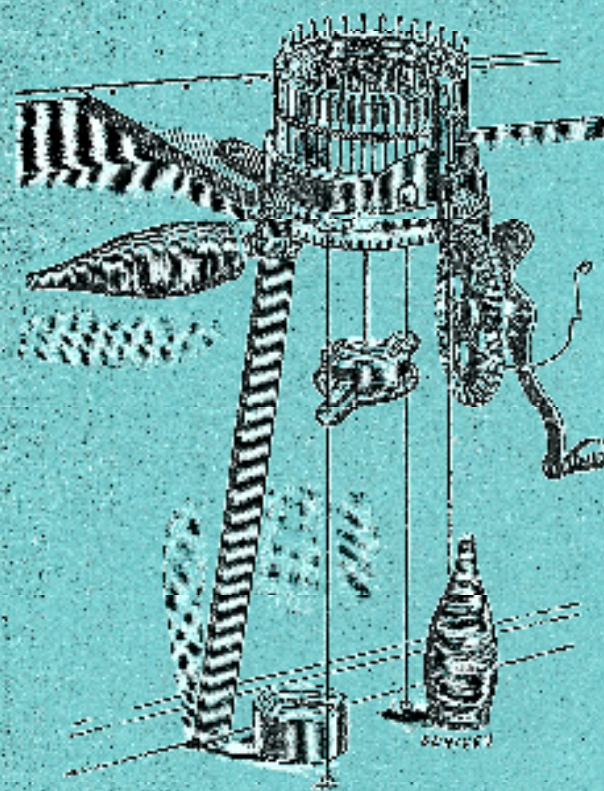


**INSTRUCTIONS
FOR OPERATING**

H. S. Knitting Machine



Manufactured by
The Dundas Knitting Machine Co.
DUNDAS, ONTARIO

INSTRUCTIONS

FOR USING THE

PEOPLE'S H. S. KNITTING MACHINE

Consult This Page Before Removing the Machine
from the Box

First learn the names of the different parts of the machine, and the position; then after a little practice and a few failures, you will have no great difficulty in learning to do any ordinary work.

To prepare the machine for work, take it carefully from the box, and screw it firmly to the table, or better still, a stand for the purpose. See Fig. A for the shape of this shelf; it is made of one inch pine board, is fastened to the wall, and braced to the floor, as shown in Fig.



Fig. A

1. Oil the machine, use good oil, and see that everything is in place before turning the handle.

NOTE THESE FACTS CAREFULLY

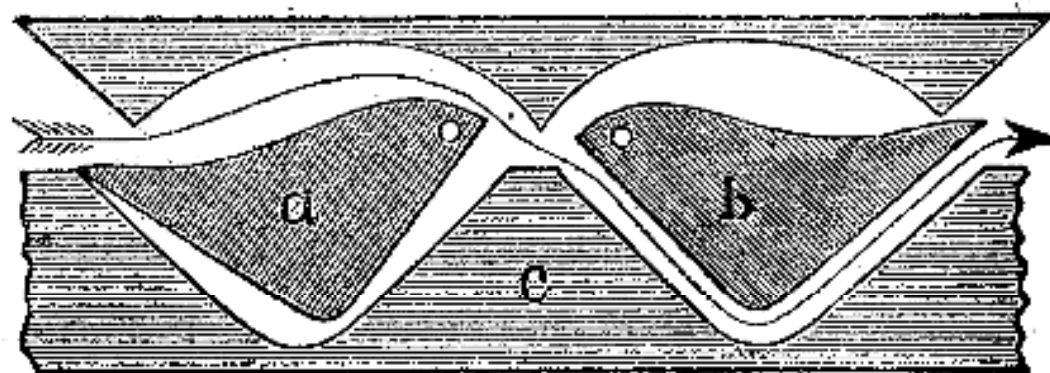


Fig. O O.

It must be remembered that when turning the machine FORWARD, the needles MUST RUN UP and OVER THE LEFT HAND CAM (a), and OUT UNDER THE RIGHT HAND CAM (b) (see cut and direction of arrow

above) and when turning BACKWARDS they must run UP and OVER the RIGHT HAND CAM and out UNDER the LEFT. The machine will NOT knit if you REVERSE either way with the NEEDLES IN the CAMS.

If the needles get stuck in the cams, raise up about thirty needles and turn the machine forward until they come to the front over the cams; this will allow the cams to fall into their proper position.

When knitting heel, toe, flat web, or at any other time, when reversing the machine, the needles in operation must all pass through the cams, and the raised needles over the cams, in front before reversing.

If you wish to take off the cams, take out 30 needles and turn the empty grooves to the front.

Be sure the yarn carrier runs the yarn under the points of the needles, that the cam is not too high or too low; that the machine does not tip down in front; if the needles stick in the cam, raise the cam up. The cam must be kept close to the cylinder, it is adjusted by the screw in the post. Oil the cams frequently. Avoid running the machine rapidly without work. When reversing the machine without work, pull up twelve needles just as they enter the cams so they pass over the cams instead of under.

CHANGING THE LENGTH OF STITCH

Study the operation of making the stitch. See Fig. O.

The stitch is made long for open work, or when using coarse yarn and short for tight work and fine yarn, by lowering or raising the cam; for loose work push the cam down, and for tight raise it. Some use an indicator showing the length of stitch, but there are many things that cause a tension on the yarn, and we find no indicator as good as the eye; adjust the cam until the tension is what you want. Care should be taken to have the yarn flow freely to the needles, as any strain on it will cause the machine to turn hard, and result in tight knitting, and if much strain is on you may find the yarn cut by the needles; have it come freely to the needles, and depend on the cams for the tension. If the stitch clings to the needles, or loops are formed, not properly knit; the stitch is too short or there is not sufficient weight on the work.

