Nov. 17, 1942. I. H. C. GREEN 2,302,211

KNITTED FABRIC AND METHOD OF KNITTING

Filed May 4, 1938 5 Sheets-Sheet 1

FIG. 4.

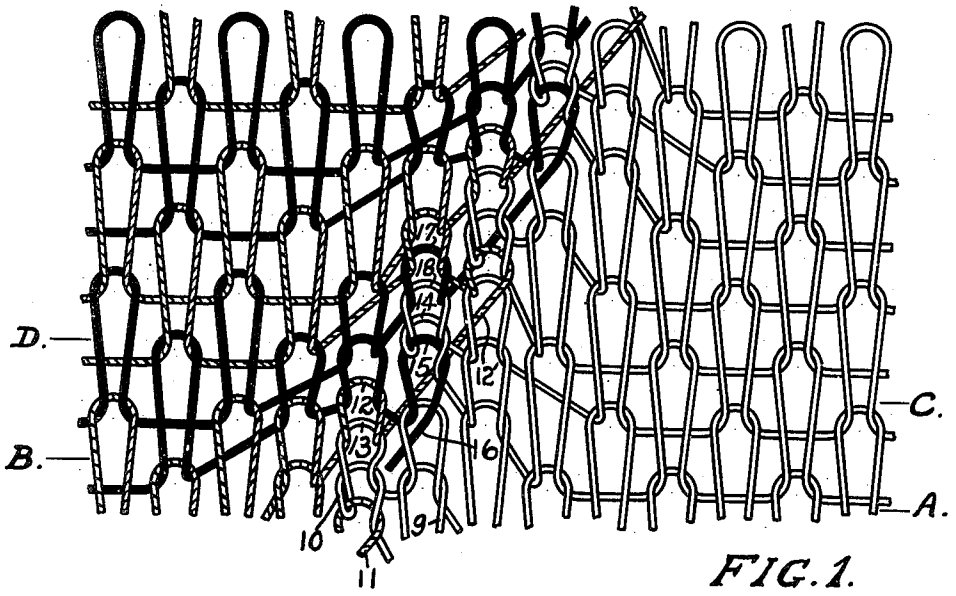


FIG. 1.

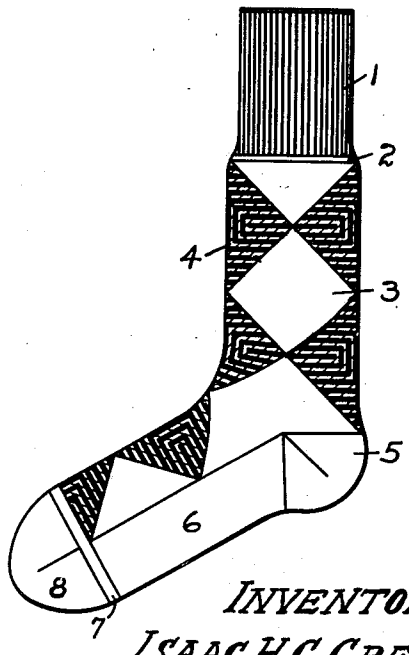


FIG. 2.

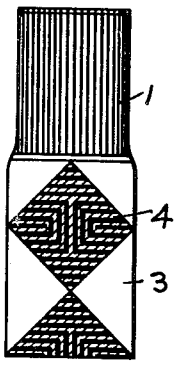
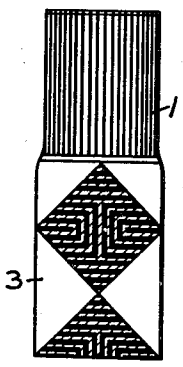


FIG. 3.



