Knit in order listed

BEGIN - 5F 6G 3D 5H 7D 2C 2I 8I 8C 3B
5E 6F 3E 6H 7C 2D 3I 8H 8B 2B
4E 6E 3F 7H 6C 2E 4I 8G 7B ACROSS J ON □ OF 2 GRASS
4F 6D 3G 7G 5C 2F 5I 8F 8B
4G 5D 3H 7F 4C 2G 6I 8E 5B GRASS □ ACROSS 2-8 INCL.
4H 5E 4H 7E 3C 2H 7I 8D 4B ON J (△ BACK 8-2 INCL.
BORDER TOP & BOTTOM (8-2 INCL) & (2-8 INCL)
BORDER - SIDES (5-1 INCL) & (1-5 INCL)
CORNERS = A9, I1, K1, 9K END

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Patented Jan. 27, 1948 2,435,068

UNITED STATES PATENT OFFICE

2,435,068

NUMBER KNITTING

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Application April 16, 1945, Serial No. 588,561

8 Claims. (Cl. 96—1)

1 The present invention relates to number knitting and comprises a method of hand knitting and articles produced thereby. According to this method an article is formed progressively in numbered units each of which, after the first, is picked up in the knitting from a previously knitted unit with a completed edge. Each of these units has a boundary of straight lines and is one of a plurality of fundamental shapes or combinations thereof. Yarns of different colors or characteristics may be used and very ornamental results attained.

An important object of the invention is to provide a novel and advantageous method of knitting, of the general character specified.

Another object of the invention is to provide a method of knitting design wherein the design of a knitted article is determined by knitting in succession units which may contain yarns of varied characteristics such as color, and of which each is bound by straight lines and, with the exception of the first, is picked up in knitting from a previously knitted unit with a completed edge.

Still another object of the invention is to provide a method of knitting wherein the design of a knitted article is determined by knitting in succession units of certain fundamental straight-line shapes of standard sizes or of multiples or combinations of the fundamental units.

A further object of the invention is to provide novel and advantageous hand knitted articles comprising attached units of various standard shapes and sizes bounded by straight lines, each following unit being attached to a completed edge of a preceding unit or the completed edges of a plurality of preceding units and having a completed edge at the remainder of its periphery.

A still further object of the invention is to provide knitted articles of the general character specified which will in general retain or tend to return to their original size and shape.

Number knitting proceeds in large or small geometrical straight-line figures of suitable colors which may be planned, for example, by drawing a figure to please one's self with colored pencils on graph paper and with sections in the order for knitting, and may be carried out by following the pattern and/or colored figure as to shape and color of different parts and knitting the parts in the order of their numbering on the design.

In drawing the picture or design, one should be guided by the lines of graph paper, breaking up the design into geometrical figures that can be knitted and using pencil strokes to indicate raised lines of knitting. Also the number of rows of stitching and the number of stitches in each row are very carefully worked out.

Other objects, features and advantages will appear upon consideration of the following detailed description and of the drawings in which

Fig. 1 illustrates a number of basic straight-line figures which may be used alone, in multiple or in combination with each other in providing units for a design; and

Fig. 2 is a view illustrating one example of a knitted article made in accordance with the present invention and indicating the order in which the various parts are knitted.

Referring to Fig. 1 there are disclosed six elementary units from which others may be formed. The first form of unit is a square and it will be evident particularly upon inspection of Fig. 2, that a multiple of squares can be combined to form a larger square or a square may be divided into a plurality of smaller squares. The second form of unit is a right triangle which might be obtained by cutting the square into two parts along a diagonal from the lower left corner of the square to the upper right and taking the upper and left triangle. The third form is an oblique angled parallelogram and might be obtained by placing the triangle of the second form to the right and the remaining triangular part of a square to the left. Of course, this form could be lengthened indefinitely by adding squares between the triangles. The fourth form is a rectangle and as illustrated may be formed by placing two squares side by side. Of course, this form might be lengthened indefinitely, by adding intermediate squares. The fifth form is a divided square that in the pattern is in two parts divided by a diagonal and this form might be changed by replacing said diagonal by a diagonal perpendicular thereto. The sixth form is a double parallelogram which may be used to represent a butterfly or a leaf. This form may be varied. One form of double parallelogram may be made by binding off at any point short of or continuing beyond (in multiples of X) on a square (stitches times ridges).