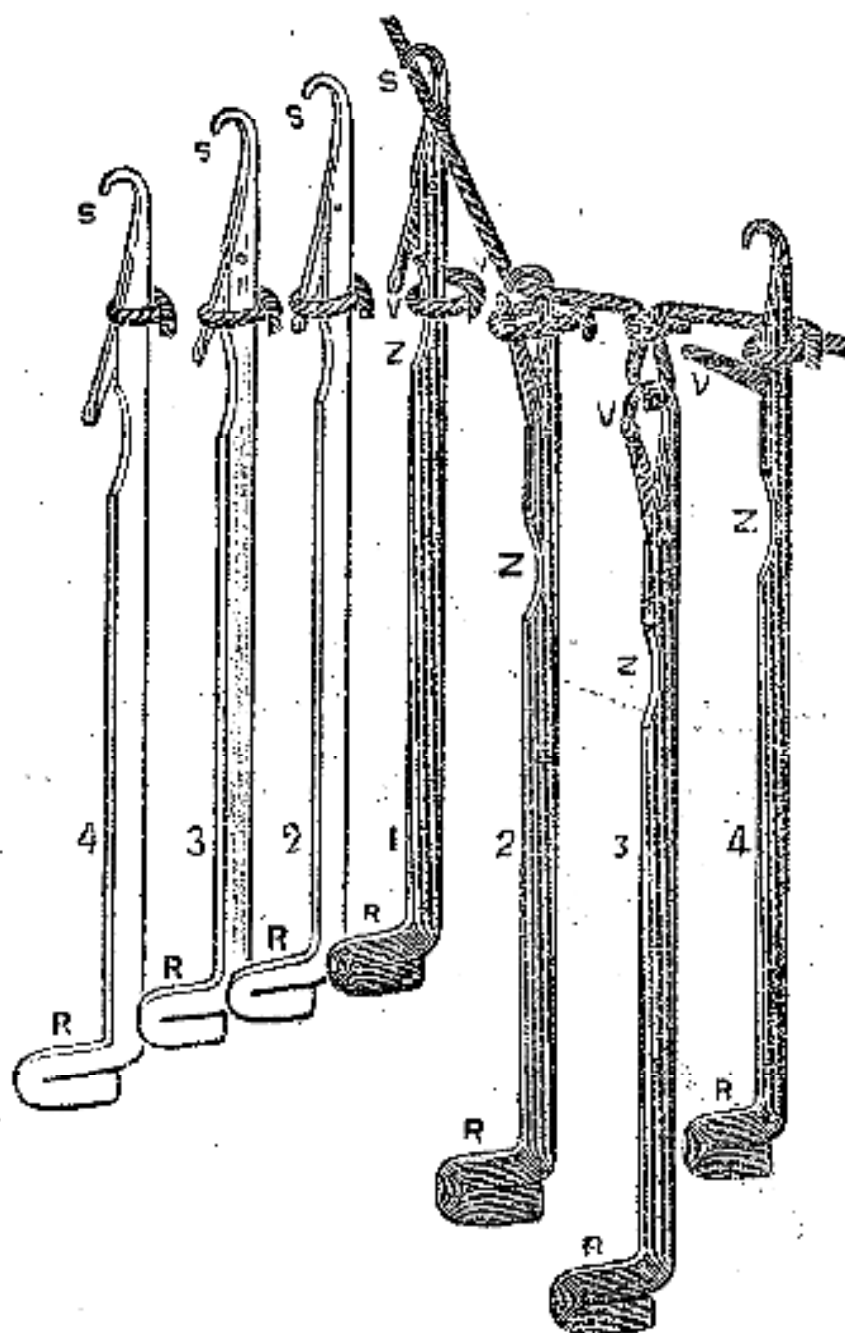


Fig. O.

TO SET UP THE WORK

Wind the yarn on the bobbin loosely, or for family work use the yarn from a ball wound loosely to unravel from the inside, you will get better results from the ball than from any amateur wound bobbin, and set on floor as shown. Pass the end of the yarn through the hole in the carrier at E, Fig. 2. Draw through about 5 ft. of the yarn, or enough to make the first round of stitches. Place the set-up ring inside of the cylinder and begin to set up the work close to the carrier on the front of the machine, by placing the yarn under the end of the wire turning to the right and around the needle turning to left, and so on until you get to the needles under the cams; now put on the weights or press the work down with the fingers and turn the machine slowly forward until the empty needles are out of the cams, and continue setting up until you get to the needle you started at, and you better put an extra stitch on three or four so as to secure the yarn. In this operation you must turn the set-up ring, so that the end follows along with the needles as the loops are thrown on. You will notice by setting up this way, turning to the right on wire and to the left on the needle, that the loop is crossed between the wire and the needle, thus preventing the top from raveling out.

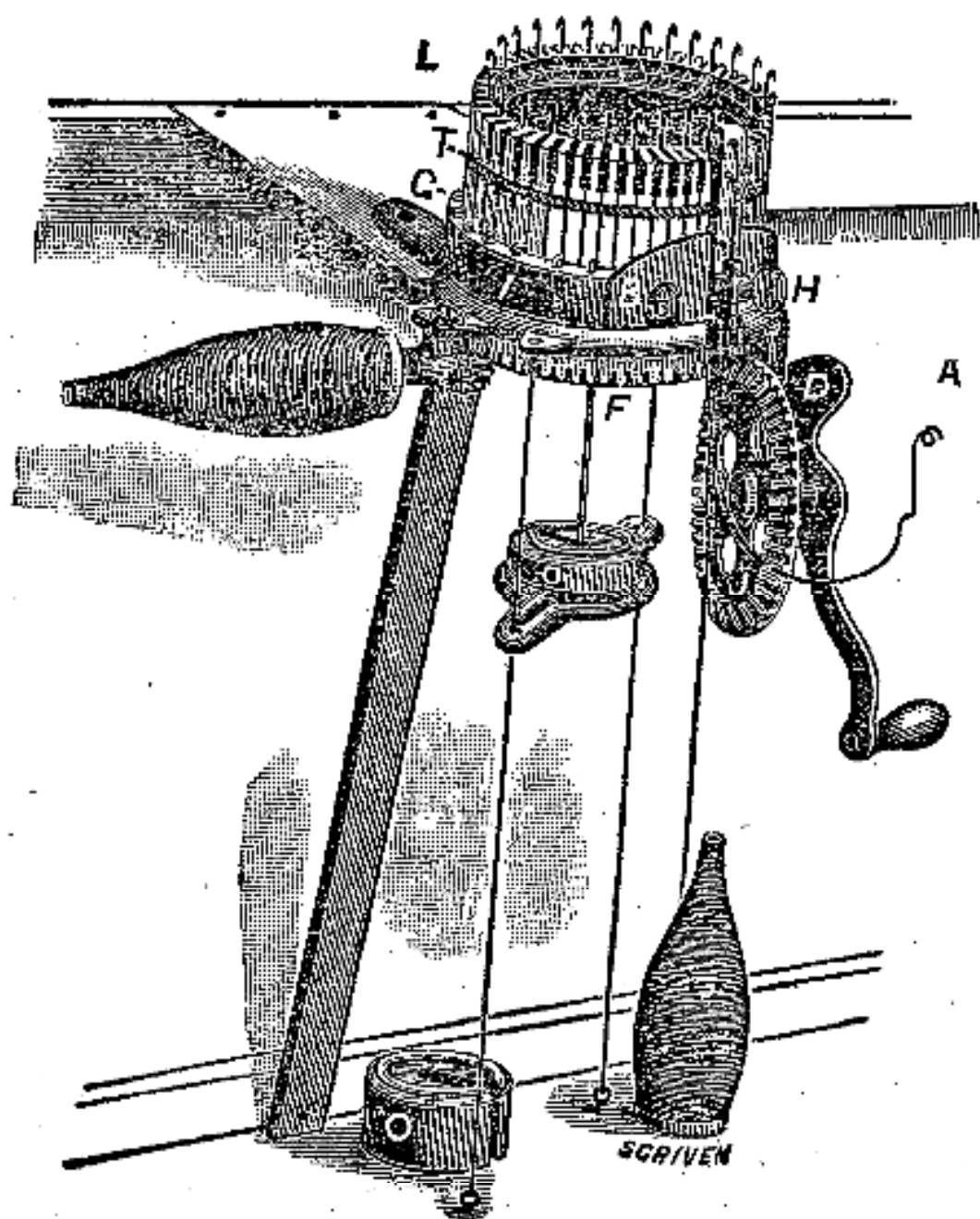


Fig. 1.

