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ILLUSTRATIONS OF Parts and Accessories

FOR THE NEW PATTERN

"GRISWOLD" Stocking Knitter.

Kindly quote these numbers when ordering duplicate parts, etc., at the same time it is also advisable to give the number of the machine for which they are intended in order to assist us to execute orders correctly.

"GRISWOLD" MACHINE PARTS.

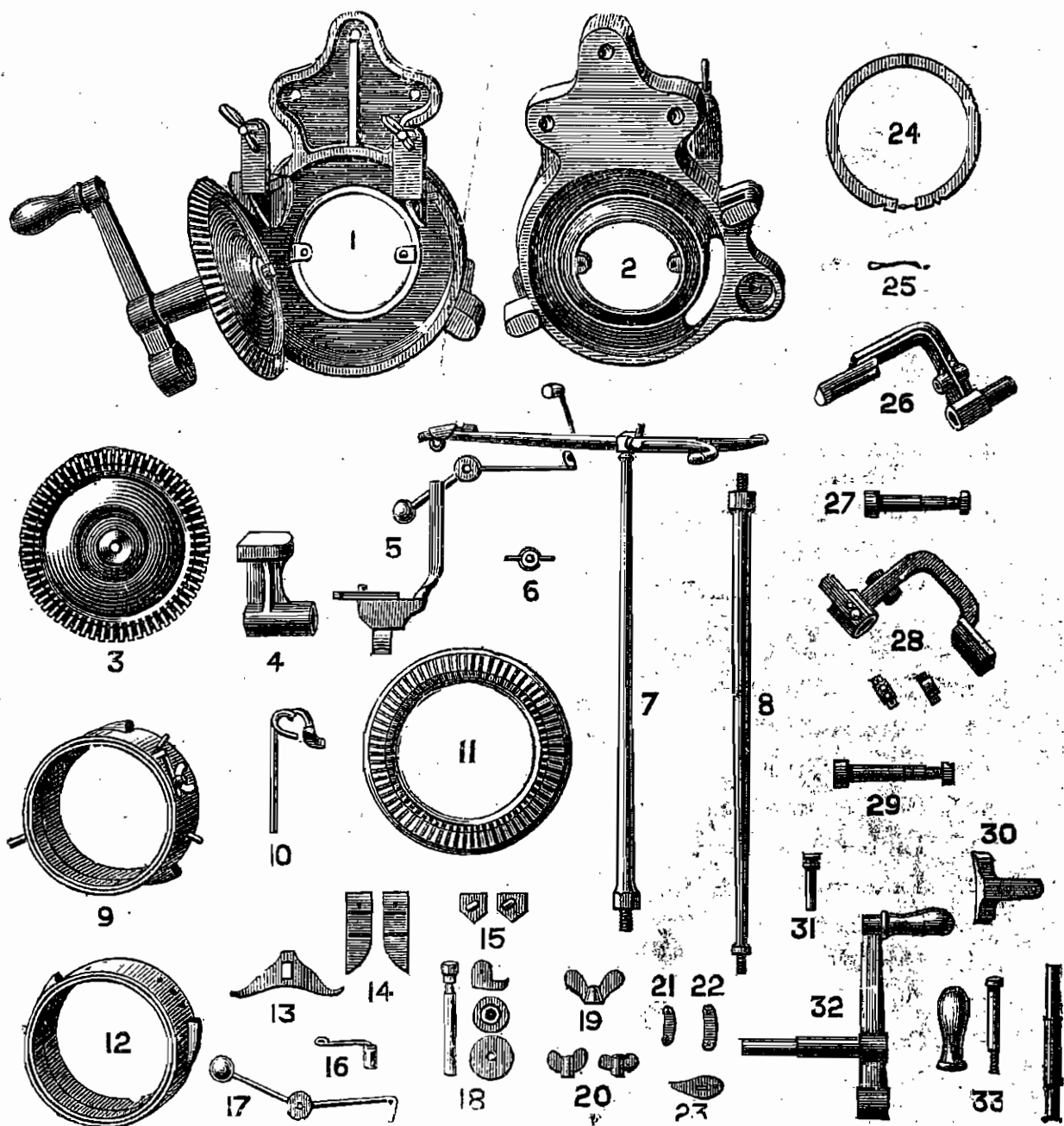
| No. on Illustration. | Description. | No. on Illustration. | Description. |
|----------------------|--|----------------------|---------------------------------------|
| 1. | Body with Wheel and Handle, complete. | 18. | Counter, complete. |
| 2. | Body, fitted with Thumbscrews. | 19. | Large (Brass) Thumbscrew or Wing Nut. |
| 3. | Driving Wheel. | 20. | Small (Brass) Thumbscrew or Wing Nut. |
| 4. | Wheel Bracket. | 21. | Stitch Indicator (small size). |
| 5. | Adjustable Post. | 22. | " " (large size). |
| 6. | Wing Nut for Adjustable Post. | 23. | " " Pointer. |
| 7. | Yarn Post and Cross, complete. | 24. | Clasp Ring. |
| 8. | Yarn Post. | 25. | Spring for Clasp Ring. |
| 9. | Cam Shell, fitted with Cams, complete. | 26. | Ribber Arm, with Adjustable Tube. |
| 10. | Latch Opener, fitted with Yarn Guide. | 27. | Ribber Arm Spindle with Nut. |
| 11. | Geared Reversing Ring. | 28. | Ribber Arm (new style). |
| 12. | Cam Shell. | 29. | Ribber Arm Spindle (new style). |
| 13. | Combined Stitch and Guard Cam. | 30. | Yarn Carrier Bracket. |
| 14. | Side Cams. | 31. | Driving Pin. |
| 15. | Upthrow Cams. | 32. | Handle fitted with Shaft complete. |
| 16. | Automatic Roller Tension. | 33. | Wood Handle. |
| 17. | Adjustable Take-up, complete. | | Wood Handle Stud. |
| | | | Wheel Shaft or Handle Shaft. |

WHEN ORDERING NEEDLES PLEASE SEND SAMPLE.

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Illustration of Parts.

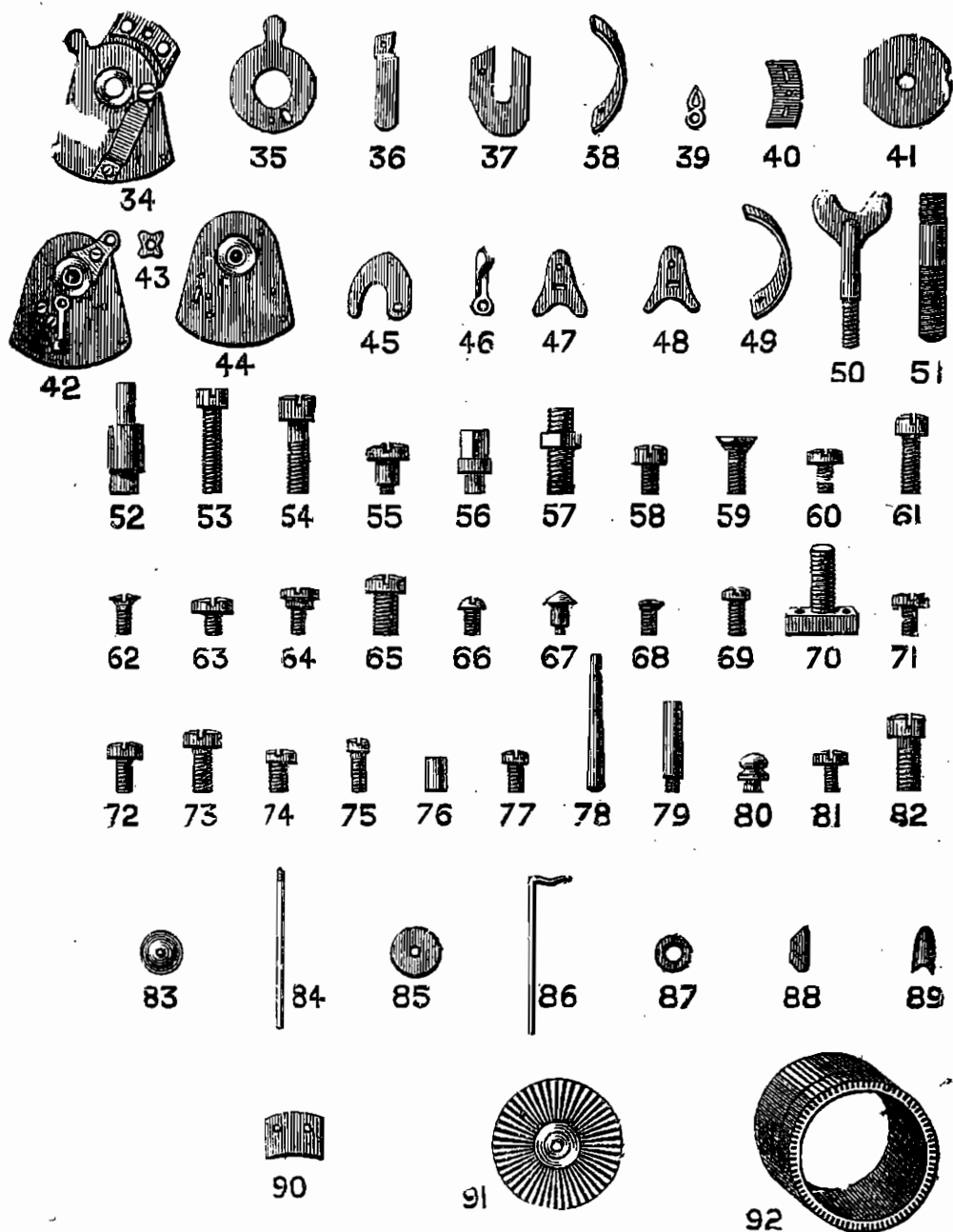


When ordering Parts please give Number of Machine for which they are intended.

| No. on Illustra- on. | Description. | No. on Illustra- tion. | Description. |
|----------------------------|--|------------------------------|---|
| 34. | Large Size Welting Cam Cap, with Cams complete. | 60. | Regulator Plate Screw. |
| 35. | Out-throw Cam Lever. | 61. | Yarn Carrier Staple Screw. |
| 36. | Spring for Out-throw Cam Lever. | 62. | Cam Side Screw. |
| 37. | Out-throw Cam. | 63. | Take-up Bush Stud Screw. |
| 38. | Ribber Stitch Cam. | 64. | Automatic Tension Screw. |
| 39. | Pointer for Ribber Stitch Cam. | 65. | Yarn Cross Screw. |
| 40. | Regulator Plate. | 66. | Name Plate Screw. |
| 41. | Cam Cap Cover. | 67. | Centre for Out-throw Cam Lever Spring. |
| 42. | Welting Cam Cap (small size) with Cams, complete. | 68. | Stitch Indicator Screw. |
| 43. | Star Spring for Out-throw Lever. | 69. | Guide Wire Screw. |
| 44. | Small size Welting Cam Cap only. | 70. | Cam Block. |
| 45. | Out-throw Cam and Stud for ditto. | 71. | Worm Shaft Bracket Screw. |
| 46. | Out-throw Cam Lever. | 72. | Ball Screw. |
| 47. | Adjustable Plate. | 73. | Shell Pointer Screw. |
| 48. | Adjustable Plate. | 74. | Cam Pointer Screw. |
| 49. | Ribber Stitch Cam. | 75. | Ribber Stitch Cam Screw |
| 50. | Bed Thumb Screw. | 76. | Plunger Screw |
| 51. | Ribber Arm Screw to Shell. | 77. | Star Spring Screw. |
| 52. | Take-up Bush Stud. | 78. | Taper Pin for Wheel Shaft. |
| 53. | Cylinder Screw. | 79. | Cam Peg. |
| 54. | Bracket Screw. | 80. | Indicator Knob |
| 55. | Out-throw Cam Lever Stud. | 81. | Ring Spring Screw. |
| 56. | Out-throw Cam Lever Stud. | 82. | Small Bracket Screw. |
| 57. | Bed Screw. | 83. | Ball Screw. |
| 58. | Latch Opener Screw. | 84. | Ball Wire. |
| 59. | Bush Screw. | 85. | Take-up Bush. |
| | | 86. | Take-up Wire. |
| | | 87. | Cam Shell Washer. |
| | | 88. | Ring Hinge. |
| | | 89. | Yarn Lock. |
| | | 90. | Holding-down Plate. |
| | | 91. | Dial. |
| | | 92. | Cylinder. |

*When ordering Parts please give Number of Machine for which
they are intended.*

Illustration of Parts.

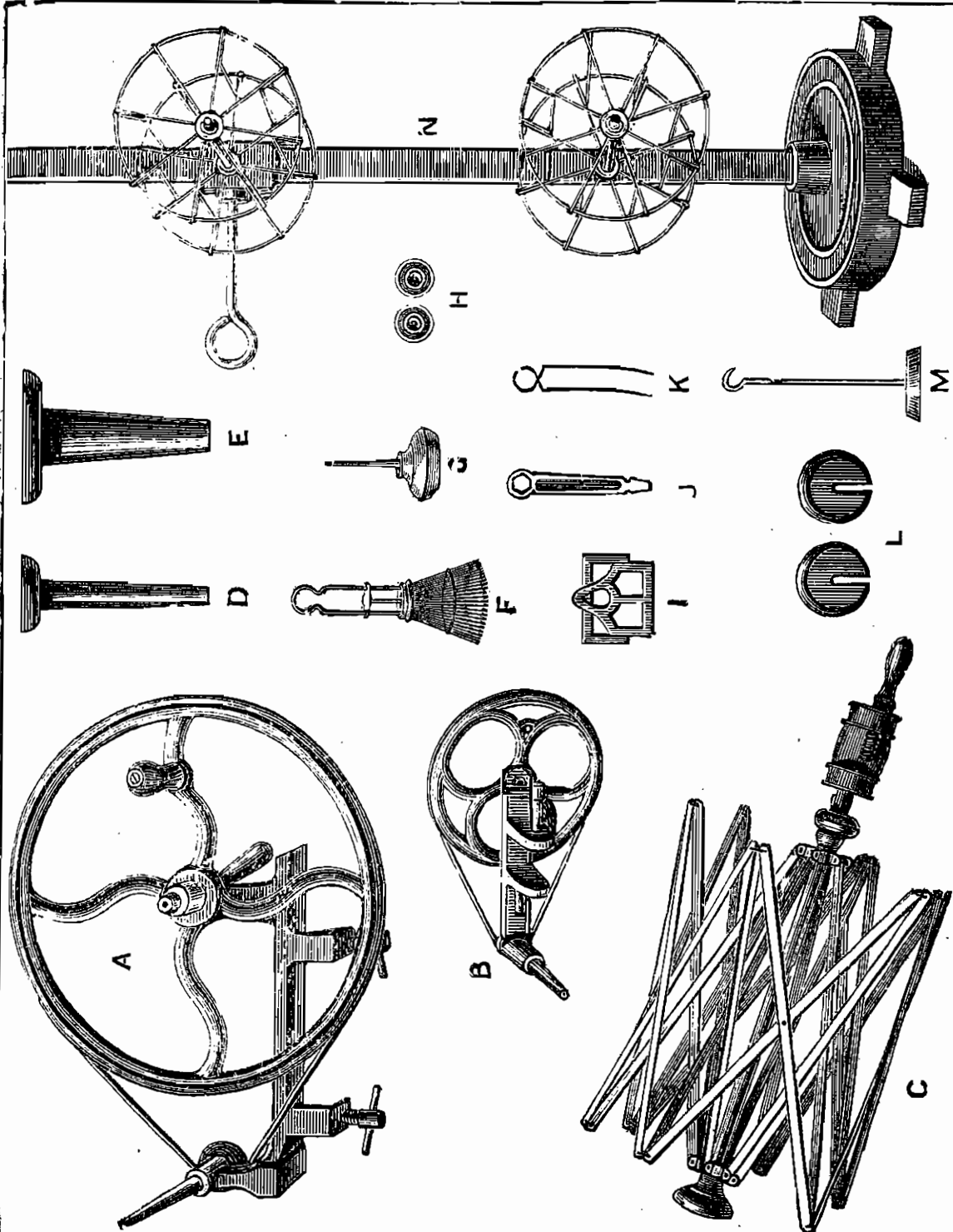


ESTIMATES FREE ON APPLICATION.

LIST OF ACCESSORIES for the "GRISWOLD" KNITTER.

| No. on Illustration. | Description. |
|-------------------------|------------------------------|
| A | Large Winder. |
| B | Small Winder. |
| C | Shaker Swift. |
| D | Small Bobbins. |
| E | Large Bobbins. |
| „ | Medium Bobbins. |
| F | Expanding Set-up. |
| G | Oil Tin. |
| H | Buttons. |
| I | Buckle (iron). |
| „ | Buckle (brass). |
| J | Screwdriver and Wrench. |
| K | Heel Wire. |
| L | Iron Weights. |
| M | Weight Stand and Hook. |
| N | Adjustable Runners on Stand. |

Illustration of Accessories.



THE "GRISWOLD" STOCKING KNITTER.

The "Manufacturing" Machine differs from the "Family" Machine in having—

First—A long post with cross, which enables the operator to run the yarn off a large bobbin or spool standing on a table, instead of using small revolving bobbins, as in the case of a "Family" Machine.

Second—A short yarn carrier, through which the yarn is brought in a vertical position (or direction) from a hole in the cross above referred to.

Third—A welting cam cap, which enables the operator to commence the sock or stocking with an improved selvedge or welt.

Fourth—A new arrangement for adjusting the dial to the cylinder after completing the 1 and 1 top (page 31) by means of an adjustable post inside the cylinder, which is actuated from the outside of the machine.

LIST OF ACCESSORIES SENT FREE WITH EACH MACHINE.

2 Buttons.

Buckle.

2 Bobbins.

2 Heel Wires.

Instruction Book.

Lever (for adjusting the dial).

6 Needles (for Cylinder).

6 Needles (for Dial).

Oil Can.

Set-up.

Turnscrew

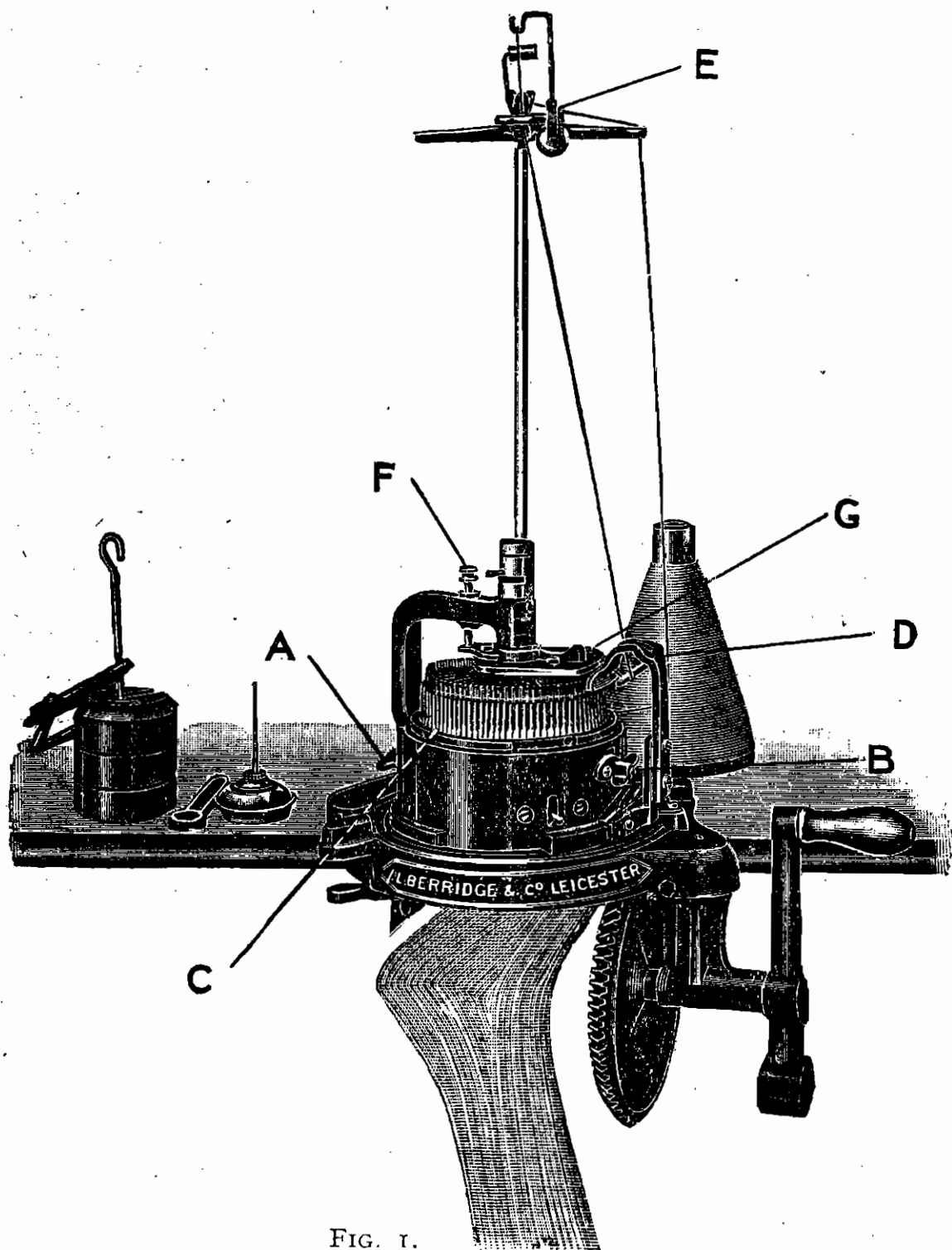
5 Weights.

