Instruction-Book

for

ADLER

Right Hand Cylinderarm Sewing Machine with Ocillating Shuttle

Class 48

Kochs Adlernähmaschinen Werke A. G.
Bielefeld
Telegrams: Kochswerke

Instuction-Book

for

Right Hand Cylinderarm
Sewing Machine
with Oscillating Shuttle

Contents.

Instructions.

Generalities

Generally the heads of the Sewing Machines will be packed in a case and the stand will be packed in a crate, but to Oversee countries the stand will also be packed in a case.

Having unpacked the head and the stand one puts the head on the stand and cleans it by means of a soft rag, taking care that no dust enters the oil-holes of the machine.

All machines will leave our factory properly adjusted for sewing.

As proof of the sewing and the good functioneering of the machine a sample of work, sewn on the machine, will be beneath the presser foot.

Before commencing sewing one must pay attention to

The Threading and guide of the needle thread
The Position of the needle (long groove to the left)
The position of the Shuttle
The threading of the shuttle.

This can be learned best by practice. Each machine has a sample of work, on which one must first make some stitching by turning the handwheel against oneself. The direction of turning has been designed by an arrow on the handwheel.

Making this one must pay best attention to the cooperation of needle and shuttle.

How to remove the sample of work.

Move the needle bar to its highest position and draw the needle thread beneath the threadlever about 7 cm downwards, that the thread unwinds from the reel. Now one lifts the presser by means of the lever at the rear of the machine-head and draws the work about 8 cm sidewards to the left, cutting both threads closely to the sample.

Instructions for treadle drive.

Having removed the sample of sewing one exercises the treadling, provided that one is not yet accustomed to the working of Sewing machines.

The needle thread must be drawn out of the needle and the thread lever and the presser foot must be lifted up.

The belt must be unhooked and guided downwards through both holes of the table top and then the belt must again hooked together. Then one must put the belt on the groove of the handwheel that it roves on the groove of the flywheel of the stand.

Now one sits down comfortably before the machine both feet on the treadle. By means of the right hand one must seize the handwheel and put it in march from above to oneself, simultaneously treadling by means of both feet, trying to leave the machine in march without assistance of the hand, treadling slowly.

The treadling must be excersised as long as one can control the march of the machine and stop or start the machine without the assistance of the hand. To accustom lateron the hands to be busy simultaneously one must take a piece of cloth put it beneath the presser foot down the foot and set the machine at work.

The fabric can be turned to all directions by means of the left hand but it may not be pushed or drawn as thus irregular stitching will be effected and the needle may break; the left hand must guide the fabric in an easy way to the needle whilst the right hand guides the fabric carefully away from the needle. Also one must take care that the presser foot not being downed as long as the machine has been put in march without fabric to be sewn. The real sewing can begin only when the machine does not make rearmovements when frequently starting and stoping the machine.

Instructions for power drive.

A lot of Right hand oscilating shuttle sewing machines will be driven by motor power either by means of single drive by anexed motor or by means of group-drive i. e that a lot of machines are mounted on a power bench to be driven by a transmitter or an electromotor.

With all powerdriven Oscilating shuttle machines one must pay attention to the following items:

1. The lateron mentioned revolutions must be obeyed and must not be increased as too much revolutions or number of stitches does not enhance the efficiency of the machine, on the contrary the wear of the machine part will be more and there will be perhaps troubles. The machine must not work at more than 2000 stitches per minute when making light leather work and if middle leather work is concerned 1500 stitches must not be exceeded.
2. The machines itselves as well as the transmitters and shaft-bearing of the power bench serving for the transmission of the power must be lubrificated every day after each stop of work by means of good mineral oil or Stauffer grease.
3. All machines running by means of power drive must be surely secured on the bench. One must tighten all screws and nuts securely before commencing work to convince himself of the firm stand, the good lubrification and the closed position of the shuttle.

The threading of the needle thread (see page 2 and 3.)