TO KNIT A SOCK

Set up the work as directed, or if you desire a mock rib top, take every fourth needle from the cylinder, and after having knit as much of this top as required, replace the needles in the cylinder and continue to knit until the leg of the sock or stocking is the desired length.

TO KNIT THE HEEL

Lift up half the needles in the back part of the cylinder, place the hook of the take-up spring at A under the yarn, and the yarn under the fork, remove the weights and set-up ring and attach the heel hook K to the work, well up inside the cylinder directly under the needles that are in operation, and hang the weight on the heel hook. You are now ready to begin forming the heel. The work will appear as in Fig. 2.

Turn forward until the needles in operation all pass through the cams; lift the last needle through, then turn backwards until the needles all pass through the cams and lift the last one through, continue knitting back and forth, raising a needle each time as before, until you have raised all but, say, 12 to 15, and when raising the last one, push the one down next to the last one in operation on the opposite side of the machine; knit across until the needles have all passed through the cams and push down the one next to the first one through, and continue to knit back and forth, pushing down a needle each time as before until you have the half down except one needle on each side. The machine should now be in position to turn forward; push all the

needles down, catch both the heel and the opposite side of the web with the hook and proceed to knit the foot. In knitting the heel it is very important to have the strain properly on the work, otherwise the yarn will raise on the needles and form loops. Many operators press the work down with their left hand, and some use a pair of single hooks attached to either end of a strong twine, and connected with the double hook, hanging the weight on the twine. This is a matter of taste, and the dou-

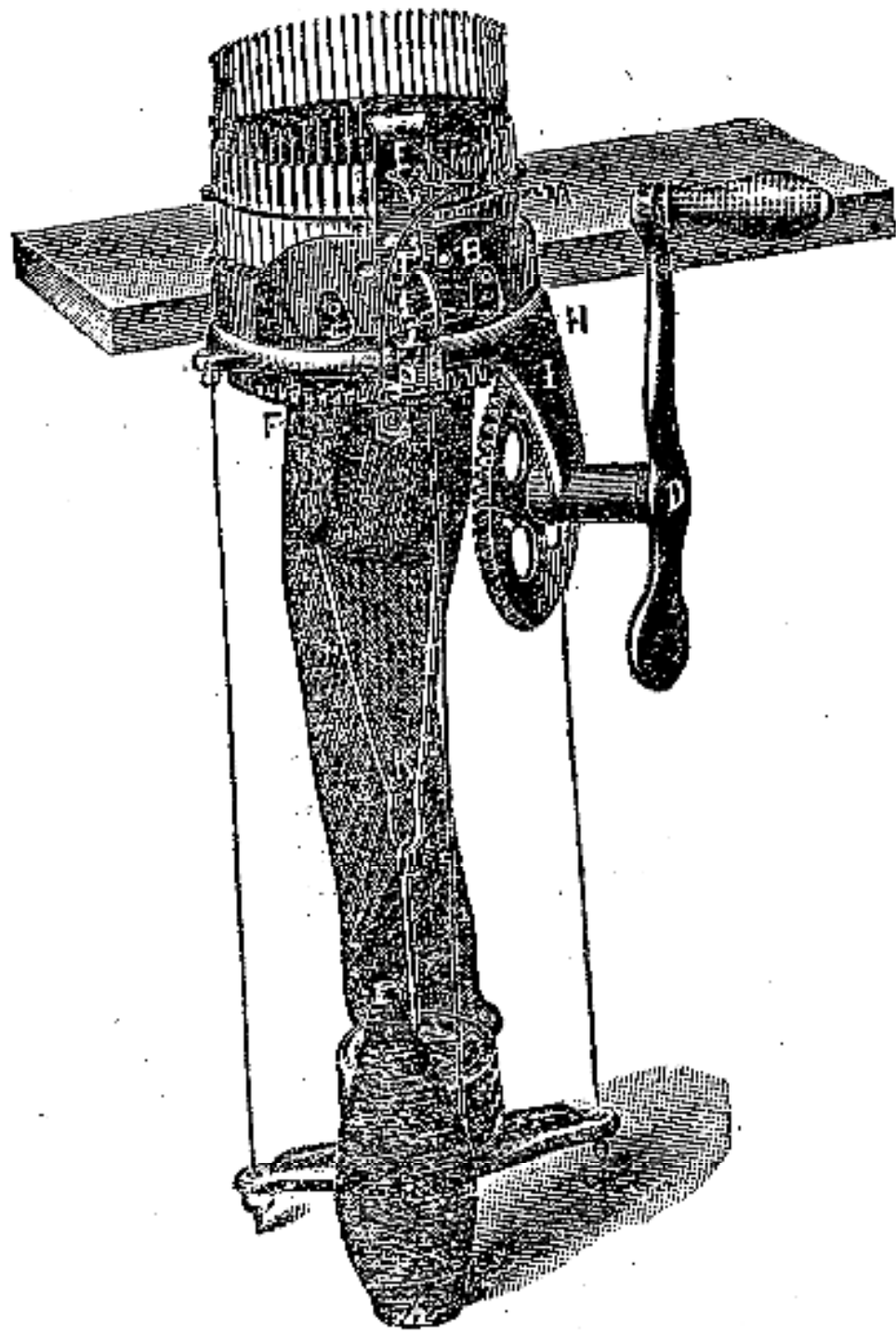


Fig. 2.

ble hook is all that is necessary. The toe is knit on the same side as the heel, and like the heel in every particular. When complete, knit two or three rounds with all the needles down, break the yarn and run the work off the machine.

CLOSING THE TOE

After the sock or stocking is run out of the machine, take a flat or sad iron and damp cloth and press the toe so as the stitches will lay out smooth. The sock will then appear as Fig. 3. Ravel one round or until the yarn is brought to the corner; thread the yarn on a darning needle; pass the needle through the first stitch from the UPPER SIDE, and through the opposite stitch from the UNDER SIDE, as seen in Fig. 4; draw the yarn through the stitches; now pass the needle down through the first stitch and up through the next one to it, as you see in Fig. 4; then on the opposite side take the stitch through which the yarn has already passed and the next in front of it, and so on each alternate side, take the last stitch in which the yarn was drawn, and the next in front until the toe is closed; this can be done very rapidly and neatly, so that it can not be distinguished from the other knitting. The damp cloth and hot iron will prevent the stitches raveling back easily.

