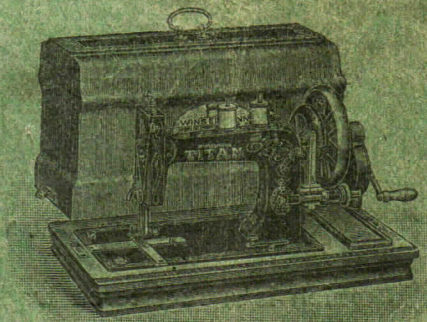
TITAN is the name which stands for the best product. Buyers make a note of it and protect yourselves.

Instructions

for the use of the

Titan boat shuttle machines.



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As a proof of its genuineness,

every

Titan sewing machine

bears the

factory 

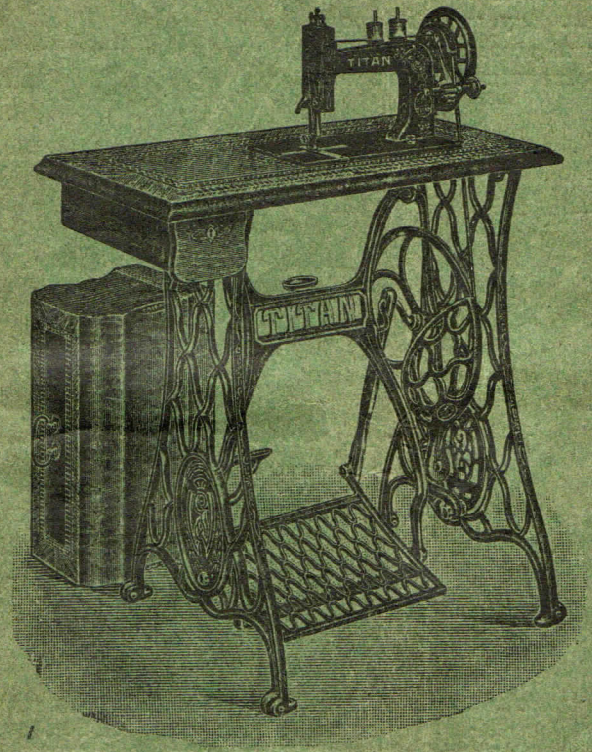
mark

given on the front of the arm,

as well as the name

"Titan",

which is a registered trade mark.



Directions for Running.

The following have proved sufficient to teach the operation of this machine thoroughly, without further personal instruction. This can best be accomplished by having the learner carry out practically, at the machine, the instructions contained in each separate paragraph, while a second person reads the same aloud. Never be in a hurry, but take up each paragraph thouroughly before passing to the next.

The machine is forwarded all ready for operation.

1. The Treadle.

Before beginning to sew, practice must be had in treading; the machine should be worked evenly with one foot (or both). One ought to begin without boggling. and be able to tread fast or slowly at will. The following method of treading has been every where introduced as the easiest and favorite way. Place the feet on the treadle so that one foot rests with ball and toes on the forward part, the other in the same way on the rear part, of the treadle, and then move the feet alternately as in walking. In this manner one learns in a very short time to run the machine either fast or slowly. The handwheel of the machine should be started up towards the operator with the right hand, never in the opposite direction.

When the machine is started without cloth to be sewed, the presserfoot should alaways be lifted by the lever No. 16 (page 20), so that the teeth of the transporter may not rub on the Presser.

After having learned to tread properly, take a piece of cloth or paper, lay it under the presser-foot, let down the latter by lever 16, and start up the machine (with needle unthreaded) so as to learn how to guide the work. Try at first to guide the work according to traced straight lines, and then according to curved lines.

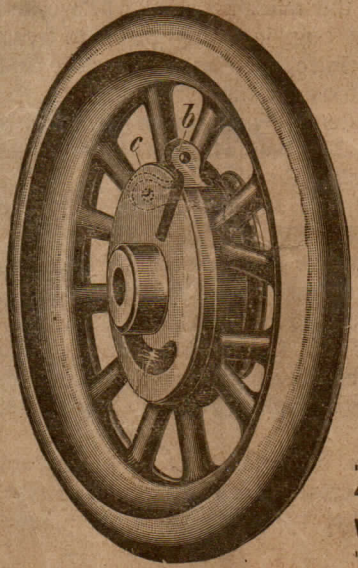
On either side of the treadle are found conical screws between the points of the frame-cross, bearing the treadle. If after long use treadle should work too loosely, take the screw-driver accompanying the machine, unscerw both screws symmetrical against the bearing, producing a very easy treadle movement, without any shake, and then screw both screws tight.

2. The frame-wheel.

The frame-wheel plays between the points of the frame-cross, without to come in contact with the cheeks of the frame. On the outside of the frame-cross is found a conical screw. If the wheel should shake at any time, it is only necessary to loosen the nut, after turn and press the screws at the right side, for having an easily movement of the wheel.

3. Setting the Needle.

The needle has on one side a long groove, on the other a short groove. In setting the needle the directions given below must be followed exactly and very carrefully, a correct setting being very important. First loosen with the screw-driver the screw of the Needle-socket No. 18 (page 20); which holds the needle, bringing Needle-bar to its highest position. Take theneedle between the thumb and forefinger of the left hand,so that the nail of the thumb enters the long groove ofthe needle, and insert the needle thus in the groove behind the needle-socket No. 18; hold the needle here firmly and, by turning the upper hand wheel of the machine slowly with the right hand, let down the needle-bar so far, that the cross-mark filed in front of the needle-bar above the face-plate is just level with the latter, and adjust the needle so that half the eye is visible above the Needle plate No. 15 (page 20). In this position and adjustment screw the needle tight, taking care thereby that the needle passes throught the hole in the needle-plate without touching either side and that the longer groove is turned exactly towards the operator. An exact setting of the needle is absolutely necessary.