First one loosens the wingnut 30073 on the reel stand by turning it to the left and draws the reelpin 09222 out of the arm. Then one puts the reel or the cross-spool on the reel-pin brings this pin again in its right position and tightens again the wing nut by turning it to the right. The reelpin must not be pushed too deep into the reelstand body as thus the reel will be unwound with difficulty and irregularly. With ordinary reels the reel stand must stand transverse and with cross-spools alongside to the machinearm.

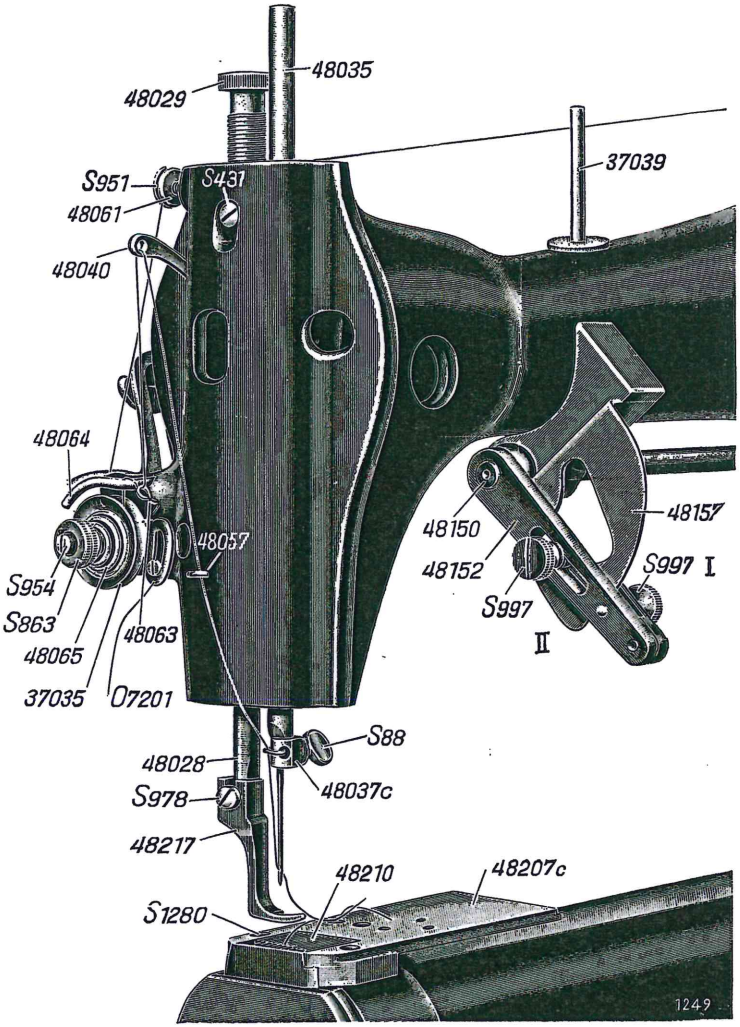
48035
48029
37039
S951
S437
48061
48040
48064
48150
48157
48152
S997 I
S997
II
48057
S954
S863
48065
48063
37035
07201
S88
48028
S978
48037c
48217
48210
48207c
S1280
1249

Fig. 3

clamp 48037c and then from te left to the right into the needle-eye. The thread must hang about 3 inches out of the needle-eye when the needle is in its highest position.

Threading of the shuttle-thread and the inserting resp. the removal of the bobbin.

To come to the shuttle one must open first the shuttle race cover plate 48153 protecting the shuttle against the penetration of dust pushing the toothed part of the cover plate at side. Now one turns the cover downwards that the shuttle race will become free, brings the shuttle on its deepest point (deepest needle position) and grips by means of the thumb of the left hand the bottom part of the shuttle flap 48126 opening same by turning from right to left. The filled bobbin 48135 must be taken between thumb and forefinger of the left hand in the manner that the thread unwinds from above to the right, puts the bobbin into the before opened shuttle and shuts the shuttle flap again closely but in no case one must forget to shut the flap as otherwise the shuttle will be hurt when sewing.