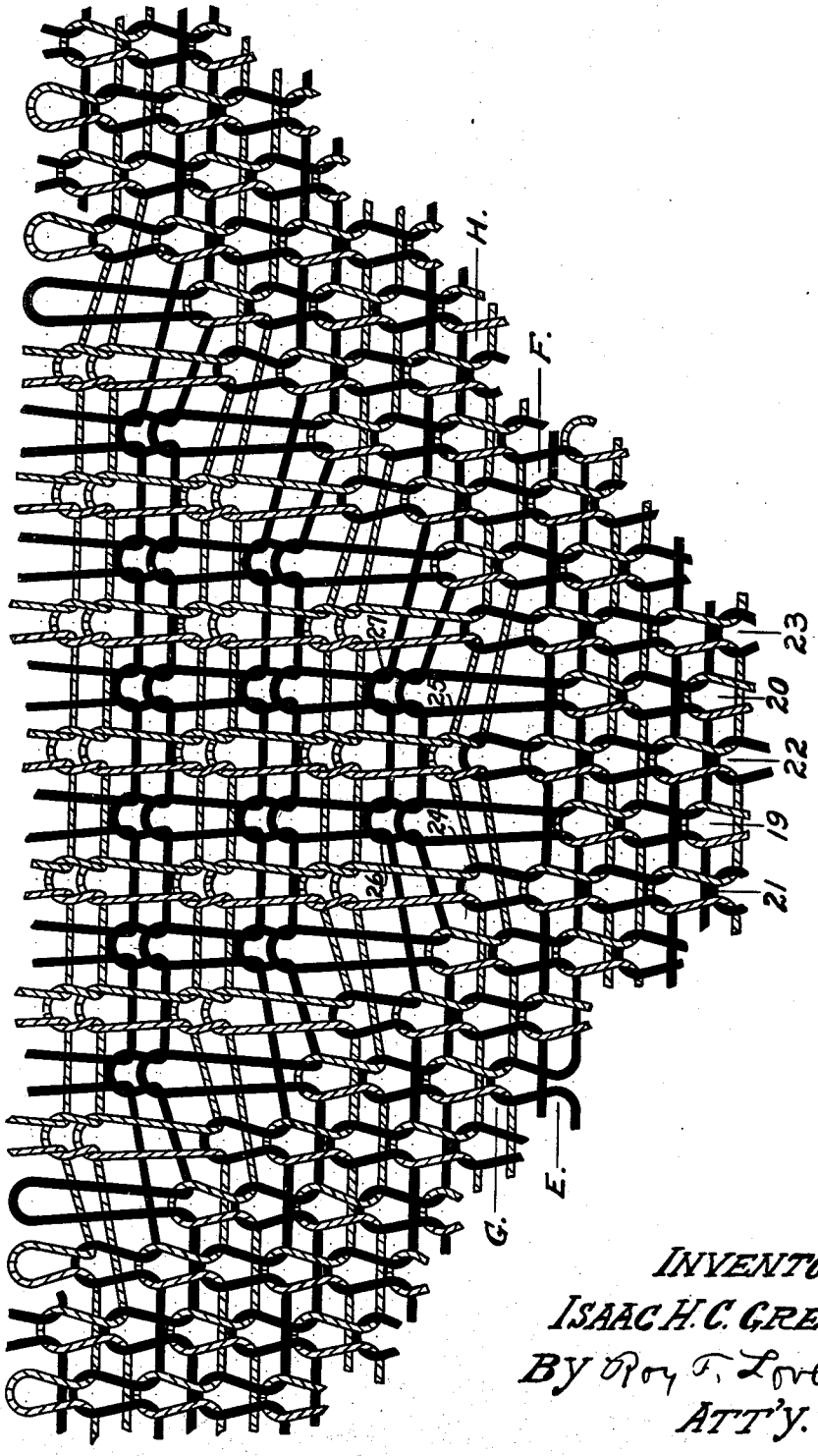
INVENTOR:
ISAAC H. C. GREEN,
By Roy F. Lovell,
ATT'Y.

Nov. 17, 1942. I. H. C. GREEN 2,302,211

KNITTED FABRIC AND METHOD OF KNITTING

Filed May 4, 1938 5 Sheets-Sheet 2

FIG. 5.



INVENTOR:
ISAAC H. C. GREEN,
BY Roy F. Lovell,
ATT'Y.

Nov. 17, 1942. I. H. C. GREEN 2,302,211

KNITTED FABRIC AND METHOD OF KNITTING

Filed May 4, 1938 5 Sheets-Sheet 3

FIG. 6.

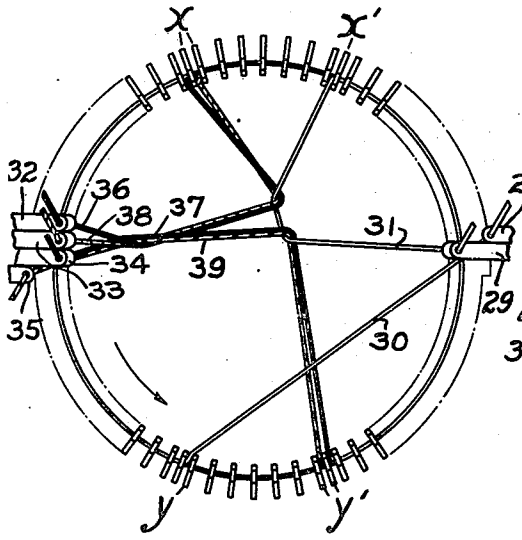


FIG. 7.

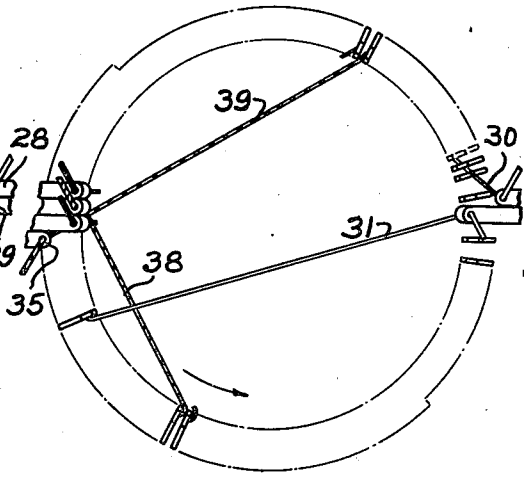


FIG. 8.

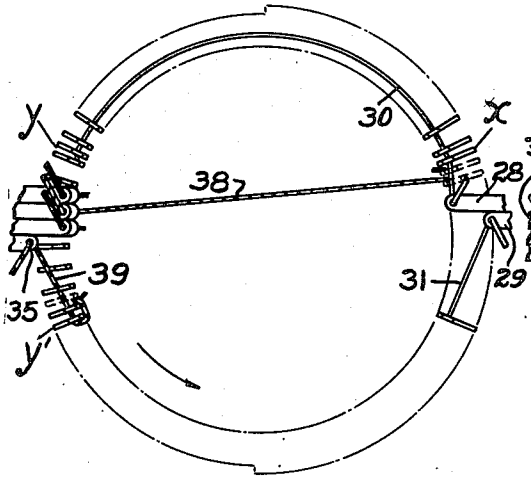
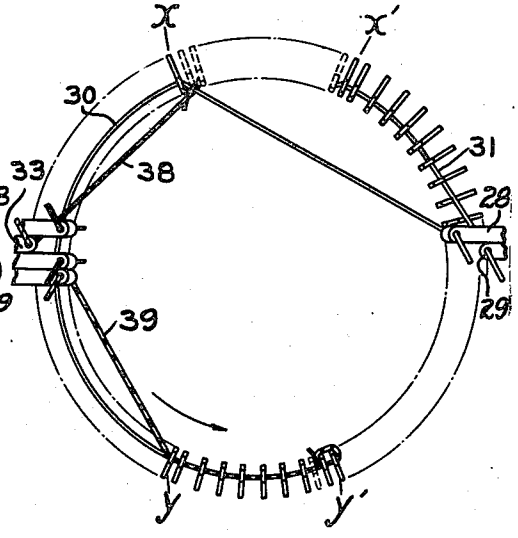


FIG. 9.



