ready for use.

The tension of the thread is regulated on the screw d, by means of the little screw-driver; one turn to right or left being sufficient to increase or to diminish the tension.

Then draw about three inches of the thread out of the shuttle and place the latter, with its point to the right and the outside spring upwards into the shuttle-holder.

A few drops of good oil on the points of the spool, from time to time will prove a great help.

For threading the needle.

Fig. 2.

Raise the needle as high as it will go.

The upper thread is on a wooden reel, which is placed on the spindle or pin No. 20. From that reel, draw the thread through the upper of the two ears No. 5; let it pass between the clamp-discs No. 7 and underneath their bolt, from front to back; upwards through the ear of the thread-lever No. 6, from front to back; downwards through the ear No. 10, at the lower end of the needle-bar; and finally, from front to back through the eye of the needle. About three inches of the thread may remain on the ground-plate.

Shuttle and needle having been threaded in this manner, raise the cloth-presser, hold, with your left hand, the end of the thread in the needle, and turn, with your right hand, the wheel in the direction of the arrow on its ring, till the needle has once moved down and up again. While the needle is moving downwards, loosen the thread in the needle a little, so that, when it gets to the shuttle, it can form a loop. Now, gently draw the upper thread tight, so that the lower thread will make a loop, and turn both threads away from you underneath the cloth-presser.

For sewing.

Fig. 2.

Having strictly followed the above directions, the very first thing must be to close the steel-slide. Leave the needle as high as it will go, and place the material under the cloth-presser which must be lowered immediately afterwards. Then begin moving the machine, working the treadle regularly, and allowing the material to glide under your hands without pulling, but only directing it.

When several seams or double-seams meet and cross each other, it is good to press such places flat, especially when sewing hard, coarse material and to rub them with hard white soap. Besides, it is good in such cases, especially with cross-seams, to sew slowly, turning the wheel with care, till the place has been passed over; otherwise, the needle will easily get bent or broken. In sewing very thick material, the pressure of the cloth-presser may be increased, by tightening the screw No. 2.

If you want to sew round a sharp corner, stop the fly-wheel, raise the needle till you see the eye of it, the point, however, remaining in the material; raise the cloth-presser, and turn the work round the needle in the desired directions, the needle acting as an axle.

To take the work, when it is finished, off the machine, raise the needle as high as it will go, and lift the cloth-presser. Draw the material out in the direction to the left, at the same time drawing it a little upwards. Cut both threads, and put them, as you did when beginning the work, underneath the cloth-presser.

For regulating the tension of the thread.

Length of the stitches.

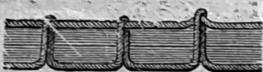


Fig. 7.



Fig. 8.



Fig. 9.

The thread in the shuttle must be 1 or 2 Nos. thinner than that in the needle.

The tension of the upper thread requires special attention, the regularity as well as the durability of the seam depending on it. The tension should always be regulated as in fig. 8, the two threads equally tightened and crossing in the middle of the material. The stitch is perfect, when it is the same on either side.

The screw No. 3 fig. 2, acts on the disk No. 7, regulating the tension of the upper thread. According as these disks are pressed or loosened the thread is more or less tightened.

After a few turns, the machine should be stopped, and both tension and stitches should examined.

When little loops are projecting underneath the seam, as in fig. 9; or the thread lies stretched on the material; it is due to the upper thread not being tight enough. In that case, turn the screw No. 3, but very slightly till the stitch be perfect on either side of the material. Should there be little loops on the upper side of the seam, as in fig. 7; or should the thread lie stretched on the material, it is due to the upper thread being too tight, and the afore said screw must be unscrewed.

The thread will break when too much strained. Should the seam become too loose, though the stitches are well made on both sides, the thread of the shuttle must be tightened, according to the directions of chapter «for threading the needle» or passed through some more holes. That done, regulate the upper thread again, and the seam will become firmer.

To produce a well-formed round stitch on the right side, the thread of the shuttle must be tighter than that of the needle.

The length of the stitches is regulated by the screw No. 33, fig. 2. Loosen that screw by half a rotation; when pushed to the left, the stitches become smaller; when pushed to the right, they become larger. When the proper length has been attained, the screw must be fastened again.

For setting the needle.

Fig. 2.

In setting the needle, the following directions must be observed.

Raise the needle-bar as high as it will go, and loosen the screw No. 11, till the head of the needle can be put between the ear-piece No. 10, and the needle-bar. Set the needle so as to have the long groove of it in front, the short one in behind, and the head of the needle against the small square projecting from the needle-bar. Turn the head-shaped and winged-screw No. 11 so that the needle be slightly held, and thread it from front to back. Turn the fly-wheel slowly till the eye of the needle be level with the hole in the needle-plate, and hold the thread with the thumb and the forefinger of your left hand, so that it lies stretched on the needle-plate and parallel with it. Loosen the screw No. 11 till the top of the needle be free, and turn the fly-wheel carefully, till the notch which is to the left of the upper end of the needle-bar, be level with the upper edge of the front-plate. Now, fasten the screw No. 11 with the screw-driver. The position of the needle is correct, when the above mentioned notch at the upper part of the needle-bar, is level with the upper edge of the front-plate, and when half of the eye of the needle stands above the needle-plate.

Now, turn the fly-wheel, slowly and carefully, and observe that the needle passes in its whole length **exactly through the centre of the hole in the throat-plate**. If it grates against either side of it, it is bent and must carefully be straightened with the finger. If the needle does not move easily in the needle hole, the material will be drawn aside, the seam become crooked, stitches be dropped, or the needle be broken by being pushed against the edge of the needle-hole.

As we have already said, every machine before leaving the factory or the depot, is set ready for use, with the needle properly placed. The latter should not, therefore, be removed, till it has been observed, by the

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Loops or long stitches are to be seen on the upper side of the seam

1. when the upper thread is too loose;
2. when the tension arrangements have been used wrongly or not at all;
3. when the point of the needle is bent;
4. when the needle is crooked and pierces the upper thread;
5. when the shuttle-groove is too much oiled, and the formation of the loops is thereby hindered;
6. when the shuttle is not well threaded, so that the shuttle-thread is too loose;
7. when the thread-lever delivers the thread too quickly (see the chapter on the regulator of the thread-lever).

If the upper stitch be well made, and the under thread lies straight on the material:

the upper thread is not strained enough.

If the under stitch be well made, while the upper thread lies straight on the material:

1. the upper thread is too tight, or the shuttle-thread too loose; or:
2. the upper thread is entangled somewhere.

The stitch is sometimes above, sometimes below, better formed:

1. when the threads are uneven, which will especially occur with linen thread;
2. when the shuttle-bobbin is not well wound, or the shuttle-thread too loose;
3. when the upper spool fits too tight on the spindle, or the thread is entangled round it, so that it has to overcome some resistance before getting free;
4. when the shuttle is not properly threaded.

Missing stitches may occur:

1. when the thread or silk is too much twisted;
2. when the needle enters too deep into the shuttle-groove, and the loop remains on the side of the latter, so that it cannot get out;
3. when the upper thread becomes oily, which will frequently occur, when the machine has been oiled too much;
4. when the needle is not properly placed, standing too high or too low;
5. when the needle is, in proportion to the thread, too thin or too thick;
6. when the machine is not properly oiled, or dirty, and consequently works with difficulty.