2 Weight Stands.

Winders and Swifts if required are charged for.

The "GRISWOLD" STOCKING KNITTER

referred to in the Working Instructions.



The "Griswold" Knitter.

WORKING INSTRUCTIONS.

PART I.

This KNITTING MACHINE is sent out very carefully packed, in such a manner that it may be easily taken out of the box, and packed again when required.

Having unscrewed the lid of the box, remove all the loose parts, such as bobbins, etc., take out all the screws which are found on the outer sides of the box, and thus relieve the pieces of wood which hold the machine in place (*first having noticed how they are arranged, so as to be able to pack the machine again in the same way if required*). It is better to screw each piece back in its place, so that it and the screws will not be lost.

Having removed the machine, screw on the handle and fasten it to the side of a firm table.

Learners invariably expect to knit a ribbed stocking, completely shaped at the first sitting. This should not be anticipated; but anyone can become expert in working the machine within a very short time, from the book only, without personal instruction, provided they will commence at the beginning, and learn perfectly ONE THING AT A TIME, following the order herein given.

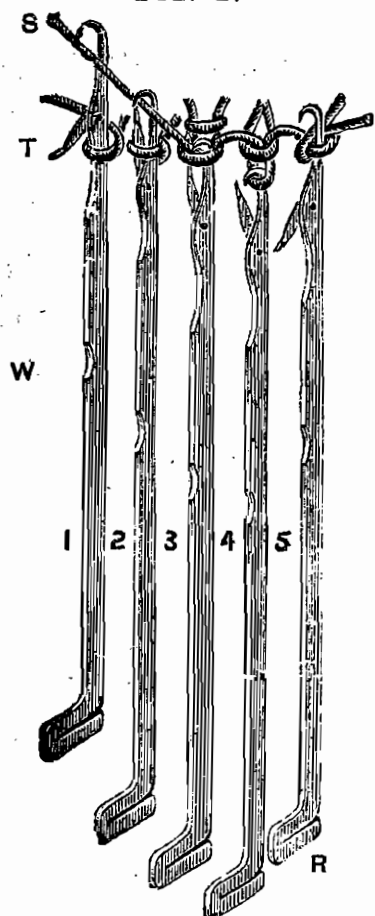
First Remove the Ribbing Attachment.

Having loosened the Ribber Arm wing nut (*a*) a little, the Ribbing Attachment may be lifted off entire, and as the machine without it is complete for knitting plain web and most of the fancy stitches, the ribber should not be replaced until you have become thoroughly acquainted with the working of the machine and have learned to knit the heel and toe of a stocking.

How the Needles form the Stitches.

Fig. 2 represents five of the needles with the yarn looped thereon, as when the machine is at work. Each needle

FIG. 2.



consists of an angular bent portion or butt *R*, a hook *S*, and a latch *T*. The latter is pivoted to the shank of the needle and works partly in a slot formed in the body. The latch has, moreover, a spoon-shaped end, which, when the latch is closed, as shown at needle No. 2, meets and partly shuts over the point of the hook *S*, so that the loop formed on the needle easily slips off when the latter makes its downward movement.

The groove *W* serves to keep the needle from dropping down when it is raised out of action.

Now let the reader suppose one line of stitches already formed on these needles, as shown in the engraving, and the thread of yarn to be knit so held that the

needle marked No. 1 will hook over it when that needle descends. The yarn will be drawn down by the needle until the latch T meets the loop previously formed. This loop, sliding along the body of the needle, lifts the latch and closes it into position shown in No. 2. The loop then slides off the needle as it continues to descend, and the thread, being drawn through the former loop, as at No. 4, forms a new loop, through which the needle will pass in rising, as shown in No. 5, opening the latch, and leaving the hook free to engage the yarn again. This process is repeated at each revolution of the machine.

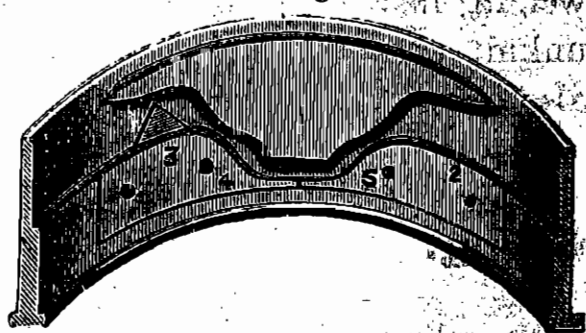
Now it is obvious that if we supply mechanism that will bring the yarn under the hooks at the proper moment, and also move the needles up and down successively, and also provide a device for supporting each row of loops till the next row is formed, we shall have a machine that will knit a straight tube. By still other devices we are able to knit flat, as well as tubular web, and to narrow and widen at will.

How the Cams actuate the Needles.

If you remove all the needles and unscrew the two screws underneath the machine, which hold the grooved needle cylinder in its place, this cylinder may be lifted out. You will then ob-

serve the form of the actuating cams as represented in Fig. 3

FIG. 3.



which shows these cams arranged as when turning the handle towards the right; 3 is the right-hand up-throw cam, the office of which is to raise the needles so as to free their latches, as at No. 1 in Fig. 2. The cam 1 then depresses the needles to knock off the newly-formed loops, as in No. 4, Fig. 2. The cam 5 then raises the needles again to their normal position as represented by No. 5. It is evident, therefore, that the farther down the cam 1 is, the farther down the needle No. 3 will be compelled to travel, and the longer will be the stitch. This cam is regulated by the stitch-cam wing nut on shell, B, Fig. 1.

Shortening or Lengthening the Stitch.

This is done by loosening the stitch cam wing nut (*b*), and pushing the indicator pointer down for lengthening, and up for shortening the stitch, always being sure to turn the screw as tightly as possible again before working the machine. When using very coarse yarn, or if you wish for an open or long stitch, the lever must be down; and in using the finest yarn, or in making a very close stitch, it must be up, or nearly up to the top. The tighter or firmer the work, the more weight will be required. If there is not sufficient weight, instead of forming a row of stitches, a long piece of unknit yarn will be left round the needles; this result will also occur when the stitch is too short for the material used.

Oiling.

Very little oil is needed, but what is used should be of the *very best quality*. When the clasp ring is removed, a few

drops should be put on to the cams directly behind the cam screw, and in front of the cams, and also into the hole on the bearing of the handle.

Sperm Oil is the best. Do not use Salad Oil.

FIG. 4.

Winding the Yarn.

In filling the bobbin, commence at the bottom, and wind in the form of a cone, filling the lower end first in a short, even slope, as represented in Fig. 4. Coarse yarn should be wound tightly, fine or soft twisted yarn and wools loosely, but smoothly.



Great care should be taken to wind the bobbins so that the yarn will run off without clinging or causing tension. An unevenly wound bobbin will make the machine run badly when everything else is right.

Fig. 5 represents what is known as the "Shaker Swift," which is supplied at 3/6.

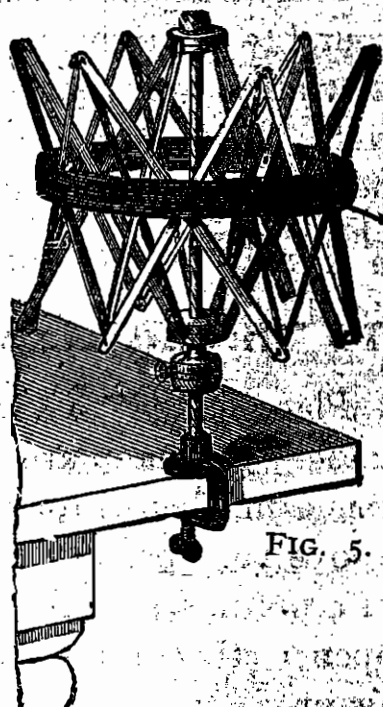
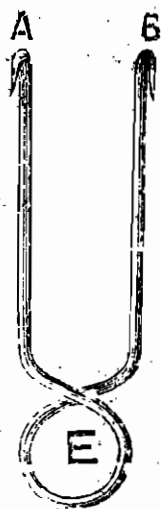


FIG. 5.

Heel Wire.

We send with each machine two heel *wires*, as represented in Fig. 6, which are used in making the heel and toe of a stocking, or in certain kinds of fancy work, where one part of the work becomes longer than the other, so that the weight does not hold it down properly. The hooks A and B should be hooked into the fabric, and the weights hooked into the hole E.

FIG. 6.



To put the Needles into the Machine.

Turn the handle round to the right a few times, to accustom yourself to the motion. Stop with the yarn carrier at the back.

Take off the clasp ring (c, Fig. 1).

Place a needle in each groove of the cylinder, from the left round to the right, until you find that the needles will not go down into the grooves properly; then turn the handle to the right half a revolution, and afterwards continue to insert needles until every groove has its needle, and replace the clasp ring.

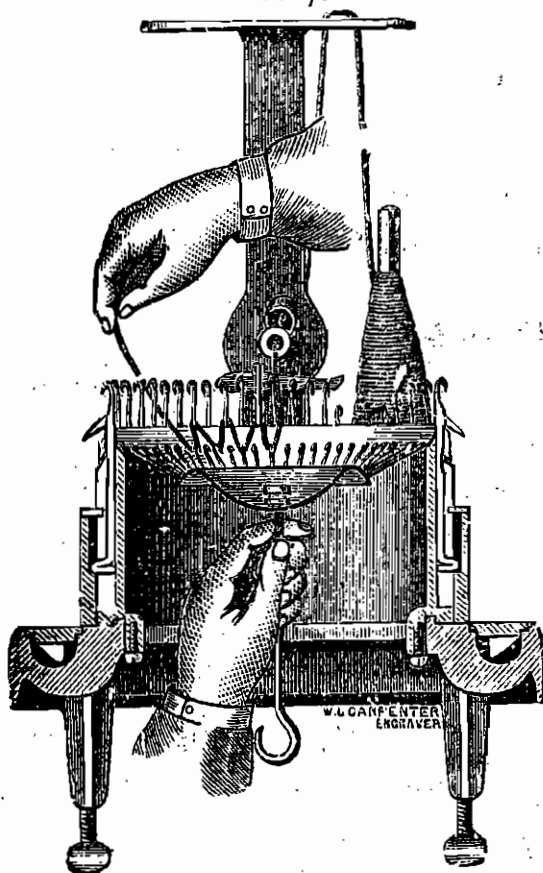
To Thread Machine.

Place bobbin of yarn on table or machine stand directly under right-hand arm of yarn cross, thread the yarn through this arm, then through hole in centre of yarn cross, directly above yarn post, then under shield and through centre hole of cross in front, then through hole in yarn carrier or latch opener, then round yarn staple and through latch opener again.

To Set-up Tubular Work without a Selvedge.

Draw off about $1\frac{1}{2}$ yards of yarn, and place the set-up inside the machine, *concave side up*, and with the hooks level with the top of the needle cylinder. Hold the set-up with the

FIG. 7.



left-hand, and, commencing under the yarn guide, with the right-hand wind the yarn under one of the hooks of the set-up, as shown in Fig. 7, then round one of the needles, then under the next hook, then round the next needle but one to the left, and so continue putting the wool round each alternate needle, and that hook which is nearest abreast of the needle, as illustrated in Fig. 7, and advance (in a direction opposite to that in which the hands of a watch move) round the cylinder to

where the needles are depressed: then attach a weight-hook, with one or two weights, to the bottom of the set-up, see that all the latches of the needles are opened down, turn the handle slowly to the right, and when you have knitted about half a round (far enough to bring all the needles that were below the top of the cylinder up again), wind the yarn round every alternate one of these in the same way as round the others; wind up the loose end of yarn, and place it on the top of the set-up, and knit forward as many rows as are required.

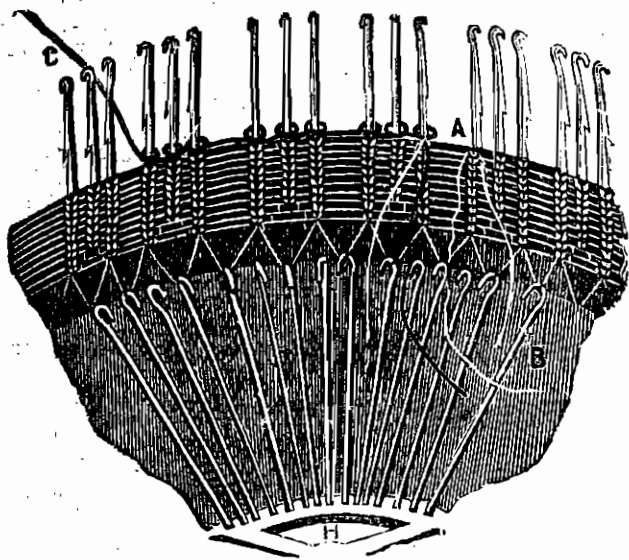
The machine will form its own loops over each alternate needle; but if, by inadvertance, *two* adjacent needles have been skipped, you have only, after knitting once round, to draw the loop down between the two empty needles and place it over one of the hooks of the set-up; or, instead of that, you may lift out of action one of the two needles, and after knitting once round, put it down again. A proper loop will then be formed upon each needle.

The machine will knit when turned in either direction, but in round work it is more convenient to turn the handle towards the right (*i.e.*, the way the hands of a watch move), and these instructions are prepared accordingly.

Setting-up with a Selvedge.

The machine should be first set up without a selvedge, as directed on page 17; break off the yarn, leaving a short piece inside the cylinder, as shown at A B, Fig. 8; thread the yarn carrier with a piece of strong linen thread (which has previously been oiled), rather more than long enough to knit one row, and knit with it halfway round. Then commencing at A, and leaving the end hanging inside the cylinder, raise all the needles which have stitches of thread upon them (*i.e.*, commencing at A). Knit forward until the yarn carrier is at the back of the machine; then raise the remaining needles; break off the thread, leaving a third short end

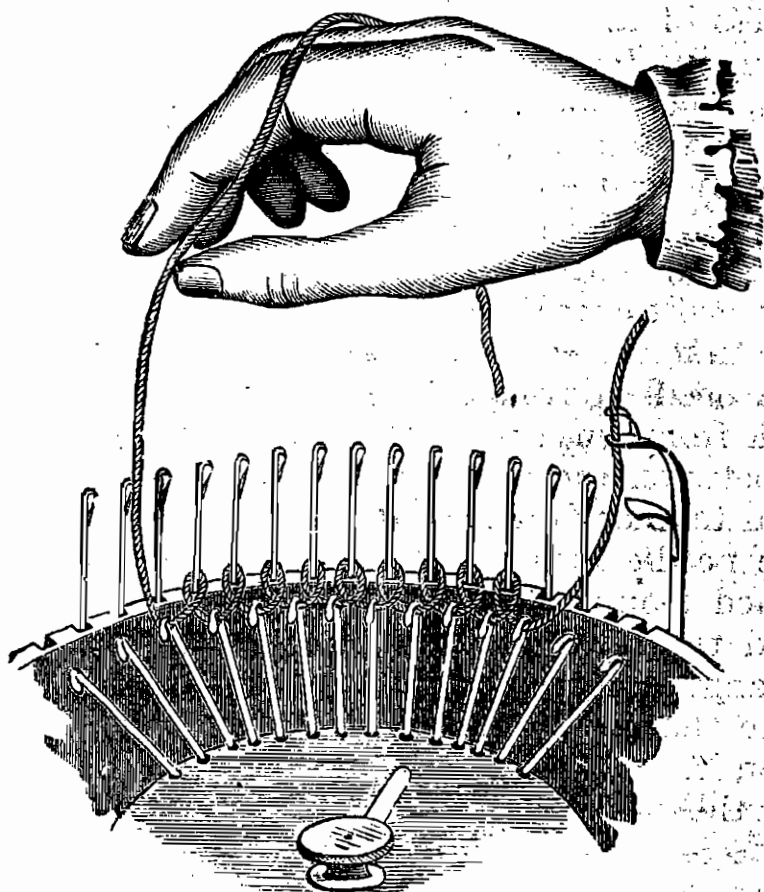
FIG. 8.



inside the cylinder next to the stitch last knitted. Thread the yarn carrier with the wool which you intend using for the work, and draw off about $1\frac{1}{2}$ yards; then at A commence to put on the selvedge (leaving a fourth end loose inside the cylinder), wind the wool round each needle (instead of alternate ones) forming loops as shown in Fig. 8. This being done all the way round, put down the needles, beginning from A (the one round which the selvedge was put first). Knit on until the carrier is at the front, and then put down the remaining needles and knit round as many times as you require.

When the knitting is finished, draw out the linen thread, and as perfect a selvedge will be found as can be knitted by hand.

FIG. 9.



Another Method of Forming the Selvedge.

In stockings made from Alloa, or coarse fingering yarns, a selvedge cast on directly from the set-up as follows will be found sufficiently smooth and tight, and is much more quickly done than that just described.

To make this selvedge, set up the work as described on page 18, only you must wind the yarn around *every* needle, from left to right, so as to form loops similar to those represented in Fig. 9. When two needles come abreast of one hook of the set-up, the loop may be wound twice round the same hook; or if there are too many hooks you can occasionally miss one.

To take up Dropped Stitches.

Unless the latch opener (*d*) has been bent out of its position, the machine cannot drop stitches except through carelessness of the operator.

If by any inattention, however, a stitch should be dropped, (providing the ribbing attachment is not in use) it can be quite readily taken up, even if several rows have been subsequently knitted.


To do this, open the clasp ring (*c*), and take out the needle from which the stitch is dropped, and (with the butt of the needle turned towards the top of the cylinder) take upon its hook the first perfect stitch, and crochet it up as follows: push the needle downward far enough to free the latch of the needle from the stitch; place the first cross yarn over the needle, between the hook and the latch; draw the needle back so as to knock off the stitch and form a new loop; then push the needle forward so as to free the latch from this last-formed loop; place the next cross yarn between the hook and the latch of the needle; draw the needle back, forming another loop, and thus reknit each loop successively, and place the needle back into the groove again with the loop upon it.

Faults thus remedied cannot be discovered in the finished work.

To Knit Flat Web.

Take out some of the needles, leaving at the back of the machine as many needles as are necessary to knit the required width.

Turn the handle to the right, and then back, until the carrier is opposite the first needle on the right side ; set up the work, attach the weights, hook the take-up lever (e, Fig. 1) into the yarn, and knit backwards and forwards the length required.

 BEFORE THE CARRIER IS REVERSED IT MUST BE TURNED FAR ENOUGH TO BRING THE UP-THROW PIN (f) ON SHELL BEYOND THE LAST NEEDLE, OTHERWISE THE FIRST FEW NEEDLES WILL NOT KNIT.

Widening and Narrowing.

A flat web may be widened on either or both sides by merely inserting a needle in the next groove (the latch being down), and putting the yarn behind this needle before reversing. It may be narrowed by removing one needle on either or both sides and transferring its loop to the adjoining needle.

Before narrowing or widening, remove the clasp-ring, which is only required when setting up the work, or when lifting needles out of action, as in knitting the heel or toe.

A better selvedge is formed if, in narrowing you remove from the machine the fourth needle from the selvedge edge, and having placed its stitch over the fifth needle, you move back the other three needles to fill up the vacant space.

Putting the Needles out of Action.

Any one or more needles may be made inactive for the time by simply lifting them up as far as possible, without opening or removing the clasp-ring.

By thus raising the needles it will be seen that their butts (R, Fig. 2) will pass over the cam guard (6, Fig. 3) and entirely out of reach of the cams. The heel and toe, as well as many fancy stitches, are formed by thus putting out of and into action a certain portion of the needles.

To Unravel without removing the Work from the Machine.

Knit once across or round without any weight, which will bring all the loops above the latches of the needles ; draw some yarn out of the mouth of the yarn guide and pull it tightly in a line with the top of the needles, which will cause the previous row of stitches to fall over the hooks of the needles ; with a little practice one can ravel back as far as desirable without dropping a stitch. In tubular work, if there is any difficulty in passing the needles which are below the top of cylinder, turn the handle a little either to the right or left.

To Finish off with a Selvedge.

Lift all the needles out of action ; break off the yarn, leaving an end about $1\frac{1}{2}$ yards long ; take out the needle which knitted the last stitch, and, drawing a loop from the yarn in the hand through this stitch, place it over the next needle. There will then be two loops on this needle. Take the next needle out and draw a loop through the two loops which are upon it, and place this loop upon the next needle. Repeat this all round or across, being careful not to draw the loops too tight, and drawing the wool twice through the last stitch to make it secure. This selvedge will be exactly like the usual closing off by hand.

Imitation Rib.

A very good imitation rib, suitable for the tops of socks or for children's stockings, may be knitted by leaving out every third needle, and knitting with as tight a stitch as possible.

PART II.

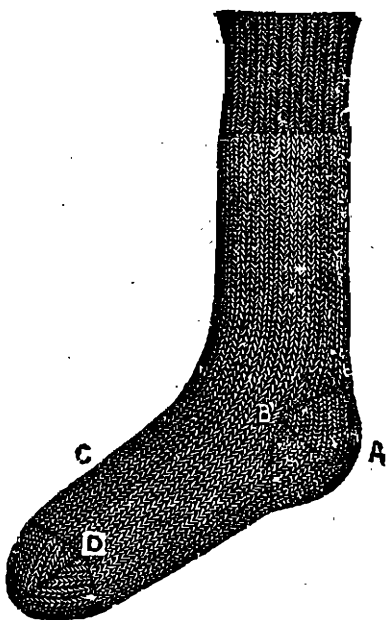
THE KNITTING OF SOCKS AND STOCKINGS.

Before learning to use the Ribbing Attachment it is advisable to learn to make a plain sock with the mock-rib top, as represented in Figure 10.

Instructions for Knitting a Man's Plain Sock.