The basic square is the simplest unit of number knitting and should be knitted at the beginning and used as a gauge thereafter. As a gauge the basic square may be used not only to decide upon the yarn and needles to achieve the desired texture but also to give an exact measurement of the desired design. It may then be unraveled and the yardage measured to determine how
Since the basic square equals the smallest square on the graph paper used for the diagram, the final measurements may be arrived at by counting the squares of the design and multiplying by the length of a side of the basic square. To make the basic square, cast on \(X\) stitches and return (first ridge). This is repeated until \(X\) ridges less one ridge have been knitted. On the next row there is a binding off with a larger needle. \(X\) may equal any number of stitches, usually 2 to 8, or any larger number that is needed for the design, but it must always represent the smallest square used as a unit, i.e., the lowest common denominator. The basic square may, if the design be simple, be as small as desired. However, a sample gauge could not be knitted as a sample gauge for so small a form. Six is an average number and would be used in most designs.

Each triangle, such as the second form, is really half a square. To make one triangle of this kind, on \(X\) stitches (or a multiple of \(X\)) knot together the second and third stitches at the beginning of every other row, and when three stitches are left on the needle knit two together and purl last stitch. Next row, purl two stitches. In a reverse triangle the knitting together and the purling are done at the end of every other row.

The parallelogram of the third form is a unit having parallel sides but the angles are not right angles. On \(X\) stitches or any multiple thereof, insert a stitch at the beginning of a row by knitting twice into the second stitch and decrease on the same row by knitting together the second and third stitches from the end. This will give diagonal sides to the unit, on a slant upward from left to right. Or, decrease one stitch at the beginning of the row and increase one stitch at the end of the same row. This will give diagonal sides running parallel from right to left and upward. When height is \(X\) ridges, or multiples of \(X\), cast off on first row of last ridge. The parallelogram may be changed by reversing the direction of the diagonal lines and proceeding, in multiples of \(X\), to provide a zig-zagging arrangement.

The rectangle of the fourth form represents any multiple of the basic square which is wider than it is high, such as \(X\) ridges high and \(2X\) stitches wide. Of course, the basic square may be used in multiple to form a rectangle higher than it is wide. Except that it is the multiple of the basic square it may be made in exactly the same manner.

The divided square of the fifth form when finished appears to be two triangles formed by diagonally dividing a square. The divided square is made on twice \(X\) stitches, or \(2X\) stitches, either cast on or picked up from a completed unit or half \(X\) cast on and half \(X\) picked up and knitted off. A divided square may be made on any multiple of the basic square, but the first row always includes two ends of the square to be finished.

The double parallelogram of the sixth form, often used to represent a butterfly or leaf is made on \(2X\) (or an even multiple) stitches and \(X\) ridges (for example, on \(2X\), \(2X\), \(X\) with variations, as \(4X\), \(X\), \(X\), by \(2X\), \(2X\), \(2X\), \(2X\) etc.) and on every other row increases in the second stitch at each end, and on the same row decreases twice on the four central stitches. Cast off is effected when the number of ridges equals \(X\) or a multiple.

In Fig. 2 there is a disclosure which indicates the manner in which the knitting is laid out and the general appearance of the finished article. This figure is laid out to represent nine columns numbered from 1 through 9 starting at the left and eleven rows lettered from A to K starting from the top and the part common to a column and a row at their intersection is a square equal to nine basic squares and identified by the digit of the column followed by the letter of the row. The plan of order of knitting the various units inside the border is indicated in the table at the foot of the figure, as is also the order of knitting the various parts of the border. Each of the square sections referred to in the table is a multiple of the basic square with each side three times as long as the side of the basic square, and has nine times the area of the basic square. Each of said square sections of the table can, therefore, be considered to contain nine basic squares. The direction of the ridges of knitting in the various parts is indicated by parallel lines.