The breaking of the needle is generally due to the following causes:

1. the needle is bent, and does not enter into the needle-hole, but stops beside it;
2. the upper thread is held too tight, in drawing up the shuttle-thread, whereby the needle will get bent;
3. sewing being continued when the shuttle-thread is broken, whereby the needle will be bent by the upper thread;
4. knots or other obstructions being in the thread, which will not pass through the eye of the needle;
5. the needle is placed too near the shuttle, in which case it will pass from the stitch-hole into the shuttle-groove, and be broken by the shuttle;
6. the needle is pushed against knots and other hard things in the ~~padding~~ material is drawn too much backwards while being sewn. Persons who have not had much practice in using the machine, will do so frequently and involuntarily;
7. the cloth-presser ~~is not~~ is not screwed on fast enough, and changes its place while being used.

Accessories added to each machine:

1. I assortment of needles,	12. I corder,
2. I assortment of steel-bobbins,	13. I corder for piping,
3. I screw-driver,	14. I ruffler,
4. I small screw-driver,	15. I spiral-hemmer,
5. I ordinary cloth-presser,	16. I lap-hemmer,
6. I ruler with a screw,	17. I extra needle-plate,
7. I universal braider,	18. I oil-can,
8. I binder,	19. I extra spring for the thread-lever.
9. I variable hemmer,	20. I Instruction-book.
10. I quilter,	
11. I ribbon-sewer,	

Instruction gratis.

Guarantee for solid work.



help of the foregoing instructions, how it is to be set. If the machine is constantly in use, the position and motion of the needle should be examined every day.

Should the point of the needle meet with any injury, it must be taken out and sharpened, care being taken that the point remains smooth.

It may also occur that the eye of the needle becomes so sharp as to cut the thread; it may then be ground with a strong linnen thread, dipped in fine emery and oil.

The needles sent with the machines are of the first quality, and the eyes of them well and carefully cut.

Always take care that the thread lies completely in the groove of the needle when passing through the material.

The needles are assorted in numbers; from 10, the finest, to 15, the coarsest.

It is advisable to use only the best thread with the machine, as it is more strained than in sewing by hand.

When silk is used, that on reels is preferable to that in skeins, since the former is wound better than it can be done by hand.

For certain work, in which only the upper side is seen, silk may be used for the upper, and cotton for the under thread.

For regulating the cloth-presser-bar.

Fig. 2.

Underneath the screw No. 2, there is a spiral spring which acts upon the bar of the cloth-presser. If you loosen the screw No. 2, the pressure diminishes; if you tighten the screw, the pressure increases. According as you screw or unscrew No. 2, the material is pressed more or less against the feeder. For coarse material, more pressure is wanted, than for thin material.

For regulating the thread-lever.

Fig. 2.

The screw No. 1 on the needle-bar does not, like the other screws, consist of one piece, but of two, viz. a screw with an acorn-shaped knob and a counter-nut running on that screw. The whole of this mechanism is meant to correct the too rapid delivery of the thread by the lever, so that loops appear between the eye of the needle and the material as the needle enters it; or the too slow delivery of the thread, so that it breaks.

Such cases occur very rarely. When they do occur, regulate as follows: Thread the needle, and put the material on the feeder, turn the fly-wheel slowly till the needle has entered into the material so far, that the eye of the needle and the thread are just over it. Now, loosen the counter nut which runs on the screw No. I, and turn the screw itself in or out, till it touches the thread-lever No. 6 without pressing it; that done, fasten the counter-nut again.

For the tension of the little wire-spring behind the head of the machine, next to No. 18, three little holes are made, so that, if required when sewing with exceptionally coarse thread, it may be tightened, which takes place according as it is put more to the left.

We have added to these directions figures of those various sewing-machines which we manufacture according to the system in question; viz.

- 1) the treadle sewing-machines,
- 2) the hand-sewing-machines with hand-appliance mounted on a stand, suitable at the same time for foot and hand,
- 3) the hand-sewing-machines Minerva with cog-working.

Sewing being learned by means of these directions, we must first ascertain which of the machines above mentioned we have before us. This is stated under the figures of the first four chapters, to which machines they belong; though the differences in their management are very small and consist principally in the way of working them. The other figures are to be used for all three machines alike.

Such cases occur very rarely. When they do occur, regulate as follows: Thread the needle, and put the material on the feeder, turn the fly-wheel slowly till the needle has entered into the material so far, that the eye of the needle and the thread are just over it. Now, loosen the counter nut which runs on the screw No. I, and turn the screw itself in or out, till it touches the thread-lever No. 6 without pressing it; that done, fasten the counter-nut again.

Fig. 1. The position of the little
spring behind the head
of the screw.

Description of the extra apparatus and accessories.

The ruler.

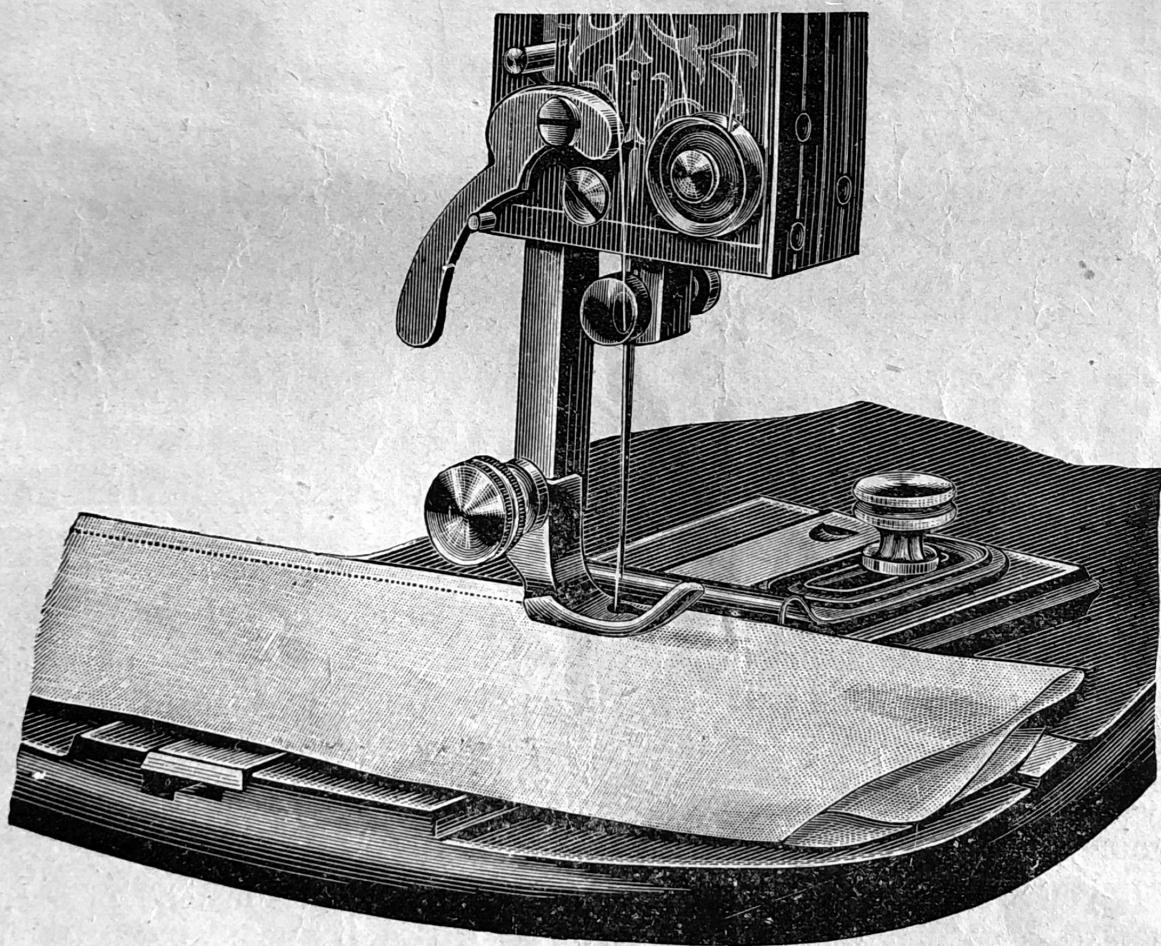


Fig. 10.

