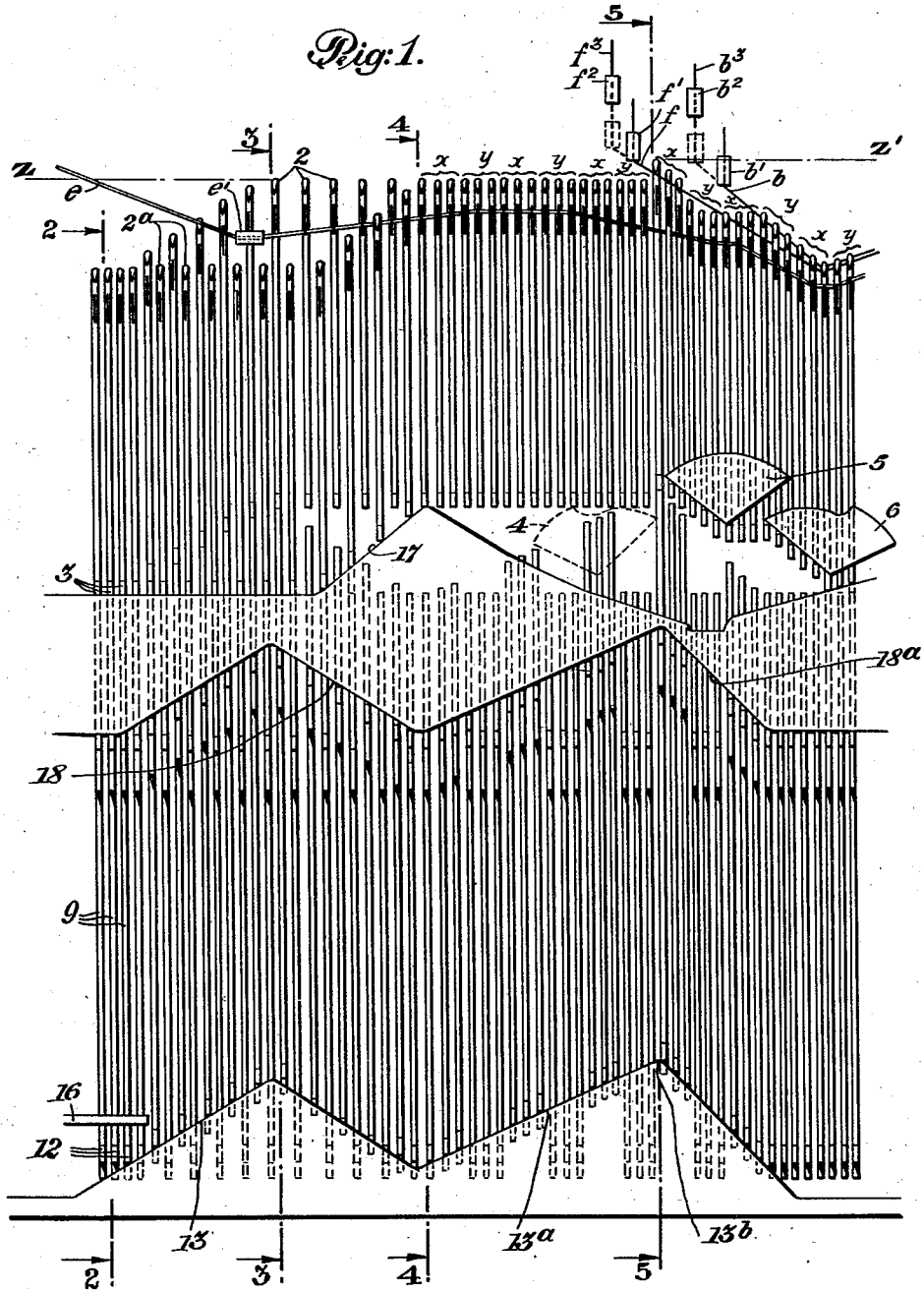
Aug. 29, 1939. J. L. GETAZ 2,171,236

PROCESS OF KNITTING

Original Filed April 17, 1937 4 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

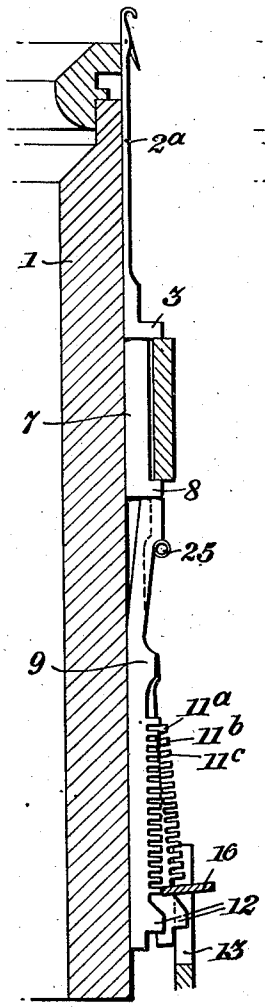


Fig. 3.