When the machine is continually used the position and movement of the needle should be looket after daily; if the point has become blunt or rough it must be sharpened on the accompanying oil-stone, because the machine can never sew well if the needle is not perfectly smooth and sharp. In sharpening the same carc must be taken not to make a broad, thick point, but a thin point wellrounded on all sides. — Should the eye be sharp, and cut the thread, a coarse thread socked in oil and covered with fine emery must be drawn back and forth through it until it becomes smooth. However, the needlees accompanying the machine are all prime quality, and the eyes polished. **It is a matter of great moment, that needle and thread should agree in size**; that is, the thread should be just coarse enough to fill out the groove in the needle when the latter pierces the cloth (see table, p. 19), and the under-thread in the shuttle must be of the same number as the upper-thread.

4. Ungearing the Hand-wheel for Winding. □□□

In order to wind, throw out the lever *b* (on the outer side of the hand-wheel) into the dotted position *c*. The fly-wheel is thus thrown out of gear, and revolves without moving the sewing machinery.

To start up the latter again, turn the lever back into position *b*, an turn the fly-wheel a little.

In order to be enabled to lubrify the fly-wheel during the spooling, there is a lubricator in the handwheel-axle before the protection of strap. (See page 20, No. 20.)

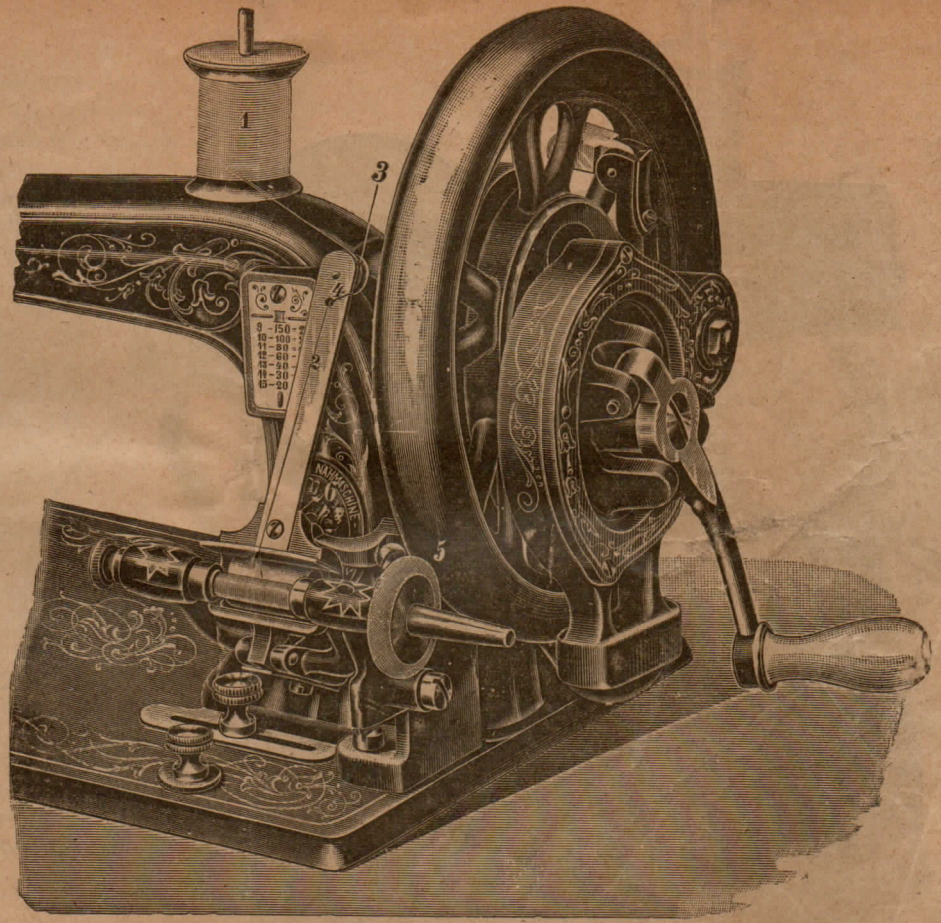
5. Filling the Bobbins of family machines.

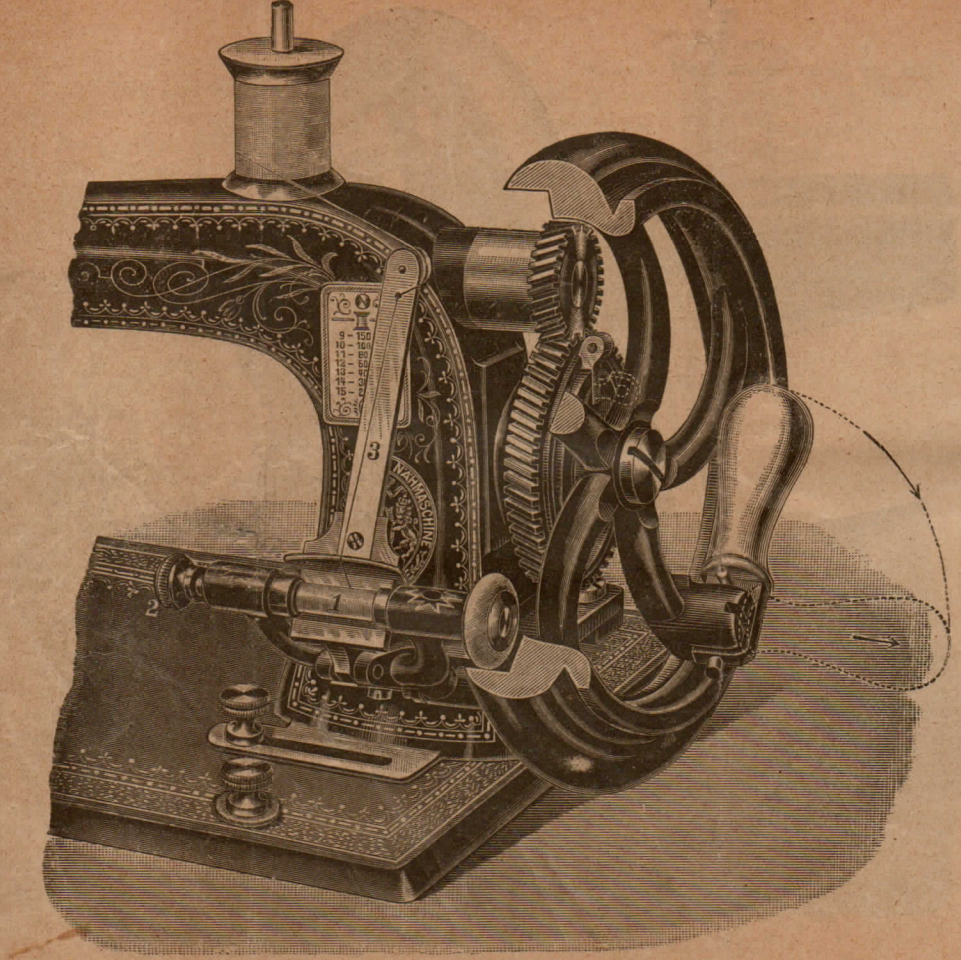
1. Before proceeding to wind thread on the bobbins, ungear the hand wheel in the way just mentioned.