To sew a hem or seam parallel with any given edge, screw the ruler fast on to the bed-plate, to the right of the cloth-presser, and parallel with the feeder. Use for this purpose the screw, which is delivered with every machine, and the hole to the right of the needle-plate. According as the edge you have to stitch be narrower or broader, the ruler must be put nearer to, or farther from the needle.



The patented Universal Braider.

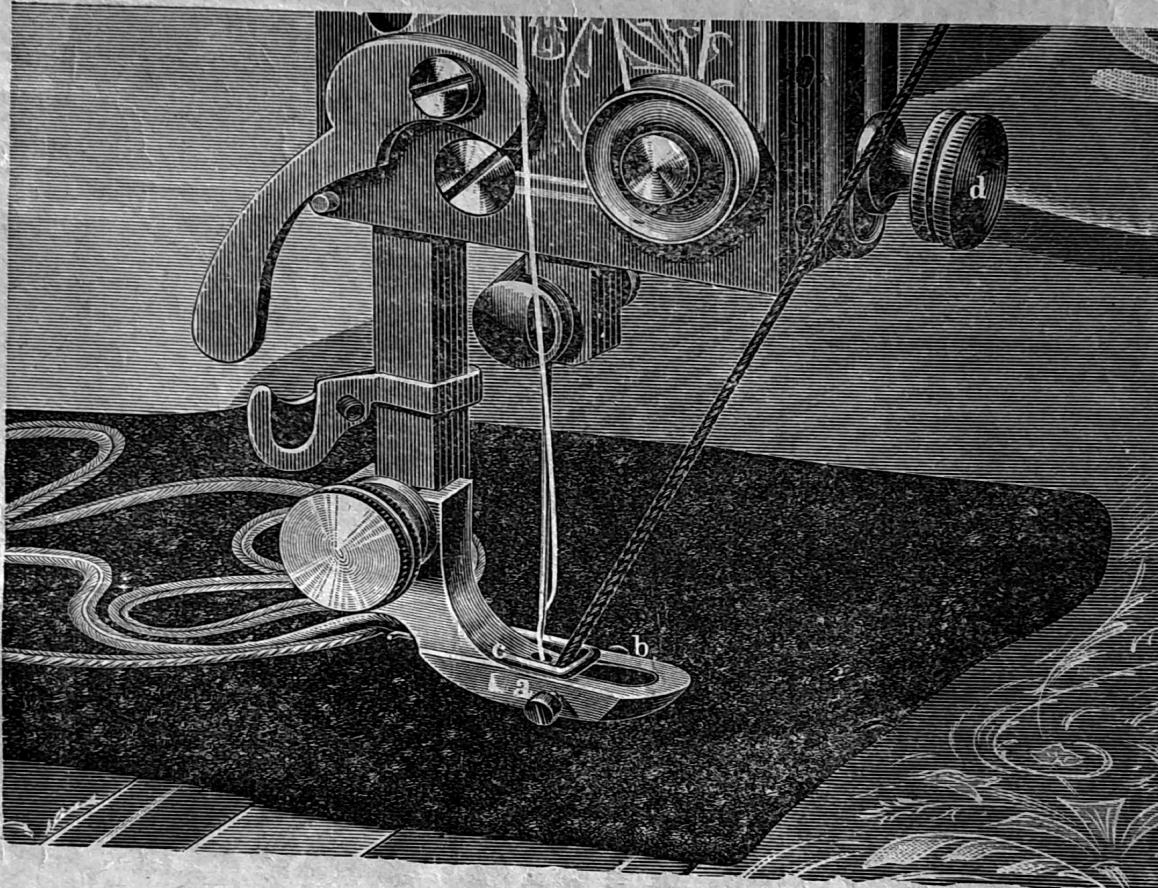


Fig. II.

This most ingenious apparatus opens a wide field to braiding which has lately come so very much into fashion. By means of a special mechanism, it admits of using all kinds of braid of any breadth and thickness, and even cords. The two screws **a** and **b** act on a spring, bordering the width of the lace, and the bow **c**, which is movable in the cloth-presser, must be regulated according to the thickness of it.

If you wish to stitch the braid on one of its edges instead of stitching it along the middle, regulate the afore said spring which leads the braid the more to the left, the less the screw **a**, and the more the screw **b**, is turned. Is the braid to be led to the right, the reverse is, of course, to take place regarding the screw **a** and **b**.

The binder.