INVENTOR:
ISAAC H. C. GREEN,
BY Roy F. Lovell,
ATT'Y.

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KNITTED FABRIC AND METHOD OF KNITTING

Filed May 4, 1938 5 Sheets-Sheet 4

FIG. 10.

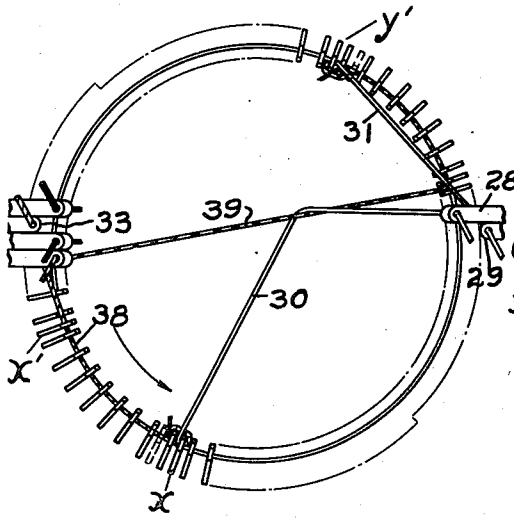


FIG. 11.

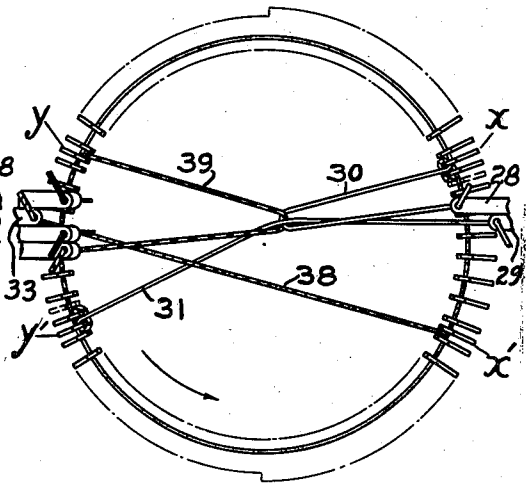


FIG. 16.

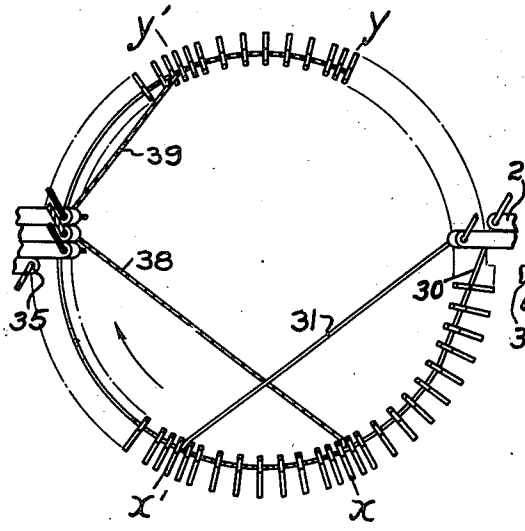
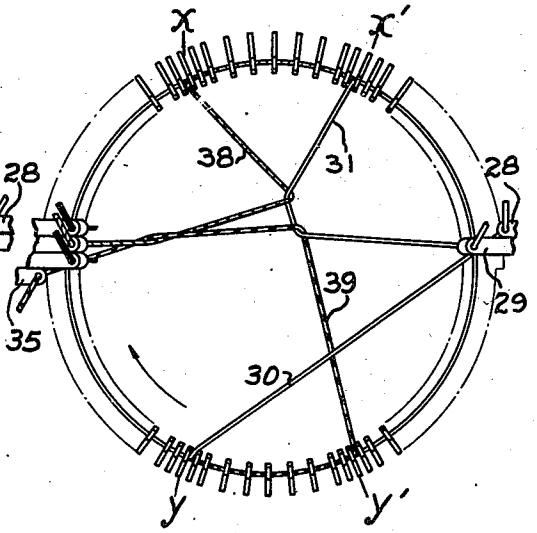


FIG. 17.



INVENTOR:
ISAAC H. C. GREEN,
BY Roy F. Lovell
ATT'Y.

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KNITTED FABRIC AND METHOD OF KNITTING

Filed May 4, 1938 5 Sheets-Sheet 5

FIG. 12.

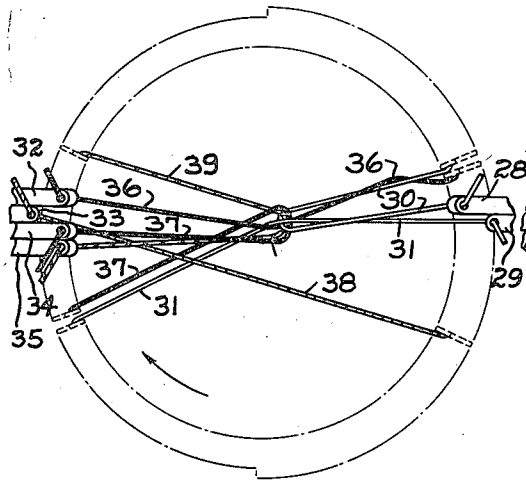


FIG. 13.