Foot $10\frac{1}{2}$ inches. 84 cylinder, $\frac{1}{4}$ lb. ex. super Scotch fingering. *Stitch as tight as will run easily.* Put the needles into the machine groups 3 in and 1 out, all the way round. Set up the machine with old yarn, and knit about 10 rows ; then knit one row with stout sewing cotton or linen thread ; raise all the needles, and put on a selvedge with the fingering as directed on page 18, and illustrated in Figure 8. Knit 30 rows of the mock ribbing, then fill up the vacant spaces, taking up on to

FIG. 10.



each needle the stitch last knit by its adjacent needle, and knit 100 rows plain, stopping with the carrier in front. Raise 42 needles at the back of the machine, and knit to the right across all the needles which remain down. Loosen the stitch by depressing the stitch-indicator about two points ; put a bobbin of splicing yarn (about half the thickness of the yarn that is being used for the sock) ; thread this yarn through the remaining two eyes of the yarn-carrier and tie it on to the other yarn, just before it enters the

yarn-guide ; hook in the take-up ; now raise one needle on

FIG. 11.

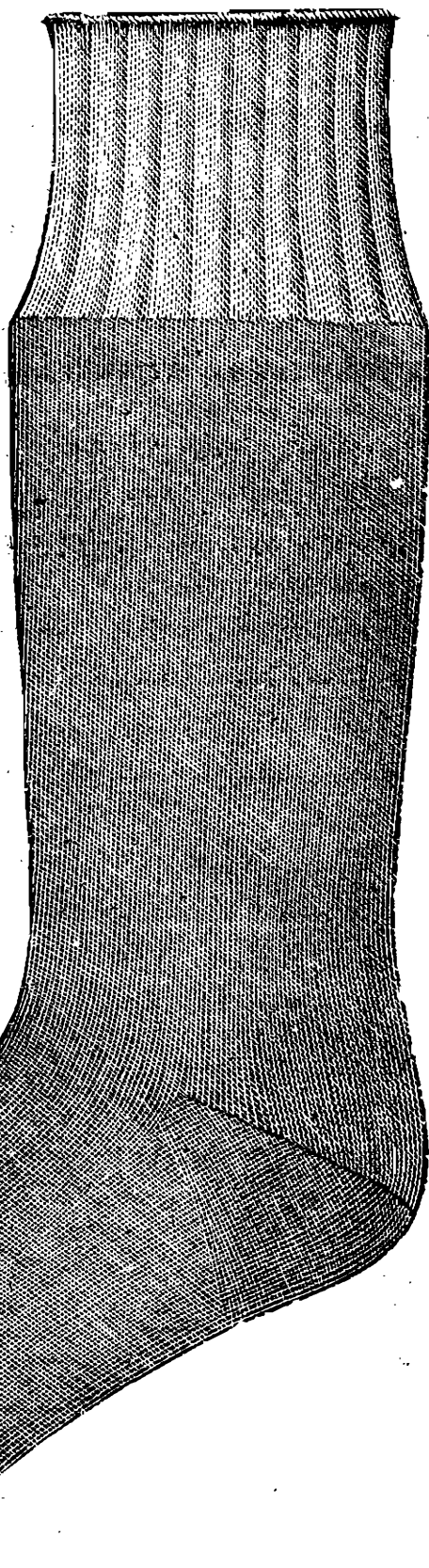
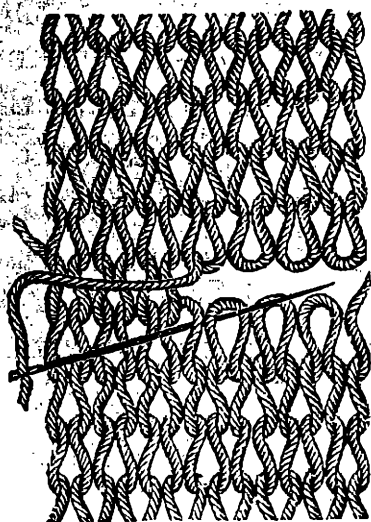


FIG. 12.



the right next to those already drawn up ; knit across to the left, raise one there ; knit back again to the right and raise another and so continue raising one needle every row, and on the side the carrier is, until all but 14 needles are up,—this completes the narrowing for the heel as far as A B, Fig. 10. To widen out again, this process must be reversed, and one needle must be put down every row across, on the side of the carrier, and the wool put behind it. As soon as you have 40 needles down, stop with the carrier in front, and put down all those at the back ; break off the splicing yarn ; unhook the take-up lever ; raise the stitch-indicator to the point where it was before commencing the heel, and knit round the cylinder 80 times, which completes the foot as far as C, D, Fig. 10.

The toe is more quickly formed, in the same manner as the heel, and sewed up across the bottom by the mending stitch, as represented in Fig. 11 ; but before running the work off the machine, you should put all the needles into action and knit two or three rounds, which will be ravelled out before sewing up. Damp the part that is to be sewn up, and press with a hot flat iron, so as to keep the stitches from ravelling out.

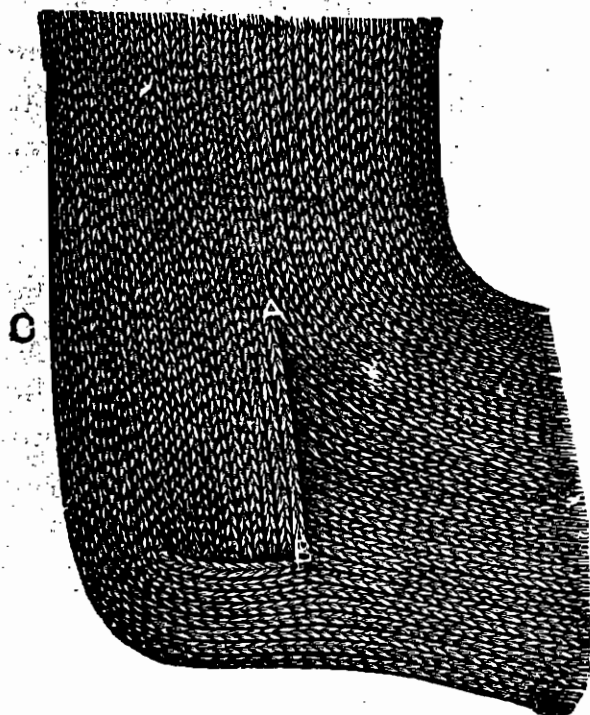
Fig. 11 shows the sock after the surplus rows have been ravelled out. Leave the sock right side out, just as it comes from the machine. Thread a darning needle ; put the needle in through the first stitch and out through the second, on the same side, as shown in Fig. 12 ; then in through the first and out through the second, on the other side ; then put the needle in through the stitch which you brought it out of on the first side, and out through the next stitch on the same side, as represented in Fig. 12 ; continue in this manner, taking the old and new stitch on one side, then on the other, alternately, being careful to draw the yarn just as tightly

as the web was knitted. If care is taken not to miss a stitch or split the yarn, it cannot be discovered where the toe is sewn up, and the sock or stocking will be absolutely seamless, as much so as if knitted by hand.

Method of Forming the Scotch Heel.

After having knit the ankle, top of instep, and half of the

FIG. 13.



toe, as directed, insert the needles which were left hanging in the loops at A, C; knit 32 rows, remove 16 needles on the side opposite to the carrier, knit across and remove 16 needles on the other side; now put the stitches from the 16 needles hanging on each side on to the outside needle in the machine, one on each side, every time you knit across; now take up the 16

selvedge loops, A, B, on 16 needles placed on each side in the machine, and knit the 80 rows for the bottom of the foot, and form the toe as before.

Forming the Scotch Toe in two parts.

The toe may also be made in two parts, with selvedge edges, and sewn together.

Raise 42 needles at the back, as before commencing the heel, knit three rows, then two stitches must be narrowed;

this is done by taking out the second needle on each side, and putting the stitch over the third, and moving back the first, to fill up the space. This narrowing must be repeated every third row, until only 30 needles remain in the machine, and then every second row, until 14 are left ; then knit three or four rows , to be ravelled out before the two halves of the toe are sewn together ; break off the wool and take these needles out ; then depress the needles which were raised, and knit the second half the same as the first, narrowing to 14 needles, and knitting a few surplus rows. Now press the toe with a hot iron ; ravel out the surplus rows ; crochet the loose stitches together, or sew them with the mending stitch, after which the sock should be turned wrong side out and the selvedge edges sewed together.

A SMALL-SIZED MAN'S OR YOUTH'S SOCK IS BETTER KNITTED ON THE 72 CYLINDER, IN WHICH CASE ONLY 36 NEEDLES ARE USED IN FORMING THE HEEL AND TOE, INSTEAD OF 42.

For proportions, see Table, page 46.

Method of making a Seamless Stocking.

Form the leg, heel, and foot of the sock or stockings as instructed on page 23. For the toe, lift out of action the back half of the needles ; narrow the front half of the toe in the usual manner, by lifting a needle out of action on each side, until 12 needles remain. Lift these 12 needles ; break off the yarn, leaving a short end. Then having depressed the back half of the needles, tie the end of the yarn on to a stitch on the inside of the stocking, just under the first needle on the right ; knit a short distance, so as to bring the yarn-carrier at the back of the machine ; remove the clasp ring, and take out all the needles upon which the first half of the toe was knit,

letting them hang in their loops in the inside of the cylinder ; transfer the stitch which is on the first loose needle at the left-hand side on to the first needle which remains in the machine, and knit across to the left ; transfer the stitch which is on the first loose needle on the right to the first needle remaining in the machine at that side ; narrow at the left (on the same side as the yarn carrier) by taking out a needle and placing its stitch upon the next needle. Knit back to the right side again, and, repeating the process, thus knit to and fro, narrowing on the side of the yarn carrier, and transferring a stitch to the last needle on the opposite side, until only 12 needles remain in the machine ; remove these needles and join these 12 stitches to the 12 remaining ones on the other half of the toe, by the mending stitch (see page 25), or finish off the machine as instructed on page 22, and the stocking will be complete, and as seamless as could be made by hand.

RIBBING ATTACHMENT.

Before removing the Ribbing Attachment from the machine, or replacing it, if there are needles in the dial the yarn-carrier must be turned back so that the yarn tube is directly over the cam screw (*b*, Fig. 1), otherwise the projecting ribbing needles will be broken, or the latch-opener bent.

THE MACHINE MUST NOT BE LIFTED BY THE RIBBING ATTACHMENT, OR IT WILL BE LIABLE TO BE BROKEN OR STRAINED.

It is advisable that the learner should first get thoroughly acquainted with the working of the machine *without the attachment*, before using the latter, and to this end should carefully practice according to the instructions given in Part I., and also learn how to make a plain sock.

The Latch-opener

Is the steel part (*d*, Fig. 1) and it performs one of the most important offices in the machine. It will be noticed that the latches of nearly all the needles are held open by the loops last knit, so that these latches cannot be closed; but that just before it knits, each cylinder needle rises up, and each ribbing needle projects forward, so that its latch is freed from its loop.

Now the Latch-opener guards these latches and keeps them from closing when not held open by their loops, and if properly adjusted the dropping of stitches is impossible, unless caused by the carelessness of the operator. If the Latch-opener should get bent too low down, or too far back towards the centre of the machine, it will touch the needles and probably break some of them. If, on the other hand, it is too far away, or too high up, the latches (especially those of the ribbing needles) will be allowed to close before the yarn has passed under their hooks, and the stitches will be dropped.

Every machine is carefully adjusted in this respect before leaving the factory, but it is quite possible that either while in transit, or when being removed from the box, the Latch-opener may become bent, in which case it must be re-adjusted as explained above; for this purpose the screw holes for the Latch-opener are slotted.

To Change the Dial.

Each ribbing dial is usually made with just half as many grooves as there are in the corresponding needle cylinder, and a separate dial is required for each cylinder. To change the dial, use the handle of the screw-driver, and with it unscrew

the nut on the bottom of the ribbing-spindle ; remove the dial and substitute the other one, then screw the nut firmly down to its place again.

The Picking-up of Dropped Stitches

In plain work is easily accomplished, in the manner explained on page 20 ; but in ribbed work this is more difficult, and the operator is advised not to restore the dropped stitches of ribbed stockings until after the work is finished and removed from the machine. To do this (having first turned the stocking wrong side out, if it is a ribbed stitch that is dropped) take the first perfect stitch on to one of the machine needles (with the butt of the needle towards the top of the stocking), and crochet it up as follows : push the needle forward far enough to free the latch of the needle from the stitch ; place the first cross yarn over the needle between the hook and the latch ; draw the needle back so as to form a new loop ; then push the needle forward so as to free the latch from this last-formed loop ; place the next cross yarn between the hook and the latch of the needle ; draw the needle back, forming another loop, and thus re-knit each loop successively. Finally, with a wool needle threaded with some of the same yarn, fasten the last loop, so that it cannot unravel again, and the fault can hardly be detected.

If, during the knitting a needle is noticed to have dropped its stitch, the latch of this needle should be opened, in which case it will commence knitting again, and only a few rows will have to be restored.

To Fix the Ribbing Attachment to the Machine.

See that the Ribbing Attachment is complete, but with *no needles* in the dial.

Fix the Ribbing Attachment to the machine by placing the slot at bottom of the ribber arm over the ribber arm wing nut screw (a). Press the arm firmly down into its place, and screw the brass wing nut (a) as tight as possible with the hand.

THE MACHINE MUST NEVER BE TURNED BACKWARD

WHILE THE RIBBING ATTACHMENT IS IN ACTION.

Adjustable Post.

To effect this adjustment, loosen the thumbscrew underneath the machine which secures the adjustable post, and move the post a little to the left by means of the projecting lever, at the same time holding the dial either with the left hand, or by means of the pin sent for the purpose (called "Lever for adjusting dial" in list of accessories), so that it presses against the *lug* on the dial, which when put on should always be on the left of the post referred to ; then tighten the screw when the post is in the required position for the upper part of the leg of a stocking, that is with the ribbing needles working over the posts of the cylinder, instead of over the empty grooves.

New Adjustable Post.

This is actuated by star wheel on spindle under body of machine on left hand side. This attachment will give a very accurate adjustment of the dial by merely turning star wheel.

To put the Attachment out of Action.

The ribbing attachment may be put out of action by removing the driving pin (f). In replacing this pin care must be taken that it enters its hole in the cam cap.

To Adjust the Ribbing Stitch.

Loosen the cam screw on cam cap (G), and move it a little forward in the slot to *tighten*, and a little back to *loosen* the stitch, being careful to screw it up firmly after each operation, otherwise the ribbing needles will not work.

To Adjust the Ribbing Needles.


The needles of the Ribbing Attachment may be adjusted so as to work either over the posts or over the grooves of the cylinder : for instance—while knitting the foot and ankle of a stocking, every fourth needle is removed from the cylinder, and the ribbing needles work over the empty grooves ; but in the upper part of the leg, all the needles of the cylinder being in use, the ribbing needles are adjusted to work over the posts of the cylinder.

To Set up for 1 & 1 Ribbed Seamless Work.

Having removed the ribbing attachment, take every alternate needle from the machine, set up the work on the remaining needles ; knit a few rows until the work is perfect on every needle ; and stop with the yarn-carrier at the back of the machine.

Having removed all the ribbing needles, place the ribbing attachment on the machine in the manner indicated on page 30. Insert the driving pin into both of the holes, as shown in Fig. 1 ; adjust the dial as directed, page 31, so that each groove of the dial will come directly over the groove of the cylinder. When accurately adjusted, put a ribbing needle (with its latch opened back) into each groove of the front half

of the dial ; turn the handle half a round ; and then insert a needle in each of the remaining grooves at the back of the dial. Knit slowly 2 or 3 rounds, following the action of each needle with the eye, and carefully note that each needle catches hold of the yarn.

 In knitting 1 and 1 ribbed fabric, the stitch indicator must be well down, say at the 5th or 6th point, so as to give a sufficiently loose stitch.

To Set up for 3 & 1 Ribbed Seamless Work.

Remove the ribbing attachment ; take out every fourth needle, leaving 3 needles and 1 empty groove successively round the cylinder ; set up as for *plain* seamless work, and stopping with the yarn-carrier at the back of the machine, fix the ribbing attachment as for 1 and 1 ribbed work, placing a ribbing needle in *every other* groove—*i.e.*, those which are directly over the empty grooves of the cylinder—and proceed to knit the required number of rounds.

To Set up 4 & 1 Ribbed Seamless Work.

Place *all* the needles in the cylinder ; set up as for *plain* seamless work, and, stopping with the yarn-carrier at the back of the machine, fix the ribbing attachment in its place, and adjust the dial so that the grooves come over the *posts* between the cylinder needles ; put a ribbing needle in every other groove of the dial, and proceed to knit the required number of rounds. The result is a 4 and 1 rib, such as is used for the legs of stockings.

To Set up 3 & 1 or 4 & 1 Rib with Selvedge.

Set up with old yarn, and put on the selvedge with the yarn intended to be used (as directed on page 18). Knit once

round ; put on the ribbing attachment, insert every alternate ribbing needle, and transfer to it a stitch, and also in the case of 3 and 1 rib removing the corresponding cylinder needle.

To make a Scalloped Top.

The scalloped top forms a very neat commencement for either a sock or stocking, and is made as follows :—Take off the ribbing attachment and set up the machine for plain work. Knit a few rounds plain, then one complete round with cotton or splicing thread, and put on a selvedge (as directed on page 18) with the yarn intended to be used.

Knit one round ; put on the attachment with the needles left out ; insert the driving pin ; adjust the dial ; then commencing at the back of the machine where the selvedge was begun, and advancing in the direction in which the machine turns, insert the ribbing needles successively in their respective grooves, first catching up with each ribbing needle the selvedge thread and also the thread of the first row knitted. When about half the ribbing needles have been inserted, knit round far enough to admit of inserting the rest of the needles in the same manner. Knit as many rows as are required, draw out the thread, and you will find a nice scalloped top.

To make the Two and One Welt.

Run in one row of cotton or splicing, pick up every alternate cylinder needle, knit one row of yarn to be used for the stocking, pull forward welting spring, knit one row with needles still lifted up. Loosen tension half a stitch, put down cylinder needles, knit three rows, pull back welting spring, proceed as usual.

To Knit a Ribbed Sock.

84 cylinder ; 4 oz. ex. super Scotch Fingering. Notice on opposite sides of the cylinder two of the posts are sloped off. This is to divide the cylinder in two equal parts for making the heel and toe.

With the yarn-carrier at the back of the machine insert every other needle, commencing at the left-hand slope.

Set as directed on page 33 ; knit a few rows until the work is perfect on every needle. Stop with the yarn-carrier at the back of the machine ; put on the ribbing attachment ; adjust the dial so that a groove of the dial comes directly over an empty groove of the cylinder. Put the stitch indicator at the 5th or 6th point from the top ; place a ribbing needle in each groove of the dial, commencing at the left slope and advancing round the front of the machine. When half of the ribbing needles have been inserted, put the driving pin (f) through arm and cap, and knit half a round, bringing the yarn-carrier to the front ; then insert the rest of the ribbing needles, taking care that the latches are open ; knit a few rows, watching each needle to see that it knits properly. Shorten the cylinder stitch until it is as tight as can be conveniently knitted ; then tie on the yarn from which the stocking or cuff is to be made with which knit exactly one round, stopping with the yarn-carrier in front of the machine, and move towards you the lever as far as it will go, thus throwing ribbing needles out of action. Now knit with care, holding the work down firmly, two or more complete rows, and then replace the lever which completes the selvedge.

Selvedge or 1/1 Welt.

Move the brass lever to the right as far as it will go, knit 3 rows if yarn is thick or 4 or 5 rows if yarn is fine, and then replace the brass lever being careful to have it touching the screws at the left hand side, this completes the selvedge or welt.

[When the sock is finished, the line of cotton must be cut in three or four places, and drawn out, and a perfect selvedge will be found at the top.]

Now set the brass counter at No. 1, opposite mark on body of machine, or put pointer to No. 1 on clock and knit 50 rows for the ribbed top. Stop with the yarn-carrier at the back, and commencing at the left-hand slope and advancing round the front of the machine, take out every alternate ribbing needle, transferring its stitch to a cylinder needle and inserting the latter in its corresponding groove. You have now, instead of a 1 and 1 rib, a 3 and 1 rib, which should extend as far as the heel. For this purpose set the brass counter at No. 1, as before, and knit 80 rows.

For the number of rows to knit the various sizes, see Table on page 47.

To Form the Heel.

Stop the yarn-carrier at the back ; and, commencing at the left-hand slope, remove one by one the front half of the ribbing needles, transfer their stitches to corresponding machine needles, and place the latter in their respective empty grooves in the machine ; knit round to the front ; remove the driving-pin ; raise out of action the half of the needles in the machine at the back ; hook on the take-up

the lever, as shewn at Fig. 1, and knit to the right across all the needles which remain down. Loosen the stitch by depressing the stitch indicator about one point; put a bobbin of splicing yarn (about half the thickness of the yarn that is being used for the sock) on the table; thread this yarn through the remaining two eyes of the yarn-carrier, and tie it on the other yarn, then it enters the yarn guide; now raise one needle on the right (next to those already drawn up); knit across to the left, raise one there; knit back again to the right and raise another and so continue raising one needle every row and on the side the carrier is, until all but 12 needles are up; this completes the narrowing for the heel, as far as A, B, Fig. 10. To widen out again this process must be reversed, and one needle must be put down every row across on the side of the carrier and the wool put behind it. As soon as you have 40 needles down, stop with the carrier in front, and put down those needles which are out of action at the back, looking to see that all the latches are opened down; break off the splicing yarn; unhook the take-up; raise the stitch indicator to the point where it was before commencing the heel, put in the driving pin and knit round the cylinder 80 times, which completes the foot as far as C, D, Fig. 10. The needles which have been removed from the ribbing attachment while forming the heel should *not* be replaced, thus leaving the bottom of the foot plain.