CLOSING THE TOE ON THE MACHINE

Set up one half the needles, raise the other half as in knitting a heel; knit an inch or so of web, now break the yarn, and attach a thread of common sewing cotton, and knit five or six rows, break the cotton and attach the yarn intended for the sock, or stocking at the first needle, and knit from six to eight rows; now raise the last needle through and knit back again and raise the last needle through and continue same as in knitting a heel until you are back where you started from, and all the needles you started with are in operation; knit back and forth as often as you did before you began to narrow. Now take off the set-up and weights and push down the other half of the needles and place the first row of stitches after the cotton on the other half of the needles, being sure you get each on its proper needle. Now cut off the cotton and draw out the cotton thread, attach the heel hook to the centre of the web, put on the weights and proceed to knit foot and heel as in the ordinary way. The top of the leg may be finished with a crochet hook so as to prevent raveling. The space left at the side of the toe can be closed as in Fig. 6.

LONG STOCKINGS

You do not take out any of the needles in knitting stockings, but set up with the full set of needles. Knit the top a little loose so as to give the required size. Knit from 60 to 100 rounds, and then shorten the stitch a very little; knit 10 to 15 rounds and again shorten; knit the length required, say 130 or 140 rounds. Knit heel and complete the same as for a sock.

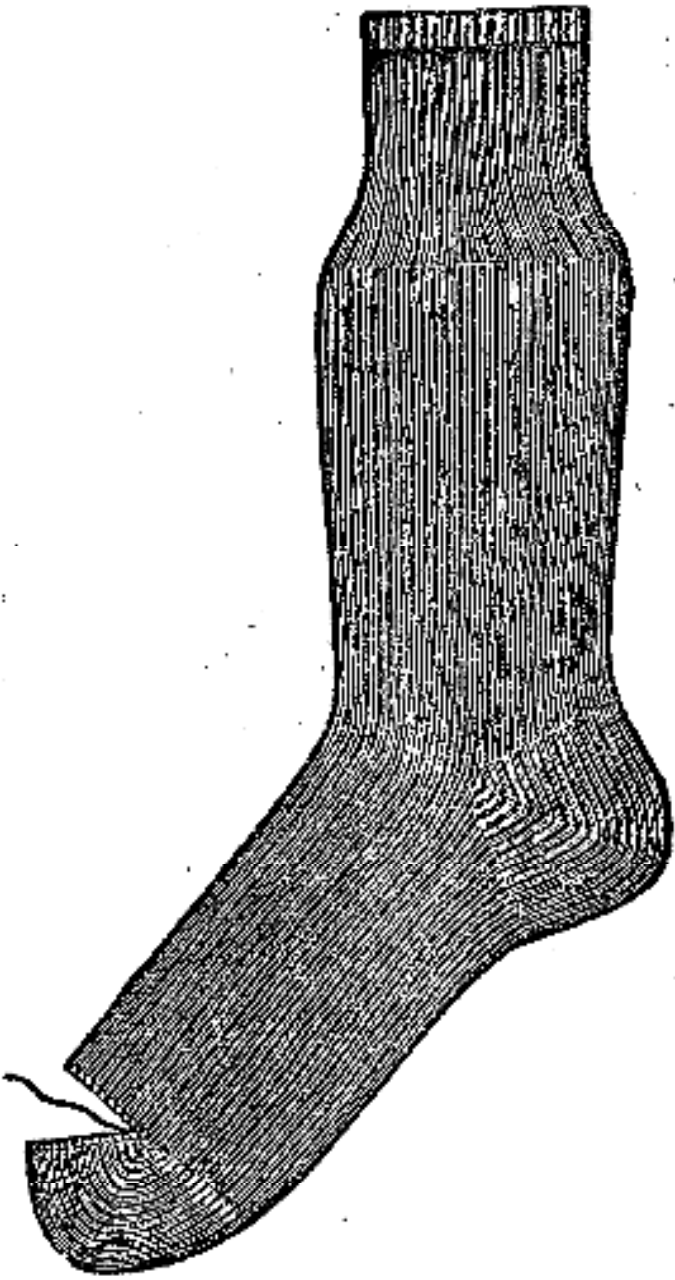


Fig. 3.

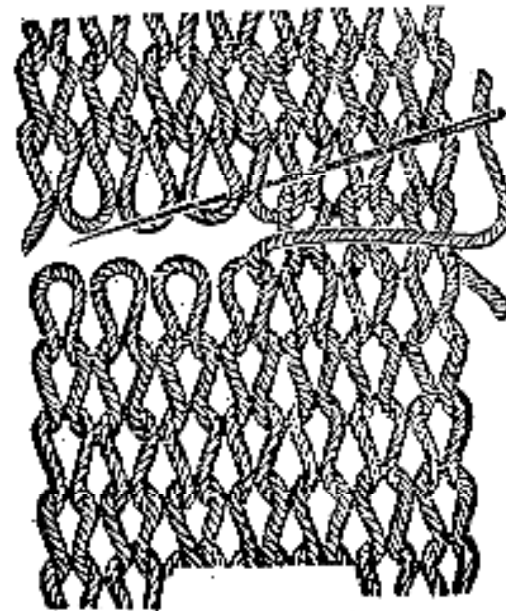


Fig. 4.

If a measure is preferred, it takes about 24 inches before tightening the stitch and six or seven for ankle after tightening.

ANOTHER WAY

Knit 60 or 100 rounds; take out one needle in the centre of the cylinder at the back; knit two or three rounds; take out the fourth needle on each side of the one first taken out; knit two rounds and take out the fourth needle on each side the last taken out. Continue to knit two rounds, removing the fourth needle on each side until every fourth needle is removed. Knit 30 to 50 rounds, and put in the needles taken out in front where the heel is knit; knit the heel, knit the length required for the foot; put in the rest of the needles taken out; knit three rounds and knit toe as in other cases. If taking out every fourth needle makes the ankle too small, only remove them from the back half of the CYLINDER; this makes the rib only in the front of the stocking.

Some people object to the mock rib, the work appearing very open; but when taken from the machine and washed, this work fulls up, and is

scarcely noticed, while the work so done will retain its shape. The work looks very open on the machine, but do not put it aside until you have seen it after it has been washed and dried.