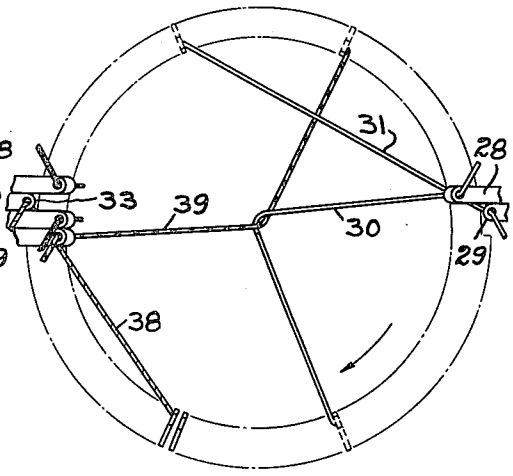


FIG. 14.

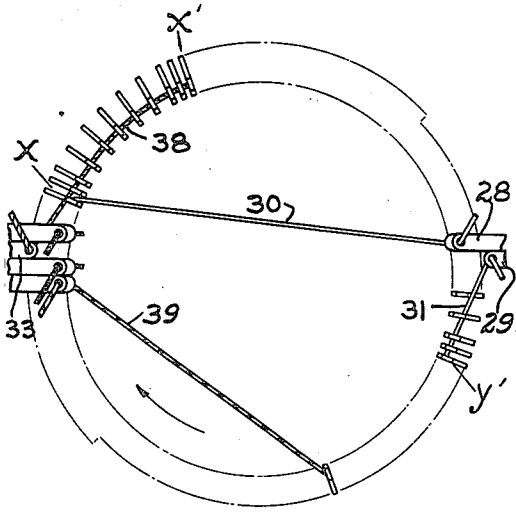
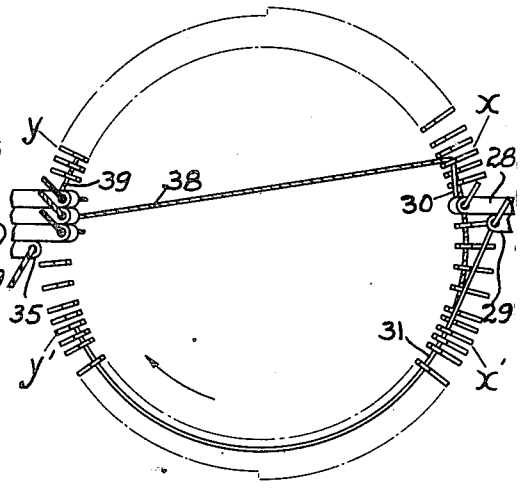


FIG. 15.



INVENTOR:
ISAAC H. C. GREEN,
By Roy F. Lovell,
ATT'Y.

Patented Nov. 17, 1942

2,302,211

UNITED STATES PATENT OFFICE

2,302,211

KNITTED FABRIC AND METHOD OF KNITTING

Isaac H. C. Green, Central Falls, R. I., assignor to Hemphill Company, Central Falls, R. I., a corporation of Massachusetts

Application May 4, 1938, Serial No. 206,019

5 Claims. (Cl. 66—179)

This case concerns stockings of the so-called solid color pattern type and a method of ornamenting the same. This method of ornamentation is further adapted to be applied generally and the following disclosure will apply to solid color pattern work and to the general problem of ornamentation as well.

In the figures of the drawings:

Fig. 1 is an elevation of a solid color patterned half-hose having in addition to the solid color work, horizontal and vertical striping made in accordance with the invention;

Fig. 2 is an elevation showing the front of the half-hose shown in Fig. 1;

Fig. 3 is an elevation showing the back of that half-hose shown in Fig. 1;

Fig. 4 is a conventional representation of a section of fabric at the suture line showing one form of ornamentation in detail, the fabric stitches being greatly enlarged;

Fig. 5 is a similar conventional showing of another part of the fabric, not taken at the suture line, and showing both horizontals and verticals;

Figs. 6–11 show successive positions of needles, yarn guides and feeding yarns throughout a stroke of knitting in counter-clockwise direction;

Figs. 12–17 show similar views throughout the following clockwise stroke of knitting.

A method and machine for producing solid color patterned hosiery on circular, independent needle knitting machines has been described in detail in co-pending application Serial No. 171,134, filed October 26, 1937, now Patent No. 2,217,022. This case is a continuation as to all common subject matter of that application.

According to solid color pattern knitting in its simplest form, certain areas are to be knitted of one colored yarn and adjacent areas of another colored yarn, these yarns being interknitted in some sort of a suture at the junction between patterned areas. By a method of knitting employing a plurality of yarns of different colors or of contrasting characteristics within a single area, it is possible to effect the knitting of stripes within what would normally be an area of a single solid color. By combining this scheme with the knitting of tuck or draw stitches effects of vertical stripes or of stripes running in diagonal or other directions may be knitted.