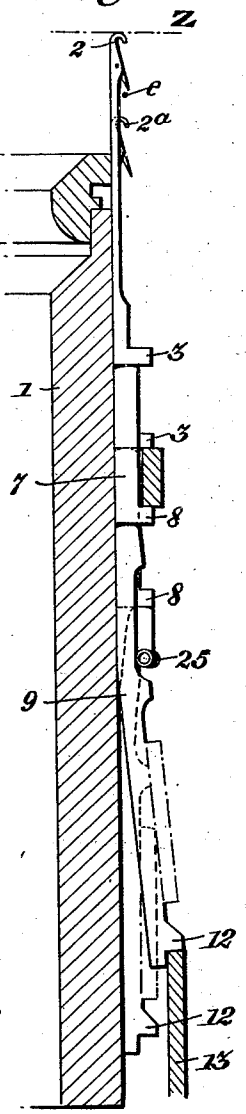


Fig. 4.

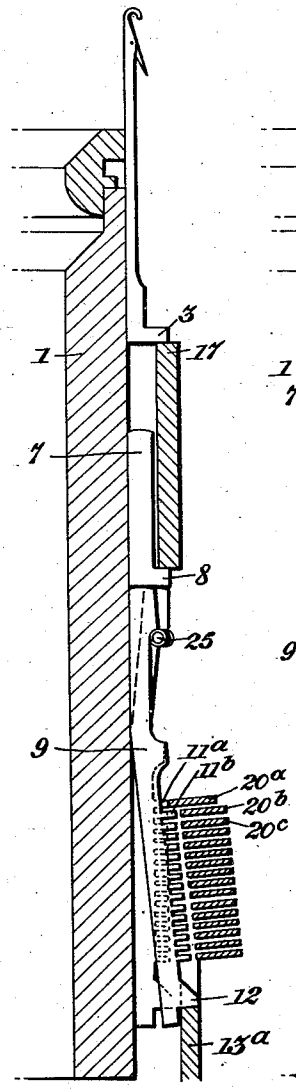
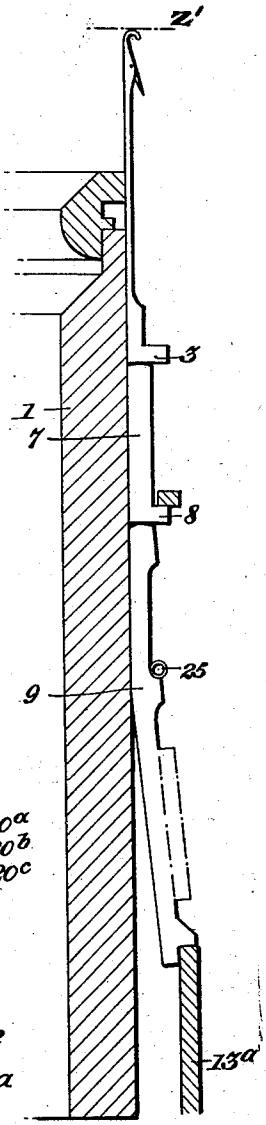


Fig. 5.



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Fig. 6.

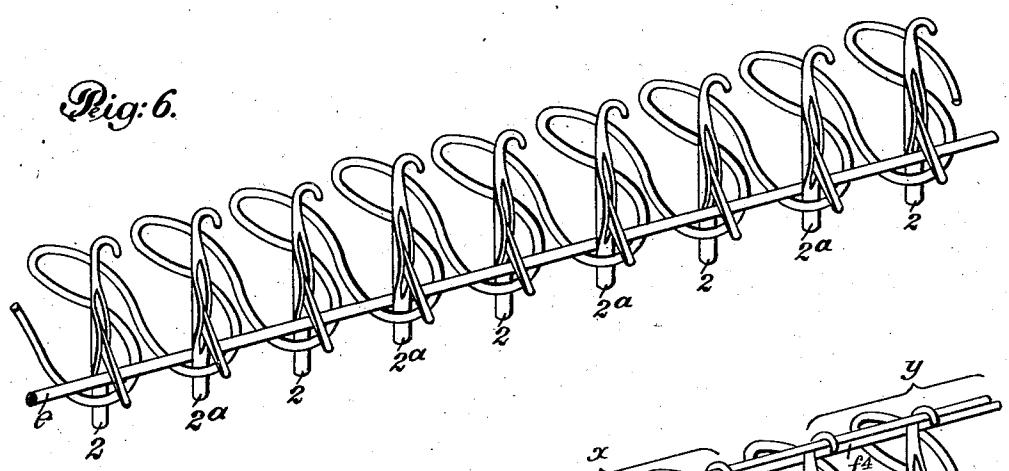


Fig. 7.