INFANTS' STOCKINGS

Any number of needles may be used, less 16 required to be taken out for reversing the CAMS. In a 72 NEEDLE CYLINDER take out 16, leaving 56. Set up as directed. Knit from 30 to 40 times across, then narrow two stitches, one on each side, third time across, until you have narrowed eight stitches. In narrowing, lift the stitch from the last needle at the edge and put it over the next needle, then take the empty needle out of the machine. After narrowing 8 stitches, knit 20 times across the ankle, leaving the YARN CARRIER at the left hand side of the work. Lift up all the needles except 9 next the YARN CARRIER. On these nine knit one-half the heel, thus: Turn the machine forward until these needles all pass through the cams; raise the last one through and knit back, until they have all passed through the cams, and knit forward, lifting the last needle as before; continue knitting back and forth, raising a needle each time forward as above, until only four remain down and the machine is in position to turn forward; push down the last raised and knit forward and back; push down the next needle and knit forward and back; continue this way until 8 are down; now put them all down and knit clear across to the opposite side; then lift up all but 9 needles and perform the same operation on these as we have just described, thus forming one half a heel on each selvage. You will have to hold the work down on the edges while thus knitting the heel, either with your fingers or with the HEEL HOOK. Having completed the heel, put down all the needles, knit 18 or 20 times across, and you are ready for the toe. Knit the toe thus: Turn until the YARN CARRIER is at the middle of the work; lift up 9 needles on each edge; knit back and forth, lifting up a needle on each side, just as in knitting the toe or heel of a sock, until only four needles are left down in operation; then push them down as in the toe of a sock until only one is left, with a double stitch on it on each side; then push all down, knit to the edge and back, break off the yarn and run out the work.

TO CLOSE THE SELVAGE

Your stocking is now complete, except closing the selvage down the back. This is done with a darning needle, by taking up the short stitch on each edge on the wrong side, and sewing over and over as in overseaming, or as in Fig. 6. Close the toe as in a sock. Use double yarn in closing the edge.

The general principle in knitting flat web is to set up the number of stitches required; knit the top of the leg the length required; narrow for the ankle just alike on each edge, knit half the heel on one edge and half

on the other. Knit the proper length for the foot. Knit the toe in the middle of the needles and not on the edge as the heel. The heel and toe are always knit with not less than one-half the needles; so where the heel is knit one-half on one side and one-half on the other, only one-fourth the needles are used on each edge. Do not forget that there are three stitches on the selvage, and the middle one is always referred to as the selvage stitch.

DIFFERENT SIZES

There are three things that change the size of a sock, stocking, or other article.

1. The number of needles in a cylinder.
2. The length of the stitch.
3. The size of the yarn.

The coarser the yarn the larger will be the web with any given number of needles, and of course the finer the yarn the smaller the web. The coarse cylinder will make a small stocking with fine yarn, knit with a short stitch. Experience will teach you how to grade yarn in relation to the cylinders. Seamed work is always smaller than where a full set of needles is used. With every other needle out you may knit a small web.

Machine knit goods are usually shaped after they leave the machine, by means of the wooden shapes. The goods are drawn on to the shapes, damped, stretched to the shape and allowed to dry there. In factories, large steam presses are used to dry, and at the same time press them. For stockings, etc., the shapes are usually made of maple, about $\frac{1}{4}$ of an inch thick, and of any size and shape desired. And for family use the goods are sometimes dried by pressing over a cotton cloth with a hot iron. Do not be deceived by the nicely shaped goods you see in store windows; they are done this way. You will soon learn how to judge the size so as to get good results from the shape.

CHILDREN'S STOCKINGS

Children's Stockings and Leggings can be knit circular web by taking every other needle out, either the coarse or fine cylinder; knit around, following the same principle as for large stockings and leggings.

DOUBLE HEEL

To knit double heel and toe, use coarse yarn, a slightly longer stitch, or add fine cotton to the knitting yarn.

SUSPENDERS

Knit with flat web the required width, or with every other needle out, and a long stitch, with zephyr or Shetland yarn bind the ends, and add the necessary button hole strips at the ends.

MENDING BROKEN STITCHES

This is done with one of the needles of the machine, either in the machine or after the work is out. The needle is used as a crochet needle; you hook it in the dropped stitch and push it far enough through to bring the stitch below the latch; then draw it back, catching the next cross thread above, in the hook above the latch; continue to draw the needle back until a new stitch is formed; proceed in this way until all the dropped stitches are knit in. If the mending is done out of the machine, you will tie the dropped stitch with a short piece of yarn and draw the ends inside the web.

When reversing the machine with work on, always lift up at least twenty needles at the back and turn the machine until the raised needles are over the cam. After reversing, if you wish to continue to knit, the raised needles must all be put down again. When reversing the machine without work, pull up eight or ten needles just as they come out of the cam, so they will pass over the cam instead of under.

The stitch can be lengthened, and the work made open by loosening the screw at H and pushing the cam B down. Or if the cam is raised, the work will be tighter. For coarse yarn put the cam down. For fine yarn, raise the cam.

The TAKE-UP SPRING A should never be used except when knitting backward or forward, such as knitting the heel or thumb, or similar work.

TO KNIT MITTENS

Large size: Set up the work and knit the wrist ribbed, same as stocking. Put in all the needles and knit about 14 rounds plain. When you are ready for the thumb, knit backward and forward on 24 needles about 40 times for the thumb. This forms a strip. Close off the point the same as a small stocking and run the needles out. Now on those 24 needles just run out, place 12 stitches from each selvage edge of the thumb, beginning close down to the hand. When those 24 stitches (12 on each side) are on, then proceed to knit around about 45 times for the hand. Close off the same as toe of socks. Close the point of the thumb with a needle.

CHILDREN'S MITTS are knit flat web, same as small stockings. Use enough needles to make the mitt the size you want. Rib the wrist, knit the hand and form the thumb in the middle of the web by knitting a strip backwards and forwards say on 16 needles. Knit backward and forward 30 times, then narrow off the end of the thumb down to two stitches, by throwing the selvage on the next needle, but do not widen again. Run the needles all out of the thumb, and close the point with a darning needle. Now take the selvage stitches (8 from each side of the thumb thus knit), beginning close down at the bottom and put them on the 16 empty needles. Loop the yarn over a needle and proceed to knit around and

around for the hand. When the hand is long enough, narrow from 24 stitches to 8, and widen again to 24, and finish just the same as a stocking. This is for a mitt 48 stitches.

The only difficulty in knitting the thumb is to hold it down, which is done by catching the work close up to the needles with the heel hook.

Children's mitts look very nice with the wrist knit CHEVRON or BAR and DIAMOND stitch, until within a few rounds of the thumb. No fixed rule can be found for any of this class of work as the size of the yarn makes a great difference in size of the web.

CHILDREN'S MITTS

Children's Mitts of various sizes can be knit either circular or flat web by knitting ribbed wrist; then knit straight, solid web long enough for the hand. Turn inside out, and with a sewing machine run a seam around the thumb and hand as indicated by the shaded lines in

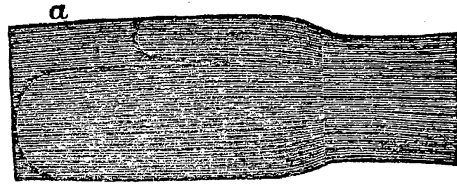


Fig. 5.