According to the method employed in the preceding Case No. 171,134, sutures were knitted between the adjacent areas of different colors or characteristics and also a suture at the back of the fabric, or at least at one point along the length thereof. This last mentioned suture preferably was knitted in the back and cut through certain of the figures so that even though a figure might be made entirely of the same color, it had to be knitted from separate yarns. This vertically extending suture also gave the fabric the appearance of having a seam at that point. In the present method the stroke of the cylinder as it reciprocates has been increased to a considerable extent thereby doing away with this separate suture at the back of the fabric and thus simplifying the knitted product while improving its appearance. By increasing the stroke in reciprocation to about one and three-fourths revolutions and feeding the several yarns in advance of the edges of each patterned area, it is possible to knit what appears to be a circularly knit article connected by no sutures other than those between the several patterning areas. In other words, the only sutures, in the finished product as herein described are those which connect by interknitting, contiguous solid colored areas.

Referring to Figs. 1, 2 and 3, the general appearance of the stocking is illustrated, Figs. 2 and 3 showing that the appearance at the front and at the back are practically identical. In these Figs. 1, 2 and 3 a conventional half-hose is shown having a rib top 1, ring top 2, a leg and instep being patterned by a solid color pattern of white at 3 and a contrasting color or colors at 4. These areas are joined by interknitting the end loops to form knitted sutures as will hereinafter be described. According to the method of construction these sutures may differ at some of the points of juncture, but the general scheme prevails throughout. These areas are herein illustrated as being of diamond form, but it is to be understood that, depending upon the capabilities of the machine, the pattern scope, and the desires of the knitter, varied shaped figures and figures of different sizes or extents may be realized. The areas of solid color 4 are, according to the present case and invention, to be knitted of at least two contrasting yarns. For example, we shall consider the solid or filled-in lines as being of black yarn and the sectioned lines of a red yarn. Obviously, different colors may be employed and likewise the areas 3 may be of two or more colors, but preferably of different colors from those employed in the areas 4. It will be noted that each of these areas 4 has a sort of diamond within a diamond, this effect being produced by vertical lines bordered by horizontal lines. Different configurations may be resorted to, all the possibilities being far too numerous to make it worth while to attempt to describe more

than one or two specific embodiments of the invention from which the general principles and essentials of the invention may be learned.

The stocking includes the usual narrowed and widened heel 5, sole 6 which may be reinforced if desired, and a ring toe 7. The narrowed and widened toe 8 is knitted in the usual way. Other variations of these elements of the stocking are possible, for instance, the top 1 may be knitted as plain fabric in this machine and may have an elastic yarn inserted in any of the well-known ways to simulate rib appearance and to act as a garter. The pattern work may be extended through the entire foot except at the heel, ring toe and toe, whereupon the area at 6 will be patterned as in the leg. If desired the ring toe may be varied or dispensed with. The usual loopers rounds terminate the toe and the opening thereat is to be looped up in the usual fashion.

Referring to Fig. 4, a section of fabric is shown wherein an area knitted from red and black yarn joins another area knitted from white yarns. The suture between the two is illustrated in detail and will be described more thoroughly in a following paragraph. By the scheme of knitting employed, a black yarn is fed throughout two courses, then a red yarn for two courses, then a black for two more courses and so on. It is to be understood that the machine is reciprocated continuously throughout the knitting of these solid color patterned areas and that when a black yarn or a red yarn is introduced it knits in one direction and then in the return direction whereupon it is withdrawn as the other colored yarn is introduced. In one form of the invention each yarn may be fed to all needles knitting within the patterned area on each stocking, but by a more acceptable form, every other needle will take the yarn in one direction, then in the return direction the intervening needles will take said yarn and knit. The result is that a sort of single line stripe of pleasing appearance is produced. The staggering results in lines of jagged appearance which are very acceptable in a stocking of this type. The fabric will also be less bulky than it would be if each course were knitted on all the needles. While it is not absolutely necessary to employ the same scheme in the solid colored areas which are knitted of the white yarn, or at least of a single color or contrasting colors to that in the areas 4, Fig. 1, it is better to resort to the same scheme to avoid distortion of fabric and unevenness due to greater weight in the areas 3 than in the areas 4.

In Fig. 4 the fabric is knitted from bottom to top and the suture is shown as it would appear when partly through one of the figures. In other words, the start is not at the corner of a diamond or other figure. The first course A at the bottom is drawn on a clockwise stroke and ends in the loops 9 and 10 of white yarn, the loop 10 being knitted through a loop 11 of the red yarn which is started at that particular point. In other words the needle which first knitted the red yarn will be the last needle to knit the white yarn. Obviously the white yarn and the red yarn are knitting at substantially the same time but one at one side or feed of the machine and the other at the opposite. At the end of this clockwise stroke the cylinder returns and course B is knitted in a counter-clockwise direction, the intermediate needles being raised on this stroke whereas in the clockwise stroke the so-called alternate needles are raised for taking the yarn and knitting. A terminal loop 12 of the red yarn knits through a loop 13 of the white yarn which is in turn knitted through the loop 10 of that same yarn. After loop 10 was knitted on the clockwise stroke that same needle knitted the white yarn over again on the counter-clockwise stroke so that we have the red loop 11, then the white loop 10 knit through the red loop 11, thereafter another white loop 13 and then the loop 12 of the red yarn whereupon that red yarn floats at 12' until it is to be introduced again on a subsequent clockwise stroke, but after that stroke in which the black yarn, or a yarn of another color, has been in action.

The white yarn knits across on this counter-clockwise stroke and it will be obvious that another suture will be made at the opposite side of each of these patterned areas. It is not necessary to illustrate the sutures at the other side of these areas since they will be similar, but opposite to the suture illustrated. In other words, the white yarns will be knitted just as the red and black yarns are knitted in Fig. 4 when we consider the opposite side of the white area of that figure. Likewise at the opposite side of the red and black area in Fig. 4 the red and black yarns will merely knit into the suture and return being knitted in each direction of knitting on those needles which knit the suture. These needles are generally two or three in number thus making it essential to have a plurality of adjacent needles knitting in the suture in contrast to the alternate arrangement of needles knitting throughout the rest of the solid color area.