2. When not in use, the winding apparatus must always be laid **downwards** and the thread guide **to the back.**

3. Fit in the metal bobbin, so that the hole in the little brass disk gears into the pin on the **right** of the winder bolt.

4. Carry the thread from the **wooden reel** No. 1. to the tension pulley No. 3 at the upper end of the thread guide, pass it between these two from above to the **right,**





lay it in the slit of the hole No. 4, and then fix its end tight between the **right** brass disk of the bobbin and the winder bolt.

Having done this apply the thread guide No. 2 to the bobbin **in front,** then press the entire winding apparatus against the hand wheel No. 5 with the thumb of the right hand, and set the wheel in motion the in direction **towards oneself.** The thread will now begin to wind itself automatically on the bobbin.

Before beginning to wind, take care that the thread is drawn **tight** between the wooden reel No. 1 and the winding apparatus.

5. Should the bobbin not fill **sufficiently, loosen** the little set screw behind the thread guide in the arm No. 6 **a little;** should the bobbin fill **too full**, the same screw must be **tightened a little.**

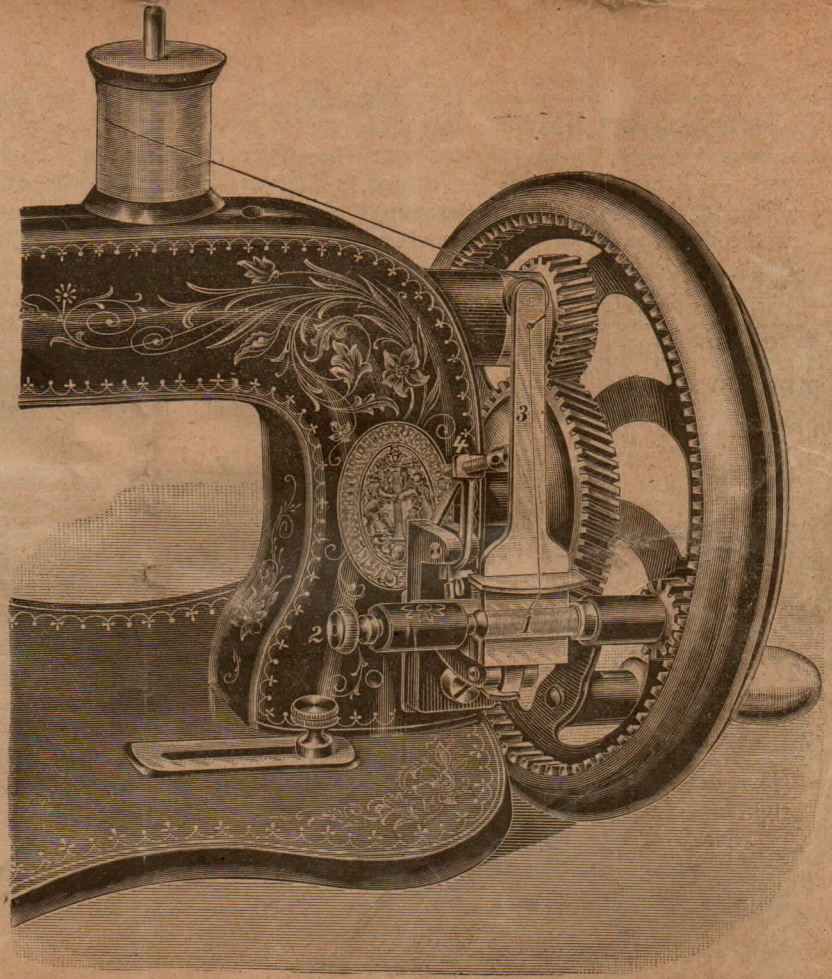
From time to time lubricate the little screws on the two sides of the sliding roller with a drop of oil.

6. Filling the Bobbins of Saxonia A and Regia B machines. □□

(See page 4 and 5).

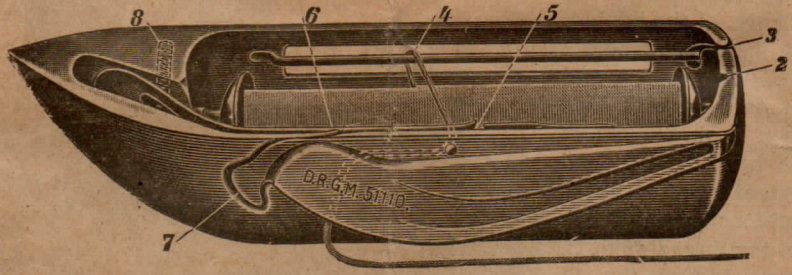
Take the bobbin 1 out of the winder, pulling outwards with the left hand the winder-piston 2 and throwing backwards the thread-guide 3.

If one wants to wind a bobbin, seize the bobbin with the right hand, throwing at the same backwards the thread-guide 3, then put it in the winder, so that the little pin on the right hand side spindle fits into the hole in the flange of the bobbin, then cause with the left hand the spindle 2 of the winder to give way a little and place the bobbin with its other end into the opposite hole. Then push the winder against the tire of the hand wheel, lead the thread from the spool on the top of the arm of the machine between the tension-disks, fitted on the thread-guide 3, behind, and from thence through the slit in the thread-guide, and fasten it by squeezing the end between the bobbin and right hand winder-ring pushing a little backwards the bobbin with the piston, with the left hand. When completely filled the winder will automatically cease to work.