Form the toe exactly the same as the heel, adding a splicing yarn, if necessary, and narrowing to 12 instead of 14 needles. Having finished the toe, put all the machine needles and the ribbing attachment into action, break off the splicing yarn, and knit 3 or 4 rows, to be ravelled out before sewing up the toe, as directed on page 25.

To Knit a Fashioned Ribbed Stocking.

The upper part of the leg of a stocking is usually knit with all the needles in the machine cylinder, and with the ribbing attachment so adjusted that its needles come directly over the posts of the machine cylinder. When commencing with a 1 and 1 ribbed top, however, this adjustment should not be made until the top is completed, the same as in a sock. Having completed the 1 and 1 ribbed top, as directed for a sock, take out every alternate ribbing needle, and having transferred its stitch to the corresponding cylinder needle, insert the latter in its groove in the cylinder ; then adjust the ribbing attachment so that the ribbing needles will be directly over the posts of the cylinder. Fill up the vacant grooves in the cylinder, taking up on to each needle the stitch last knit by the adjoining needle. Knit the required number of rows for the upper part of the leg (see page 47) ; then, to *narrow*, take out of the cylinder one of the two needles in the middle of that rib which is directly in the front of the machine, and place its stitch on the other middle needle of the same rib, moving forward the next cylinder needle to fill the empty space ; knit 5 rows ; then take out the corresponding needle of the rib next on the left, and one from the rib next on the right of the first one, and place these stitches on the adjoining needles ; knit 6 rows more, and take out again one needle on each side ; do this all round, so as to leave the needles in the cylinder in groups of three. Now adjust the dial by adjustable post (see page 31) so as to bring the ribbing needles exactly over the empty grooves in the machine ; put the yarn into the hook of the take-up, in order to tighten the stitch ; knit the required number of rows for the ankle (see page 47), and form the heel, foot, and toe as instructed for a sock.

The upper part of the stocking should be made loose, and the stitch gradually tightened down the leg, so that at the ankle and in the foot the stitch may be as tight as possible.

SEVERAL DIFFERENT SIZES of socks and stockings may be knitted on the same cylinder and from the same sized yarn by simply knitting the smaller sizes more tightly than the larger sizes and observing the number of rows, as given for each size, in the table on page 47.

WE SHOULD ADVISE LEARNERS TO CAREFULLY READ AND BEAR IN MIND THE REMARKS ON PAGE 48 (WHICH FOLLOW THE TABLE OF SIZES) AS SOME VERY VALUABLE HINTS ARE THEREIN GIVEN.

Boys' Ribbed Hose.

The numbers 0 and 1 sizes of boys' hose cannot be well knitted on the Class C machine *seamless*, as the foot would be too large in diameter. The legs of these smaller sizes may be advantageously knitted without narrowing in a 3 and 1, or 1 and 1 straight web, in which case the feet may be knitted plain, in two parts and narrowed, as explained on pages 37 and 38, for plain stockings. This may be done whenever desired, provided the feet are knitted plain.

The 72 cylinder in the full-sized stocking machine is the one used for boys' hose, and in ordinary extra-super 4-ply Scotch fingerings; this will make all the sizes from No. 2 to No. 4 inclusive. Larger sizes than these should be made on the 84 cylinder, or else a thicker (say a 5-ply) yarn should be used. With a thicker yarn the same number of stitches are required for the Nos. 5, 6, and 7, as in the thinner yarn would be used in knitting the Nos. 2, 3, and 4 respectively.

To Knit a Ribbed Jersey.

Set up with a selvedge, a ribbed web, with all the needles in both the dial and the cylinder ; knit a piece of (2 and 1) tubular web twice as long as is required for the body of the Jersey ; finish off with a selvedge as directed on page 22. Now, with a pair of scissors, split this tube down, following one of the ribs, and fold it over, so that the two selvedge ends will come together. Then sew up each side one rib back from the edge (leaving room for the armholes), and feather-stitch down the seams neatly. Pick out a row of stitches half-way across the middle of the top, thus making an opening for the neck. Having started with a selvedge (scalloped or plain, see page 34), knit a (2 and 1) collar about $1\frac{1}{2}$ inches long and run it off the machine. Sew this collar into the neck with the mending stitch (see page 25). Make the sleeves exactly like the leg of a fashioned stocking (see page 38), and sew them into the two armholes, and the Jersey will be complete.

With 4-ply Scotch fingering the children's sizes may be made on the 84 cylinder, but for ladies' sizes the 96 cylinder is required.

4 and 1 Fashioning.

Centre rib needle to be left in all through. Take out ribbers right and left of centre, knit four rounds. Put the stitch off 3rd plain needle on to 2nd on each side, taking out the empty needles. Move plain needles up to centre, leaving ribbers working over blank spaces. Knit four rounds. Put stitch off plain needle on to 2nd. Move ribbers and plain needles round from back to front of machine. Continue narrowing,

leaving plain needles in groups of four, with ribbers working over blank spaces. On the 84 machine, only 4 rib needles should be taken out.

Another Method.

Before commencing to put the stitch off 3rd plain needle on to 2nd, take out another ribbing needle right and left to centre rib needle and knit four rounds, continuing as directed in other 4 and 1 fashioning.

Instructions for Scalloped Top on 3 and 1.

Turn two or more rounds with strong splicing ; tension very slack ; tie up with ordinary yarn to be used ; when it comes to needle to be knit lift up 1st and 3rd needle in each group of three all round cylinder ; knit one row ; put back welting cam ; knit one round ; put down the plain or cylinder needles, knit one round, and work as many rounds as required ; bring forward welting cam and proceed as usual.

Instructions for Making Socks and Stockings completely Seamless.

To do this it is necessary to commence at the toe, put in half the needles back of machine ; set up, starting from the right and knit 8 rows ; narrow down a needle at a time, leaving twelve needles, and widen out again as usual ; work five and a half rows backwards and forwards, stopping with the carrier at the back ; take out the set-up, put

in front needles, leaving out one needle next to the slope on either side ; transfer selvedge loops to front needles, raveling off $2\frac{1}{2}$ rows ; crochet up with a cylinder needle, the additional rows at each side to form one stitch, inserting the needles in the empty grooves ; put on ribber ; transfer every fourth cylinder needle to a ribbing needle at back, and knit the foot as usual ; then knit heel, and transfer every fourth cylinder needle to a ribber in front of the machine, making a 3 and 1 rib all round for leg. Having knit, say 75 rows for a sock transfer every other cylinder needle to a ribber to form a 1 and 1 rib, and having knit the required number of rows break off yarn close to yarn tube, and crochet top by hand to secure the stitches.

Instructions for making Fancy Tops for Stockings.

To make Half-diamond Pattern.—Put in all needles in cylinder grooves exactly as used in knitting plain work. Divide same into four equal parts of 21 needles each, lift up 63 needles, leaving down one group of 21 needles, on these knit the yarn, raising one needle on each side, instead of only one, as in making heels and toes, the 63 needles being stationary. Then knit the three remaining groups of 21 needles in the same way as first group of 21. This produces half-diamonds.

To make complete diamond Pattern.—Put down needle in centre of two half-diamonds; continue putting down two needles each time until there are 21 down, then pick up these needles same as in half-diamonds. Repeat this process until four diamonds are made. To complete top, knit four half-diamonds as described above.

To make Skeleton Diamond Pattern.—Divide machine into equal portions, as before, but in this case leave all needles in work. Loop the colours required to the first needle of each group, leaving a length of the yarn, say about 12 inches, hanging inside the machine, that is four ends. Take off clasp ring, lift out needle, knit a loop on each of the four loose threads by lifting needle, knitting the loop by hand, continue this, crossing the diamond according to pattern required. Two or more sets of colours may be used according to design required.

Instructions for Changing Cylinder & Dial on Compound Griswold Knitting Machine.

To change from the 84 $4\frac{1}{2}$ Cylinder and Dial to the 72 $3\frac{3}{4}$ Compound.

First break off yarn and turn two rows to press off all work.

Take off ribber attachment, by loosening large thumb screw, and take out all ribber needles from dial.

Unscrew nut holding dial underneath ribber attachment, take off dial and cam cap, now put on small cam cap and dial in place of the others and screw up to position again. This $3\frac{3}{4}$ ribber attachment is now ready for use.

Take out all cylinder needles, and the two cylinder screws.

Unscrew the adjustable post inside cylinder and take it right off.

Now lift out the 84 cylinder and replace with 72 $3\frac{3}{4}$ cylinder

Then fit in the $3\frac{3}{4}$ adjustable post to its right position and after doing this, screw up cylinder.

Put in your compound cylinder needles.

Fix the clasp ring round cylinder.

Bring yarn carrier nearer needles by loosening the screw in slot, to move sliding carrier forward as required, then screw up tightly again.

Machine is now ready for setting up work as shown in Instruction book on page 15.

Price of Compound Griswold Knitters on application

Instructions for the use of the New Splicing Arrangement on the Griswold Machine.

Place the small splicing bobbin on the pin provided for it on the top of the ribbing spindle. Thread the splicing yarn first through the hole in bracket which is directly above the bobbin, then through the hole at the end of the same bracket ; from there through the hole in the steel trapper, next through the split tube, then through the solid tube.

To splice the front part of the stocking put the steel peg on the right of the operator in the inside hole on the body of machine, and the peg on the left on the outside hole. To splice the back put the pins *vice versa*. To throw the splicer out of action altogether, remove the pin which is in the outside hole to the inside hole.

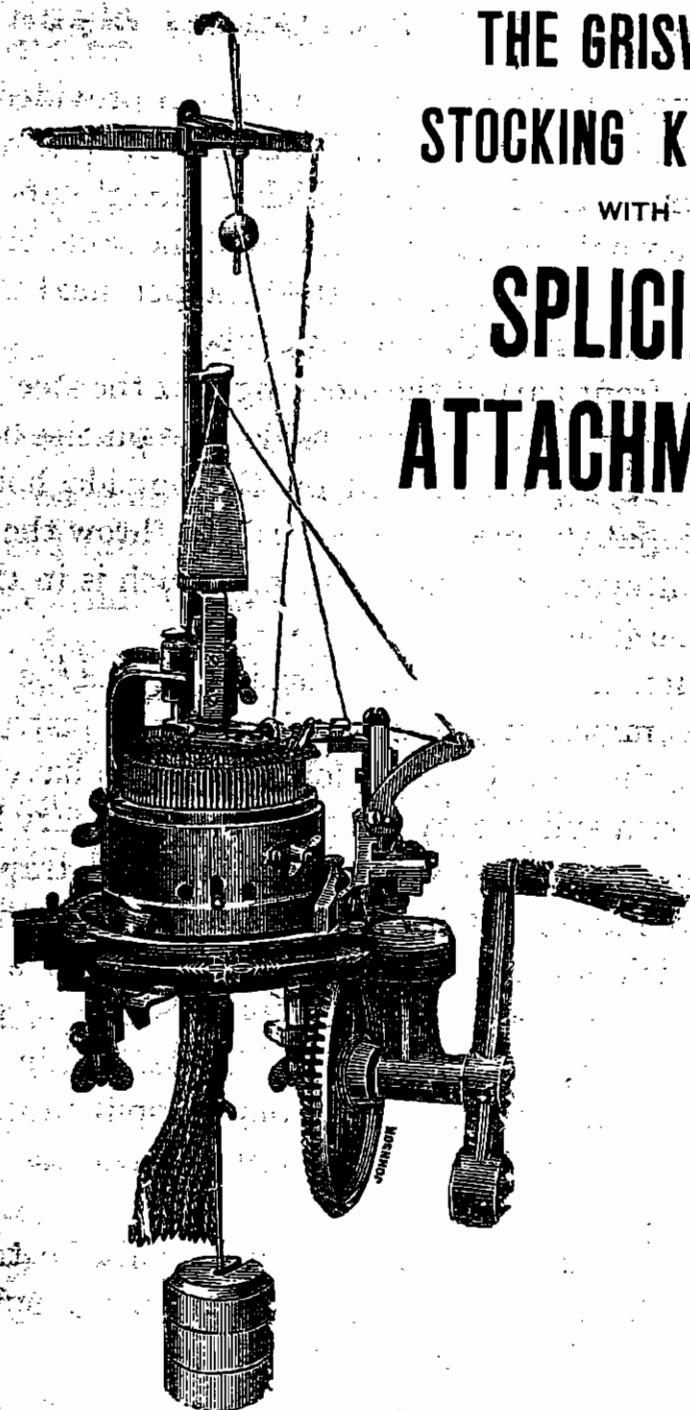
It is recommended that the stocking should be spliced down to the commencement of the heel as per instructions. But in making the heel it will be found easier to have a yarn bobbin filled with splicing by the side of the ordinary bobbin. When the operator has worked down to the heel, trap off the splicing by moving the outside pin to inside, and tie the splicing thread which is on the large bobbin to the yarn that is being worked.

When the splicing apparatus is not in use, and in making the heel, release the ordinary yarn from the split tube and let it work through the solid tube only. When the heel is finished proceed as before.

When splicing, the knitting yarn must only be threaded through the split and solid tubes, and when not splicing it should be released from the split tube.

It is only the splicing thread which should be threaded through the bracket, lever, and trapper, as well as through the tubes.

**THE GRISWOLD
STOCKING KNITTER
WITH
SPlicing
ATTACHMENT.**



Approximate Table for Knitting the different sizes of Socks and Stockings.

Which must vary according to quality, etc., of wool used (see note).

| | SIZES. | MEN'S SOCKS. | | | MEN'S KNICKER BOCKERS | | | | WOMEN'S HOSE. | | |
|---|--------|--------------|-----|------|-----------------------|-----|-------|------|---------------|-------|------|
| | | Ribbed Top | Leg | Foot | Ribbed Top | Leg | Ankle | Foot | Leg | Ankle | Foot |
| 52 and 60-Cylinder ; Alloa and Double Yarns. | Small | 38 | 55 | 50 | 40 | 60 | 45 | 50 | 100 | 45 | 42 |
| | Medium | 38 | 59 | 54 | 40 | 65 | 45 | 54 | 105 | 45 | 46 |
| | Full | 38 | 63 | 58 | 40 | 70 | 45 | 58 | 110 | 45 | 50 |
| 72-Cylinder ; Scotch 4-fold Fingering. | Small | 50 | 75 | 60 | 56 | 70 | 50 | 60 | 120 | 50 | 50 |
| | Medium | 50 | 80 | 65 | 56 | 78 | 50 | 65 | 130 | 50 | 55 |
| | Full | 50 | 85 | 70 | 56 | 86 | 50 | 70 | 140 | 50 | 60 |
| 84-Cylinder ; Extra Super 4-fold Fingering. | Small | 50 | 80 | 65 | 45 | 140 | 55 | 65 | 175 | 55 | 52 |
| | Medium | 50 | 87 | 72 | 45 | 150 | 55 | 72 | 185 | 55 | 59 |
| | Full | 50 | 94 | 79 | 45 | 160 | 55 | 79 | 195 | 55 | 65 |
| 96-Cylinder ; 3-fold Fingering, Eider and Andalusian. | Small | 70 | 90 | 70 | 78 | 125 | 60 | 70 | 195 | 60 | 54 |
| | Medium | 70 | 98 | 78 | 78 | 135 | 60 | 78 | 205 | 60 | 62 |
| | Full | 70 | 106 | 86 | 78 | 145 | 60 | 86 | 215 | 60 | 70 |
| 108-Cylinder ; 2-fold Fingering, Silk Cotton and Merino. | Small | 80 | 100 | 90 | 88 | 150 | 70 | 90 | 230 | 70 | 70 |
| | Medium | 80 | 110 | 100 | 88 | 165 | 70 | 100 | 245 | 70 | 80 |
| | Full | 80 | 120 | 110 | 88 | 180 | 70 | 110 | 260 | 70 | 90 |
| 120-Cylinder ; 2-fold Fingering, Silk, Cotton and Merino. | Small | 90 | 110 | 105 | 100 | 175 | 80 | 105 | 265 | 80 | 80 |
| | Medium | 90 | 122 | 118 | 100 | 190 | 80 | 118 | 280 | 80 | 92 |
| | Full | 90 | 134 | 130 | 100 | 205 | 80 | 130 | 295 | 80 | 105 |
| 132-Cylinder ; Fine Silk, Cotton, and Merino. | Small | 100 | 120 | 110 | 115 | 200 | 90 | 110 | 300 | 90 | 85 |
| | Medium | 100 | 134 | 125 | 115 | 215 | 90 | 125 | 315 | 90 | 98 |
| | Full | 100 | 148 | 140 | 115 | 230 | 90 | 140 | 330 | 90 | 110 |
| 144-Cylinder ; Extra Fine Silk, Cotton and Merino. | Small | 110 | 135 | 120 | 140 | 210 | 100 | 120 | 320 | 100 | 90 |
| | Medium | 110 | 150 | 138 | 140 | 230 | 100 | 138 | 340 | 100 | 105 |
| | Full | 110 | 165 | 156 | 140 | 250 | 100 | 156 | 360 | 100 | 120 |

| | SIZES. | BOY'S STOCKINGS. | | | | BOY'S SOCKS. | | |
|---|--------|------------------|-----|-------|------|--------------|-----|------|
| | | Rib'd Top | Leg | Ankl. | Foot | Rib'd Top | Leg | Foot |
| 72-Cylinder ; Extra Super 4-fold Fingering. | No. 2 | 50 | 70 | 30 | 40 | 45 | 45 | 40 |
| | No. 3. | 50 | 80 | 30 | 45 | 45 | 50 | 45 |
| | No. 4 | 50 | 90 | 35 | 50 | 45 | 55 | 50 |
| 84-Cylinder ; Extra Super 4-fold Fingering. | No. 5 | 60 | 100 | 35 | 55 | 50 | 60 | 55 |
| | No. 6 | 60 | 110 | 40 | 60 | 50 | 65 | 60 |
| | No. 7 | 60 | 120 | 40 | 65 | 50 | 70 | 65 |

REMARKS.

The preceding measurements have been carefully prepared from socks and stockings actually knitted in our factory, and are therefore in the main correct. So much, however, depends upon the quality of yarn employed and the tightness of the knitting, that they cannot be followed *absolutely*, but are only to be taken as indicating the approximate number of rows required.

The best way to obtain correct sizes, is to use an ordinary yard measure ; and while the sock or stocking is in progress put it up under the machine as high as it will go (temporarily removing the weight), and measure the work against it allowing 2 inches for toe and 2 inches for heel so that supposing you require a sock of $9\frac{1}{2}$ inches in the foot the leg should measure $10\frac{1}{2}$ inches (commencing from the top) before the heel is made. The heel and foot should be 8 inches and the toe about $1\frac{1}{2}$ or 2 inches.

Add about $\frac{1}{2}$ an inch of knitting for each size larger in the leg and foot.

As a rule, stockings should measure as follows viz :—

| | |
|-------------------------------|--------------------------------|
| For 6 inch foot.. 15 inch leg | For 8 inch foot .. 23 inch leg |
| „ $6\frac{1}{2}$ „ „ .. 17 „ | „ $8\frac{1}{2}$ „ „ .. 25 „ |
| „ 7 „ „ .. 19 „ | „ up to about .. 28 „ |
| „ $7\frac{1}{2}$ „ „ .. 21 „ | for a man's stocking. |

The operator may prepare for herself a table of sizes, by knitting a few inches of web of the required tightness, from the yarn to be used ; then without stretching it in either direction measure with a rule one inch in length, and count the

number of rows. Multiply this by the number of inches required for the different parts of the stocking making due allowance for the length of the heel and toe.

The upper part of the leg of a stocking should be knitted loosely, and the stitch gradually tightened above the ankle.

We have given the gauge of the cylinders best adapted for each kind of yarn, but oftentimes the best yarn can be knitted equally as well on a cylinder one or two grades coarser or finer than that designated. For instance, socks from the extra-super fingering can be made equally as well on the 72 as on the 84 or 96 cylinders, provided that all the machine needles are used, as in the leg of a stocking, instead of leaving out every fourth one, as usual.

The measurements given for the legs and ankles of stockings are *exclusive* of the number of rows that are knitted while the narrowings are being made.

When a 1 and 1 ribbed top is not required, the first two columns are to be added together for the length of the leg.

Ladies' stockings are usually preferred with the scalloped tops but if 1 and 1 tops are required, the measurements for the leg are to be taken from the sizes given for men's knickerbockers.

Pressing.

Cotton yarns should be knitted as tightly as possible and the articles washed with soap and hot water (or even boiled) before they are worn.

Woollen or worsted stockings however should be drawn on to wooden form, or block, of the required shape then a wet cloth having been laid upon them they should be pressed with a hot iron. Any other woollen article should be dressed as follows : Lay it upon a flat surface, or ironing board, and place over it a piece of old cotton cloth wet with clear water, pass a hot flat iron lightly over the cotton until the steam has penetrated and damped the work ; then remove the wet cloth and place a dry one over it and press until quite free from moisture.

We have always in stock a large assortment of Yarns, which we obtain direct from the Manufacturers, and which are specially adapted for Machine Knitting. These we supply in any quantities by Post, at strictly Wholesale Prices. (SEE PRICE LIST.)

We also supply Hosiery Boards, and all requisites for making and finishing Hosiery.

LIST OF HOSIERY SHAPES.