Various objects are indicated in the field inside the border by straight line figures some of which (double parallelograms) are intended to represent butterflies and others (more elaborate) are intended to represent lambs.

In the first square 8P of the table there is one of the double parallelograms pointing downwardly only to the left. This figure is made up of the central basic square knitted as a divided square with an upward extension constituting one-half of the middle basic square of the top row and with a rightward extension constituting one-half of the middle basic square of the right-hand column. In the second square 8E there is marked out a triangle constituting half of the middle basic square in the top row and forming part of a figure of which other parts are in 8D, 8F, 8J, 8G, 8H, and 8C. All of the various figures are built up in generally similar ways. Across the upper part of row J there is a rectangle twice as high as a basic square and which may be considered as built up from a plurality of basic squares. In the lower third of row J there is a plurality of basic squares which are formed by knitting from left to right a series of half squares or triangles pointing downwardly to the left and then knitting in connection therewith from right to left half squares or triangles to complete the basic squares. After the knitting of the field is completed, the border is knitted around the field.

The squares in such knitted articles may be basic squares and squares having sides which are multiples of the sides of the basic squares. With these different squares and triangles formed from halves, larger squares and larger triangles can be built up and these may be combined to form parallelograms, rectangles, divided triangles and double parallelograms. The parallel lines on Fig. 2, as stated hereinbefore, indicate the ridges in the different parts of the article. The diagonal lines on chart always represent decreased or increased (according to the slant) number of stitches, one change of one every other row (or each ridge) each side of the diagonal.

Although as listed in the table, certain squares each equal to nine basic squares are knitted in succession, alternate squares might be knitted in various parts and then the omitted squares filled in by knitting. Also, certain large squares might be omitted entirely and others partially, thus leaving an irregular outline. For example, all of row J, with the exception of the downwardly pro-
jecting figured portions in columns 4 and 6, might be omitted.

An important feature of the present invention is that each section or unit is made exactly with a given number of ridges and stitches and is complete in itself. Also each new section after the first is in the knitting thereof placed in carefully on one or more sides with one or more previously knitted sections and is provided with a completed edge around the remainder of its periphery. This procedure enables the knitter to avoid cumulative effects of slight variations in size or shape which might occur if the units were made separately and then secured to each other. Also the arrangement may be such as to provide substantially uniform tension in all directions thereby presenting corresponding resistance to stretching. In the illustrative example in Fig. 2, the main parts added in the form of squares, but the added parts might be of many other forms and the periphery of the article might take any desired shape.

One advantage of knitting sections or units in succession is that the yarn can frequently be carried directly from one section to the next in the knitting operation.

Obviously the invention may be embodied in many different forms and in addition to the surface effects due to the shape of the sections or units, and the character of the knitting therein, the appearance may be modified very much by the use of different colors in the yarn. The different colors of different parts may be indicated on the chart by the initial letters of the names of the colors.

It is well known that many knitted fabrics tend to stretch more in one direction than another and, therefore, get out of shape. According to the present invention this tendency may be overcome or very much reduced. For example, in a divided square knitted according to the present invention the resistance to stretching is greater in some directions than in others. This condition may be utilized to make the fabric meet within practical limits the requirement of having equal resistance to stretching in all directions or a limited number of directions. In the illustrated embodiment of the invention, this problem is met within reasonable limits and the article tends to retain its original size and shape and to lie flat on a generally flat support.

The knitter should keep in mind the following general number knitting rules:

1. Knit the units or sections in predetermined order and in accordance with the indications on the diagram, prepping up a set of stitches for a new unit from a preceding one and knitting them as they are picked up. Bind off each unit, except those decreasing in one stitch.

2. Turn the diagram, if necessary, to follow the reading of a new unit—the ridges run (one ridge equals two rows) in the same direction as the first stroke.