7. Threading the Needles. (See page 20). On unpacking the machine notice in what manner the needle is threaded, so as to be able to do so in the same way. The correct method is as follows: The upper thread is on a common wooden spool, which is set upon the spool-peg. — From this spool the thread is first drawn through the wire ring No. 23 and downword to the tension-disk No. 13, then passed between these two so that it runs through the cleft from below to above; now draw it through the slit of the thread-lever No. 25 and downward to the needle-socket No. 26, and behind the little hook, to be seen on the side towards the operator, finally, pass it through the eye of the needle. The end lying out on the needle-plate may be about 2 inches long.

8. Shuttle on the very newest principle with threading in front. To adjust the bobbin in the shuttle, insert one end of same in the centre bearing behind wich there is a little spring, and press the other end of the bobbin gently into the rear depression until it springs in with a slight snap. **Both bobbin-ends should be touched with a drop of oil, that the bobbin may revolve easily.**



The thread is let from below through the slit-hole 3, round the bridge 4 into the tension spring-hole 5. Now draw the thread towards the shuttle point round the horn 7 of the covering-spring and the threading is right as is seen on the figure.

No. 8 is the tension-regulating-screw.

With the shuttles without threading the tension is regulated by means of the screw on the outside of the point of the shuttle.

With every machine follows only **one** shuttle, either **with** or **without** threading.

In order to pick the shuttle out of the shuttle-basket, the **shuttle-lever** is used. Turn the machine in such a way that the shuttle appears quite in the front (left) and draw out the slider **forward** (left). If one draws rapidly the shuttle springs out entirely, otherwise it is only lifted.

9. Sewing. **Never sew or thread when the needle-plate slide No. 28 (page 20) is open, otherwise the machine would be instantly spoiled by the shuttle flying out.**

When both threads are properly adjusted as directed above, observe the following: Adjust the shuttle in the movable guide always so that the point of same is turned towards the needle, and the outside spring turned upward; then draw out the thread about two inches and push the steel slide to so far, that the thread is not pinched; now draw out to the same length the upper thread which passes through the needle, seize is with the left hand, while the right hand turns the upper fly-wheel round once (whereby the needle is depressed and again elevated to its highest position); draw gently on the thread held in the hand, so that the under-thread is raised in a loop through the aperture in the needle-plate, and then stroke both threads backward with any instrument at hand, not forgetting however to lift the presser-foot first. After this procedure, pass the work under the presser-foot, **let the latter slowly down by lever No. 16 (page 20)**, and begin to sew. Catch both threads with the left hand, and with the right turn the upper fly-wheel slowly until 2 or 3 stitches have been made, after which the machine may be operated evenly. Guide the work, **but take care not to draw or push the cloth, else the needle may easily break off.** If you have to sew over very hard places, or cross-seams, **sew slowly** and turn the upper fly-wheel cautiously with the hand, so that the needle may not be bent or broken.

If the work is to be taken out, let the needle rise to its highest position, and lift the presser-foot; now the thread can run freely through the eye of the needle, without bending the needle; take the work away **towards the left side**, drawing it somewhat upward at the same time. An exact observance of this rule will obviate breaking of needles.

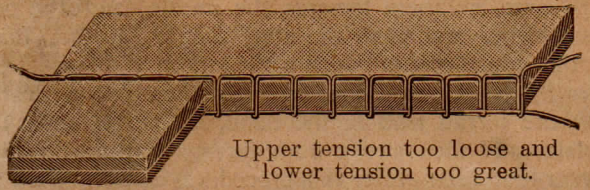
If on taking away the work the under-thread (in the shuttle) should happen to break, take out the shuttle and draw the thread-end out again, proceeding as directed above.

10. Regulating the Tension of the Thread. **The tension of the upper-thread requires special attention, as on it depends the perfection of the seam.** It should always be so regulated, that both threads are drawn in equally, and connect in the middle of the cloth. The stitch is most perfect when as nearly as possible alike on both sides of the cloth.

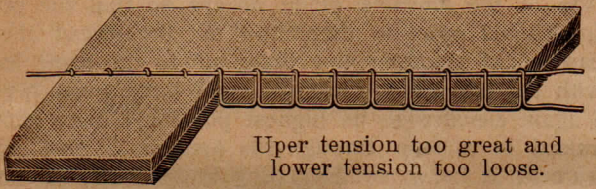
The tension-disks No. 13 (page 20) are regulated by screw No. 27, situadet beside the needle-bar. If this screw be turned to the right, the upper tension is increased; if turned in the opposite direction it is decreased. Turn but very slightly each time.

To obtain a handsome stitch on the upper side, the upper-thread should not be quite as tense as the lower.

The tension of the thread in the shuttle must always be regulated first, after which the upper tension can be so regulated that both are equal. — If the tension in the shuttle has been made strong, test it by drawing the thread towards the broad end of the shuttle; if the thread does not break, the tension is right for thick and heavy goods; on the other hand, soft and loose fabrics require looser tension.



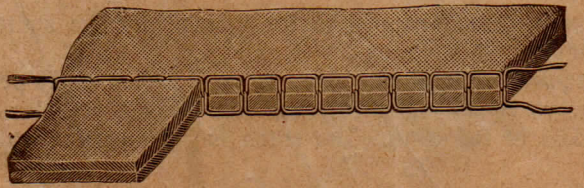
Upper tension too loose and lower tension too great.



Uper tension too great and lower tension too loose.

After sewing a few stitches stop, and test tension and stitches. When loops or knots are formed on the under side of the cloth, or when the under-thread is not drawn in, but lies straight along, the upper tension is to loose, and consequently the tension-screw No. 27 must be thightened up a little. But when the work wrinkles, and the thread often breaks, or lies flat along the upper side of the cloth, the upper tension is too great, and can be lessened by slightly unscrewing the tension-screw. If the tension in the shuttle be right, it must not be altered in any of the above cases; alterations must be confined to the upper tension.