On the next return stroke in a clockwise direction course C is knitted of the white, terminating in a loop 14 knitted through the initial loop 15 of a black yarn which had been floating as at 16 while the red yarn was knitting in courses A and B. The black yarn then knits in the return stroke D terminating in the loop 17 drawn through the white loop 18 which was the second white loop to knit on that needle as the white yarn was knitted in a counter-clockwise direction. On the next clockwise and counter-clockwise strokes the red will be introduced and the black will float as it is withdrawn. The cycle will be practically the same as that described with respect to courses A and B, but since the figure is becoming wider in one area and narrower in the adjacent, the suture needles will differ in each consecutive pair of courses. The illustration just given will serve to indicate in general how the fabric is knitted, the specific way in which the suture is formed and one specific manner of effecting narrow horizontal stripes from yarns of contrasting colors or characteristics within a single solid color area.

Referring to Fig. 5, a section of fabric is shown wherein the edges are patterned in a manner similar to that illustrated at the left hand side of Fig. 4, but the central part is changed in a manner to effect vertical stripes instead of horizontal. In fact, this Figure 5 represents a part of the center of one of the areas 4, Fig. 1, while Fig. 4 represents a different part of one of those areas, that adjacent the suture. To change the pattern from one of horizontal lines to lines vertical or at right angles to those first mentioned, needles are so controlled as to knit one colored yarn only in alternate wales and the other colored yarn only in intermediate wales. While the terms horizontal and vertical are used, this applies to the example herein shown and it is to

be understood that Fig. 4 shows stripes in a coursewise direction while Fig. 5 shows stripes both along the courses and in the direction of the wales. Likewise, examples herein given as simple illustrations involve alternate and intermediate needles, but other schemes such as a 2 x 1 or 2 x 2, or others, may be resorted to and are fully within the original intent and scope of the invention.

As will be evident from an inspection of Fig. 5, the horizontal stripes may be changed to vertical stripes by holding some of the loops so as to knit what are generally termed draw stitches while knitting other stitches in those wales of ordinary length. These draw stitches are so arranged in courses that certain wales will be knitted only of black yarn while certain other wales are to be knitted of red yarn, or generally speaking, the yarns will be of contrasting colors or characteristics.

To the course indicated at E, Fig. 5, the knitting is in accordance with that described with respect to Fig. 4 wherein the result is horizontal lines of contrasting colors. Beginning in course E which is knitted from black yarn the alternate needles are drawing loops while the intervening needles are merely retaining loops of the red yarn which they drew on the previous stroke. The needles which are knitting in wales 19 and 20 are to hold their stitches over an extent of three courses rather than over a single course as in the previous examples. In the next course, course F, the intermediate needles draw the black yarn, drawing it through loops of the red yarn which were taken two courses prior. After these two courses with the black yarn the red yarn is introduced and the black yarn withdrawn. In course G the red yarn is knitting on alternate needles, but is skipped by those alternate needles which knit in wales 19 and 20. On the next course H the red yarn is fed on the opposite stroke to the intermediate needles and it will be noted hereinafter that those intermediate needles knitting in wales 21, 22 and 23 are to hold their stitches as described with respect to the needles knitting in wales 19 and 20 from the black yarn.

The black yarn will then be introduced on two consecutive courses, and so far as wales 19 and 20 are concerned, will knit loops 26 and 27 through the greatly extended loops 24 and 25 which floated over a distance of three courses. These stitches 24 and 25 are drawn out or extended over three floats, one of black yarn and two of red yarn. On the return stroke with the black yarn it will be skipped by the needles knitting in wales 21, 22 and 23, but will immediately knit through the loops 26 and 27 drawn through 24 and 25, respectively. Incidentally the pattern is being widened out and the elongated stitches in these courses number four, an increase of two at each step in the cycle. The scheme is carried out in the particular pattern herein shown but it will be realized that other schemes may be employed depending upon the particular pattern and effects desired.

On the next two courses knitted from the red yarn, a similar system prevails wherein the pattern is widened out at either end, short loops being drawn through the draw stitches which were being held on intermediate needles, and thereafter other loops which are to be held over a plurality of courses. It is to be noted that in starting off the elongated loops 24 and 25 are held in three courses, but that the loops of the red yarn are necessarily held for only two courses. If the pattern was to be changed by converting the red stripes running horizontally to verticals first, the opposite would prevail. It will be noted that at the edges of the pattern black loops extend over three floats or courses whereas at the center of the pattern both black and red loops are held for two courses only. The result is that in wales such as 19 and 20 only the black yarn is knitted; in wales such as 21, 22 and 23 only the red yarn is knitted. The conventional representation of the fabric is greatly enlarged and opened up to a considerable extent so that the floats show between and around the stitches. In the actual fabric these floats are not apparent at the face and the appearance is one wherein adjacent wales are of contrasting, solid colors. The particular pattern herein illustrated is a simple one and it is quite apparent that many variations such as diagonal lines rather than verticals and horizontals may be knitted, and in fact, effects so numerous that no full description could be given in this disclosure.