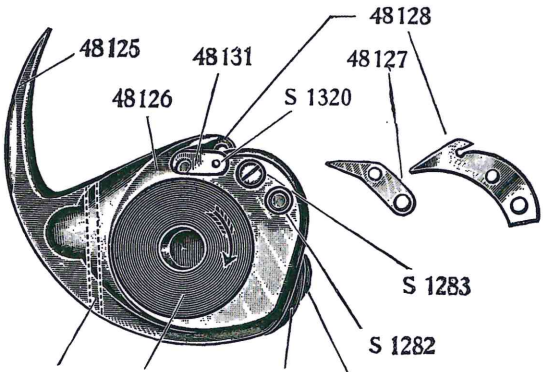

Fig. 4

Then one puts the bobbin thread by means of the left hand into the notch of the fllap 48126 in such a way under the tension spring 48128 that the thread comes out of the small opening of the tension spring. The shuttle thread must hang about 3 inches out of the shuttle. The shuttle race cover must again pulled upwards and must be left closed whilst

The tension of the bobbin thread will be regulated by means of the Regulating screw S 1283 as per illustration. Turning to the right effects tighter tension and turning to the left slackens the tension. Only, when by means of the regulation of the needle thread no clean stitching can be effected, the tension of the bobbin thread should be altered.

The tension of the needle threnđ. (Fig. 3) will be effected by means of the tension nut S 863 below the front plate of the head. Turning to the right effects tighter tension and turning to the left slackens the tension.

The tension of the needle thread must always be effected in such a way that the laces of the needle and bobbin thread are in the midst of the fabric and that on both sides appears a clean stitch. (see fig. 5.)

Fig. 5

If the seam is as Fig. 6 shows, i. e. that the laces of the threads are to be seen on the bottom of the fabric and the lower thread is simply streight and not tensioned below the fabric, the tension of the needle thread, is too slack and the tension of the bobbin thread is to tight. It also may be that the bobbin thread compared with the needle thread is too thick and too brittle. The bobbin thread must be always softer as the needle thread or at least of the same quality as the needle thread, but in no way thicker.

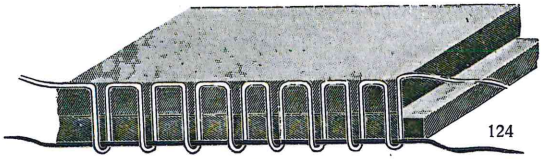

Fig. 6

If the joint of the threads is to be seen on the upper side of the fabric as indicated in fig. 7 the needle thread tension is too tight or the bobbin thread tension is too loose.

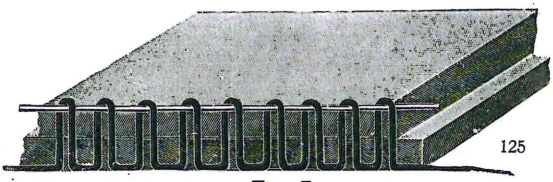

Fig. 7

Engaging and Disengaging the flywheel of the head.

Holding fast the handwheel by means of the left hand one turns the nickel disc as far as possible to the left. If the wheel shall be engaged again, one turns the nickel disc tightly to the right, holding the handwheel fast, that the handwheel does not disengage itself whilst sewing.

Winder and winding.

Before using the winder on the right of the handwheel the handwheel must be disengaged, then one engages the winder by loosening the Screw of the winder, pressing it downwards till one feels that the caoutchouc of the winder presses against the handwheel, then again tightening the screw. Now one puts the empty bobbin on the pin of the winder and the reel on the reelpin of the reelstand, fastens the end of the thread on the bobbin and puts the machine in march, that the thread winds itself on the bobbin. The bobbin must be filled by regular and tight layers. One guides the thread letting it glide through the right hand. Sometimes iregularly wound bobbins will be the cause of iregular seams. Having wound, the bobbin winder must be taken away from the handwheel.