To get a handsome, even, straight seam it is in the first place absolutely essential **that a good and flawless needle be employed and properly adjusted, that the tension be regulated exactly, and a good, even thread used.**



II. Formation of Stitch.

A description of the method by which in this machine the stitch is formed by the aid of the shuttle is the more appropriate in this connection, as the same aids in correctly running the machine. — The needle, whose eye is near the point, pierces the cloth and carries at the same time a part

of the upper-thread under the needle-plate; when te needle rises the upper-thread forms a loop, into which the point of the closely following shuttle pushes, thus widening the loop, and connecting the two threads with each other as shown in the above cut. Finally the loop, through which the under-thread is now passed, is drawn tightly into the cloth by the widening of the next loop.

12. Lenght of Stitch. Just before the operator to the right, close in front of the base of the arm on the machine-table, is an adjustable thumb-screw set in a slit, and serving to regulate the length of the stitch. By loosening the screw and pushing to the right you make the stich longer, to the left shorter. After fixing the length of the stitch, screw tight again.

13. The Presser-foot, which is fastened to a prismatic bar, and by means of a little lever No. 16 (page 20) is either lifted or let down upon the cloth to be sewed, serves to hold the latter firmly down to the needle-plate and transporter while sewing. The pressure exerted by this foot upon the cloth can be regulated by screw No. 33 (page 20). Various attachments can be fastened to the presser-foot bar, if the foot be un screwed. (See description of same pages 14—18.)

14. The Thread Regulator. From the face-plate in front of the needle-bar projects a small lever No. 25 (page 20) with an eye in the end; its motion is regulated by the adjustable steel spindle above in the needle-bar, which spindle is fastened by means of a little nut, and can be screwed upward or downward when the latter is loosened. However, the position of the spindle is precisely gauged before selling the machine; a readjustment of the same is therefore to be avoided; only, when exceptionally thick fabrics are to be sewed, it may be screwed $^1/_{10}$ in. lower down on the needle-bar, to loosen more of the upper-thread. But if for any reason the spindle should be differently set, it can be properly reset according to directions following:

Supposing the needle to be set in the exact height, this steel spindle must sit so low on the needle-bar, that, after a piece of fabric has been laid under the presser-foot (for tailors or any kind of cloth-workers thick cloth laid double; for seamstresses 3 thicknesses of linen), the little lever begins to move at the moment when, while the needle is descending, the eye is still a trifle above the cloth under the presser-foot. To this end, unscrew the nut which holds the steel spindle, turn the wheel slowly around until the point of the needle pierces the cloth and the eye is still just above the cloth, then screw the steel spindle so low down on the needle-bar that its lower end touches lever No. 25 and fasten the spindle by screwing up the nut. If the spindle stands too high, it will set the lever too late in motion, and the thread will be loosened too late, after it is needed,

and consequently break. If the spindle stands too low, the thread is loosened too soon, and loops are formed on the upper side of the cloth, or the needle pierces the thread.

15. Cleaning and Oiling the Machine.

(See page 20). **When in constant use, the machine must be cleaned once or twice a day, and then oile dwith the best oil.** The little holes in various places are oil-holes, and conduct to the spots where friction occurs. Lift the presser-foot and bring the needle to its highest position; then carefully remove with a rag all old oil, dust and dirt, and from the accompanying oil-can pour a drop of oil into:

1. The needle-bar at top (No. 2),
2. The opening in which the presser-foot plays (No. 3),
3. The hole in front upan the arm (No. 4),
4. The hole on rear of arm behind the spool-pin (No. 5),
5. The hole for axle of the fly-wheel (No. 6),
6. The hole above the firm-mark (No. 7),
7. The hole under the same (No. 8),
8. The greater aperture on the arm forward, for oiling the heart-wheel on the needle-bar (No. 29).

At the thorough cleaning done from time to time the upper works are to be turned over to the rear, after throwing the belt off the driving-wheel, whereby the under view is obtained. Here oil:

9. The places below on the base,
10. The plate along which the shuttle runs must be touched with oil now and then,
11. The transporter too, often,
12. In the shuttle bobbin-points,
13. The opening by the Winder,
14. On the under frame the ends of the fly-wheel crank, and both sides of the treadle where it plays upon the treadle-bar.
15. The two places in which the wooden connecting-rod moves ud and down.

Use very little oil; but it must be very clear and unctuous, fluid, bone or mineral oil (best is the specially prepared machine oil, to be had at all machine ware roons and agencies). Never take vegetable oils.

After oiling according to the directions above, **take out the shuttle and run the whole machinery rapidly for a minute,** and cleanse the machine of superfluous oil before beginning to sew.

Should the machine happen to run hard during use, either some part of same was overlooked when oiling, or the oil has become sticky. In this case **pour kerosene or benzine into each hole,** to decompose the dirt, **run the machine both backwards and forwards quite rapidly, clean it thoroughly and oil it again all round;** it will then immediately run more ligthly.

The same remark about needle-plate slide as above.

General Remarks. □ If on account of bad oil or long disuse of the machine the oil has become thick and the machine runs heavily, it is only necessary to pour a little kerosene (better benzine) into the oil-holes, to run the machine a while both backwards and forwards, and then wipe thoroughly. If the belt transmitting the motion from below to above should be too much stretched, it will slip without moving the machine; to obviate this it is only necessary to unhook the belts and twist them somewhat tighter together, or where this does not answer, the belt has to shortened a little. Its tension must not be too great, however, for then the machine would run heavily.

Hints against defects which occur in sewing.

When the cloth is not pushed forward evenly, the cause may be:

1. That the presser-foot is not all the way down;
2. That tick spots occur in the cloth higher than the transporter rises, thus hindering the foot from pressing the cloth down firmly upon the same;
3. That folds or very thick cross-seams bulge against the foot, and the cloth catches on it;
4. That the upper-thread is very loose; long loops are formed on the lower side of the cloth, and catch on the needle-hole;
5. That a thread has got pinched somewhere, and keeps the cloth back;
6. That the transporter does not rise up high enough;
7. Or that the opening, in which the presser-foot moves, in quite filled with threads, bids of cloth, and dirt.