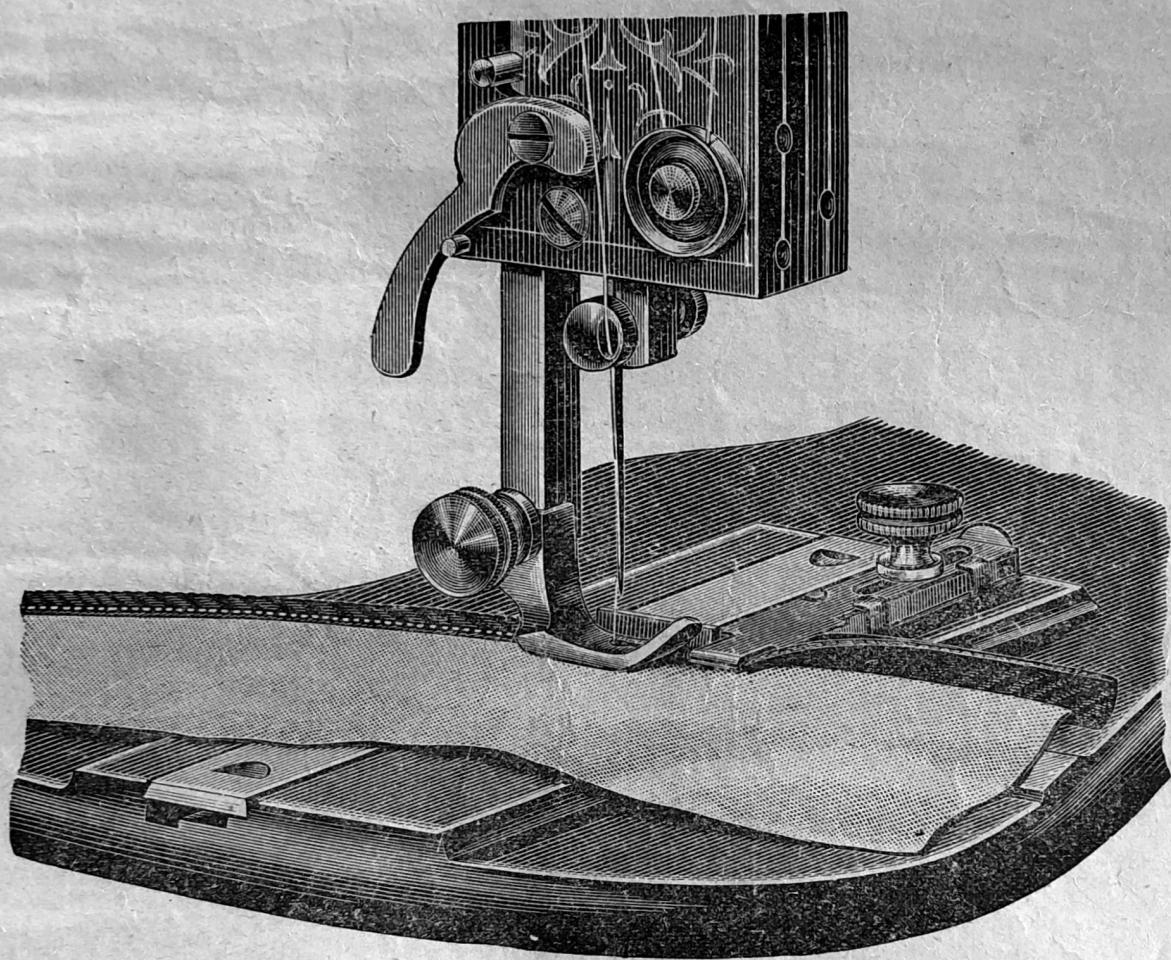


Fig. 12.

The binder is used for bordering cloths, hats, etc., and saves the preliminary tacking of the ribbon. In using it, employ the ordinary cloth-presser. Fold the ribbon in the middle, and put it between the two plates of the apparatus; the hooks of the former are intended to hold the edges of the ribbon, and to direct their course. Take care that the ribbon be neither too tight nor too loose. Raise the cloth-presser, and screw the apparatus as tight as possible on to the ground-plate. Put the material under the cloth-presser and between the above mentioned plates holding the ribbon, which passes round the edge of the material. Lower the cloth-presser before beginning to work.

The above figure illustrates the use of this apparatus so clearly, that the given explanation will be sufficient to make its application quite plain.

The variable hemmer.

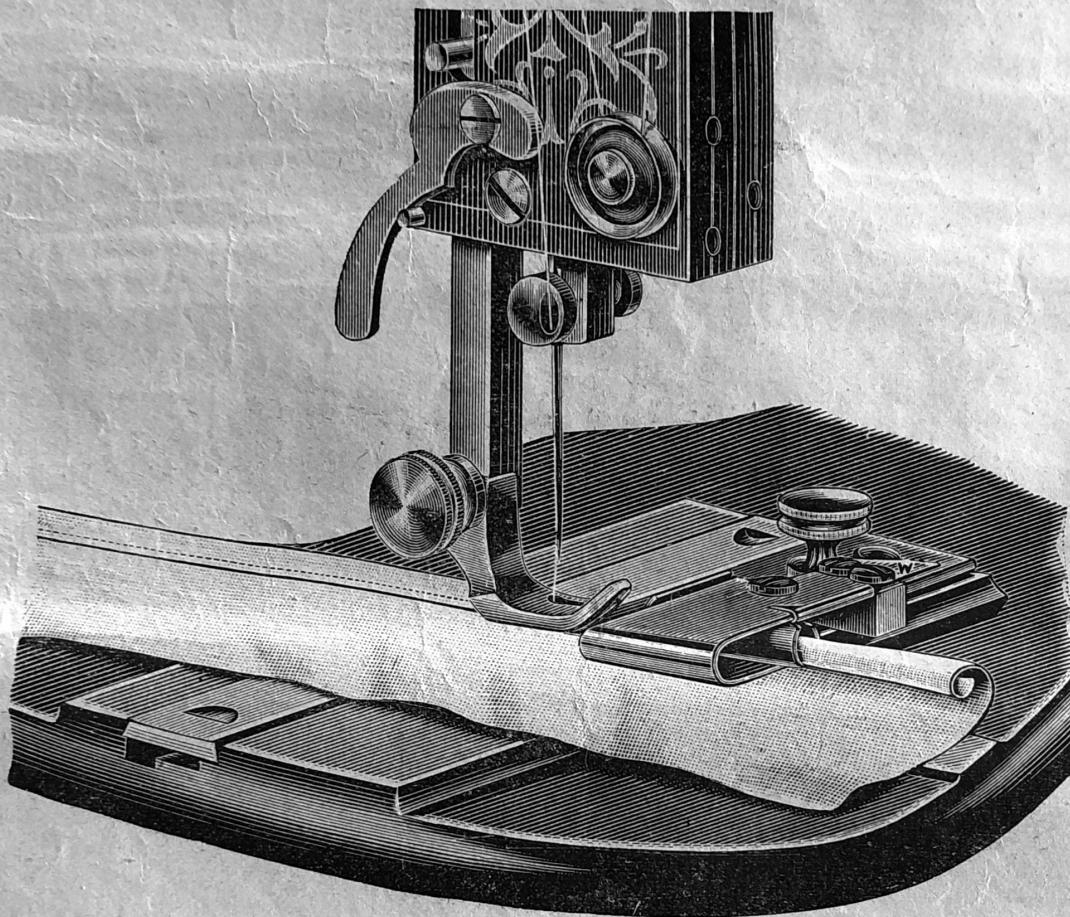


Fig. 13.

Use the ordinary cloth-presser, and fasten the apparatus on to the ground-plate by means of the head screw. The width of the seam is to be regulated by the screw *w*, going through the slit of the apparatus. If you loosen that screw and push the upper part of the front piece to the left, the seam will be narrower; if to the right, the seam will be wider. The width of the seam being settled, fasten the screw in the slit again. Turn down 1 or 2 inches of the material with your fingers, in the width of the seam, and draw it under the needle through the funnel of the hemmer. Lower the cloth-presser and sew as usual, taking care that the funnel-shaped hemmer be always sufficiently but not too much supplied with material.

The quilter.