We supply for our Right Hand Cylinderarm Sewing Machines provided with heavy handwheel an automatic winder fitted on the table top. The heavy handwheel is not releasable thus allowing that the winder can be emploied whilst sewing.

One puts the reel on the reelpin of the winder draws the thread beneath the hook then over the wire-hoop and from above between both tension discs in front of the reel. Then one threads the cotton into the hole of the winder axe (through the discs) and puts the bobbin on the pin of winder in front of the belt of the machine. The bobbin must always fit deeply and closely on the pin that it cannot turn on the pin. Now the machine must be put in march and the small lever must be be pressed deeply between the discs of the bobbin, that the winderbelt-wheel presses on the machine belt and the working winder stands still. When the bobbin has thus been filled the winder releases automatically.

Inserting the needle and needle required.

When a new needle must be inserted the needle bar must have its highest position and the screw S 88 of the needle clamp must be loosened, the needle must be put into the needle clamp with its large groove to the left as high as possible and then the screw of the needle clamp must again be tighted up (by turning to the right). If there missing of stitches should happen the needle must be turned a bit more to the right or to the left. Curved and blunt needles cannot be emploied.

The right needles have the designation No. 563. The kind of point must be always indicated on the ordersheet.

Choice of the right size of needle and thread.

Never bad threads or needles with faults should be emploied, as the best machine can not deliver a good seam if the thread is knotty, irregular, too much drilled or rotten or the needle is bad, curvy and blunt.

Always **left twisted** thread should be emploied with this machine as the right twisted thread gives never such a nice and clear stitch as the lefttwisted thread. Right twisted thread loosens when sewing and breaks.

As bobbin thread one chooses always a softer thread, which is some what thinner as the needle thread. Brittle and highly twisted thread cannot easily sewn.

Left twisted thread.

Right twisted thread.

It is a pitty that the designation of the different kinds of threads and their sizes has not yet been made in an uniform way, therefore one considers best the following rules:

Thread the sewing thread into the needle and put it into the long groove of the needle. If the thread fills the groove well and if the thread can be easily drawn to and fro, the needle will be alright. If the thread has alongside too much play in the groove the needle will be too thick if the thread can only be drawn with difficulty or if it does not fit into the groove the needle will be too thin.

Too thick or too thin needles cause missing of stitches and irregular seams.

Table for the designation of sizes of needle and thread with indication of some designations of threads emploied.

Type of needle 563. (Lammertz Aachen.)

Number of needle	Cotton	Linen thread	silk
1/2	70		70
1	50—60		40
2	40		30 silk substitute
2 1/2	30		30 „ „
3	10—20		24 „ „
4		50—60	12 „ „
5		30—40	
6		30	
7		25	

The **round pointed needles** will be emploied with wooven fabrics.

The **leather pointed needles** have slanting points and therefore will give a slanting stitch for sewing leather.

The **pearl pointed needles** have streight points in the direction of the eye, which gives a transverse stitch and are in use only for ornamental stitches on fine leather.

The Sewing.

After having threaded correctly the needle and bobbin thread one must turn the handwheel of the machine one turn by means of the right hand in the indicated direction holding easily back the end of the needle thread, drawing thusby means of the needle thread the bobbin thread about 3 inches through the stitch hole. Both threads must be laid backwards and the fabrik must be put beneath the presser foot, then one downs the presser foot by means of the lifter lever at the backside of the machine head taking care that both threads will be helt fast by the presser foot. Better is to hold fast both threads by means of the fingers of the left hand till the first few stitches have been made. When sewing one never must push or draw the fabric, one only must guide it as far as it will be necessary to hold the seam at the right place. If the machine does not feed by itself either the stitchregulator is on the dead point or the teeth of the feed doog must be blunt or too dirty.