3. The number of stitches for each new unit must equal a multiple of the basic square which is the smallest square of the graph paper used for the diagram, and always equals the same number of stitches wide as rows high.

4. Slip the first stitch and pull the last of every row, giving one chain stitch at the side for each ridge.

5. Cast on and bind off as loosely as possible, or with the needle two sizes larger than the one used for knitting.

6. Do not break yarn unless (or until) necessary. When possible, carry from the last stitch—fastened off—of finished unit, to the first stitch of new unit, and cover it by knitting first under then over it.

7. Make gauge by casting on the number of stitches given for a basic square, and then knitting the same number of ridges. If basic square is too small to be knitted as gauge (as on one or two or three stitches), make gauge on multiple of basic square.

8. Cast off on the wrong side of work unless otherwise directed. Pick up, knitting at the same time, on the right side of work, unless circumstances dictate otherwise.

9. It should be understood that various changes may be made and that certain features may be used without others, without departing from the true scope and spirit of the invention.

Throughout this specification and the following claims a completed edge is considered as being a bound off edge or its equivalent. These terms are used interchangeably in the knitting art.

I claim:

1. The method of making a knitted fabric which comprises the laying out on graph paper of a pattern therefor made up of geometric straight-line figures such as basic squares and half squares and pluralities thereof, and dividing the pattern into parts to indicate fabric parts to be knitted in succession; and knitting said parts accordingly, beginning the knitting of each part by knitting it to a preceding part.

2. The method of making a hand-knitted fabric which comprises the laying out on graph paper of a pattern therefor made up of geometric straight-line figures such as basic squares and half squares and pluralities thereof, and dividing the pattern into parts to indicate fabric parts to be knitted in succession and determining the order in which said parts are to be knitted; and hand-knitting said parts accordingly, beginning the knitting of each part by knitting it to a preceding part.

3. The method of making a hand-knitted fabric which comprises the laying out on graph paper of a pattern therefor made up of geometric straight-line figures such as basic squares and half squares and pluralities thereof, dividing the pattern into parts to indicate fabric parts to be knitted in succession and determining the colors of the yarn to be used; and hand-knitting said parts accordingly, beginning the knitting of each part by knitting it to a preceding part.

4. The method of making a hand-knitted fabric which comprises the laying out on graph paper of a pattern therefor made up of geometric straight-line figures such as basic squares and half squares and pluralities thereof, dividing the pattern into parts to indicate fabric parts to be knitted in succession, determining the order in which said parts are to be woven and determining the colors of the yarn to be used; and hand-knitting said parts accordingly, beginning the knitting of each part by knitting it to a preceding part.

5. A method of predetermining the looping by hand of a fabric comprising the laying out on graph paper of a design built up of a plurality of basic squares of the size of the squares on the graph paper and of triangles half the size of the basic square and in which one or more of the basic squares or the triangles or both are combined to form units to be looped in succession, and determining the number of loops and the ar-
6. A method of predetermining the looping by hand of a fabric comprising the laying out on graph paper of a design built up of a plurality of basic squares of the size of the squares on the graph paper and of triangles half the size of the basic square and in which one or more of the basic squares or the triangles or both are combined to form units to be looped in succession, determining the number of loops and the arrangement thereof in forming each of the various units, and determining the color of yarn in different basic squares or triangles.

7. A knitted fabric comprising a plurality of knitted units with straight-line peripheries fitting together, connections between said knitted units including a completed edge of one of said knitted units and a pick up connection between such completed edge and the fabric of another knitted unit which has a completed edge at other parts of its periphery, said units individually having a directional stretching characteristic and successively having said characteristic oriented mutually transversely, thus giving at least an approximately uniform stretching characteristic to said fabric.

8. A knitted fabric comprising joint knitted units having greater resistance to stretching along certain lines than the knitted structure as a whole along those lines, and said lines of the units of the knitted structure being arranged to render resistance to stretching substantially the same in a plurality of directions.

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