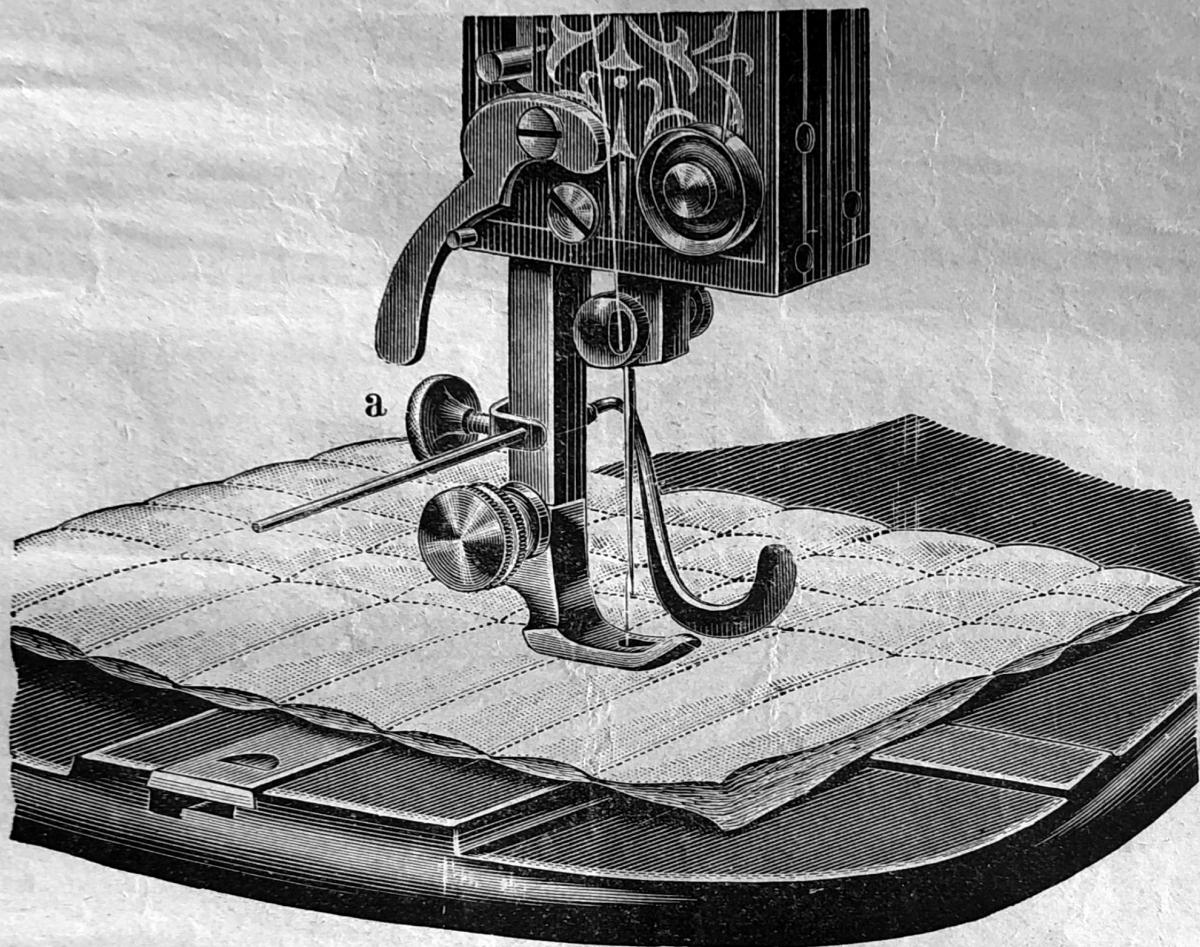


Fig. 14.

The ordinary cloth-presser is used.

The apparatus is to be fastened by means of the head-screw, next to the lower edge of the head of the needle, and is movable to the right and to the left, upwards and downwards, as seam and thickness of the material require.

The quilter is an improvement upon the ruler, and is chiefly used for quilting, for which the ruler is not suitable. It saves marking the seams, as it measures their distances from each other in parallel lines.

The line or seam, to which a parallel is to be sewn, passes under the edge of the quilter. According as a smaller or greater distance is required between the seams, the quilter must be approached to, or removed from the needle.

The ribbon-sewer.

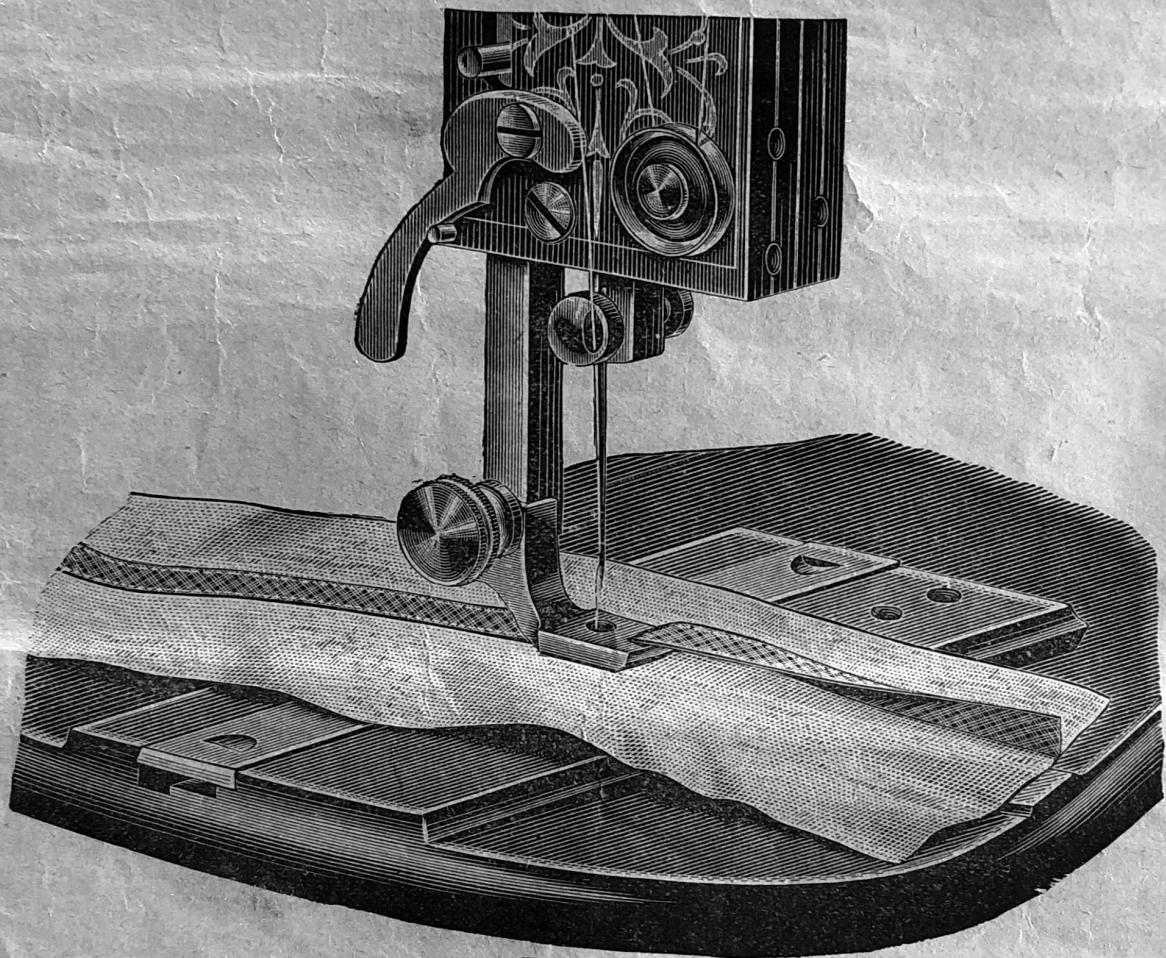


Fig. 15.

The ribbon-sewer is to be put in the place of the ordinary cloth-presser. Draw the ribbon upwards, without having previously tacked it, through the slit in the apparatus. Place it under the needle on the material, and begin to sew, observing however, that the ribbon fills the slit completely out.

The corder.