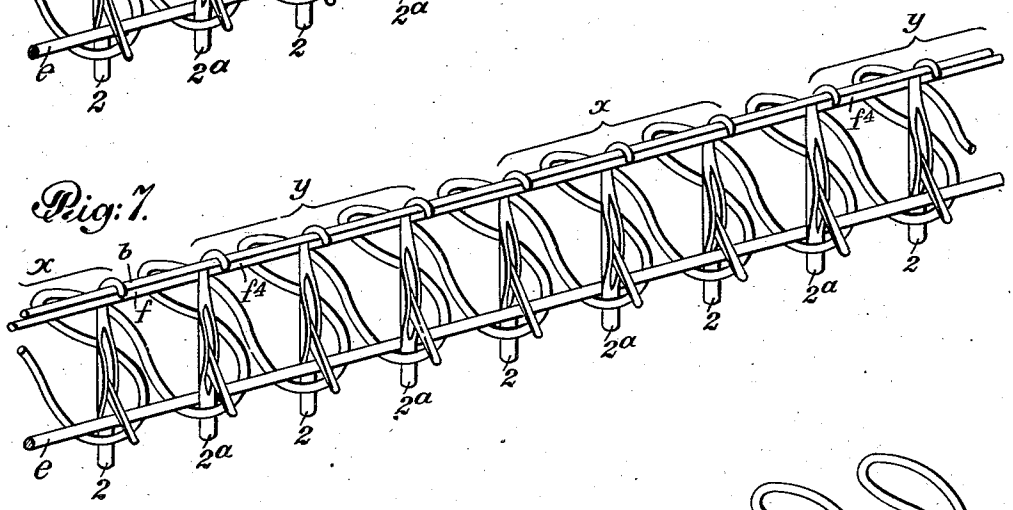
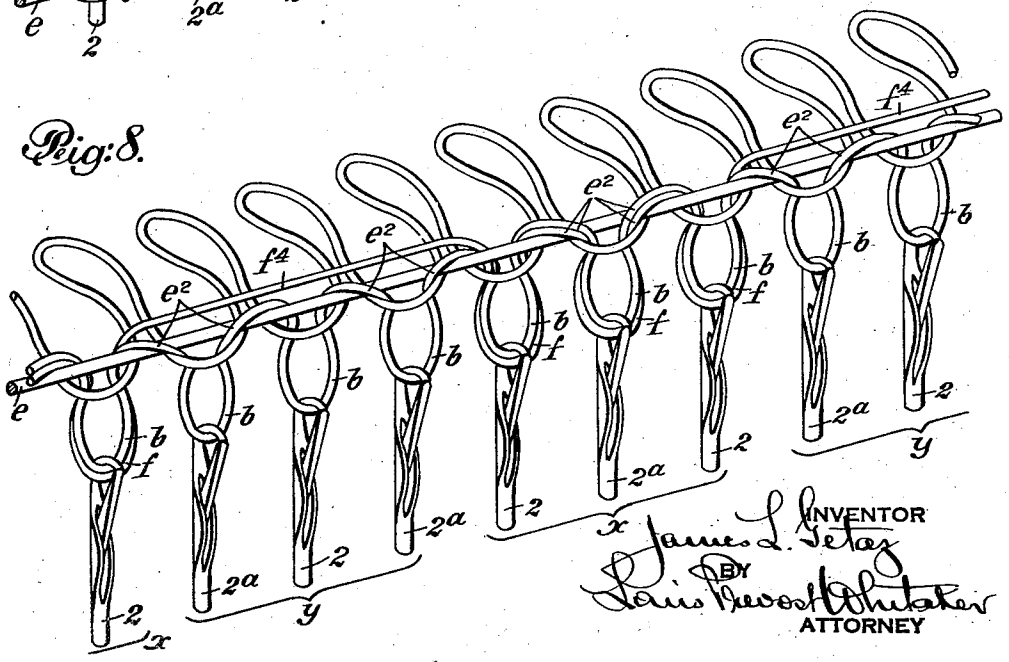


Fig. 8.