Frequent breaking of the upper-thread occurs because:

1. The eye of the needle has a sharp cutting edge, which scarpes and cuts the thread;
2. The needle does not play in the middle of the plate, but close to the edge of the small aperture, so that the thread rubs and breaks off against it;
3. The needle is set too far towards the shutle-race, and therefore the thread is torn when the shuttle goes back;
4. The needle is wrongly set, either too high or much too low; or its long groove is turned towards the shuttle race;

5. The tension of the thread is so great, that it breaks;
6. The sewing-thread is of very unequal thickness, or knotty;
7. The needle is much too fine in comparison to the thread;
8. The thread regulatore is out of order, and does not let go of the thread soon enough.

Loops or isolated long stitches occur on the upper side of the seam:

1. When tension of the upper-thread is much too weak;
2. When the thread is wrongly drawn through some part of the tension apparatus;
3. When the needle has struck somewhere, and the point is bent to a hook;
4. When the needle is bent far aside, or is crooked, and pierces the upper-thread;
5. When thread in the shuttle is not rightly threaded, and the lower tension is therefore very loose;
6. When the thread regulator lets the thread go too soon, so that the needle pierces the latter.

When there is a very nice stitch above whereas the unter-thread lies along straight, the tension of upper-thread is too loose.

But on the contrary, when the stitch is good below, and the thread lies straight above:

1. Either the upper-thread is too tight, or the under-thread too loose;
2. Or the upper-thread is caught somewhere.

Wath makes the stitch seem better, first above, and then below?

1. That the threads are uneven in thickness, which happens oftenest with machine twist;
2. That the spool does not fit right on the pin, but sits too tight;
3. That the underthread draws irregularly, which occurs when it was wound too unevenly or too much at a time, so that the bobbin chafes on the inside of the shuttle;
4. That the under-thread is wrongly threaded in the shuttle.

Stitches may be skipped:

1. When thread or silk is twisted too tight;
2. When the needle sits too deep in the socket, and the loop therefore catches on the side of the socket, or does not stand out;
3. When the upper-thread gets oily especially with very fine thread or silk;
4. When the needle is wrongly set too high, too low, or wrong side to, so that the long groove is towards the shuttle or fronts sideways;
5. When the needle is either much too fine or much too coarse in proportion to the thread;
6. When the machine is badly oiled, or so dirty as to run heavily.

The needle may break for the following reasons:

1. Because it is bent, and does not pass through the aperture, but strike the edge;
2. Because while drawing out the under-thread the upper-thread was held too tight and the needle bent, causing it to strike;
3. Because the machine keeps running after the lower-thread has been used up or broken off, the needle being then pulled to the rear by the upper-thread, and striking;
4. Because knots or thick places are in the thread which cannot pass the eye;
5. Because the needle stands too far towards the shuttle-race, projects through the aperture into the race, and is broken off by the shuttle;
6. Because in sewing wadding hard substances are present in the latter;
7. Because while sewing the cloth is pulled too far backwards; beginners often do this unconsiously.

16. The auxiliary devices.

The following are usually supplied free of charge with the machine:

1 Envelope of assorted needles,	1 Oil can,	Instructions for use.
A number of spools,	2 screw drivers,	

Further a larger or smaller number of the following auxiliary devices:

Sewing foot,	Steel flat seamer,	Adjustable cord sewing-in device and smaller edge foot.
Straight edge with head screw,	Adjustable hemming device,	Quilting straight edge,
Steel hemming rule,		

The handling of the different devices and their work is explained by the clear illustrations adjoining and the descriptions, so that there is no difficulty in learning. The devices, however, should not be employed before a thorough knowledge of the machine itself has been obtained.

17. Straight edge. □ (Illustration 1). When it is necessary to make a seam parallel to an edge, the straight edge is screwed to the plate by means of the screw. The straight edge of the device is adjusted more or les away from the needle, according to the distance required between the needle and the edge of the stuff. If it is required to sew close to the edge of the material, the small foot

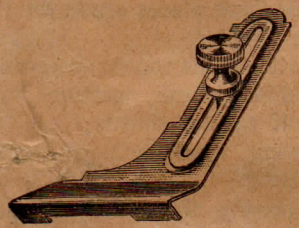


Illustration 1.

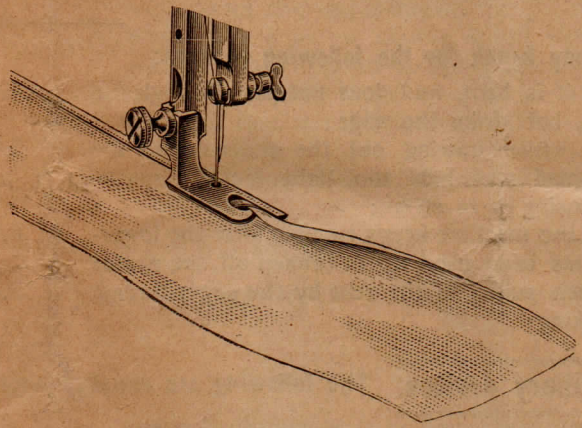


Illustration 2.

(see 22) which is provided, is to be employed. This foot like all others may be fastened by means of a screw to the lower part of the material presser rod. The straight edge serves also for sewing folds and facings, in a straight direction, as also seams equidistant. By this means the wearisome process of marking out the lines beforehand, is avoided.

18. The steel hemming rule. □ (Illustration 2) is screwed to the lower portion of the material presser. The edge of the material, which is to be hemmed, after being foldet over at the commencement, is guided into the spiral of the hemming device, by which means it issues behind the needle as a double folded hem, the inner edge of which lies exactly under the needle. The stuff is drawn forward by means of a thread or pushed with a needle until it is held by the needle, the material presser is lowered and sewing carefully commenced.

During sewing, the material must be guided so that the opening of the hemming device is fully occupied, in order that the hem may be sufficiently folded over. Too much, however, must not be allowed to enter; this may easily happen if the material is pressed inwards with the hand, before opening the hemming device. Trials will quickly show how to handle it correctly.