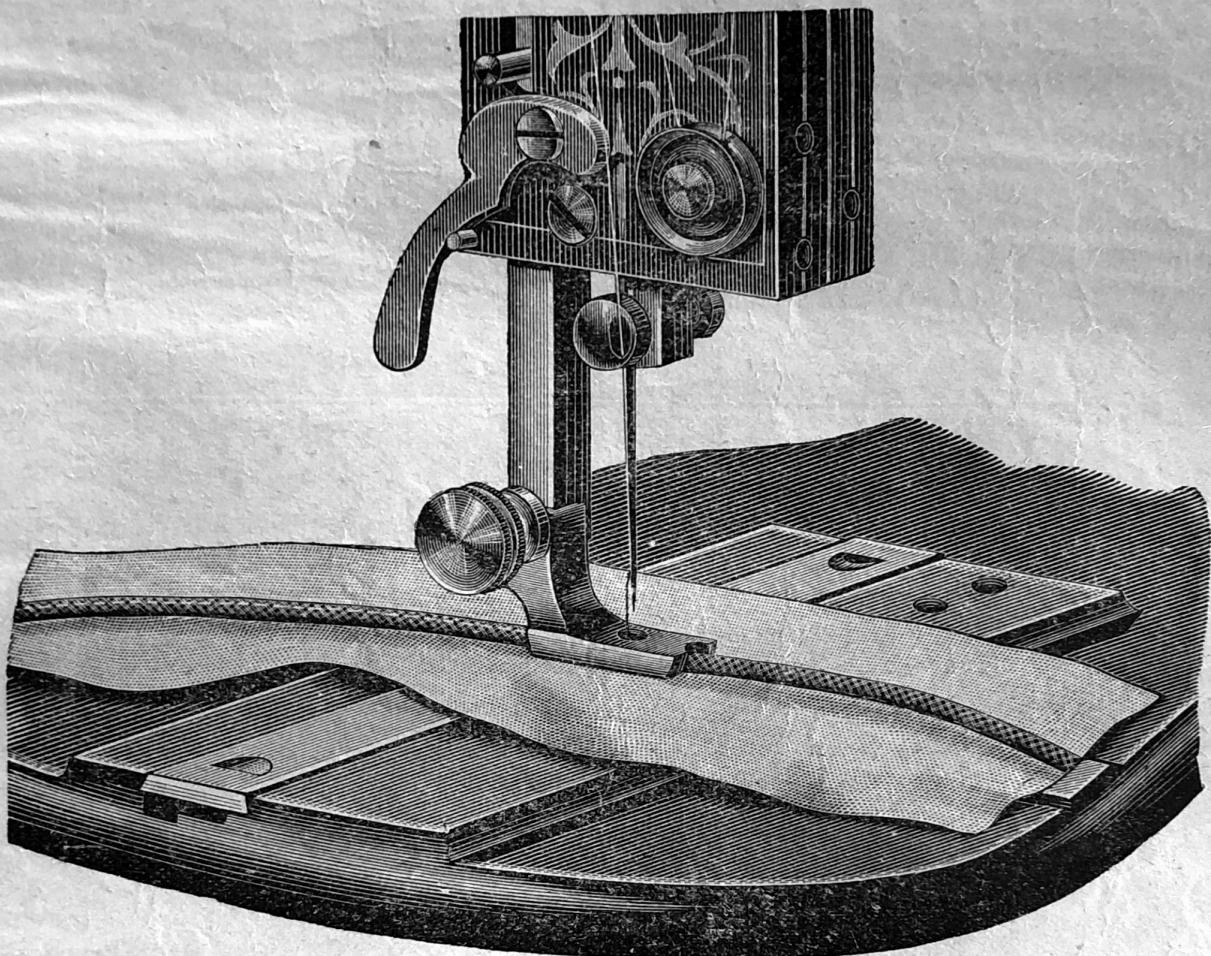


Fig. 16.

The corder is to be put in the place of the ordinary-cloth-presser. The edge upon which the cord is to be sewn, must be smoothed and placed under the cloth-presser. Then, draw the cord under the groove of the apparatus, and set the machine in motion. In sewing on cords, the stitch must be somewhat larger, and the upper thread a little more strained.

The corder (for piping).

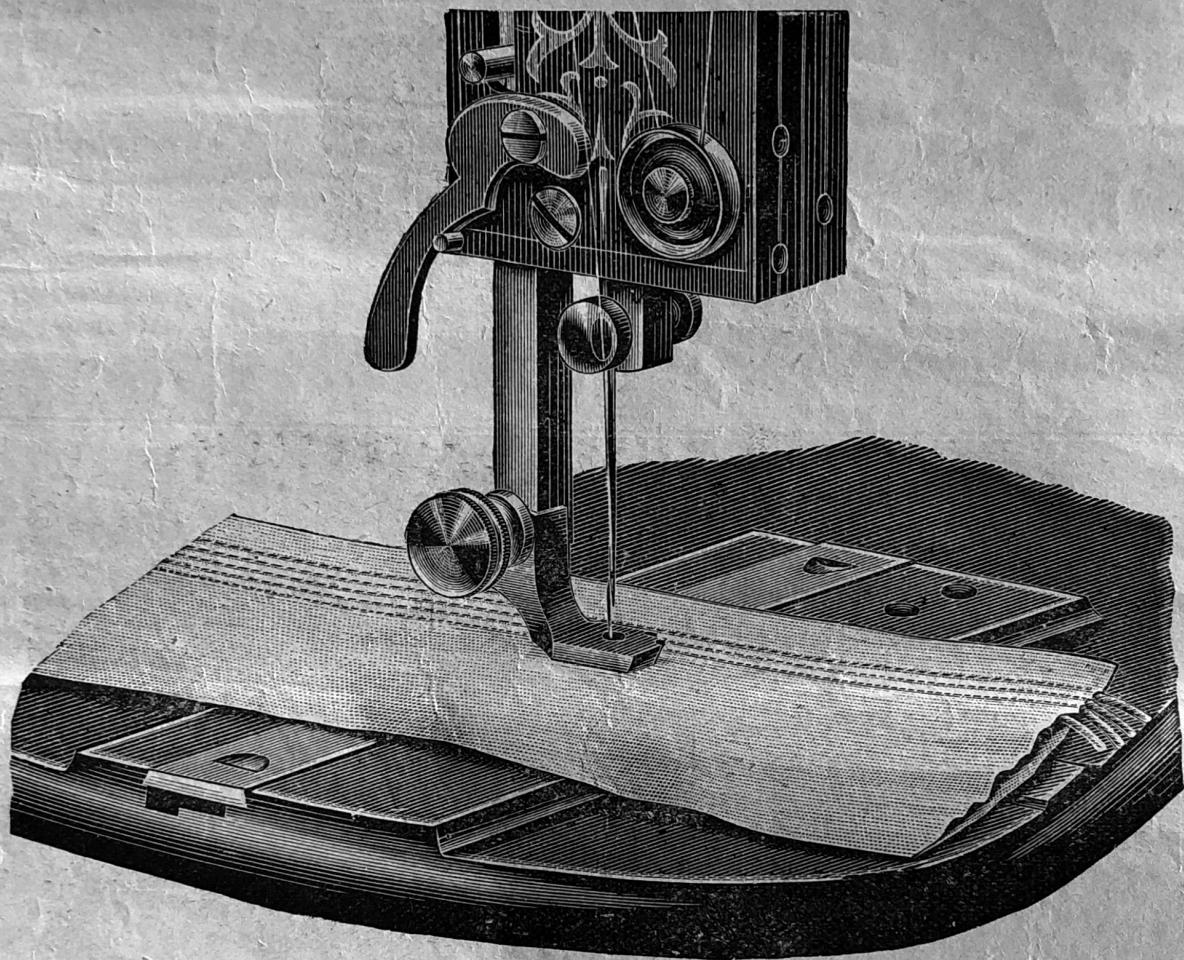


Fig. 17.