Regulating the length of stitches.

With the machines with reversible feed the stitch regulator lever 48152 has been fitted at the front of the head of the machine i. e. most convenient. (see ill. 3)

To be able to regulate the length of stitches ohne must first loosen both stitchregulator screws S 997 I and II by means of leftturn. If the machine shall sew at longest stitch, one pushes the screw S 997 II into the top corner of the slit 48152 tightening the screw by turning to the right. If one now pushes the stitchregulator lever downwards the machine sews forwards, if the lever is up the machine feeds backwards (on both sides the length of stitches can be regulated up to 5 m/m). The dead point is in the midst of the scale 48157. If one likes small stitches one regulates the stitch regulator screw S 997 II forwards into the slit 48152 and tightens this screw turning it to the right after having obtained the desired length of stitches, that the stitch does not alter whilst sewing. Now one can again sew for-and backwards on both sides with the same breadth of stitch. If one desires to sew for-and backwards with a distinct length of stitches one tightens also the screw S 997 I.

With the machines, sewing forwards only, the stitchregulator screw S 950 is at the right on the top of the machine-arm. (see ill. 10). To be able to regulate the length of stitch one loosens the stitchregulator screw by means of turning to the left. If one now regulates this screw upwards one will observe that the feed dog moves up and down. If one pushes the screw downwards the stitch will grow. If one has obtained the desired breadth of stitch one tightens the stitch regulator screw.

Taking off the sewing work.

One adjusts the machine in such a way that the thread-lever is in its highest position, then one draws the thread end, going to the needle beneath the thread take up lever, about 5 inches downwards, that the thread unwinds

from the reel. Then one lifts the presser foot, takes off the work backwards to the left and cuts the threads near the work in such a way that still about 4 inches are hanging out of the needle eye and the stitch hole. Taking off the sewing work one must take care that the needle will not be bent.

Light sewing work.

For light works one chooses thin needles and thinner threads. The pressure of the presser foot needs not be so strong. The regulation of the presser foot will be effected by more or less screwing in or out of the milled screw, in which the presser bar goes up and down and which is visible above on the machine head. The machine can work at 2000 stitches per minute.

Middle weight sewing works.

For this one emploies thicker needles and threads. The Presser foot must press on the work in such a way that a regular feeding will be possible and that the needle does not lift the fabric when elevating. One must not work with more than 1500 stiches per minute. If the machine has heen provided with double groove pulley one must use the slow groove with thicker kind of works.

Flat works on the cylinderarm Sewing Machine.

For Sewing flat works the machine will be provided with a nickeled work-plate which will be mounted on the cylinderarm of the machine. Against extra-charge can also be delivered a wooden sliding worktable.

The driving belt.

This must be never to tight as thus the machine works heavily also it must not be too loose that it slides. If the belt is too long one must it unhook, cut a small piece off and pierce a new hole into the end of same by means of an awl and then hook it again together.

The stand.

The crankshaft and the treadle of the stand run on tempered steel points. Shaft and treadle have to run smoothly without tottering. If the parts begin laterally to shake the steel points must be adjusted anew. One loosens the regulating screw and puts the steel point deeper, that the shaft and treadle works again without noice and with ease. Having adjusted the steel point correctly the regulating srew must be tightened well again.

If the ball bearings of the metal-pitman have loosened themselves one must loosen the screw on the upper end of the pitman and adjust then the lateral ballbearing rings and tighten then again the upper set screw. To be able to fasten the ball bearing on the treadle one loosens the lower counternut, turns the bolt a bit deeper and tightens again the counternut.

Each treadle stand has been provided with and adjusting foot as illustrated in fig. 8.

The adjusting foot of the stand.