Fig. 5. Cut away the cloth (a) from the thumb and hand close to the seam; turn right side out, and you have a very nice mitt.

SHIRTS

These are usually made in the shape of a flat web, requiring four pieces of web, which have been knit the length and shape required, to form the body; the sleeves may be knit either in flat web or like a stocking leg.

Knit a flat web, using as many needles as possible, twice the length of the body of the shirt; run off and knit another the same; lay these side by side, and you see that by sewing up the sides as far as the arm holes, and the back as far as the neck, you have the body of an undershirt open in front; sew this as far as the breast. Crochet or bind the bottom as desired. Turn off the neck to suit your taste. Bind each side of the breast; work button holes in same, and sew on buttons in usual manner.

To form a sleeve properly, it should be knit at the shoulder with a gusset, which may be done by knitting the upper portion of the sleeves flat web the full size of the machine for about six inches, then knit a flat piece four or five inches square, and place one corner of it in the sleeve between the two flat webs, and sew them together on the two sides, then place the opposite corner of the gusset in the arm hole, and sew the sleeve with the gusset into the arm hole. The gusset may be knit by raising two or three needles less than half, the same as for heel work, and then narrowing down as for a heel by raising the needles until only two are down; then put down all the needles and run the work

off. The gusset forms part of the sleeve, and the pointed end is placed in the lower part of the arm hole and sewed in.

ANOTHER WAY

Another and perhaps better way for family use, is to knit with a fairly heavy yarn and open stitch, a web twice the length required for the body of the shirt. Cut this down one of the stitches from end to end, and fold in the centre; sew up the sides as far as the armholes, and you have a shirt body, cut circular piece for neck, from front, and stitch to back, cut open for breast. Knit arms as before, bind and finish to suit taste.

DRAWERS

Set up as for a man's sock, using cylinder and yarn to suit; knit about six inches of mock rib for the bottom of the leg of the drawers, and knit with a medium stitch, and gradually loosen the stitch until the length of a man's full size hose is knit. Now remove out of the machine in front, 36 needles. The needles lifted out can remain on the inside of the web with their stitches on them, or removed entirely. If the needles are removed, a thread had better be run through the stitches to prevent their raveling out. Now knit flat web straight on the left side and widen out on the right side one stitch about every seven rows until about 144 to 160 rows are knit, and 56 are again in the cylinder. The needles on each side of the flat web will require to be raised, and put down each row of stitches after the widening has caused the yarn and cams to engage with needles of the opposite side of the web. Now knit both sides of the web straight for about 72 to 80 rows, and narrow one stitch on the same side as the widening was done on every seven rows, until about 72 to 80 rows are knit; run off the work; form the second leg in the same manner, only knit the second straight on opposite side and widen and narrow on the opposite side from the first.

Knit two pieces commencing on the 36 needles lifted out of the machine, and gradually widen out in the same manner on one side, and knit straight on the other for about 144 to 160 rows, then knit straight on both sides for about 144 to 160 rows more.

Knit the second piece in the same manner, only widen on the opposite side. A small gusset piece about four inches square will make a better shape to the drawers, if knit and placed in the seat, one corner in each seam of the leg.

The lengths of the various parts, and the narrowings and widenings may be too few or many for some yarns, but practice will enable you to strike the desired sizes.

They should be bound on the top and lined inside of the waist about three or four inches, and a band placed up the front on each side for buttons and button holes.

HOW TO SEAM FLAT WEB

Fig. 6 shows two pieces of flat web with three stitches in each. The upper half is turned over to show the right side of knitting as it appears when sewed together.

When properly done it will appear as if knit without a seam.

The sewing should always be done from the inside, or wrong side of the web.

The middle stitch of each web, as shown in lower half of cut, is ravelled out, that the stitches to be taken up may be more readily seen. There are three stitches which appear on the selvage; only one of them is the right one, viz.: THE MIDDLE ONE. The needle passes through the one on the right, then directly through the one on the left edge, and each time the needle is drawn through, two new stitches are taken up, one from each web.

Where possible, always sew the web in the direction the knitting was done. Keep the two edges of the web from curling while sewing by pressure between the thumb and fore-fingers of the left hand. Dampening and pressing the edges will keep them in better shape for seaming.

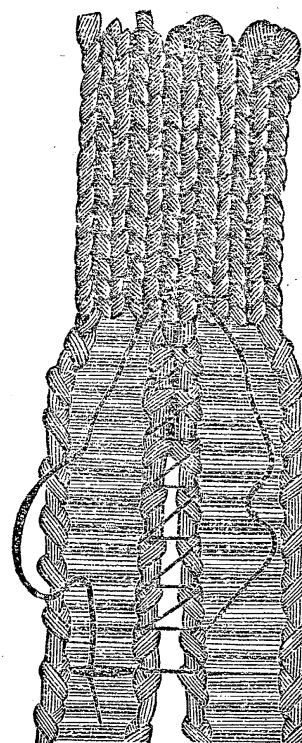


Fig. 6.

TO KNIT FLAT WEB TOGETHER

First knit one web, and when you commence the next one, take the first long loop of the selvage of the lower right hand corner of the web already knit, and put it over the last needle in the row, or at the left hand side when the carrier is at the right. Then knit across and back; place the next loop of the selvage over the same needle, and continue to knit and place the loops over the needles as before, until the web you are knitting is as long as the other. Any number of strips may be joined in this way, thus making web of any size and shape required.

TO FINISH THE TOP

The top of the work can be finished so as to give a double top, by crocheting the loops left by the set-up ring; draw the second loop through the first, the third through the second, and so on, being careful to get the proper loop and from the under side.

FANCY STITCHES

While our machines are just as capable of knitting the fancy stitches as any of the plain hand machines, costing many times the price, from

other makers, we are none too favorable to doing this kind of work, and feel that the old saying of "THE GAME NOT BEING WORTH THE CANDLE," may apply here.

LOCUST STITCH

Take for example, twenty-four needles. Commencing the work flat web, and knit across three or four times plain; then raise two needles and leave two down all the way across the work; knit across twice. Now push down all the raised needles and knit across once. Raise the same needles as before and knit across twice, push down all the raised needles and knit across once as before. Continue to do this until the piece is the desired length. Be careful that all the needles that are down form perfect work. A heavy weight is necessary.

FILIGREE STITCH

Commence as before; now raise two needles and leave one down; raise the next two and leave the next one down, and so on, two up and one down, all the way across the work. Knit twice across, push down the raised needles, and knit across once. Raise up the same needles as before, knit across twice and push down the needles as before, knit across once and raise the same needles. So continue, being careful that all the needles that are down form perfect work. A heavy weight is necessary.

BULL'S EYE STITCH

Commence as before; raise up two needles and leave two down; knit across twice, push down the raised needles, and raise the other two; knit across twice, push down the raised ones and raise the other two and continue pushing down and raising needles and knitting twice across. Use heavy weight.