The corder is used for sewing cords or braids on shirt collars, cuffs etc. On the lower face of the apparatus, there are two grooves for conducting the cords. Lay the cords between the material, and glide along with the screw-driver, until the cords lie close to the seam; place the work under the apparatus; observing, however, that the cord be exactly in the groove next to the needle. In adding more cords, the last sewn is to be placed into the right groove, to act as a guide to the next following cord, which passes through the left groove.

The ruffler.

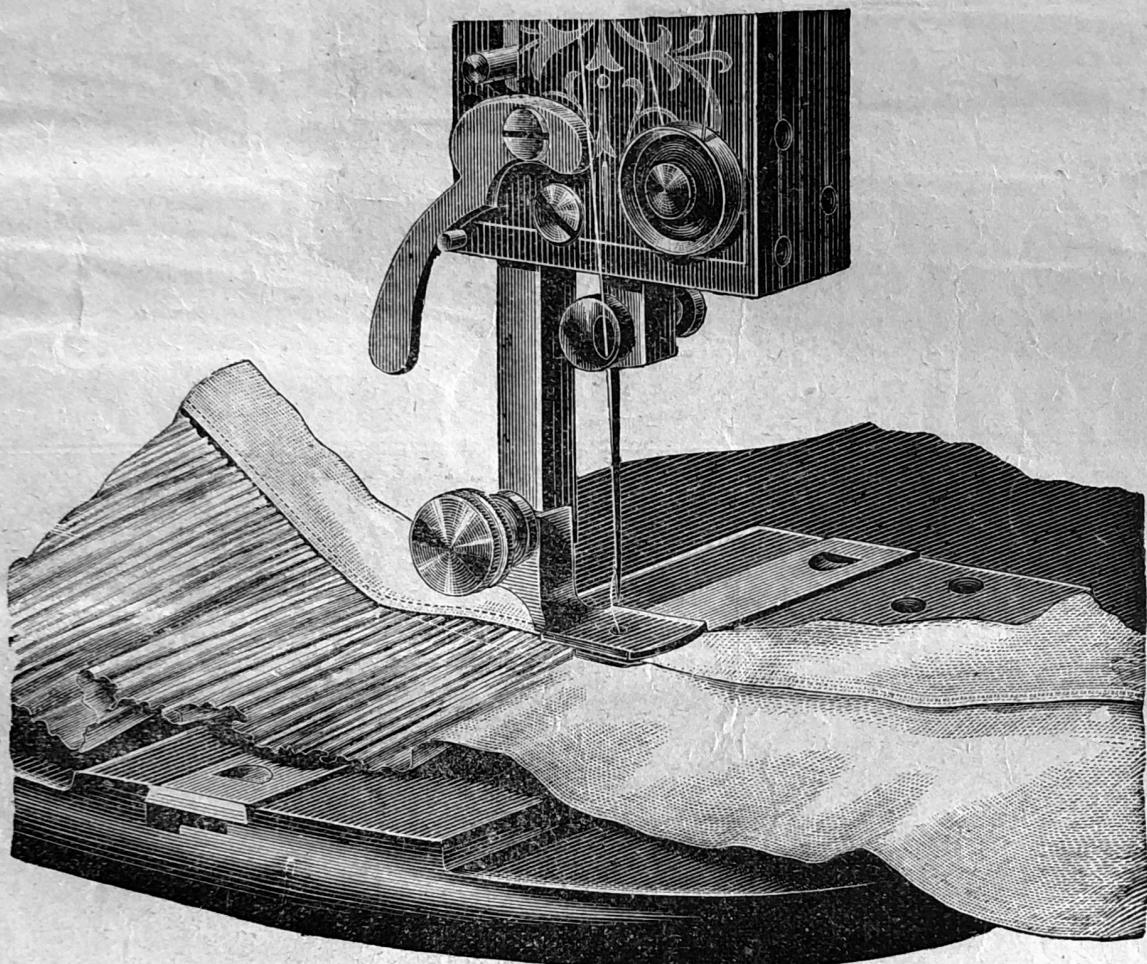


Fig. 18.

The ruffler is put in the place of the ordinary cloth-presser, and is used for gathering one of two materials placed upon each other. Place the material to be ruffled under the apparatus, and lower the cloth presser. Fix the second material in the horizontal slit of the ruffler, and begin sewing. The feeder acts upon the lower material, and gathers it upon the upper. The larger the stitch, the larger the folds of the ruffle.

The spiral-hemmer.

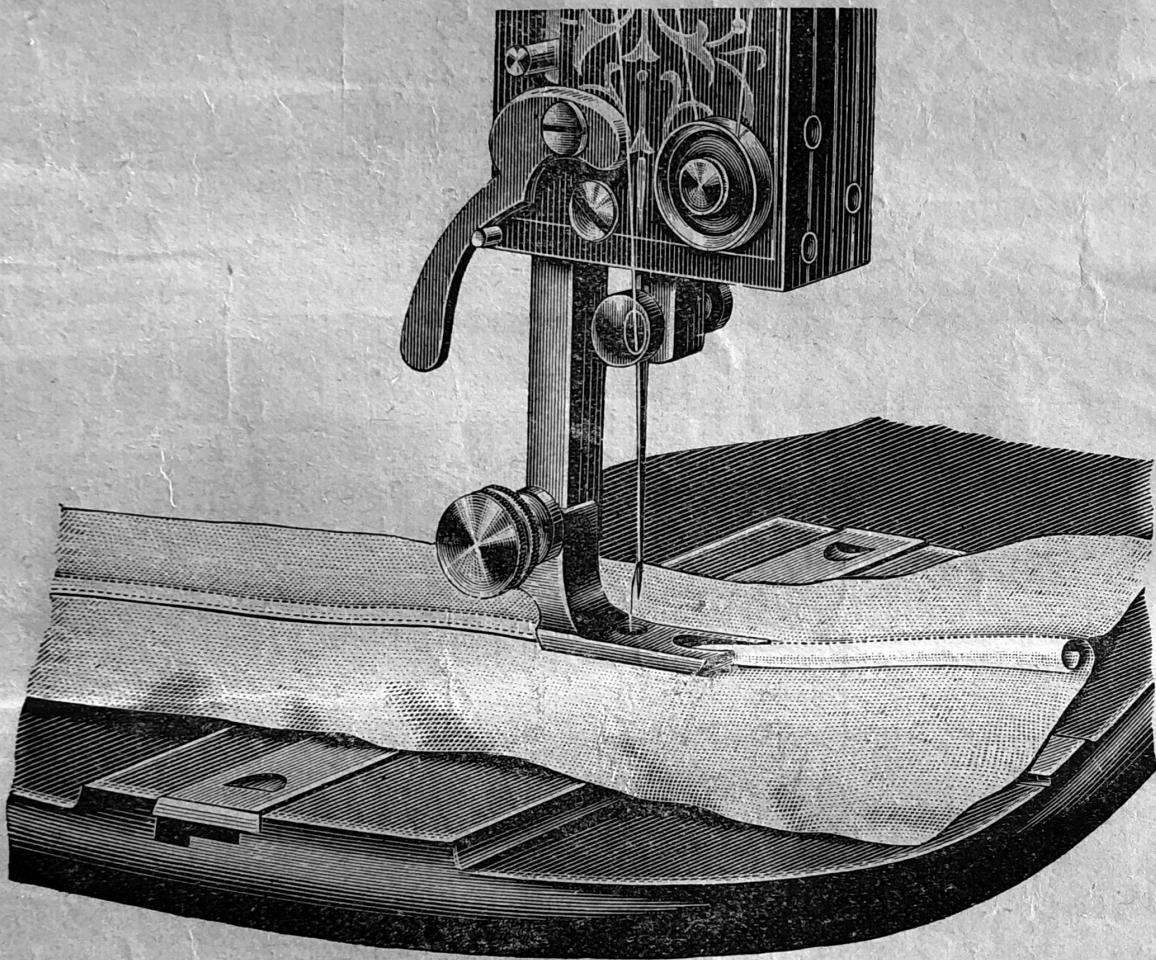


Fig. 19.