- Children's Socks, 00, 0, 1, 2, 3, 4, 5, 6, 7, 8
 „ $\frac{3}{4}$ Hose, 0, 1, 2, 3, 4, 5, 6, 7, 8
 „ Hose, 00, 1, 2, 3. -
 „ Hose, 4, 5, 6.
 Men's Half-Hose, 9, 9 $\frac{1}{2}$, 10, 10 $\frac{1}{2}$, 11, 11 $\frac{1}{2}$, 12 inch feet.
 S. Wom.'s, Wom.'s, and O.S. Wom's Hose.
 S. Men's, Men's, and O.S. Men's.
 Boys' Jersey Boards, 0, 1, 2, 3. Brass Joints.
 „ „ „ 4, 5, 6, 7. „ „
 „ Knicker „ 0, 1, 2, 3. Brass Hinges.
 „ „ „ 4, 5, 6, 7. „ „
 Men' Shirt „ 30, 32, 34, 36in. Brass Joints.
 „ „ „ 38, 40, 42, 44in. „ „
 „ „ „ 10, 11, 12, 13in. seat. „ „
 S. Ladies', Ladies' and O.S. Ladies' Vests.
 „ „ „ Combinations.
 „ „ „ Drawers.
 Glove Hands, straight or lapped.
 „ „ spring thumbs.
 Mitt.
 Gaiters.
 Gaiters, Knee Cap.
 Tam O'Shanter Cap Boards, 6, 7, 8, 9, 10, 11in.
 Shirt Frames for Wet Boarding, suitable for steaming
 Cardigan Jackets, or for private use for drying Under-
 shirts, 20, 22, 24, 26in.
 28, 30, 32, 34, 36in.
 38, 40, 42, 44in.

Extra Thick Boards supplied when required.

Plain Socks, $\frac{3}{4}$ -Hose, $\frac{1}{2}$ -Hose, and Hose.

Prices on application.

THE GRISWOLD STOCKING KNITTER.

The Griswold Stocking Knitter is a marvel of simplicity and efficiency. It has been brought to such a degree of perfection, as to compete favourably with and even to supersede *steam machinery* in the production of **fully-fashioned ribbed socks and stockings**, and at the same time is equally adapted for domestic use and for Schools, Workhouses, Reformatories, Convents, and other Institutions where one or two inmates can with these machines supply all the stockings required, at a saving of about half the price formerly paid. (*See Testimonials.*)

Socks and Stockings made upon this machine present the evenness and finish peculiar to frame made goods, and at the same time fit as perfectly and wear as well as those *knitted by hand*.

Upon the Griswold Machine a large variety of **fancy designs may be knitted**, suitable for Cycling, Shooting, or Golf Hose Tops, **in diamond or half-diamond patterns**, etc., etc

Socks and stockings may be re-footed, and have new toes and heels added, whether they were originally knitted by the machine or by hand.

Price Lists, Testimonials, etc., free on application.

PART 2.

INSTRUCTIONS

— for —

**Knitting Underclothing
and Fancy Articles for
Domestic Use**

on the New Pattern

GRISWOLD, KNITTER

SECOND SECTION OF BOOK

(Supplement to Sock and Stocking Section).

ABBREVIATIONS :

Mac. = Machine. **Y.G.** = Yarn-Guide. **N.** = Needle.
Ns. = Needles. **Cyl.** = Cylinder. **C.R.** = Clasp-ring.
S.U. = Set-up.

To produce certain Ribs—Arrange Needles as follows:—

| Form of Rib. | Arrange Cylinder Needles. | Arrange Dial Needles. |
|---------------------------|---------------------------|--|
| 1 plain and 1 rib, | Out of every 2nd groove. | In every groove (to work over Cyl. grooves). |
| 2 plain and 1 rib, | In every groove | In every groove (to work over Cyl. posts). |
| 3 plain and 1 rib, | Out of every 4th groove. | In every 2nd groove (to work over Cyl. grooves). |
| 4 plain and 1 rib, | In every groove: | In every 2nd groove (to work over Cyl. posts). |

Some dials will allow of other forms of ribbed fabric, such as 5 and 1, 6 & 1, 7 & 1, 11 & 1. Thus a 72 Cyl. and 36 dial will produce 6 plain to 1 rib, by placing needles in every third dial groove to work over the Cyl. posts; the same Cyl. will produce 5 plain to 1 rib, by placing needles in every third dial groove, to work over Cyl. grooves.

The more uncommon 2 plain and 2 rib can be formed on all machines, but this requires a **special** dial for each Cyl. (The dial contains just half the number of grooves of a Cyl. but the grooves in it are arranged differently from the usual dials).

Joining the Yarn.

When winding or knitting, the ends of the yarns can be best joined to one another by a weaver's knot. This knot is the most suitable for the purpose, but others can be made.

WEAVER'S



KNOT.

Regarding Needles.

Caution.—Bent latches of Ns. are caused by the latch-opener striking them, which most frequently happens if handle is turned quickly when there are no loops on the Ns.

If the latches get bent they will be stiff, but can be readily straightened and loosened with pincers, or with the forefinger and thumb, and without removing the N, from the Cyl. Bent (or stiff) latches would cause the yarn to gather about the Ns., and the work to be full of holes and sometimes stop the Mac. Latches should open and close **freely** and **fully** upon their hooks and stems.

If a latch or butt, breaks off a N. (when in use in the Cyl.), it may fall between the cams, and block the N. way; and if the Mac. refuses to move, and you attempt to force motion, damage may be done in consequence. Lift out, and examine Cyl. grooves, and shell, and remove the obstruction; replace Cyl.

If a N. stem gets bent, it will not work freely, or perhaps not at all, in Cyl. or dial groove and so will cause Mac. to stick. Straighten it with the fingers, and to make sure it is straight place it in the Cyl. (or dial, if a ribbing N.), and see that it moves freely in the groove.

Regarding Tensions.

Caution.—After changing the position of either of the pointers they must be fixed **firmly** in their new position,

otherwise when machine is put in motion Machine may immediately stick or become immovable.

For Coarse or Heavy Yarns, such as Wheeling (Alloa), put both tension-pointers to their loosest, using $4\frac{1}{2}$ -in. 60 or 75 Cyls. and dials to match.

Stocking—Gents' Knickerbocker—full sized with Turned-down Top, of Thick Yarns.

Knit upon $4\frac{1}{2}$ inch diameter 60 or 72 Ns. Cyls. and dial to match. Knit with loosest tension.



Turn-down top, 4 and 1 rib 45 rows.

Leg, 4 and 1 rib, 80 rows.

Shape to 3 and 1 rib, 35 rows on a 60 Cyl. ; 45 on a 72 Cyl.

Ankle ,3 and 1 rib, 50 rows

Foot—Top, 3 and 1 rib, 60 rows.

This instruction is for Plain Top but variety of Fancy Tops can be done (such as per diagram, &c.)

Turned-down Top.—For this kind of top set "Rough Selvedge," and knit about 30 rows of it; then set "Correct Selvedge," and knit to "**Left**" half mark; put on ribber, and adjust Cyl. so that Cyl. posts are opposite dial grooves.

Commence at "**Right**" and place dial Ns. into every second dial groove, picking up with each dial

N. a loop from the plain stitch of the last row knitted (not the loop on the Cyl. N.) ; knit 45 rows of 4 plain and 1 rib ; take off C.R. ; transfer ribbing loops on to plain Ns. ; take off

ribber ; break yarn just before Y.G. ; remove weights and set up. Take the fabric out of the Cyl. with the loops at butts of the Ns. ; turn the fabric outside in ; send Y.G. to "**Back**" and insert Ns. again first into "**Front**" half of Cyl. ; join yarn to first N. in action at "**Left**" side ; hold fabric down and knit to "**Front** ;" insert the remaining Ns. into "**Back**" of Cyl. ; attach buckle and weights ; put on ribber, and (if necessary) adjust Cyl. ; to make 4 plain and 1 rib again.

Knit the Leg and Shape as directed on on page 38, First Section of Book.

Knit 50 rows for the Ankle, and complete Heel, Foot, and Toe, as instructed for "Ribbed Sock commenced at the Toe."

To Re-Foot Hoslery.

REMARKS.

1. If there are too many stitches (loops) in a **Plain** Sock or Stocking for the Ns. in Cyl. (thus 84 stitches, and only 60 Ns. Cyl.) arrange that the extra loops shall be somewhat equally distributed round the Cyl., but not placed on the Ns. until the unravelling is done. After unravelling the rows from the tops of the Ns., the extra loops can be placed on the Ns. so that in some places there would be two loops on one N.

2. If there are less stitches (loops) in a **Plain** Sock than there are Ns. in the Cyl. (say 60 stitches and 84 Ns. Cyl.), keep all the Ns. in the Cyl., and place the loops on the Ns., missing a N. here and there so that the loops are equally placed over the whole of the Cyl. Now unravel the rows from the tops of the Ns. Afterwards, make loops for the empty Ns. This is done by picking up with a N, the **cross** stitch which is under the loop on the nearest N., and placing it on the next empty N., or take out the empty N., pick up the loop, and replace the N. in the groove.

Refooting Plain Sock or Stocking, Commenced at the Top.

(READ "REMARKS," 1, 2.)

FIRST METHOD.

After the foot is cut off just above the heel, unravel a few rows to get the loops clear ; break yarn, leaving a short end ; then see that Ns. are in all the Cyl. grooves, and that the latches are open ; put on C.R. ; drive Mac. slowly, and stop Y.G. at "**Front.**"). Place the sock inside the Cyl., with the unravelled end uppermost, and near the tops of the Ns. (If a stocking arranged that the back, or shaping, is placed at "**Front.**") Commence at the "**Right**" half mark and with a spare N. pick up and transfer loops on to hooks of Ns., but be very careful not to let the loops go below the latches of the Ns., as this would cause the work to run off Mac. After having transferred the loops on to the "**Back**" half of Ns., **support the fabric** from underneath Mac. with the left hand so as to prevent loops going below latches when turning handle ; advance Y.G. to "**Back.**" Now transfer in like manner the "**Front**" half of loops to Ns. When all the loops are on the Ns. do not attach weight, but support fabric with left hand ; now unravel about two rows to ensure that the loops are clear upon the Ns. (if the loops are clear the unravelling is not necessary.) This is done by taking the short end of the yarn (already unravelled) and drawing it out at the tops of the Ns., but it will be necessary, in order to unravel the yarn from the Ns. behind the Y.G., to move the *shell only* **FORWARDS** and **BACKWARDS** slightly, **but do not move the Y.G.** When the loops are all clear, stop unravelling on the **first N.** next to the N. on which you commenced to transfer loops at "**Right**" half mark.

Now raise "**Front**" half of Ns. out of action ; still support work, and advance Y.G. to "**Front**" ; attach buckle (or tie a piece of string round work, to form a sling), and hang to it weight:holder and weights to keep work down. With the unravelled yarn, thread Y.G., and yarn-cross *backwards*

(that is in the *contrary direction* described for "**Rough Selvedge**") and join the end to the new yarn (a bobbin of which should be already on the table, under one hole of yarn-cross). **See latches are open** ; advance Y.G. until it is opposite the first N. in action at the "**Right**" side ; draw slack yarn back to bobbin ; knit FORWARDS to "**Back,**" and watch the yarn feeds into the hook of the first N. in action. Depress "**Front**" half of Ns., and knit the number of rows required ; knit "**Heel,**" etc., as directed for a sock or stocking.

Refooting Ribbed Socks or Stocking.

SECOND METHOD—

Proceed in much the same way as for "Re-footing a Plain Sock," excepting that after having inserted into Cyl. the "**Front**" half of Ns., put on C.R., and lift out of action the Ns. just inserted in Cyl. Advance Y.G. to "**Front**" ; now turn the remaining Ns. inside sock ; open C.R. at "**Back,**" and insert these Ns. into Cyl. and shut C.R. Attach to the fabric buckle and weights. Raise the remaining Ns. out of action. Advance Y.G. to "**Back.**" With the unravelled yarn, thread Y.G. and yarn-cross backwards, that is, in the *contrary direction* described for "**Rough Selvedge,**" and join to the new yarn at bobbin. Depress "**Front**" half of Cyl. Ns. ; put on Ribber and adjust Cyl. to suit the required rib in sock or stocking ; take off C.R. Commence at "**Left**" and transfer the ribbing loops that are on the Cyl. Ns. on to dial Ns., and put them into grooves in dial. After transferring the loops from the "**Front**" half of Ns., draw slack yarn back to bobbin ; **see that all latches are open** ; advance Y.G. to "**Front,**" and watch that the yarn feeds into the hook of the first N. in action. Depress the "**Back**" half of Cyl. Ns. and transfer the remainder of ribbing loops ; put on C.R., and knit the required rows.

Knit "**Heel,**" "**Foot**" and "**Toe**" in same manner as if knitting a complete sock or stocking.

Refooting can also be done by first knitting the feet alone, and sewing same on to the legs neatly by the mending stitch.

INSTRUCTION FOR Underwear, Fancy Goods, Etc.

ABBREVIATIONS:

Mac.=Machine. Cyl.=Cylinder. N.=Needle.
Ns.=Needles. Y.G.=Yarn-Guide. C.R.=Clasp-Ring.
S.U.=Set-up.

NOTES.

1. **Cylinder to use.**—The following instructions are drafted for the $4\frac{1}{2}$ inch diameter Cyl. 84 Ns., and for 4 or 5 ply fingering yarn, unless stated otherwise. If the Knitter wishes to work a Cyl. with more or less Ns., suitable yarns should be used and the instruction (so far as the number of rows, etc., are concerned) must be varied accordingly.

2. **Extra Needles.**—It is a great advantage to have an extra set of plain Ns. when knitting large garments, as with them time is saved. In the absence of extra Ns., and when told "to lift Ns. out with their loops upon them, and place them inside Cyl.," you must remove those Ns. from the loops of the partly completed work, one by one, and as you do so draw a spare thread of yarn through each loop to prevent the fabric unravelling.

VARIATION OF FANCY PATTERNS.—The fancy patterns given in this book do not exhaust the possibilities of the Machine by any means, but much is left to the ingenious Knitter, who will be able to work out many other designs. It may be an aid to the Knitter to know that all the fancy patterns can be made more open, and for some articles more attractive by leaving out every second or every third N., and removing the loops across the open spaces. Thus, in forming the diagonal, cross-bar or herring-bone patterns, every fourth N. may be left out, and the loops removed across the open spaces. But a

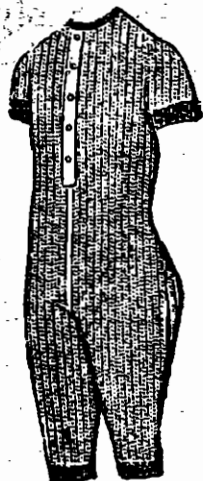
more pleasing effect may be produced by a judicious intermingling of fancy patterns with a few rows of plain knitting.

The fancy patterns may be knitted all round the Cyl. as for Circular Web, or across as for Flat Web.

Many of the rules laid down in hand-knitting books may be adapted to the Mac. Attractive Antimaccassars and other fancy articles are knitted more quickly and evenly on the Mac. than by hand.

Child's Combination (about 22 ins. long).

Knitted in 6 pieces, including sleeves. (Read NOTES 1 and 2.)



Note.—This garment can also be knitted on the $4\frac{1}{2}$ in. dia. 72 or 60 Cyl. Mac. and ribber almost as satisfactorily as on the $4\frac{1}{2}$ in. dia. 84 Cyl. Mac. and ribber. The difference, however, is more marked in the 60 Cyl. (The Ns. are further apart), as the fabric will be more open, unless coarser yarns than 4 or 5-ply fingering yarn be used.

Leg.—Back Left Half.—Ns. in all the Cyl. grooves : tension at about $4\frac{1}{2}$; set correct selvedge as for Circular Web ; put on ribber ; adjust Cyl. for 3 plain to 1 rib ; place Ns. in dial grooves and transfer loops ; knit 30 rows and stop Y.G. at **“Back ;”** transfer ribbing loops back to Cyl. Ns. ; advance Y.G. to **“Front,”** and take off ribber. Lift out of Cyl. the **“Back”** half of Ns. with their loops at the butts and place the Ns. inside Cyl. ; put tension pointer to its loosest ; put yarn on take-up ; knit to **“Back ;”** then increase at **“Right”** thus :—Remove the two end Ns. (with the loops upon them) forward one groove ; take a spare N., pick up in its hook a loop from the last stitch made at back of the second N. just removed, and place that N. into the empty groove ; knit BACKWARDS and FORWARDS ; increase at **“Right”** side 1 N. every row, and knit in the same manner until there are 56 Ns. in the Cyl. ; knit 60 rows without increasing.

Body.—Now, for the overlap, cast off the loops of 8 Ns. at “**Right.**” (See “Lady’s Combination” for fuller instruction on this and other parts.)

To shape the side, decrease at “**Left**” 1 N every 3rd row by putting 3rd loop over 4th N, and removing the 2nd and 1st Ns forward 1 groove, until 42 Ns only remain in Cyl.; then knit 90 rows without decreasing.

Neck.—Finish with a selvedge the loops of 22 Ns. at “**Right**” side. Remove bobbin; tie on piece of odd yarn and knit 6 rows; break yarn and run work off the Mac. Take all Ns. out of Cyl.; Y.G. to be at back.

Leg.—Front left half.—Insert hanging Ns. in “**Front**” of Cyl.; join yarn at “**Right**”; put yarn on take-up; attach weights; knit BACKWARDS to “**Back**”; then increase 1 N. every row until you have 56 Ns. in Cyl. (As no overlap is required at this part take in 8 loops gradually while knitting 60 rows.)

Body.—Now knit and decrease 1 N. every 3rd row at “**Right**” side until 42 Ns. remain; knit 90 rows without decreasing.

Neck.—Finish with a selvedge the loops of 22 loops at “**Left**” side this time; then proceed as above for “**Neck.**” These 2 pieces when joined will form the **Left** Half of the Combination.

Knit 2 pieces for the **Right** Half in the same way, but reversing the sides from the foregoing for the increasing and decreasing.

Sleeves.—Set correct Selvedge as for Circular web; put on ribber; adjust Cyl. for 3 plain and 1 rib; tension at $4\frac{1}{2}$; knit 20 rows; transfer ribbing loops on to plain Ns.; remove ribber; loosen tension and knit 40 rows plain, and finish with selvedge.

Join the 4 pieces neatly together; sew across the shoulders with the Mending Stitch, leaving spaces for sleeves; finish neck with a crochet stitch.

Lady's or Child's Under-Skirt.



Knit as for Flat Web, in two parts or more; the parts to be sewn or crocheted together by some fancy stitch.

To shape a skirt nicely knit the upper part of each breadth in Imitation Rib.

Very pretty effect may be produced by using yarns of different colours especially if one or other of the Fancy Patterns be worked, such as the Shell Pattern, etc.

Boy's Knickerbockers.

Knitted in Six parts, and joined together.

Leg.—Set work as for Flat Web with 54 Ns. in Cyl.; knit 44 rows; increase 1 N. on the "**Left**"; knit 8 rows, and so continue to increase 1 N. every 8th row, until 76 Ns. are in the Cyl.; knit without increasing 48 rows. Then decrease 1 N. on the "**Left**," and knit 8 rows; so continue decreasing until there are only 56 Ns. in action; finish with a selvedge.

Knit another piece in the same way.

Then knit 2 pieces in the same manner as above, but increase and decrease on the "**Right**" instead of the "**Left**."

Join the four pieces and make a hem round the top and bottom of legs.

Gusset.—Knit as instructed in Gent's Drawers, but use 20 Ns. and knit 30 rows only.

Button Piece.—Set up 24 Ns. ; knit a few rows and make a buttonhole ; knit 12 rows more and then make another hole ; continue in this way until the piece is the length required ; finish with 12 rows and a selvedge. Sew the piece on to the front of the knickerbockers and double it back so that the buttonholes may be as near the edge as possible.

Lady's Combination.

With medium tension knit 40 rows 4 and 1 rib ; stop Y.G. at " Front " of Machine. Transfer "**Back**" half of dial Ns. on to Cyl. Ns. (in the Cyl.) ; then take 11 extra Cyl. Ns. and transfer "**Front**" half of dial Ns. on to those extra Cyl. Ns. Take off ribber, and let extra Cyl. Ns. hang inside Cyl. ; lift up " Front " half of Cyl. Ns. ; knit to " Front " ; break yarn at "**Left**" side ; lift out " Back " half of Cyl. Ns. and let them hang inside of Cyl. with the loops at their butts. Send Y.G. to " Back " ; depress " Front " Ns. ; now move " Front " Ns. round and leave every 5th groove empty for the 11 extra Ns. that are hanging. Lift up those extra Ns. and lace them into the empty grooves. Put tension at " loosest," and yarn on take-up ; knit 1 row from " Left " to " Right " ; stop Y.G. at " Back " ; then, with their loops upon them, remove the 2 end Ns. at the " Right " forward 1 groove. Now take a spare N. and hook up a piece of stitch last knitted, and place it into that empty groove ; knit " Backwards " and " Forwards," and increase in this manner 1 N. every 4 rows until there are 65 Ns. in Cyl. ; stop Y.G. at " Front." From this point it will be necessary to raise some of the end Ns. out of action to prevent their knitting each row across. Thus : raise at first about 8 or 10 Ns. at the " Right " to " Back " side ; knit " Backwards " and " Forwards " and stop at " Front " ; depress those 8 or 10 Ns. at " Right"—and

always see that latches are open—and raise the same number of Ns. at “Left”; knit “Forwards” and “Backwards” to “Front,” and repeat raising and depressing the Ns. every row; also continue increasing the Ns. every 4 rows until 84 are in Cyl.; then knit to and fro 80 rows.

To shape the sides.—Decrease at “Left” side 8 Ns. (1 every 3 rows) by putting the loop of 3rd N. on to 4th N. and removing 2 end Ns. forward.