The hemming device must always sew the seam directly on the edge of the hem.

19. The steel seamer. (Illustration 3). The flat seam joins two materials.

The steel seamer is screwed on like the hemming device. When stitching the two materials are laid over each other, the lower, however, projecting a little beyond the upper. Only this projecting piece runs through the seamer, and in this manner the two pieces are joined together (see also hemming device 18 and Illustration 2).

When this has been accomplished, the material is taken apart, the seam drawn out and the edge which has formed is then allowed to run through the seamer, in order to sew it down. (Illustration 3).

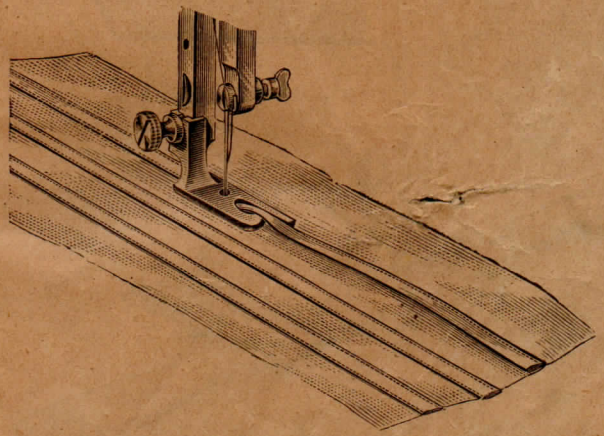


Illustration 3.

20. The French seam. □□ (Illustr. 4 and 5) serves, to join two pieces of material. The left sides of the two materials are laid on one another and a seam is sewn not far from the edge of the two stuffs (Illustration 4). After that the materials are laid together in the reverse

manner, i. e. the right sides together and the first seam between the two materials, and a second seam is sewn parallel to the first and near to the edge of the material that is outside the same (Illustration 5). The materials are now firmly joined and may be further handled as one piece. The seam roll is laid carefully on the inside (left side) of the material.

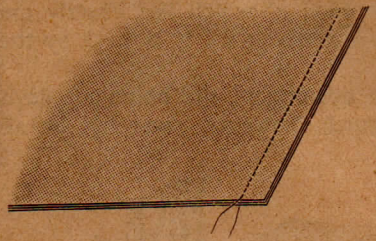


Illustration 4.

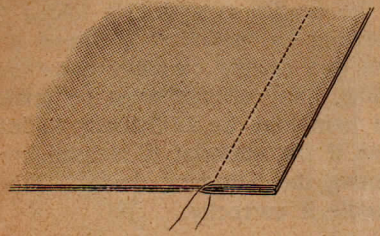


Illustration 5.

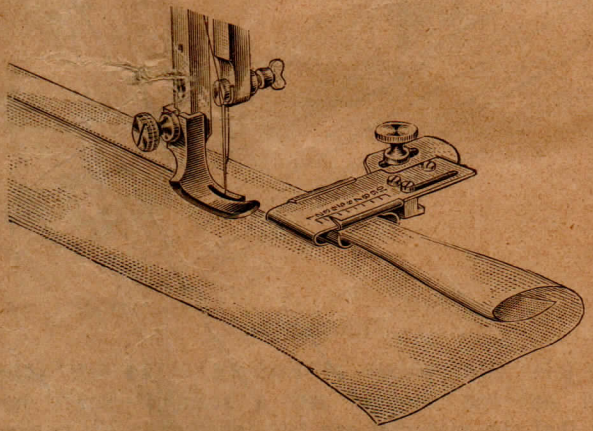


Illustration 6.

21. The adjustable hemming device. □□ (Illust. 6) is screwed on to the plate like the straight edge. In order to insert the stuff, the edge is bent at the commencement about half-a-finger's breadth and drawn by means of a thread through the hemming device under the needle. Sewing can now be commenced, care being taken that sufficient material runs into the device in order that the edge is sufficiently folded over. In order to employ this device for hems of varying breadth, the screw is slightly loosened in the slot, which allows the plate with the scale to be adjusted. The smallest hem is obtained when the figure 1 is used. The higher the number taken, the wide the seam is. Before sewing the loosened screw must be tightened again.

22. The adjustable cord sewing-in device and small edge foot. (Illustration 7). The adjustable cord sewing-in device serves the purpose of sewing in cords, insertion braid etc., in shirts, cuffs etc. On the right hand side of this device, there is an adjustable rule, which can be set according to the cord that is to be sewn in. The cord, which is laid in the material with the hand and drawn in with any desired instrument, is brought with the material under the device, in such

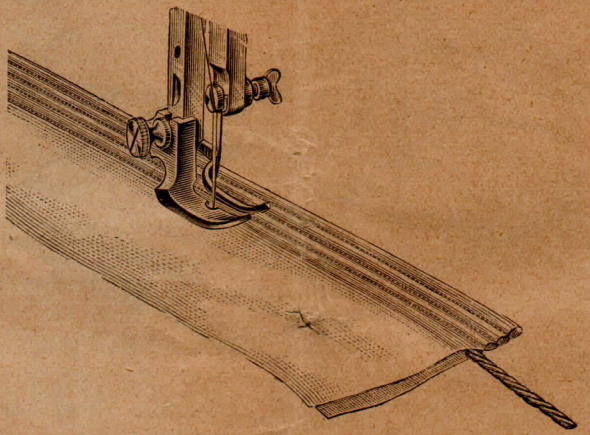


Illustration 7.

a manner, that the cord or braid comes between the side of the foot and the rule; the upper material is nicely raised by the pressure of the foot and the rule.

When sewing in many cords the cord sewn- in last is directly next to the needle, when the previous cord is on the outside right hand of the rule.

For use as edge foot, the screw is loosened and the rule drawn out before using.