The spiral-hemmer is put in the place of the ordinary cloth-presser and is used for narrow seams. Fold 1 or 2 inches of the material with your fingers, in the width of the respective seam, and draw it, by means of a thread into the spiral of the hemmer, a little beyond the needle-hole. Lower the cloth-presser and sew as usual, observing however, that the said spiral be always sufficiently supplied — but not too much — with material, or it will spoil the seam.

A very nice lap-seam may also be made with this hemmer. Lay the two materials to be sewn one upon the other and fold them in their whole length by the breadth of a seam, so that when first sewn together, the stitches be on both parts at equal distance from the edge. Cut off about half of the under of the two projecting parts, and pass the upper part through the hemmer.

The lap hemmer.

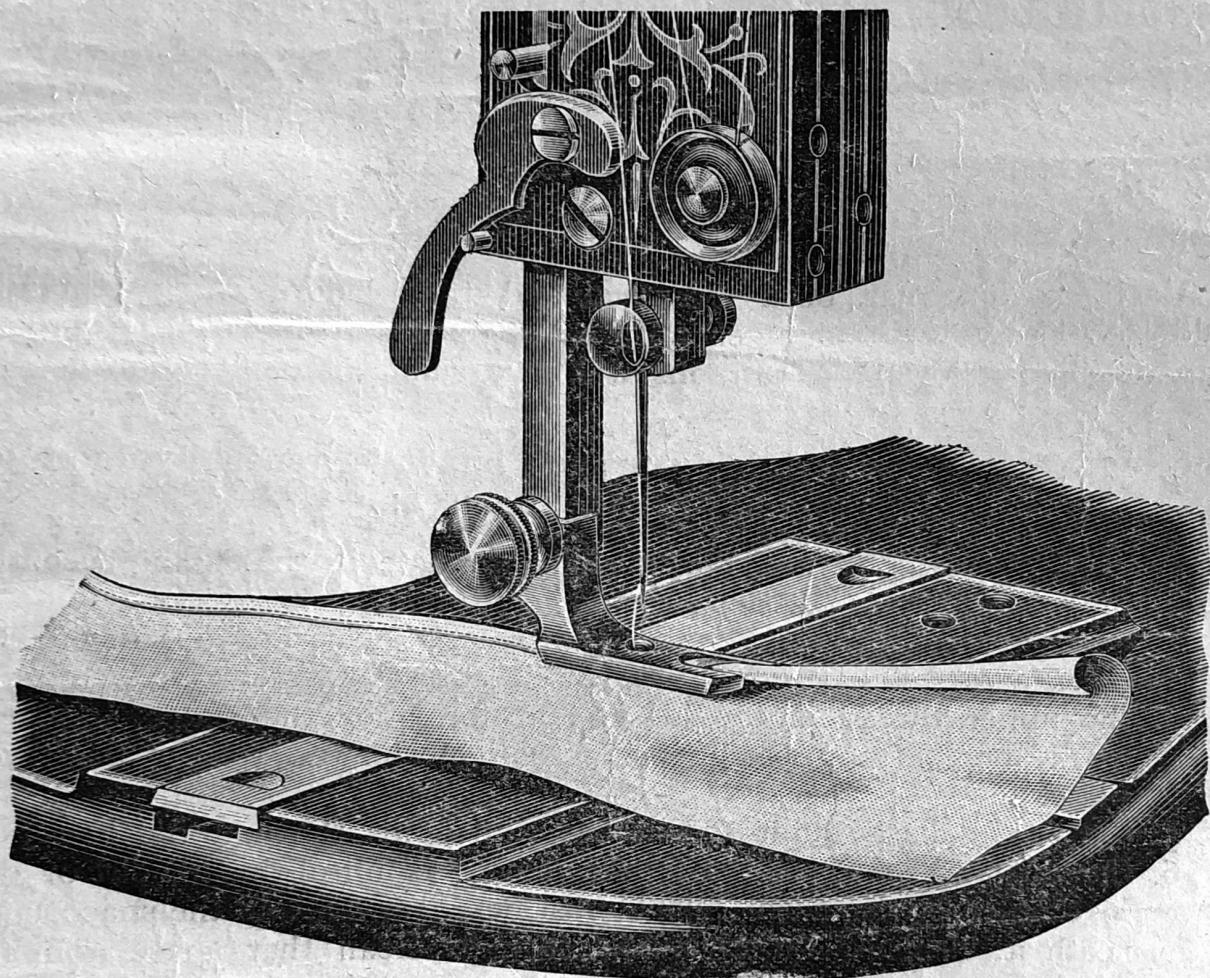


Fig. 20.

To make lap-seams with coarse linen, drilling etc., the broader lap-hemmer is to be used, and it is to be managed exactly as it has been described in the preceding paragraph about lap-seams made by means of the spiral-hemmer.

Instructions for keeping the machine in good order.

Each machine has been examined and tried before being sent away. Should it work badly, it may generally be attributed to its not being properly managed. The following paragraphs will give sufficient explanations.

If the material be not regularly pushed on, it is generally due to one of the following causes:

1. the feeder is obstructed with resinous waste in the sliding eccentrics;
2. the cloth-presser has not been lowered;
3. there are folds, or very thick transversal seams in front of the cloth-presser;
4. the upper thread is too loose, and forms on the under side of the work long loops, which remain hanging in the hole of the throat-plate;
5. the thread has caught somewhere, and holds the material back;
6. the opening in which the feeder moves, is full of thread, dirt or dust. In that case, the needle-plate must be removed, and the space underneath it, cleaned. — It is necessary to clean that space from time to time;
7. the cloth-presser is full of resin or dried up oil, and its spring is of no use. In that case, put a few drops of petroleum or benzine into the hole No. 4, fig. 2, move the lever of the cloth-presser 2 or 3 times upwards and downwards, clean it, and oil it again.

Should the thread frequently break, it may be attributed to the following causes:

1. the eye of the needle is too sharp and cuts the thread;
2. the needle does not pass freely through the needle-hole, but touches its edge;
3. the needle passes out of its groove, and passes into the shuttle groove;
4. the needle is placed too high or low, and the long groove is not placed exactly facing the worker;
5. the thread is too much strained;
6. the thread is knotty;
7. the needle is too fine for the thread;
8. the needle is not well threaded, or the thread entangled somewhere;
9. the thread-lever delivers the thread too slowly (see the chapter on the regulator of the thread-lever).