For the Overlap.—Cast off 20 loops at the increased side, knit 80 rows; now let out at “Left” side 1 N. every 4 rows of 8 Ns.; knit 60 rows. Cast off 26 Ns. at “Right” side for neck; knit 2 or 3 rows with odd yarn, and run off work.

Y.G. to “Back.”—Insert the hanging Ns. with their loops into “Front” of Cyl., leaving every 5th groove empty where ribbing stitch is. Unravel 1 row, and take 10 Cyl. Ns. and transfer ribbing loops on to them. Increase as before, but at “Left” side this time, until you have 83 Ns. in Cyl. As no overlap is required at this part take in gradually at “Left” side 19 loops whilst doing the 80 rows.

For shaping the sides.—Take in 8 loops at “Right” side—1 N. every 3 rows; knit 60 rows.

For Gusset at Bust.—Raise out of action “Right” half of Ns. Then throw out 6 of the raised Ns. at centre of fabric, and let them hang inside Cyl. with the loops at their butts. Knit “Backwards and “Forwards,” and increase 6 Ns. at centre of fabric—1 N. every 4 rows; knit 12 rows. Now **decrease** 6 Ns. at the same part—1 N. every 4 rows; break yarn. Depress “Right” half of Ns.; then insert the 6 hanging ones. Now raise the “Left” half of Ns. and throw out 6 of those raised Ns. at centre; knit “Backwards” and “Forwards” on “Right” half and **increase and decrease precisely the same as before, only, at this part, after increasing 6 Ns. you require to start and increase for shoulder.** Depress

all the Ns. ; insert the 6 that are hanging into Cyl. ; knit 28 rows, and at " Left " side cast off 10 Ns. Knit to and fro and cast off 2 loops every 2 rows until you have decreased 26 Ns. Knit 2 or 3 rows with odd yarn and run off work.

This completes one half of Combination.

For other half **procede exactly** the same **as before**, only, for "**Right**" read "**Left**" and for "**Left**" read "**Right.**"

Sleeves.—Put Ns. in all Cyl. grooves ; set correct selvedge ; put on ribber ; adjust for 3 and 1 riv ; knit 20 rows. Transfer ribbing loops on to plain Ns. ; take off ribber ; knit 80 rows finish with a selvedge.

All the parts should be neatly sewn together. Finish neck with a crochet stitch. Then press whole with hot iron over damp cloth to give proper finish.

Lady's Semmit or Vest.—Knitted in Five Pieces, including Sleeves.



Back Part.—Loose tension. 70 Ns. in Cyl. Set up correct selvedge ; knit backwards and forwards 2 rows. Then

to knit imitation rib lift out every fourth N., putting loop on to next N. Knit 35 rows. Take the Ns. just removed and pick up on each of them a loop from the side of the stitch last made by each N. next the empty grooves, and replace these Ns. in Cyl. Knit 80 rows. *To shape the side*, decrease at "**Right**" side 6 Ns. (1 every 4 rows); knit 100 rows. *For Shoulder*, let out at same side 6 Ns. (1 every 4 rows); knit 20 rows. *For Neck*, cast off 26 Ns. at "**Left**" side; knit 2 or 3 rows with odd yarn, and run work off. To complete the Back knit another piece precisely the same, only for "**Right**" read "**Left**" and for "**Left**" read "**Right**."

Front Part.—This is done the same as for the Back. Cut for the Neck, decrease gradually, so as to make neck lower at the Front than at the Back.

Sleeves.—Place Ns. in all the Cyl. grooves. Set correct selvedge as for Circular Web. Put on Ribber, and adjust for a 3 and 1 rib; knit 15 rows. Then transfer ribbing loops on to plain Ns., knit 50 rows, and finish with selvedge. Finish off Neck and Sleeves with Crochet stitch. Sew all pieces neatly together, then press the whole with hot iron on top of damp cloth, to give garment a proper finish.

Lady's Pants.—Closed Back and Front.

Knitted in Six Pieces, including a Gore and a Gusset

Leg—Back Right Half.—Place Ns. in all the Cyl. grooves; use medium tension. Set correct selvedge for Circular Web; put on ribber; adjust Cyl. for 1 plain to 1 rib; place Ns. in all dial grooves and transfer loops; knit 75 rows; re-transfer loops to Cyl. Ns. and take off ribber. Lift out "**Back**" half of Ns., tie them together and place them inside Cyl. hanging to their loops; knit 3 rows; then increase 1 N. on the "**Left**" thus:—Take a spare Cyl. N. and pick up in its hook a loop from the last stitch made (not the loop which is on the N.) behind the end N., and place the spare N. in the first empty groove at "**Left**"; knit 3 rows and increase as

before ; repeat the knitting and increasing until all the Ns. are in the Cyl. Now knit without increasing 170 rows.

Band.—Put on ribber and transfer loops to dial Ns. for 1 and 1 as before, but leave out 1 dial N. between the first and last N. of the BACKWARD and FORWARD rows above the edge of the Flat Web, to show cutting line ; knit 40 rows ; finish with a selvedge. Sew over each side of cutting line to prevent unravelling, and then cut the band through at the line.

Leg.—Front Right Half.—Place the hanging Ns. into “**Front**” of Cyl. and knit another piece with band in exactly the same way as the foregoing, but increase on the “**Right**.”

Leg—Back Left Half and Front Left Half.—Knit the two pieces with band in the same way as the foregoing.

Gore.—Place 16 Ns. in “**Front**” of Cyl. Set correct selvedge ; knit 5 rows ; then increase 1 N. each side as directed above for “**Leg, Back Right Half**” ; knit 3 rows and increase again until all the Ns. are in Cyl. ; raise out of action the “**Left**” half of Ns. ; knit 7 rows across the “**Right**” half ; now decrease 1 N. at “**Front**” thus :—take out the 3rd N. from the end of those in action ; transfer its loop to the 4th N., fill up the empty grooves by moving the 2nd and 1st Ns. next to the Ns. in action ; knit 7 rows and decrease again ; repeat four times in all, and then decrease in the same manner at “**Back**” ; knit 7 rows, decrease both sides and knit 7 rows between, until all Ns. on the “**Right**” are out of Cyl. Depress “**Left**” half of Ns. and knit in same manner.

Gusset.—Place 42 Ns. in “**Front**” of Cyl. Set correct selvedge ; knit 50 rows ; finish with a selvedge. Join the parts neatly together, and sew the two narrow ends of gore into the increasing parts of legs (leaving about 10 inches open at sides if desired) ; crochet a fancy edging to the top of band and bottom of legs. If a longer leg is required increase every 4 or 5 rows instead of 3, also knit 8 rows between each increase for the gore.

Lady's Drawers.—Knitted in Seven Pieces, including Waist-Band.

Read Notes 1 and 2, also Directions for making Gent's Drawers.

Leg—Back Left Half.—Loose tension. Ns. in all the Cyl. grooves, set Correct Selvedge as for Circular Web ; put on ribber and adjust Cyl. to make the fabric 2 plain and 1 rib ; place ribbing Ns. into all dial grooves, but first pick up with each a loop from the last stitch made at back of nearest plain N. (the fabric can be made narrower if knitted 3 plain and 1 rib, in which case, place ribbing Ns. into dial and transfer plain loops to them) ; knit 50 rows ; then transfer rib loops to plain Ns., and remove ribber ; Y.G. to be at "**Front**" ; lift out, with their loops upon them, "**Back**" half of Ns. and place them inside Cyl. ; put yarn on take-up ; knit FORWARDS and BACKWARDS (2 rows), increasing 1 N. at the "**Right**" side by removing 2 Ns. forward, and inserting 1 empty N. into the empty groove first picking up with it a loop from the last stitch made at the back of the next N. ; continue to knit 2 rows and increase 1 N. each time, until about 65 Ns. are in Cyl. In the FORWARD movement stop Y.G. at "**Right**" ; raise at first about 8 Ns. at "**Left**" ; knit FORWARDS to "**Front**" and stop. Now knit BACKWARDS to "**Front**," and depress those 8 Ns., and raise about 8 on the "**Left**" ; repeat raising and depressing Ns. every row. Continue increasing the Ns. from this point (and as you do so it will be necessary to raise and depress more Ns. each side) until all the Ns. are in Cyl. Knit BACKWARDS and FORWARDS without increasing the required length (about 15 inches, or about 180 rows), and finish with a selvedge. This finishes the **Back** part of one leg.

Leg—Front Left Half.—Take out empty Ns. ; Y.G. to be

at "**Back**"; insert the hanging Ns. into the "**Front**" of Cyl. ; join the yarn ; knit BACKWARDS and FORWARDS and increase the breadth same as before, **but at the "Left" side this time**, until all the Ns. are in Cyl. ; Knit 80 rows without increasing ; then decrease 1 N. at the "**Left**" (that is, the same side as was increased) by putting 3rd N. loop over the 4th N. and removing the 2 Ns. forward to fill the empty groove ; knit 4 rows ; repeat decreasing 1 N. and knitting 4 rows every time until 64 Ns. are in Cyl. ; finish with a selvedge. This finishes **Front** part of one leg.

For the other leg, knit two pieces the same way, but increase and decrease on the reverse sides from the foregoing.

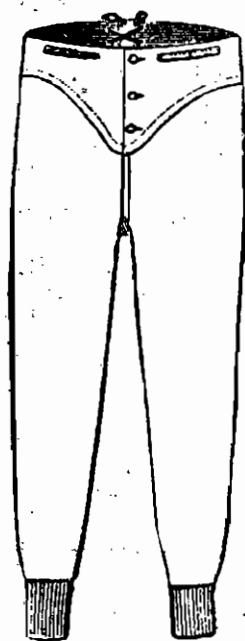
Gores.—Insert 42 Ns. in "**Front**" of Cyl. and set Correct Selvedge as for Flat Web ; knit 120 rows ; decrease as for Flat Web 1 N. from the "**Left**" end of N. every row, until all Ns. are out of Cyl.

Knit another Gore the same way, but decrease on the "**Right**" instead of the "**Left**."

Waist Band.—Insert 30 Ns. into "**Front**" of Cyl. and set correct selvedge as for Flat Web ; knit BACKWARDS and FORWARDS until the half of the length required for the band is knitted. Raise out of action the "**Left**" end N. ; knit across ; raise the next N. to the one just raised ; knit across and repeat raising one N. at the "**Left**" until 26 Ns. are raised. Knit once across and stop Y.G. at "**Left**" ; depress the N. last raised and put the yarn behind it ; knit across, and repeat depressing 1 N. at the "**Left**" and putting yarn behind each N. every row across, until all the Ns. are depressed. Now knit the other half of band and finish with a selvedge.

Join the 7 pieces neatly together.

Gent's Drawers, Full Size.—Knitted in Five Pieces.



Leg.—Commence working from the ankle. Place Ns. into all Cyl. grooves ; put tension pointer to, say $4\frac{1}{2}$; set Correct Selvedge as for Circular Web ; put on ribber, and adjust Cyl. for 1 plain and 1 rib ; transfer every second plain loop to ribbing N. and place the ribbing Ns. into dial ; knit 50 rows and stop Y.G. at "**Back**" ; take off C.R. ; re-transfer ribbing loops on to the plain Ns. ; knit to "**Front**," take off ribber ; knit 6 rows round and stop Y.G. at "**Front**." Lift out with their loops upon them "**Back**" half of Ns. and place inside Cyl. ; then knit to "**Back**."

Loosen tension and put yarn on take-up ; knit Forwards and Backwards 6 rows ; increase at the "**Right**" side 1 N., by removing the two end Ns. one groove towards "**Back**," and then take a spare end and with it pick up at back of the 3rd N. a loop from the last stitch that was knitted, place N. into that empty groove which is between the second and third Ns.) ; knit 6 rows ; increase and knit in like manner until 52 Ns. are in the Cyl. ; then without increasing knit 50 rows.

Begin to increase again, but at every 5th row, until 65 Ns. are in Cyl. and stop Y.G. at "**Front**."

From this point it will be necessary to raise a few Ns. out of action each side, raising them is to prevent their knitting the excess, or slack, of the yarn as the Y.G. passes them from the opposite side. Commence at the extreme end on the "**Right**," or increasing side, raise 12 Ns. out of action, but as the Ns. are increased from 65 it will be found necessary to raise and depress more than 12 at a time. Knit BACKWARDS and then FORWARDS to "**Front**." Depress the raised Ns. on the "**Right**" side and raise in same way

corresponding number on the "**Left**" side. Knit FORWARDS and BACKWARDS to "**Front**," and so continue the alternate raising and depressing of Ns. **every row**, also increasing every 5th row until all the 84 Ns. are in the Cyl.

Knit 30 rows to and fro (where gusset is to be sewn) ; stop Y.G. at "**Front**," then decrease 1 N. at "**Right**" side by putting 3rd N. loop over 4th N. and removing the two end Ns. to fill empty grooves ; knit 4 rows and decrease on the same side as before, and so continue to knit 4 rows and decrease 1 N., until there are 68 Ns. in Cyl.

Knit 40 rows ; then decrease at "**Left**" side 3 loops ; knit 2 rows and decrease 3 loops, and so continue until there are 20 Ns. in the Cyl., then finish with a selvedge. This finishes the back half of one leg.

Insert the hanging Ns. into "**Front**" of Cyl. and increase the breadth all as before, but at the "**Left**" instead of the "**Right**" ; knit to and fro until all the 84 Ns. are in the Cyl. Knit 30 rows, where gusset is to be sewn ; then at the "**Right**" side (that is, on the opposite side from the increased one), decrease 1 N. every 6th row until 68 Ns. are left in Cyl. ; then knit 8 rows and finish with a selvedge. This finishes the front half of one leg.

For the other leg knit 2 pieces the same way, but be careful to **reverse** the increasing and the decreasing of the sides. That is to say for "**Right**" side read "**Left**" side, and for "**Left**" side read "**Right**" side.

Gusset.—Place 28 Ns. into Cyl. and set Correct Selvedge as for Flat Web ; then knit 34 rows, and finish with a selvedge.

Button holes and binding to be supplied in linen, silk, etc., as may be desired.

Gent's Semmit or Vest.—Knitted in Six Pieces, including Sleeves and Gusset, and joined neatly together.

Body—Front.—Use loose tension ; place 66 Ns. into

" Front " of Cyl. ; set correct selvedge as for Flat Web ; knit 26 rows of Imitation Rib, take out every 4th N., and let it hang to its loop inside Cyl. ; knit 26 rows of rib, and turn the hanging Ns. into the empty grooves ; knit about 300 rows of plain (about 30 inches for full sized vest).

Neck.—Cast off, that is, finish off with selvedge, the loops of 25 Ns. at **" Left "** ; knit 10 rows for the shoulder ; raise the 41 Ns. out of action ; insert 25 spare Ns. in place of the 25 removed ; put S.U. inside of Cyl., and commencing next the raised Ns. set correct Selvedge on the 25 Ns.

Body—Back.—Depress the 41 Ns., and knit about 300 rows, about 30 inches, as before. Take out every 4th N. and knit 26 rows of Imitation, or Purl Rib, as at the beginning ; finish off with a selvedge.

Knit another piece in the same way as the above, but at the neck cast off 25 loops, and insert 25 other Ns. at the **" Right."**

Sleeves.—Proceed as for sleeves in " Lady's Vest " excepting that the cuff should be 1 plain and 1 rib, and 50 rows long ; then tighten tension and knit about 170 of plain ; loosen tension and knit Flat Web 60 rows ; finish with a selvedge.

Gusset.—Make as on page 73, but use 60 Ns. and knit 50 rows.

Join the pieces, leaving spaces for the sleeves and for the opening at neck. Bind the neck and opening with silk or linen, and make button-holes and supply button. Sew in the gussets and so finish.

If a 60 Cyl. Mac. and coarse yarn be used, work Flat Web upon 60 Ns. instead of 66 ; for the body, knit 20 rows Purl Rib and about 300 rows of plain ; for the neck remove 20 Ns. ; knit 25 rows for shoulders ; 10 rows for gusset.

Boy's Jersey.—Knitted in Four Parts, including Sleeves, and sewn together.

Body.—Use loose tension. Place 82 Ns. in Cyl., leaving two empty grooves in **" Front."** Set Correct Selvedge as for Flat Web with Ns. in all the Cyl. grooves. Knit about 200

rows ; now raise all the Ns. out of action excepting 20 from "**Front**" to "**Right**" ; remove yarn and tie on a piece of odd yarn ; knit across 5 or 6 rows with it (these 5 or 6 rows are to prevent the fabric unravelling at that point, but will be drawn out when joining the shoulders) ; break yarn and run work off these 20 Ns., and take out the 20 Ns. from Cyl. Next put down into action 20 Ns. from "**Front**" to "**Left**" tie odd yarn to end N. ; then knit 5 or 6 rows ; break yarn ; run work off Ns. and remove them as on "**Right**" side ; now take the remaining 42 Ns. out of the Cyl. and tie them in one lot, or draw a thread of yarn through the loops if the Ns. are required for use.

Knit another piece in the same way, but after taking out the 20 Ns. on each side, do not remove the 42 Ns. left on the Cyl. grooves, but insert the 42 Ns. that are in the centre of the piece done first. Put on ribber ; adjust Cyl. to make the fabric 2 plain and 1 rib, and insert all the ribbing Ns. in the dial, first picking up a loop with each N. from the stitch last made, at the back of the nearest plain N.

Collar.—Knit round about 30 rows and finish with a selvedge ; turn collar half down.

Join across the shoulders with the Mending Stitch, and sew the seams down each side, but leave room for the sleeves.

Sleeves.—Place 74 Ns. in Cyl. and set Correct Selvedge for Flat Web as before, knit 50 rows ; decrease 1 N. on both sides and knit 6 rows ; continue decreasing both sides and knitting 6 rows each time until there are only 54 Ns. in Cyl. ; knit 55 rows without decreasing ; then decrease and knit as before until 48 Ns. are left ; knit 20 rows without decreasing. Now take the 48 Ns. out of Cyl. with their loops upon them, and place them equally round the Cyl. ; put on ribber and adjust Cyl. for 1 plain and 1 rib ; place ribbing Ns. in all dial grooves, but first pick up on each, a loop from the last stitch made, as before ; knit 40 rows ; finish with a selvedge.

Knit the other sleeve in the same way.

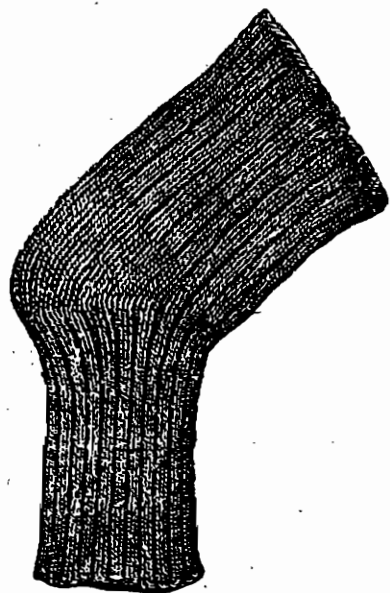
Sew in the sleeve. The cuffs may be folded back if desired.

Cardigan Jacket.—Knitted in Four Pieces Double Berlin Wool.

Knitter should refer to "**Gent's Vest**" if more detailed instruction is required than follows here.

Loose Tension.—Place in "**Front**" of Cyl. 30 Ns., 1 in and 1 out (that is, with an empty groove next each N.); knit 40 rows; increase "**Right**" side 8 Ns. 1 in and 1 out, knitting 5 rows between each increase; knit 50 rows plain without increasing; finish with a selvedge. Knit another piece in the same way. Then knit 2 pieces in the same way, but increased on the "**Left.**" Join the pieces together; make a deep hem round the bottom, and small hem round the sleeves. Finish off with ruching. For button holes, see page 90.

Knee-Cap.—Use 3, 4 or 5-Ply Fingering Yarn



Place all the Ns. in Cyl.; set **Correct Selvedge**; then put on the ribber and adjust Cyl. to dial for 4 plain and 1 rib.

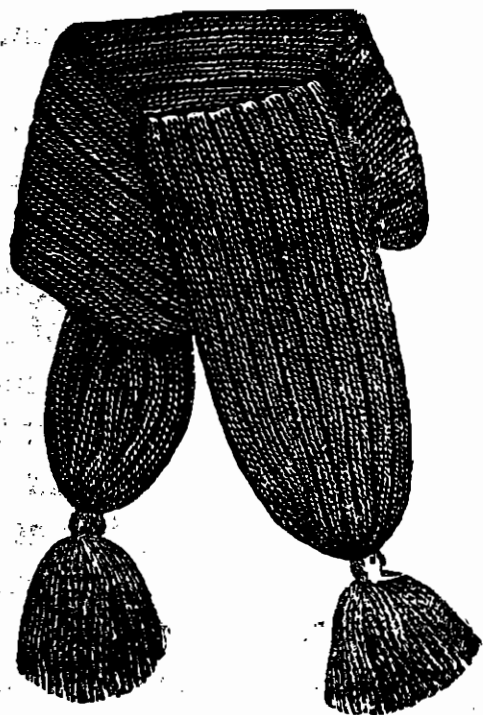
Place ribbing Ns. into every 2nd groove in dial, first picking up with each a loop from the last stitch made at back of every 4th plain N., but do not take out plain Ns. or remove the loops from them; knit round 60 rows and stop with Y.G. "**Front**"; take off C.R. and transfer the ribbing loops at "**Back**" half to plain Ns.; knit **FORWARDS** and stop Y.G. "**Back**"; transfer remainder of ribbing loops and remove ribber;

put on C.R. Raise 11 Ns. directly in "**Front,**" and at "**Right**" side of these raised Ns. raise 9 others next to them to allow Y.G. to pass freely without knitting, as for Flat Web ; put yarn on take-up ; knit **FORWARDS** to the "**Front**" until end N. on "**Left**" has made stitch, that is, see that Y.G. passes far enough to the "**Front**" each time so that end Ns. in action make stitches and rise level with the others in action ; then raise that end N. for the decreasing, and knit **BACKWARDS** to "**Back**" ; depress the 9 Ns. on "**Right**" and raise 8 on the "**Left**" of the 11 Ns.—the number of Ns. to be raised each side will be less each time of decreasing ; knit **BACKWARDS** to "**Front,**" raise end N on "**Right**" for the decreasing, and knit **FORWARDS** to "**Back**" ; depress the 8 Ns. on the "**Left,**" and raise 8 on the "**Right**" ; knit to "**Front,**" and continue in like manner, decreasing one N. each row until there are 17 Ns. only in action at "**Back**" ; attach heel wire with weight-holder and one weight to keep the fabric down.