CABLE STITCH

Take for example twenty-one needles. Commence by taking the stitch from every other needle and putting them over the next; then knit across once, forming loops on the empty needles; remove these loops to the next needle, being sure to put them all the same way. Knit across again, remove the loops as before. Continue to knit and remove the loops (putting them always the same way.) Or you can knit six rows, cable stitch, and six plain all the way around the machine, which makes very pretty work for undersleeves, or anything knit tubular. Only a light weight is necessary.

ZIG ZAG STITCH

Commence as before, by taking the stitches from every other needle, and putting them over the next; knit across once, forming loops on the

empty needles ; remove the loops all to the right over the next needles ; knit again and remove the loops all to the left ; so continue to knit and remove the loops, first to the right, then to the left, and so on. This stitch is very pretty for cotton tidies, hoods, capes, etc. Only a light weight is necessary.

By varying the number of needles and times of knitting across in the foregoing stitches, many stitches producing nice effects may be made, according to the taste and skill of the operator.

RULES FOR MEASURING

As it is impossible to give the exact number of times to knit and number of needles to use in forming different sizes of garments, we give you a form of measurement, which, if understood and followed closely, will enable you to fit any article or garment desired. In the first place, take the measure the same as a tailor or dressmaker would, by getting the number of inches in length, width, etc., and put them down in plain figures. Set up the work on a few needles with the yarn to be used, being careful to have the stitch the exact length you wish in the garment, and knit an inch or two in length, run it off, and with a rule measure one inch in length and one in breadth ; then count the stitches each way in that inch. Thus, if it takes 7 needles to make one inch in width and 12 times knitting across to make one inch in length, and your article is 8 inches wide and 20 inches long, you must use 56 needles and knit across 240 times.

The example given in Fig. 7, is half of a back of a lady's jacket. It is six inches wide at the waist, and, say, 7 needles to the inch, hence you must use 42 needles with which to commence. Being 9 inches wide at the shoulder, it will require 63 needles at this point, and as it is 9 inches in length from the waist to the shoulder, and takes 12 rows of knitting to form one inch, it will require 108 rows of knitting to reach from the waist to the shoulder, and must be widened out 21 needles in knitting, or about one in every fifth row, to make the desired width at this point ; and being 3 inches, requiring 21 needles in width at the neck, and 6 inches in length from shoulder to neck, and it takes 72 rows knitting, and to be narrowed to 42 stitches to complete it. The other half must be knit the same way, only taking care to widen and narrow on the opposite side, and join together by the machine. The above rule can be applied to any material or size of cylinder.

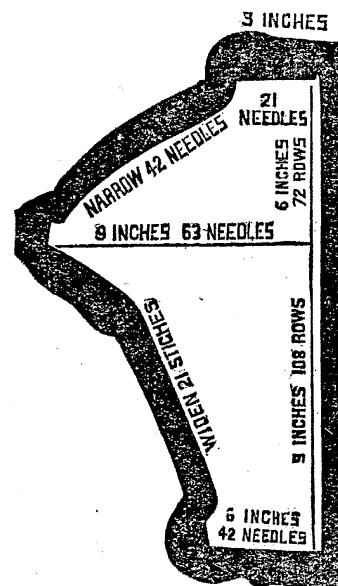


Fig. 7.

IMPORTANT NOTES TO BE OBSERVED

By drawing the needles up as far as they will go, so the bend strikes the band, the cylinder can be turned free; the shanks of the needles will all pass over the top of cam shield.

When knitting, if it is desired to make a loop instead of a stitch, draw the needles up and the needle will not be operated.

Mock-ribbed work is knit by taking every third or fourth needle out of the cylinder.

The cylinder can be taken out and a new one replaced by removing the screws which hold the cog gear to the cylinder.

Be sure the thread carrier runs the thread close to the points of the needles. This will prevent dropping stitches, but should it still drop a stitch, bend the carrier a little so the thread is caught by the hook every time the needle goes down.

Be sure the shanks of the needles run up and over the cam before reaching carrier.

The heavier the weight, the larger and more open the work will be.

Wind the yarn on the bobbin loose, filling it first at the large end and finish winding at the point or small end. The yarn should run off the bobbin freely.

We have arranged to attach a bobbin winder to the machine, so that no time will be wasted in winding bobbins, as a bobbin can now be filled while the work is being done. In attaching the bobbin winder, S, be sure it is not too tightly in gear, as very little is required to drive it. If desired, the cams may be taken off and the winder used, without work on the machine.

Oil the needles in the grooves and the cams frequently with sewing machine oil. When the machine has been out of use, pour a little kerosene oil inside where the needles work and turn until the machine runs freely.

Should you by accident, bend the latches of the needles, you can straighten them with the fingers or a pair of small pinchers. The latches should always work freely.

When knitting flat web, at least 16 needles should be taken out to reverse the machine.

The 72 needle cylinders will knit coarse cotton well. If a single thread is too fine, knit two threads off two bobbins at the same time. The 64 needle cylinder is for all medium woolen yarns and the 56 one for coarse yarn. We make what we consider the proper selection for the yarn sent.

In case a band breaks, there is no need to be idle. A piece of ordinary store twine wound two or three times around the cylinder, not too

tightly, where the band should be, and tied, will make a good substitute, until you are able to get a new band, and it is a very good idea to have the twine in even with the band.

A broken gear ring need not stop you from doing your knitting, as being fastened from the inside, the screws will hold one in place even if broken in two pieces.

INSTRUCTIONS FOR USING THE RIBBER

TO ATTACH THE RIBBER

Place the ribber arm in the socket, on the back of machine, and see that the dial is in the centre of the machine, and high enough to allow the rib needles to work about $\frac{1}{8}$ of an inch above the top of the cylinder. The dial may be moved in any direction by simply loosening the screws in the socket and shifting to suit. Turn the machine forward, until the driving lever on the inside of the cylinder presses against the lock on the bottom of the dial; this will cause the dial to turn with the cylinder, which it should do without extra strain. Do this work at first without work on the machine, and without dial needles in the dial.

TO ADJUST THE DIAL

Move the driving lever either to the right or left, until it is in such a position that when the dial lock rests against it, the needle grooves in the dial are directly opposite the corresponding grooves in the cylinder or in case you are using all the needles, directly opposite the centre of the spaces between the needles in the cylinder. Do this a few times without work on the machine and without the needles in the dial until you get accustomed to the actions. Each number of cylinder should have a dial to suit.