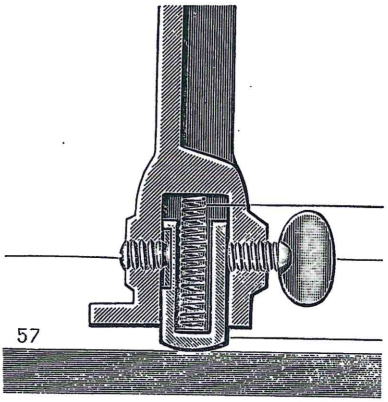

Fig. 8

By means of the adjusting foot one can give the sewing machine a firm hold also on the most uneven floor. One loosens only the wingnut, lifts the foot a little and tightens again the wing nut. A secure, firm stand cannot be missed wih any sewing machine if same shall work in the right manner.

The cleaning and oiling of the machine.

For the regular, noiseless and smooth running of the machine it is most important that all places, which are exposed to friction will be cleaned and oiled often and thouroughly. Most of all the shuttle race must be cleaned of the fluff of threads and other dirt as the machine will march heavy and even may stop work at all if there is too much dirt in the shuttle race. To be able to effect a thorough cleaning one unscrews first the shuttle race set screws, taking off the complete shuttle race with shuttle when the needle is at its highest. But one must take much care that the shuttle does not fall out, as the shuttle points would easily break. Now one takes the shuttle out of the race cleaning it of all dirt. Then the shuttle race can be put into its old position by the following manner: One brings the needle bar on its highest by turning the handwheel and puts the shuttle into the shuttle race in such a way, that the shuttle body will be situated behind the slit of the shuttledriver. Then one screws the shuttle race screw again fast and tightens same again well. Having freed also the other parts from dust one can start oiling.

The oilplaces are easily to be recognised by the oilholes which are fitted anywhere, where oil is necessary. Besides guides, slides, pivots etc. which have no special oilholes must be oiled. These must be provided with oil on the bearings. For lubrication one should only employ good and acidfree oil. Bad oil resinates and makes the march of the machine heavy.

Frequent cleaning and expert oiling of all movable parts conserves the machine always in best state.

If used regularly the machine must be oiled at least once or twice each day. The shuttlerace must not be oiled too excessive but for this sometimes more, one drop into the shuttlerace each time is sufficient.

To get to the oilholes in the head of the machine one must take off the frontplate of the machine head by loosening the screw S 431 fig. 3 by some turns and pushing the frontplate upwards. In the interior of the head both oilholes of the needlebar link and the guide-bushes of the presserbar and needlebar must be oiled.

With machines fitted with alternating presserfeet also the following places must be well oiled:

The flat guide bar 48018 (see fig. 11).

The flat presser bar 48016.

The round presserbar crank 48025.

The angle-lever for the lifter-lever 48015.

The connecting link bolt for the thread take up cam 48010.

Important oilplaces are also:

The grooves of the thread take up cam and the thread take up bearing; oilholes on the top of the machine head.

Both arm-bearings; oilholes behind the head and on the nipple at the left of the handwheel.

The Excentric and the bearing of the pitman; one must push aside the cover plate of the back of the arm and turn the machine till the oilholes are visible; on the excentric one must give some drops of oil on the polished parts, also the connecting links of the stitch-regulator. Having oiled, the cover plate must be closed again.

On the cylinderarm with cylinderarm sewing machines the 3 oilholes and the two oilholes near the throatplate and one oilhole at the end of the cylinderarm must be oiled.

Beneath the machine both shaft-bearings and point-guides of the feed rocker push shaft and the feed rocker; **the slide for the pitman roller** and the feed dog; **te excentric of the stitch regulator and the bearing of the stitchregulator fork lever must be oiled.**

On the winder the spindle must be oiled.

On the stand must be oiled: Both points of the crank shaft; both bearings of the metal pitman (ball bearings) and the point bearings at both sides of the treadle.

The kneelever.