23. The quilting straight edge

(Illustration 8) is placed, as shewn in the illustration, through a hole in the presser rod, and tightened with the screw. It may be adjusted near to or farther away from the guiding seam, which distance determines the size of the square. When working a straight seam is first made after being marked out; the material is then moved to

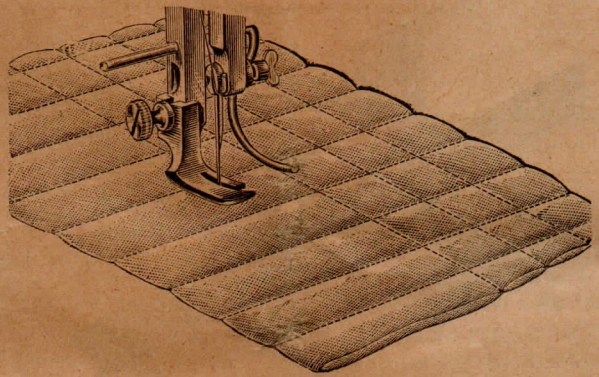


Illustration 8.

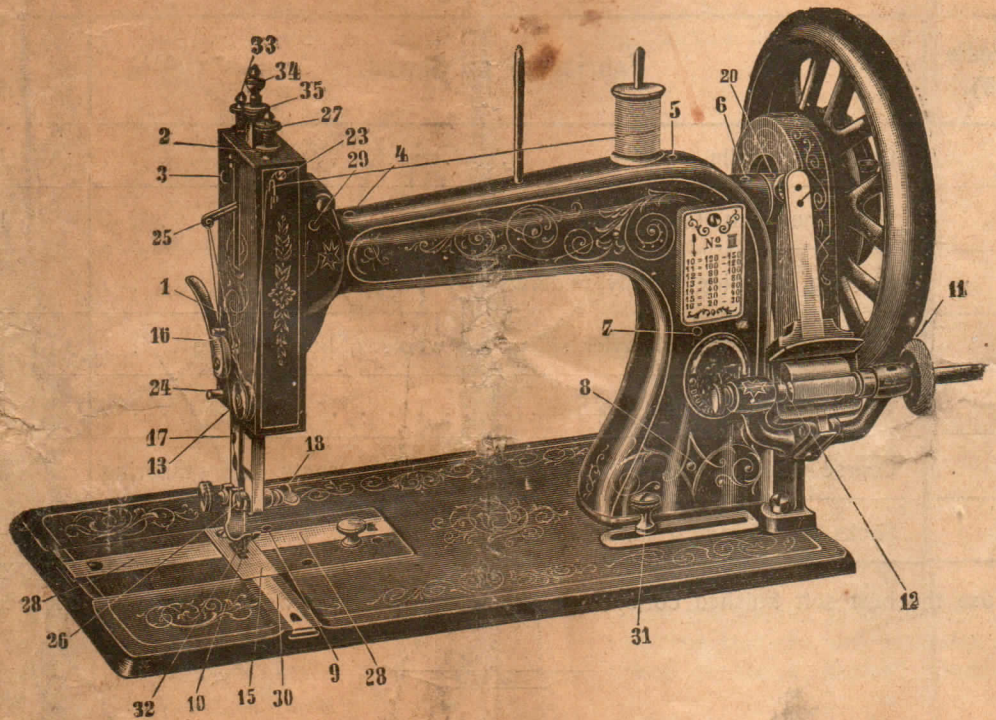
the right of the needle as far as the single rows are to be spaced apart, end the rule then adjusted so that its lower part comes exactly on the first seam. When sewing it must be observed that the previous seam is always under the rule, thus making the seams run parallel to each other. The best square is obtained when the material is sewn directly on to the wadding with no lining between.

The quilting rile is of use when spacing out all manner of quilted articles as, with its help, it is possible to sew equal rows and equal squares without previously marking them out.

24. Following Table gives proportionate sizes of Needle and Thread for different kinds of work.

No. of Needle (sort 339).	Fabrics to be Sewed.	No. of Thread Twist.
9	Cambric, muslin, tulle	150 - 200
10	Very fine linen, fine calico, cotton, fine silk goods	100—150
11	Shirting, sheeting, family underwear	80—100
12	Coarse wove linen, heavier silks, fine woolens, heavy calico . . .	60—80
13	Woolen goods, crash, cloth	40—60
14	Coarse woolens, heavy ticking, sack-cloth, over-coats, heavy tailoring	30—40
15	Sacks, and heaviest tailoring	10—30

Always use the best soft finished cotton, because it makes better work, and is the cheapest in the end.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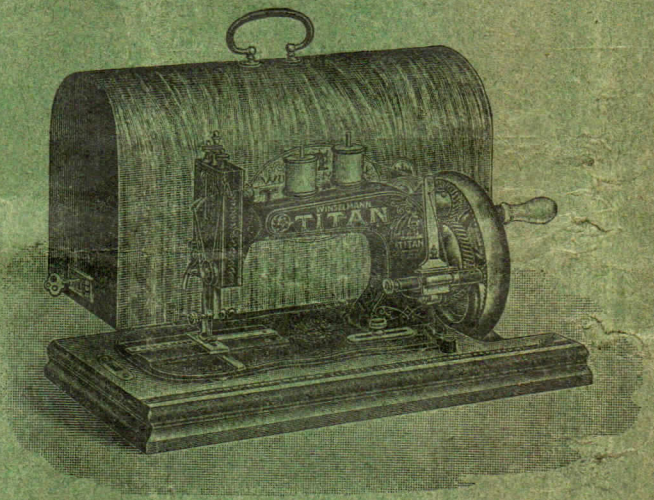

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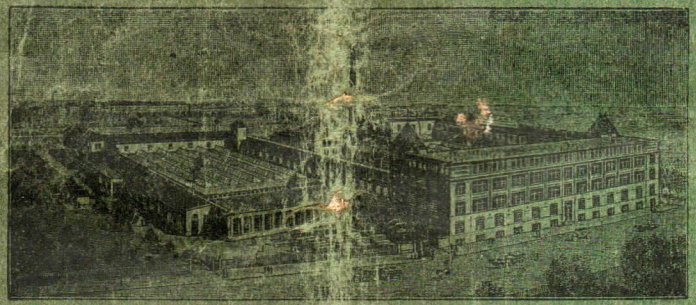

□□□ Over one million in use. □□□