TO USE THE RIBBER

Set up the plain machine in the usual way, without the ribber on; knit three or four rounds, and put the ribber on, without any needles in the dial, turn the dial to the left with your finger until the dial lock comes in contact with the driving lever, and see that needle grooves in the dial are directly opposite the corresponding needle in the cylinder. Now remove the cylinder needle and transfer the stitch from it to the dial needle as follows: Start at the left of the machine; place the hook of the dial needle in the hook of the cylinder needle, and draw the cylinder needle up high enough to allow the stitch to pass off the latch, then draw the cylinder needle down and out of the machine, when the stitch will pass on to the dial needle, which you then place in the dial in its proper groove, being sure the latch is open, for if closed the stitch will pass off when the needle is passing through the cams. Try for a while with only one rib needle working, until you understand the operation of forming a stitch.

The tension may be altered by shifting the ribbing cam; if for a long

or loose stitch, press it in ; if for short or tight stitch, draw out, and fasten firmly ; or by raising or lowering the dial, by means of the adjusting screw on top. Be careful in this, as a change is seldom needed.

TO KNIT A RIBBED SOCK

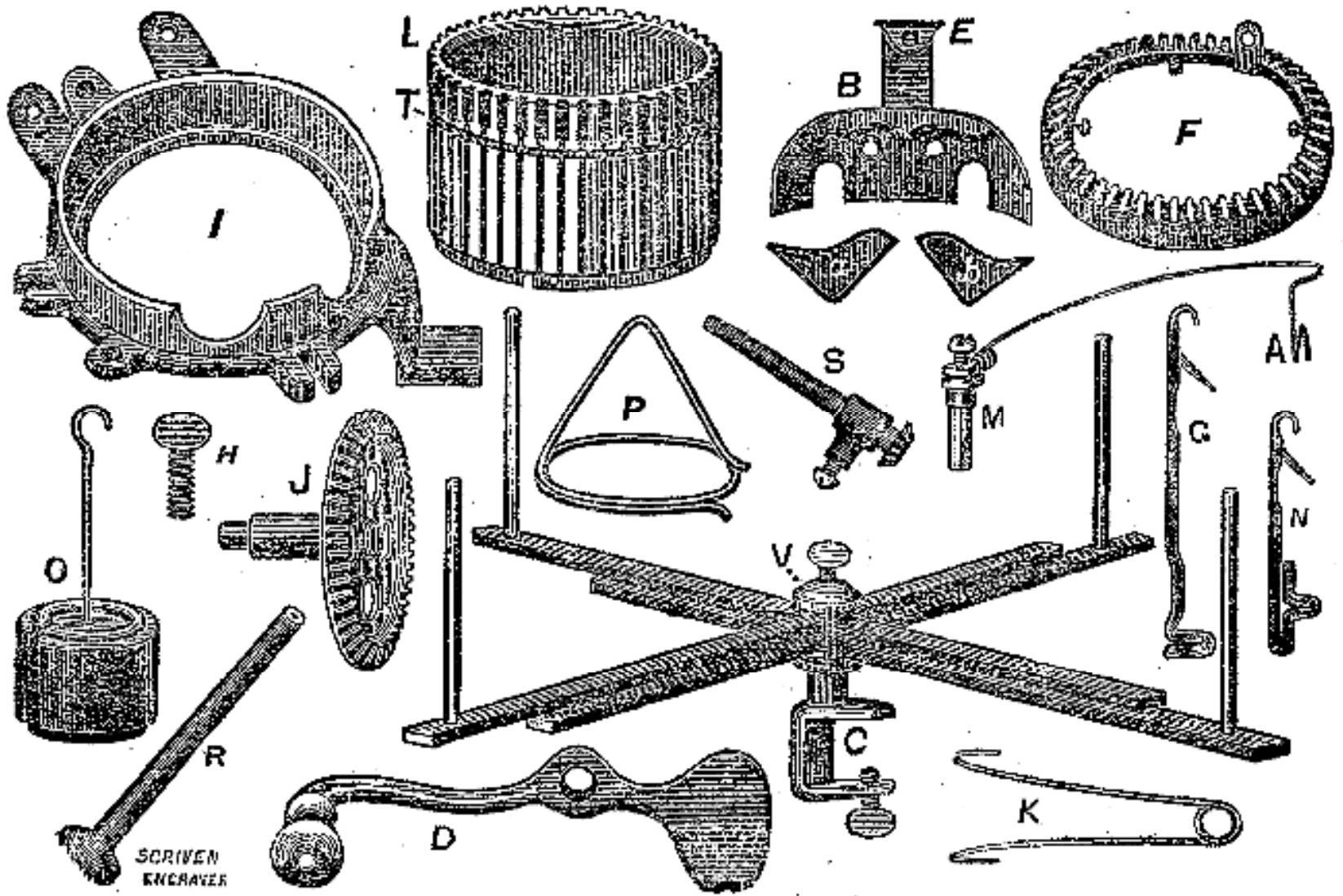
Use the cylinder and dial best adapted to the yarn. Better for a start to have all the needles in the cylinder and all out of the dial, but you may have the dial adjusted, and leave out the cylinder needle where you desire to rib, if you prefer to. Set up in the usual way, all around, put on the ribber, being sure the dial lock is against the driving lever, and on the right hand side of it ; that is so that in turning the machine forward, the lever is pressing against the lock and turning the dial. If you have set up with all the cylinder needles in, transfer the stitch from them to the dial needle and remove as many cylinder needles as you desire to rib from the machine. You better do this on the left of the machine, turning the machine forward as required, and be sure that the latches on all needles are open, and not closed on the hook, for if closed, the needle will drop the stitch, and through your fault. Be sure the dial is not too high or too low, if too far out of proper position, it will not take the yarn properly and may cause some bother. Knit the leg the desired length, then alter to plain by replacing the cylinder needles taken out and transferring the rib stitch to them ; knit the heel and foot in the ordinary way.

Work may be shaped to almost any shape by proper handling of the ribber. For a sock, try a 5 and 1 rib and knit 50 rounds, then in the back of the leg change to 2 to 1 by removing the cylinder needles where required and transferring their stitch to the dial needle, used in their place. Knit 40 rounds and change the rest to 2 to 1 in the same way ; knit 40 rounds more and change to plain, and knit the heel and foot, or change the back half of the leg to plain, and remove the other needles from the dial with their stitches on, and remove the ribber and place the needles inside the cylinder, while you are knitting the heel. After you have the heel finished, put on the ribber and turn the dial with your finger to the left until the driving lever rests against the dial lock, then replace the dial needles, being sure the latches are all open ; knit 2 rounds and put in a dial needle on each side, and remove the corresponding cylinder needle, transferring its stitch to the dial needle, knit 2 rounds and repeat the operation, knit 2 rounds and do as before, knit 50 rounds and change to plain. Remove the ribber, knit 10 rounds and start the toe. These lengths may be varied to suit the size of sock or stocking desired.

CONTINUOUS WORK

Any number of socks may be knit without removing the work from the machine, as follows : After finishing the toe and knitting three or four rounds, break the yarn and join on some cotton thread and knit three or

PLAIN MACHINE PARTS



RIBBER PARTS