After raising the last N., which will be on "Right," knit "FORWARD" and stop with Y.G. at "BACK." Lift yarn out of take-up.

Now put down into action all the Ns. and knit round to the "**Front**" ; put on the ribber ; take out every 4th plain N. and transfer loop on to a ribbing N. (to make 3 plain and 1 rib) ; knit round 60 rows, and stop with Y.G. at "**Front**" ; transfer all the ribbing loops back on to plain Ns. ; take off the ribber ; raise all the Ns. out of action, and finish with a selvedge. If a plain Mac. only is used, Imitation Rib can be made.

MUFFLERS.



Mufflers are knitted very rapidly in Flat or Tubular Web, and in a great variety of styles and sizes. They can also be knitted with any of the fancy patterns, and a careful arrangement of the patterns, etc., at or near the ends, will have a very pleasing effect.

All the Ns. may be used ; or every second one ; or 2 in and 2 out ; 3 in and 3 out ; 2 in and 4 out ; or any way suggested by the taste of the operator. Sometimes the muffler may be turned inside out, and the ends finished with fringe or tassels. Those

knitted with 2 Ns. in and 4 out, all round the Cyl., then turned inside out are very pretty.

A very good arrangement for a muffler or a cloud is to knit it plain, and having completed the length required, take out every 2nd, 3rd, or 4th N. with its loop, and place it inside Cyl. ; then break yarn and run work off the remaining Ns., and ravel out the loops of each of those remaining Ns. for the whole length of the fabric, and thus make a handsome open net work. Turn fabric inside out, secure the loops of the hanging Ns., and close the ends with a tassel, etc.

Another fancy pattern can be made by knitting the fabric in courses, say 6 rows with the loosest tension, and 6 rows with the tension as tight as can be worked. Or a good effect can be obtained from courses of plain knitting and one or more of the fancy patterns.

GAITERS.

Knit the top Circular Web like the top of a sock ; knit the calf plain, or preferably in some fancy pattern ; now part Ns., and knit back of gaiter, but increase 1 N. both sides, each row across ; then finish with a selvedge.

Place hanging Ns. into Cyl. ; knit and narrow instep, and finish with a selvedge. Join back to instep, or the joining can be avoided if the side selvedges are worked on the end Ns. when knitting instep, as in joining strips of Flat Web.

CHILD'S CAP.

Knitted Flat Web in two Pieces with Tassel.

Make a strip of Lace Pattern of the length required for the head, then a strip of plain Flat Web the same length ; join one long side of the lace to a long side of the plain ; fold so that one end of the lace is against the other end of the lace, and plain against plain, then join the ends with the mending stitch ; double up the lace to form a border ; pleat the plain, and so close with tassel for top.

The cap is much prettier if the border is of a contrasting colour to the top (plain) portion.

Child's or Fisherboy's Plain Cap.—Knitted in One Piece with a Tassel.

Loose Tension.—Turn handle slowly until Y.G. is at “**Right,**” ; commence at “**Right,**” half mark and set a selvedge **on all the Ns.** much the same as the rough selvedge ; knit 50 rows and stop Y.G. “**Right,**” ; lift off weights and carefully remove set up so as not to draw out the loops.

Next form the brim thus :—Double the fabric by turning the end with the set up loops inside, and lifting it until the loops are level with the tops of the Ns. Now be careful to have the first set-up loop opposite the N. at “**Right,**” half-mark ; then transfer **to the hook** of that “**Right,**” N. the

first loop formed on that set-up loop. Continue to transfer to hooks of all the Ns. the first loop formed on the remaining set-up loops as far as to the depressed Ns. Unravel the set-up loops of the part transferred up to "**Left**," half-mark ; advance Y.G. to "**Back**" Complete the transfer of the first loops as before, and then complete the unravelling. Break the unravelled yarn at about an inch from the Ns., and work that inch into the fabric either by a spare N. or by placing it round the Ns. in Cyl. There will now be 2 loops on each N. Grasp the fabric from underneath the Cyl. by the left hand and hold it well down ; knit 50 rows ; tighten the tension half a degree ; knit 50 rows ; then break yarn at Ns. and still hold fabric down ; then turn handle and run work off Mac. Press with hot iron, with damp cloth between ; unravel 3 rows ; thread a darning N. with the unravelled yarn, double it and pass same through all the loops in the contrary direction to the unravelling ; draw the loops together to close the top ; turn cap inside out ; pass from inside the first knob only of tassel through hole at top ; draw the loops closely round, and sew tassel to cap.

FISHERMAN'S CAP.

Knitted in two pieces, with a Tassel.

First Method.—Y.G. at "**Back**." Place 54 Ns. in "**Front**" part of Cyl., leaving grooves empty at "**Back**." Set a selvedge like Rough Selvedge *but on every N.* ; put yarn on take up ; knit BACKWARDS and FORWARDS 20 rows and turn up the hem (as directed in "Fisherboy's Cap") ; knit 90 rows ; then decrease the 2nd N. (see "**Tam-o-Shanter Cap**") each side every 5th row, until 24 Ns. remain in Cyl. ; then decrease every 2nd row until all the Ns. are out of the Cyl. Knit another piece in the same manner, and join together neatly. Finish with tassel.

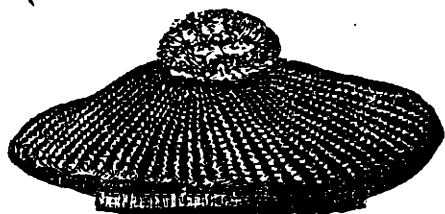
The cap has a prettier effect if the border, crown, and tassel ere of different colours.

Second Method.—Set plain work all round the Cyl. as for **“Fisherboy’s Cap”**; knit one row and put on ribber to work 2 plain and 1 rib; knit 60 rows; transfer the ribbing loops to the plain Ns., and put back the ribbing Ns. in their places in dial with latches open; knit 30 rows; transfer ribbing loops to plain Ns., and take off ribber; knit about 80 rows of plain; unravel as directed in **“Fisherboy’s Cap.”** Turn back the 60 rows and make a border. Close the top, and add tassel

TAM O’ SHANTER CAP.

Knitted in six or eight sections.

Double Berlin Wool or Double Fingering.



Loose tension, Y.G. at **“Back”**
Place 16 Ns. in **“Front”** half of Cyl., with an empty groove between each N.; set a selvedge like the Rough Selvedge, but in every N.; put yarn on take-up. Knit

backwards and forwards 20 rows, then remove the weights and also the set-up; lift the end of the fabric with the set-up loops, and place the first row of loops after the set-up loops over the hooks of Ns. in Cyl.; unravel set-up loops, then fix in heel-wire to hold the fabric down; knit three rows; increase one N. each side with an empty groove between each as at the beginning; knit 3 or 5 rows; then continue to increase each side and knit as before until there are 31 Ns. at work. Decrease the second N. on both sides by transferring its loops on to the third N. and moving first N. into the second N. grooves; knit three rows; continue to decrease and knit until all Ns. are out of Cyl.

Join the sections, and insert tassel, etc., as may be desired.

TASSEL.

Wind yarn round a book or board, according to the length and thickness of tassel required ; then cut yarn through in one place and afterwards tie in centre tightly ; double or bring the ends together and bind a thread of yarn round the doubled centre, and so form a knob ; then wind yarn to form a second knob close to the other. Cut ends of tassel to make them even with one another.

BABY'S BOOTS.



Knit Flat Web same as " Plain Sock for a Child," but in some fancy pattern, such as the Honeycomb.

Commence with 5 rows of small looped ruching ; trim to taste.

BED SOCKS.

Use Light Soft Yarn.

Knit Circular Web and as an ordinary plain sock, or in a fancy pattern, such as Lace or Honeycomb.

SLIPPERS.

Place Ns. in "**Front**" half of Cyl. and knit a toe as in a " sock commenced at the toe " ; then knit round, either plain or ribbed, 25 rows ; remove ribber if used ; for the instep take out and decrease at "**Back**" 2 Ns., crossing their loops—that is, placing the loop of the "**Left**" N. over the first N. in action at "**Right**" side, and the loop of the "**Right**" N. over the "**Left**" N. ; knit across as for Flat Web 2 rows ; now decrease (without crossing) 2 Ns. and knit 2 rows after each decrease until 12 Ns. are out ; knit 15 rows

without decreasing, and stop Y.G. at "**Front**"; raise out of action 15 Ns. each side from the empty grooves. Knit a heel on the remaining Ns. depress the 2 lots of 15 Ns. and knit 20 rows ; finish with a selvedge.

The sock can be lined and trimmed, and have a light sole sewn to it.

If a 72 Cyl. is used decrease 8 Ns. for the instep

HOOD.

Knit plain, or a fancy pattern, in strips of varying lengths. Crochet or sew together, and work a fancy edging by hand.

A child's hood can be made of ruching in any pleasing design, and finished with trimming in colours to suit the taste.

CUFFS.



These can be knitted as in Circular Web, plain or ribbed, with or without one of the fancy patterns. Commence with a Correct Selvedge, and finish with a selvedge.

MITTENS.

Make a cuff and continue knitting for the length required, but at the opening for the thumb work Flat Web, and afterwards resume the Circular Web ; finish with a selvedge.

The thumb piece can be knitted Flat Web ; commence and finish with a selvedge ; join, and sew to mitten.

GLOVES.

On 84-Groove Cylinder Machine.

Set up for 1 and 1, make welt same as in half hose, knit say 45 rounds for wrist, according to size of yarn used.

Transfer loops of fabric from ribbers on to Cyl. Ns. and remove ribbing attachment. Knit 24 rounds.

Thumb.—Pick up all Ns., excepting say 25 on the “**Front**,” commencing from the notch or dividing mark on Cyl. top, put on heel hooks, but thread on take up, and knit say 20 rows BACKWARDS and FORWARDS of plain web for lower part of thumb. Take out 3rd N. from either ends of fabric, knit, and place stitch on 4th N., then move other 2 Ns. up same as in narrowing, knit 20 rows. narrow 2 Ns. in to shape the thumb, knit 8 more rows ; this completes the thumb ; run off the work on 21 Ns. left.

Put on the selvedge of first 20 rows of thumb, 12 Ns. on one side 13 on the other, put all Ns. down, knit 20 rows to complete hand.

Make each finger separately as follows :—

1st Finger.—When commencing 1st finger for right hand glove lift up 5 Ns. from notch or dividing mark on Cyl. towards “**Front**” machine on “**Left**” side. For left hand glove the same, but on “**Back**” of machine.

Lift 59 Ns., knit BACKWARDS and FORWARDS 3 times on 25 Ns., to form web between fingers ; pick up 2 Ns. each side ; make finger on 21 Ns., say 40 rows, or as required and press stitches off.

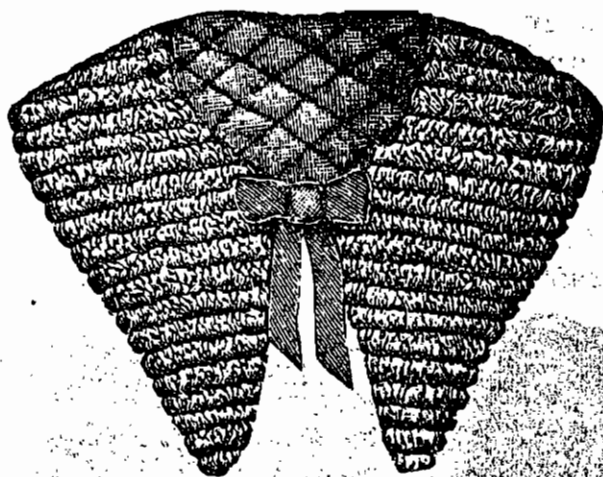
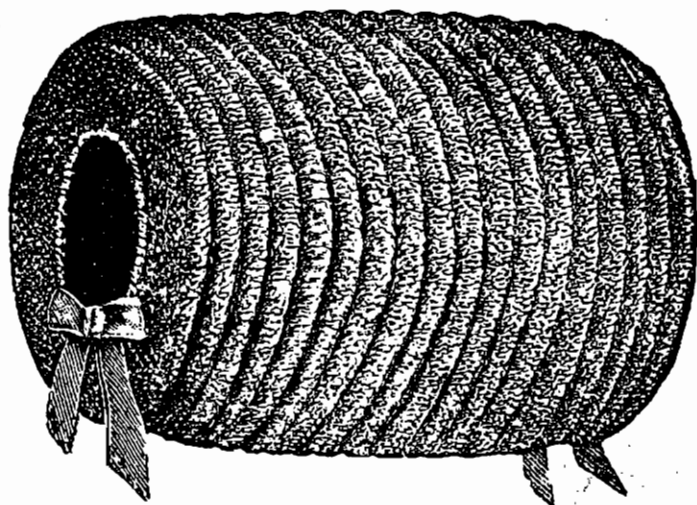
2nd Finger.—Take out empty Ns., left in making 1st finger, move 13 Ns. on each side to “**Front**” of machine (to do this it will be necessary to put Ns. with loops on inside machine), knit 3 rows, lift 2 Ns. on each side out of action, knit 45 rows, or as required, press stitches off.

3rd Finger.—Take out empty Ns., move up 12 Ns. on one side and 13 on the other to make 25, knit 3 rows, lift out 2 Ns. on each side, take empty Ns. out of Cyl., turn 40 rows, press off.

4th Finger.—Place 20 Ns. in “**Front**” of machine, knit 30 rows for finger, or as required.

To finish the glove turn inside out, gather up loops to form end of fingers with N. and yarn, seam up selvedges ; the glove is then complete.

RUCHING OR TUFTED WORK.



Place Ns. (say 10) in "**Front**" of Cyl.; set work; knit about two or three rows, and stop with Y.G. at "**Left**"; draw yarn from the Y.G. and loop it over the second N. at "**Left**," then round your finger, which hold at back of Ns. below the hooks (a stick or the heel-wire bent to the shape of the inside of Cyl., can be used as a tufter in place of the finger); now loop yarn over the third N. and your finger again, and so on for all the Ns. excepting the last or end N. at "**Right**"; turn Y.G. via "**Back**" to "**Right**"; draw slack yarn back to bobbin; hold the finger or tufter well down, so as to have the loops go below the latches of Ns. when knitting; knit **Backwards** to bind in the loops; remove the tufter from the loops, and repeat for the length required.

To secure the loops, stitch them by hand to the fabric.

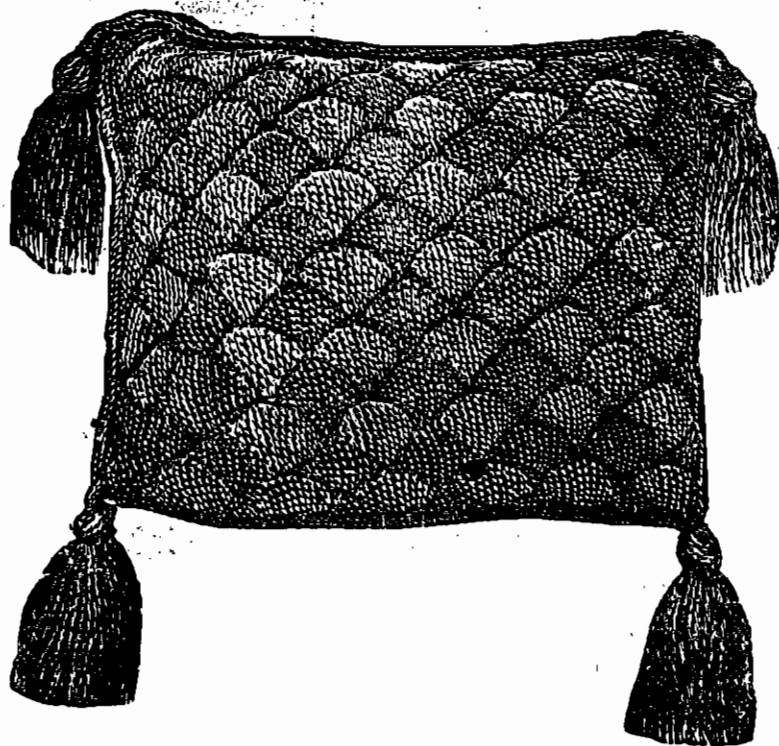
The loops can be made long or short according to the size of the tufter and the distance it is held from the Ns. The yarn may be looped over the Ns. and the tufter 2 or 3 times, or only every 2nd or 3rd N. You can also form diamonds, squares, monograms or other fancy patterns.

Another Method is to set the work and knit with yarn of one shade and make the loops for ruching the yarn of another shade, in which case the knitting can be done to and fro instead of BACKWARDS only.

Strips of Ruching or Tufted Work can be used to trim cloaks, coats, dresses, or anything for which astrachan or fur would be employed; or they can be made into muffs, collars, cuffs, caps, etc. Children's muffs, however, can be knitted round the Cyl. instead of Flat Web. Carriage rugs, also carriage door, and hearth mats, can be made from strips of ruching. This ruching, with a fringe attached, is very suitable for trimming.

SHELL PATTERN

(Very suitable for Fancy Shirts, Cushions, Mats, &c.)



First Row.—Commence and end with whole shells.

Second Row.—Commence and end with half-shells.

If two shades of yarn in good contrast are used for the rows of shells a prettier effect is produced than with one only.

Set Selvedge for the Flat Web with Ns. in all Cyl. grooves, and knit twice across (that is Backwards and Forwards); stop Y.G. at "**Left.**"

First Row.—1. Raise out of action all Ns. but 7 on the "**Left**"; knit across these 7; at opposite side from the N. last knitted, raise 5 N. of the 7; knit across the remaining 2.

2. Depress one N. at the opposite side to the N. last knitted, and knit across the 3; depress 1 N. at opposite side to N. last knitted, and knit across the 4 Ns., and so continue after each knitting across to depress one N. at opposite side to the one which last knitted, until 12 Ns. are depressed.

3. Now depress 7 Ns. to the "**Left**" of the 12, and knit across the 19 Ns.; raise 17 Ns. at the opposite side to the N. last knitted, and knit across the 2; depress 1 N. and continue as in paragraph 2 till 12 Ns. are depressed; repeat above 7 times in all.

This completes 1 row of 7 whole shells.

Y.G. to be at "**Left**"; begin at "**Back,**" and depress all the Ns.; knit 1 row BACKWARDS.

Second Row.—Raise all the Ns. excepting 2 at the "**Left**"; knit once across these 2, and depress one N. next to the N. last knitted, putting the yarn at the back of it; knit twice across the 3 Ns., and again similarly depress, and put yarn at back of 1 N.; then knit twice across the 4 Ns.; and so continue depressing 1 N. and knitting, until 9 are depressed stop Y.G. at "**Right.**" *This completes the half shell at the commencement of the 2nd row.*

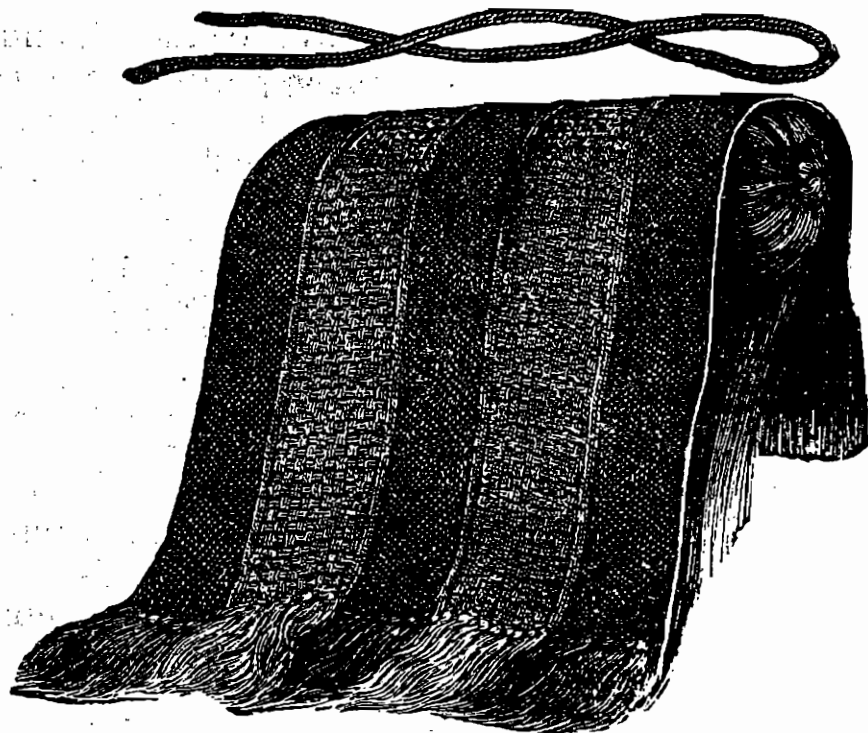
Y.G. to be at "**Right.**" Depress at once 7 Ns. in continuation of the last N. depressed, and knit across; raise 11 Ns. at the opposite side from the N. last knitted; knit across the 2

Ns., and now continue depressing 1 N. at opposite side, as directed above in paragraph 2, until 12 Ns. are depressed ; depress 7 Ns. on opposite side, etc., as in paragraphs 3 and 2 above, until 6 shells in all are completed.