Now referring to Figs. 6–17 I will describe certain steps in the method of knitting to show rather briefly which yarns are knitted in the various patterned areas, how the changes are made, and how the yarns float when not knitting. Figs. 6–11 are of consecutive steps in a counterclockwise stroke of knitting while Figs. 12–17 show steps in a clockwise stroke. At one side of the machine two yarn levers 28 and 29 feed white yarns 30 and 31 respectively. At the other side four levers 32, 33, 34 and 35 feed two black yarns and two red yarns. The set-up is such that alternate levers feed black yarns and intermediate levers the red yarns. The levers 32 and 34 feed black yarns 36 and 37, respectively; while the levers 33 and 35 feed red yarns 38 and 39, respectively. In Fig. 6 the red yarn 39 and white yarn 30 are in feeding position, but have ceased to feed since they have been taken by the terminal needles in selected groups which were knitting them.

It is to be understood that suitable knitting cams are provided at each side of the machine so that needles may knit in either direction as they reciprocate through these cams. Jack or other control of the needles is provided so that different groups of needles may be selected at each knitting station, and further, this selection is provided in both directions of travel, all as described in the co-pending application above identified. The selecting mechanism is so controlled that it will be effective only as needles approach that stitch cam at which they are to knit and further, the selection can be automatically dispensed with at such times as other phases of knitting occur such as in the ring top, ring toe, and heel and toe. Pattern control is also provided for changing the position of the feeding yarn guides so that they feed the yarns in the proper courses only. The selection of needles is different in its set-up from that of the preceding case in that only alternate needles are raised to knit except as above mentioned at the suture. The necessary pattern set-up is merely a task for the knitter in each individual instance. The stroke being approximately one and three-fourths revolutions of the needle cylinder, needles will pass through the same cam block more than once. A group of needles selected to knit at one side of the machine will knit thereat and during the remainder of the stroke, will remain at a low

level passing beneath stitch cams at the opposite side and also beneath the stitch cams of the first mentioned cam feed as they pass through a second time. Obviously, different groups of needles are knitting at the opposite cam blocks at the same time and different groups knit at the same cam block at different periods within the same stroke, but any one group of needles will knit only once on a single stroke except for those needles involved in the knitting of the sutures.

In said Fig. 6 the black yarn **36** has knitted on that group of needles x, x' while the other black yarn **37** has knitted on the group of needles y, y'. The needles x, x', y and y' generally designate the terminal needles of a group or the suture needles. Of course it must be realized that on each stroke as the pattern is varied, the groups of needles knitting any particular yarns are increased or decreased, as the case may be, and thus the terminal or suture needles will be changed as the pattern progresses. Hereinafter we will not attempt to point out particular suture needles, but use the letters x, x', y and y' to designate the needles at the ends of the groups knitting a particular yarn. Within the groups thus designated alternate needles will knit a yarn on strokes in one direction while intermediate needles will knit on strokes in the reverse direction. At certain times two, and at other times, three needles may be knitting adjacent one another in the production of a suture. This is merely incidental to the general scheme of knitting alternate and intermediate needles throughout the groups to which the various colored yarns are fed. These black yarns have been withdrawn and, of course, the white yarns **30** and **31** have knitted throughout the remainder of the needles. Yarn guide **35** has been brought down to feed the red yarn **39**.

In Fig. 7 the needle cylinder has traveled about one-third of a revolution and the white yarn **30** is beginning to knit at one side on the needle y while, at the other side, the yarn **39** is in feeding position, but no needles have been raised to pass through that cam block and to knit. The other red yarn **38** is not feeding and is floating. Only those yarns being knitted on the stroke are shown floating across the needle circle in Figs. 7–11; this is merely for clearness and convenience. The maximum entanglement of floats is illustrated in Figs. 6 and 12, and between these positions, the floats reach a point of minimum or practically no entanglement. In Fig. 8 the parts have traveled through approximately another third revolution, the white yarn **30** having been knitted from the needle y to the opposite needle x. The yarn guide **28** is withdrawn and yarn guide **29** is lowered to a feeding position. The yarn **31** is being taken up by a suitable take-up (not shown); each of the yarns is controlled by such a take-up. The red yarn **39** fed by yarn feeding lever **35** is started to be knitted on the needle y'. The other red yarn **38** is floating across the needle circle.

In Fig. 9 the parts have moved approximately one-quarter turn, the said red yarn **39** has been knitted from the needle y' to that at y and is then withdrawn. The yarn **30** was knitted from the needle y to needle x and was withdrawn by raising yarn lever **28**. Then yarn lever **29** dropped into position and started to feed its white yarn **31** to the needle x' and alternate needles following.

In Fig. 10 the needle cylinder has continued to rotate for about a third of a revolution until the red yarn **38** fed by yarn lever **33** has been taken by the needle x and knitted to needle x'. The yarn guide is not withdrawn at that moment but the yarn ceases to feed since the needles x, x' and alternate needles intervening are the only needles affected by the selecting means. The other red yarn **39** is floating across the needle circle as is the white yarn **30**, and the opposite white yarn **31** has fed from the needle x' to the needle y'.

In Fig. 11 the parts continue to rotate throughout the remainder of the stroke, but yarn guides remain in position and the yarns merely float from the point in Fig. 10 to the extremity of travel illustrated in Fig. 11.

Now referring to Figs. 12–17 similar steps in the return stroke are illustrated. Fig. 12 is similar to Fig. 11 except that all of the yarns are shown thereby illustrating the entanglement of yarns at that extreme position. These yarns will be untangled progressively as the midpoint of the clockwise stroke is reached and will then proceed to assume the position in Fig. 6.

In Fig. 13 parts have moved for about one-fourth turn and the yarn levers **29** and **33** still remain in feeding position. In Fig. 14 red yarn **38** has fed from the group of needles x' to x. The white yarn **31** is started to feed on needle y'.