The kneelever serves for lifting the presser-foot when both hands will be needed for guiding the fabric. The kneelever must be ordered especially and it will be charged for it. It will be recommended if the machine will be for power drive to order the kneelever. The kneeplate can be adjusted up and

down and the kneeplate bar can be adjusted on the shaft, that the kneeplate can be regulated easily for each size of person. The kneelever must be regulated in such a way that the upwards standing lifter lever falls by itself when touching the kneelever. One loosens the fastening screw of the kneeleverhook beneath the table and pushes the hook into the adjusting block upwards respectively downwards tithening then again the fastening screw.

General rules.

As far as possible one must emploie lefthand drilled threads, see page 11. Never use bad, irregularly or knotty threads as thus needle-breaking and and threadbreaking occurs.

Bent or blunt needles or such which do not have the correct designation cannot be emploied.

A bad seam comes from a bad cleaning or oiling of the machine, from an incorrect regulation of the tension, from a bad choice of needles and threads, from a bad inserting of the needle or a bent needle and from an irregular winding of the bobbin i. e. too loose.

If the machine does not work i. e. that one cannot turn the handwheel neither for-nor backwards, one must not try to turn it by force, but first clean the shuttlerace. For the most the machine will march again with ease.

When ordering spare parts

one must indicate the exact numbers of parts as indicated in the illustrations. The designation of the class of machine is to be seen from the small plate at the right of the machine-arm.

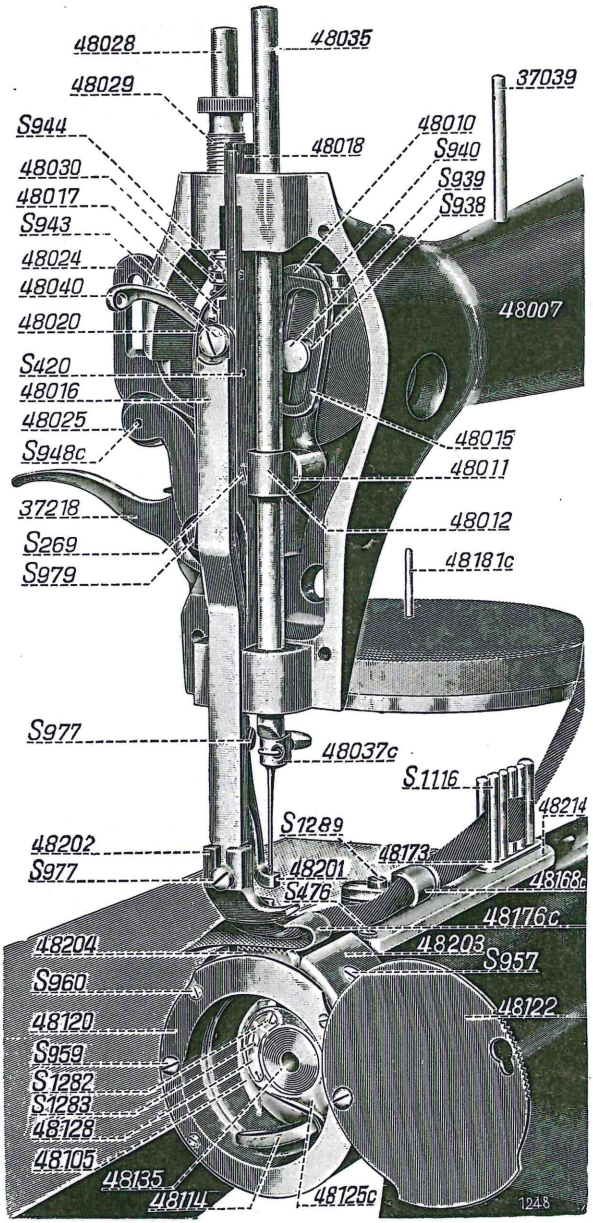

Fig. 9

Right Hand Cylinderarm Sewing Machine fitted with alternating presser feet with taken off cover plate and opened shuttle race showing the inner parts of the cylinderarm head.

The printed numbers are the designations of parts, which must be indicated in the order for parts.