Petticoat.—If it is desired to make a petticoat knit as many rows as are required, commencing the row with a half or whole shell alternately ; 22 rows of shell make a large sized skirt.

Having completed the necessary number of rows of shells for each piece, depress all Ns., and then transfer the loop of every 4th N. on to the 3rd N., so as to have Ns. in groups of 3—that is, with an empty groove after each 3 Ns. see that yarn is on the take-up ; with a medium tension, knit 110 rows ; finish with a selvedge.

ANTIMACASSARS, CORD, &c.



In making cord, 1, 2, 3, 4, or 5 needles can be used. One will make a chain; 2, a square stitch ; 3, a perfectly round

cord ; 4, a square cord ; and 5, round on one side and flat on the other. Put the number of needles required in the back part of the machine ; start it by looping over the needles and the weight hook, and, using the up-take, turn the machine to the right. If two or more different coloured wools or silks are used, the cord will be very pretty.

This cord can be used for picture or curtain cord, for lamp mats, or the edges of hassocks, and other trimmings, and also when sewn together like straw braid a nice polo cap can be made from it.

Antimacassars can be knitted Circular or Flat Web in strips laid flat and crocheted, sewn or put together with knitted cord. The strips of flat Web can be knitted together on the Mac. or by hand.

The strips may be knitted partly plain, and partly with a fancy pattern ; or, one strip may be plain and the next a fancy pattern ; or they may be made in squares or diamonds of various fancy patterns, and sewn or crocheted together. Finish with a fringe, or narrow the end of each strip, and finish with balls or tassels.

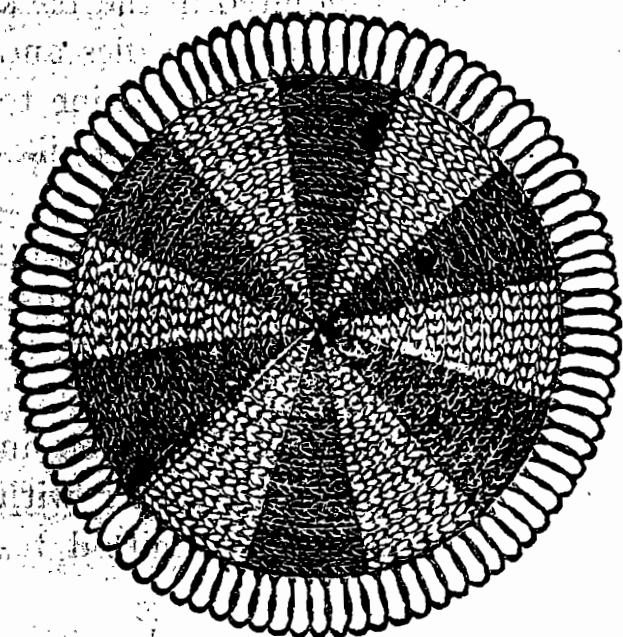
All kinds of blankets and spreads, piano and table covers, rugs, etc., are knitted in a similar way. (See Fancy Patterns.)

LAMP OR BUREAU MAT.

Knit cord, about a yard each of two different coloured yarns, say magenta and white ; fasten one end of each to the centre of a piece of canvas cut in the form of a circle ; wind the two pieces of cord round side by side in the form of a spiral ; sew them to the canvas ; the circle should be covered to within $\frac{3}{4}$ of an inch of the circumference, which space is left for the border. For the border use a strip of the single or double fringe, ruching, imitation moss or shell pattern.

In place of two different colours, you may use shaded yarn, but knit 2 yards.

MAT IN SECTIONS.



Mat with Six Sections.

Place Ns. in Cyl. equal to half of the diameter of the mat required. Set Rough Selvedge for Flat Web but on each N.; put yarn on take-up; knit to and fro, raising a N. on the "**Left**" side each row across, until only 3 or 4 Ns. remain; stop with Y.G. at "**Right**"; now depress all the

Ns.; change the yarn for that of another colour and knit another section in the same manner. Repeat the operation until there are 6 such triangular sections; unravel Rough Selvedge of the first section; then break yarn and run work off Mac.; close by mending Stitch that first section to the last one, leaving the 3 or 4 outside loops still unclosed. Place damp cloth upon the mat and press with a hot iron; cut and ravel out the 3 or 4 outside rows to form a fringe; or, trim with a ruching.

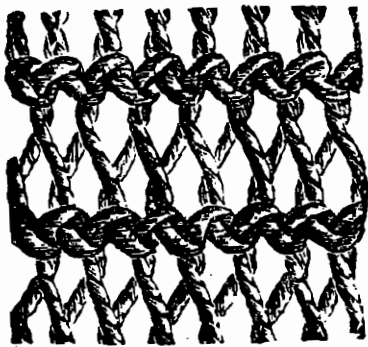
For mats of 12 or 24 sections, raise 2 or 4 Ns. each time.

The shell, and some of the other fancy patterns make pretty mats. While cotton knitted in this way makes a neat toilet mat.

TO KNIT BUTTON-HOLES.

Lift out of action all the Ns. to the left of the button-holes, and knit with the remaining Ns. the required length for the hole; then lift up these Ns. and depress the others and knit the same length, then depress all the Ns. and continue the work as before.

SPIRAL PATTERN.



Set work as usual and knit a few rows ; transfer loop of every second N. on to the next N. **FORWARDS** ; replace empty N. in its groove ; knit two rows ; then transfer the loops of these next Ns. back to the second Ns. ; knit two rows ; repeat the transfer first one way and then the other and knitting after each transfer.

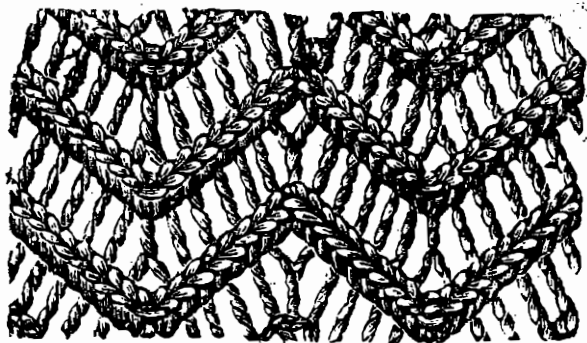
When you have the length required knit a few plain rows, without any transferring.

BALMORAL or STRIPED PATTERN.

Use yarns of different colours, winding each on a separate bobbin.

Knit the required number of rows from one bobbin and stop with the Y.G. at "**Back**" ; break the yarn at one regular place—say between the bobbin and yarn cross ; join on the different coloured yarn ; knit a similar number of rows ; break yarn ; so continue, always stopping with Y.G. at "**Back,**" and breaking yarn at the place stated, as this will ensure that the joins of the different yarns are in one regular place.

HERRING BONE PATTERN.



Set work as usual and knit a few rows ; transfer loop of every 2nd N. on to the next N. **FORWARDS**, and replace empty N. in its groove ; knit 1, or, 2 rows ; repeat three or four times in all ; then transfer **BACKWARDS**, etc., three or four times in all. Continue in like manner to transfer three or four times each way and knitting after each transfer until the fabric is the length required.

Cross-Bar (Single), or Imitation Ribbed Pattern.

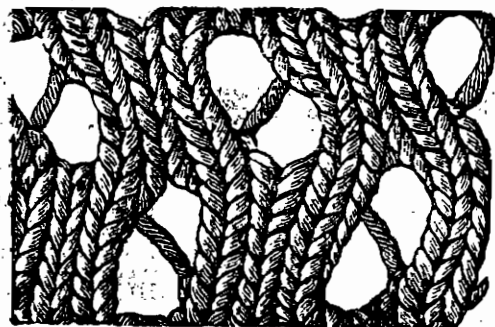
Place Ns. in Cyl. in groups of three with an empty groove after each group; set work in the usual way; knit twice round, or across; lift out of action every alternate group of 3 Ns.; knit once round, or across; depress the sets that are out of action; and lift up the alternate groups, and thus continue to knit with alternate groups of Ns. each time round or across.

The stitch may be varied by using alternate groups of 2 Ns. or 4 Ns. instead of 3.

Cross-Bar (Double), or Imitation Ribbed Pattern.

This is knitted like the single cross-bar, excepting that the Ns. are raised and depressed after knitting 2 rows each time of raising and depressing Ns.

FILET PATTERN.



Place Ns. in front of Cyl. set work either for Circular or Flat Web; knit 3 or 4 rows but stop Y.G. at "**Right,**"; raise out of action all but 5 Ns.; knit 5 rows across these 5 Ns.; depress the 5 Ns. next to them; knit across the 10 Ns.; raise out of action the first 5 Ns.; knit 5 rows across the 5 Ns. just depressed; now depress the next 5 Ns.; knit across the 10 Ns., and thus keep advancing by 5 Ns. until entirely round, or across the Cyl.

In order that the holes in the pattern may be altered in position or the next row, commence to knit upon 2 only of the first lot of 5 Ns. if Flat Web (or if Circular Web, 2 of the first 5 Ns. and three of the last 5); then take the 5 Ns. next to the 2, and so on as before.

The Filet Pattern can also be varied thus :—Raise out of action all but 4 Ns. at "**Right**" knit BACKWARDS and FORWARDS 4 rows ; depress the 4 Ns. next to those in action and knit one row ; raise the first 4 Ns. and knit 1 row ; depress the next 4 Ns. and knit 3 rows ; raise the 2nd 4 Ns. and knit 1 row ; and so continue across. Now start with 2 Ns. on the "**Left**," as this will secure that holes are not opposite.

This pattern being such an open one, it is suitable for Satchets and Satchels which should be lined with fabric of a contrasting colour. Make a strip about 26 inches long, double, and then sew the sides or draw in at the top.

DIAGONAL CROSS-BAR PATTERN.



Set work as usual and knit a few rows ; transfer the loop of every 2nd N. to the next N. FORWARDS, and replace empty N. ; knit 1 row ; repeat the transfer and knitting 1 row, for the length required.

DIAMOND PATTERN.

Set work as usual and knit a few rows ; transfer the loop of every 2nd N. on to the next N. FORWARDS, and replace the empty N. in its groove ; do this all the way round or across, or as far as the pattern is required ; knit 2 rows (by knitting not less than twice round, or across, new loops are formed on the empty Ns.) : repeat the transfer and knitting for the length required.

HONEYCOMB STITCH.

Fig. A.—Set up one in and one out, knit once across, lift each alternate N. out of action ; knit across and back, depress the Ns. which are out of action, and knit the alternate ones ; knit across and back, and so on, depressing one set of Ns. and raising the alternate ones every second time across. This work should be made in strips and joined together for antimacassars, carriage robes, etc. If it is knit in two colours, and the yarn changed each

second time across, the effect is very beautiful, and the pattern is very suitable for babies' socks and other small articles.

THIS WORK IS KNITTED IN THE FOLLOWING MANNER:

This is knit the same as in Fig. A, except that each alternate N. is lifted out of action **every** time across, instead of every other time. If different coloured yarns are used and the yarn is changed each time across, the work will be striped vertically, as shown in Fig. B.

Fig. B.

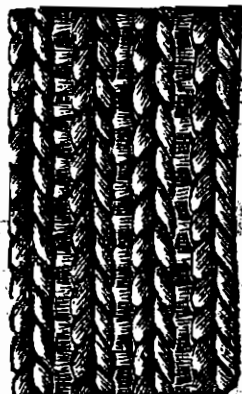
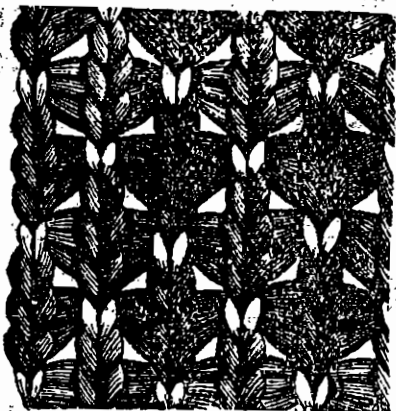


Fig. C.



Use three colours of yarn—say red, white and blue. Set up one in and one out, knit once across, lift each alternate N. out of action, and knit three times across, say with the red yarn; depress the Ns. which were out of action, and lift the alternate ones; knit three times across with the white yarn; depress the first set of Ns. and lift the second set, and knit three times across with the blue yarn, and con-

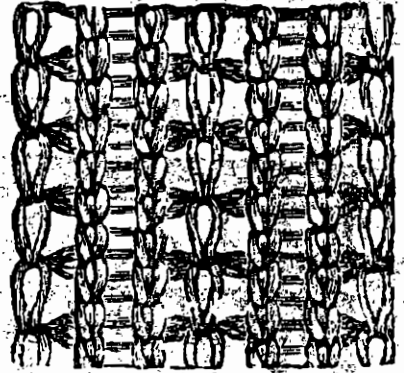
tinue depressing one set of Ns. and raising the alternate set, changing the yarn each time in rotation of red, white, then blue.

This stitch may be varied by changing the colours, or by knitting one row of a different colour on all the Ns. between each alternate set.

This is a very pretty stitch for the body of a hood for winter wear.

LACE STITCH.

Set up the work either with all the Ns. in, or every other one out, according to the coarseness of the stitch desired. Lift every third N. out of action; knit three times across or round; depress the Ns., and knit once across or round; raise the same Ns. as before and knit across or round three times again, and so on, raising and depressing Ns. This pattern may be varied by knitting twice instead of three times, or by lifting out of action each alternate N., instead of each third N.



CROCHET STITCH.

Place Ns. in "**Front**" of Cyl. in groups of three, with two empty grooves after each group; set work as usual; raise out of action all but 3 Ns. at the end on the "**Left**"; knit once across the three Ns.; raise the "**Left**" end N.; knit once across the 2 Ns.; depress the N. next to the three; knit back again; raise the end N. in action, and thus continue to advance towards the "**Right**" one N. every second row. Having reached the "**Right**" end N. reverse the process, and raise that end N. on the "**Right**," and depress towards the "**Left**," advancing by one N. each second row; continue to knit in the same way for the length required.

If a scalloped edging is desired, continue to advance across each side until only two Ns. are left in action, before returning the contrary way.

The pattern may be varied by arranging the Ns. in groups of two, with two empty grooves after each group, or 2 in and 4 out, etc.

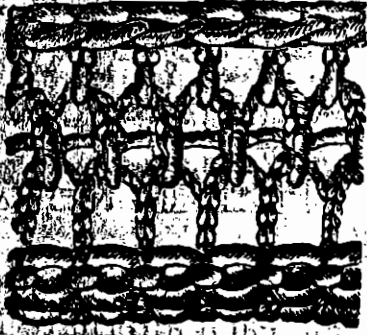
This pattern is very suitable for cotton antimacassars.

TO MAKE IMITATION MOSS.

Use clouded green or brown Berlin wool. Knit a flat web the required width, say about 12 stitches. Wet the web

and press with a warm iron, and ravel out all except two or three rows of stitches on one side of the strip, and you will have a beautiful imitation of moss, suitable for the borders of lamp mats, etc.

INSERTION PATTERN.



Set work and knit round, or across, several times, plain or fancy pattern. Lift all the Ns., excepting 1, out of action; knit 4 times across this 1 N., holding the work down on the N. with the hand under Cyl.; lift this 1 N. out of action, and depress the next N. to the "**Right**"; knit 4 times

across it and lift it out of action; then depress the next one, and so on, completely round, or across; knit a row plain, and repeat the above; after which, continue the plain or fancy knitting.

OPEN WORK PATTERN.

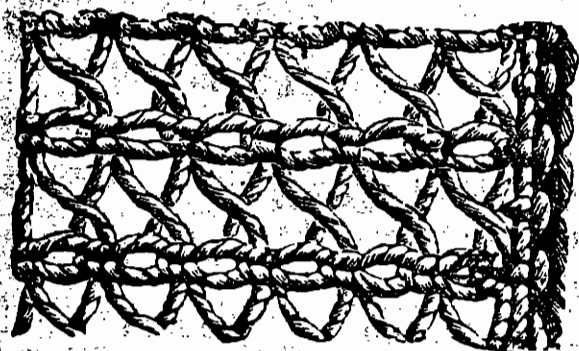
Set work as usual and knit a few rows; transfer the loop of every 2nd N. on to the next N. FORWARDS, and replace the empty N. in its groove. Do this all the way round, or across, or as far as the pattern is required; knit 3 rows or more; repeat the transfer and knitting for the length required.

PINEAPPLE PATTERN.

Set work as usual and knit a few rows; transfer the loop of every 2nd N. on to the next N., as instructed in the next paragraph for "Lasso Pattern"; knit one row to form half loops; then transfer the loops of the 2nd N. to the 1st N. and the 4th on the 5th, 8th on the 7th, 10th on the 11th, and continue in like manner across, putting the loop of one 2nd N. to the "**Right**" and one to the "**Left**"; knit one row or 2 rows; repeat the transfer, and knit 3 times in all. Now

reverse the transfer and put loop of the 2nd N. on the 3rd, 6th on the 5th, 8th on the 9th, 12th on the 11th, and so on ; knit once across ; repeat this 3 times in all. Continue placing loops as above, 3 times one way and 3 times the other way, being careful that you start on the same N. every time.

LASSO PATTERN.



Place Ns. in "**Front**" of Cyl. and set work for Flat Web ; knit a few rows. Commence at "**Right,**" and transfer the loop of every 2nd N. to the next N.—that is put the 2nd N. on the 1st, the 4th on the 3rd, and so on ; replace the empty Ns. ; knit 2 rows to form loops on the empty Ns.

Then transfer the loop of the second N. on to the 1st ; the 4th and 6th on the to 5th N. 8th and 10th on to the 9th N. continue in like manner, transferring one 2nd needle loop to the "**Right**" and one to the "**Left**" ; knit 2 rows. Now transfer the loops again, but in the opposite direction—that is, put the 2nd and 4th on the 3rd N., the 6th and 8th on the 7th N., and so on ; knit 2 rows ; repeat the transfer of the loops, reversing the direction every time, and being careful to start each time on the same N. and knitting for the length required.

The following is a variation of this pattern:

Transfer loops of the 2nd and 4th Ns. to the 3rd N., 8th and 10th Ns. to 9th N., and so continue across, transferring to every 6th N. the loops of the next N. each side of it, and thus leaving groups of 3 Ns. untouched. Knit 2 rows ; then transfer loops of the 3rd and 5th Ns. to the 4th N., 9th and 11th Ns. to the 10th, and continue across ; knit 2 rows.

FRINGE.

Use from 2 to 30 Ns., according to the width of heading desired; place the Ns. in the "**Front**" of Cyl.; set the work as usual; then place a single N. in the back of Cyl., or on the "**Right**," if a shorter fringe is wanted; raise that N. out of action. (To hold that single N. up tie a thread of yarn round Cyl. in place of the C.R.) Pressing the yarn down so that it will feed into the hook of the 1st N. each time, knit **round** until this single N. is full; then lift the loops off the single N. or cut them open. Repeat until you have as long a strip of fringe as required. Now tie from 4 to 6 of these ends together, being particular to knot them close to the heading.

For fringe half this length use Ns. both in "**Front**" and "**Back**" of Cyl.; work as for Circular Web; when the length is knitted run the fringe off the Mac. and cut the threads "**Right**" and "**Left**."

One or more colours may be used from separate bobbins, passing all the yarns over the yarn-cross and through the Y.G.; or, one colour may be knitted several times round, then another the same number of times cutting the yarn off at the single N., beginning there each time.

Fringe with a Single Heading.

Set work at "**Front**" of Cyl., as for Flat Web; place a Single N. out of action at the "**Back**" or at the "**Right**," according to the length of fringe required; knit to and fro, lifting the yarn over the single N. each time, and depressing it so that it will feed in to the 1st N. on the "**Right**."

By using silk, and knitting any one of the fancy patterns, a nice serviceable fringe can be made.

Y.C. at **"Front"**; take off C.R.; then commencing at **"Right"** take out alternate groups of 3 Ns., and let them hang upon their own loops inside Cyl.—this will leave 3 Ns. in action and 3 out. Knit 3 rows round or across; replace the hanging Ns.; knit 3 rows across; now leave the hanging Ns. in the Cyl. and take out the other groups of 3 Ns. Knit 3 rows and continue as above. The illustration will explain itself.

The knitter will see that this pattern is capable of many variations thus, the same group of 3 Ns. may be removed each time, or 2 rows may be knitted upon one group, and 4 on the other, or 2 Ns. can be treated in the same way.

PRESSING.

Cotton yarns should be knitted as tightly as possible, and the articles washed with soap and hot water, or even boiled, before they are worn.

Woollen articles should be dressed as follows:—Lay it upon a flat surface, or ironing board, and place over it a piece of old cotton cloth wet with clear water; pass a hot flat iron lightly over the cotton until the steam has penetrated and damped the work; then remove the wet cloth and place a dry one over it, and press until quite free from moisture.

Tables, Iron Stands for Machines
Pressing Boards (all kinds)
Oils, Needles for all kinds of
Knitting Machines

and every Requisite for the making of
Hosiery can be supplied by us.

GRISWOLD K&N

is a marvel of efficiency. It has been found to be perfect as to comfort and to supersede the use of rubber or felt shoe insoles and stockings, and is a perfect support of the foot and ankle, and a perfect support of the spine.

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

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[illegible]

1990-1991, 1992-1993, and 1993-1994. The first two years were used to develop the model, and the last year was used to validate the model. The model was developed using the following steps:

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PRICE LISTS



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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|