In Fig. 15 this white yarn **31** has fed from needle y' to x' while the opposite white yarn **30** has been taken up by the take-up. Red yarn **38** was withdrawn shortly after knitting on needle x and is floating. The other red yarn **39** has been introduced and has started to feed to the needle y and the group from that point to the opposite side at y'. In Fig. 16 that same yarn **39** has knitted over the needles just mentioned. The white yarn **30** has started to knit at the needle x and will knit on every other needle in that group from x to y.

In Fig. 17 the needle circle has completed the stroke and is at a position about 180 degrees from that shown in Fig. 16. The yarn **30** has completed knitting to the point y and is floating. The yarn **39** as well as the other red yarn **38** are also floating, no knitting being done at the left hand side of these figures after knitting on the needle y', Fig. 16. It will be noted that the position of yarns in Fig. 17 is the same as that in Fig. 6 but the black yarns or their floats are not shown. The progressive steps in these Figs. 6–17 are taken at a phase of the knitting where the white yarn is knitted over a fairly wide area while the red yarn is knitting over a comparatively narrow area. It may seem that the extreme length of stroke is not necessary from these diagrammatic illustrations, however, there are other extremes in which it is necessary. Of course, the pattern extends from a point with the red and/or black yarns to approximately 180 degrees of the travel of the needle cylinder, and vice versa with the white yarns. While I have described the operation as well as the fabric with respect to particular colors, it is to be understood that any colors or yarns of any different characteristics may be employed and that I resort to specific colors and pattern merely for purposes of giving one clear example of a fabric and the method of knitting.

On the following strokes in a counter-clockwise and clockwise direction the white yarn would be knitted as just described with respect to Figs. 6–17 but on different numbers of needles. Of course, what I have termed the alternate needles would be controlled to take yarn and knit on

strokes in one direction while in the reverse direction the intermediate needles would be those controlled to perform said function. When knitting the verticals above described, the selecting means is merely set up so as to control needles to knit the draw stitches in the manner described. On these subsequent counter-clockwise and clockwise strokes the black yarns will be controlled as the red yarns were in Figs. 6–17, although they would knit on different numbers of needles, the number being greater or less depending upon whether or not the pattern was being widened or narrowed.

Lengthening the stroke so that the seam or suture which formerly had to be knitted at the back of the article is done away with is of great help in knitting patterns as herein described. In the previous construction, those figures at the back of the article where the suture intervenes had both sides of each figure knitted from separate yarns, and necessarily twice as many yarn guides had to be employed. This brought about additional entanglement of the yarns adding to the machine difficulties, but further, the use of different yarns at each side affected the figure itself. Stripes at one half might not align with stripes in the other half, that is, in a horizontal direction, and were not continuous as they are according to the present practice. Any vertical striping at that point would necessarily be interrupted by the suture at the center of each figure.

Likewise, diagonal stripes could not be formed at the back of the stocking comparable to those at the front. With the present practice there is no distinction in these respects between the figures at the front, back, or at any other position.

In the examples illustrated in this case vertical and horizontal stripes and combinations have been illustrated. Diagonal lines may be produced by proper arrangement of pattern, these diagonal lines being of the color within the figures, or in certain instances being made to stand out and appear more or less like an overlaid stripe. Combinations of horizontal, vertical and diagonal lines may be knitted if desired.

The invention has been described in more or less detail with respect to certain preferred examples, but is not to be considered as limited thereto since many variations will be obvious to those skilled in the art and will fall within the scope of the invention as originally intended. The invention is defined in the appended claims.

I claim:

1. A method of knitting to produce vertical stripes in reciprocatory work including the steps of knitting a plurality of different colored yarns each yarn knitting in a partial course only, one of said yarns being knitted in spaced courses and in spaced wales and floated over intervening wales in some of such partial courses, the other of said yarns being knitted in spaced, intervening courses and in those wales wherein the first of said yarns was floated at others of said partial courses.

2. A fabric having solid colored patterned areas knitted by reciprocatory knitting and connected to adjacent areas by knitted sutures, some of said areas comprising a plurality of yarns one of which yarns is knitted in spaced courses and floated over intervening courses at the suture at one side of said patterned area, said yarns being of different characteristics to effect patterned work within said single area.

3. A fabric having solid colored patterned areas knitted in reciprocatory knitting and connected by knitted sutures, some of said areas being formed of a plurality of yarns one of which is knitted in spaced courses and another of which is knitted in intervening courses, one of said yarns being knitted at certain parts of said area in certain wales to the exclusion of the other yarn, and said other yarn being knitted in other wales to the exclusion of the yarn first mentioned.

4. A fabric having patterned areas some of which are solid colored patterned areas, said fabric being knitted from a plurality of different colored yarns some of which are knitted as horizontal stripes in the fabric, each stripe comprising a course formed by a drawing together of two separately knitted courses each of which is knitted in a reciprocatory manner, one course in one direction and the other course in the opposite direction, loops in alternate wales only of a yarn being knitted in one course and loops in intermediate wales only thereof being knitted in the second course.

5. A method of knitting to produce vertical stripes in reciprocatorily knitted work including the steps of knitting two yarns of different colors, knitting one of said yarns in a plurality of courses but in spaced wales only, reciprocatorily, first in one direction and then in the opposite, knitting the other of said yarns in a plurality of courses alternating with said first mentioned plurality, and in wales intervening those in which the first mentioned yarn was knitted, reciprocatorily, first in one direction and then in the opposite, the last knitted loops of each yarn being held after knitting the said plurality of courses thereof while the intervening plurality of courses of the other yarn are being knitted.

ISAAC H. C. GREEN.