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Fig:9.

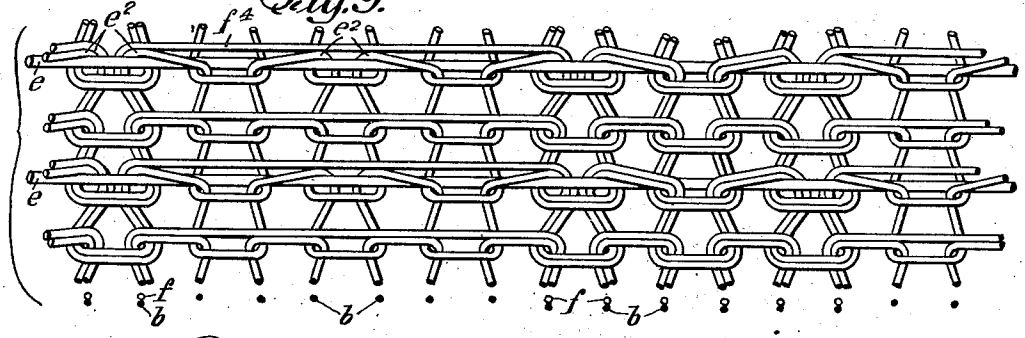


Fig:10.

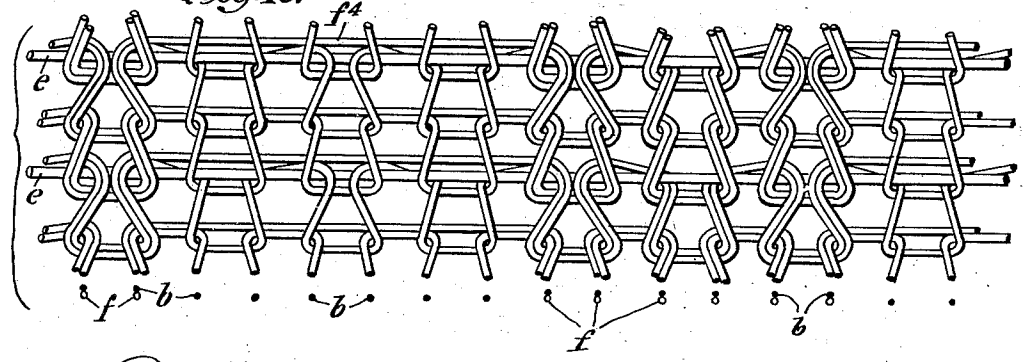
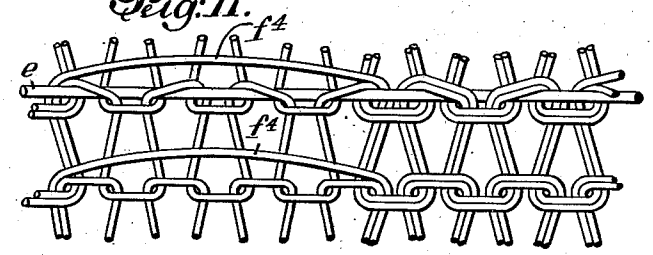


Fig:11.



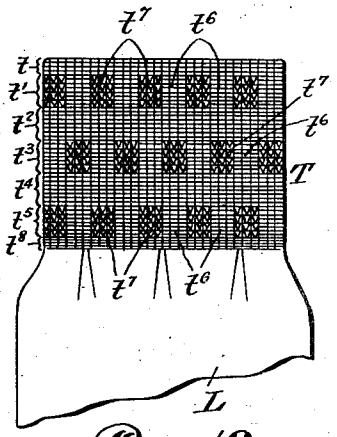


Fig:12.

Fig:13.

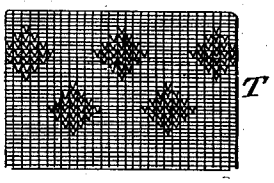
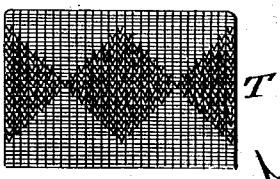


Fig:14.



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Patented Aug. 29, 1939 2,171,236

UNITED STATES PATENT OFFICE

2,171,236

PROCESS OF KNITTING

James Louis Getaz, Maryville, Tenn.

Original application April 17, 1937, Serial No. 137,451. Divided and this application April 12, 1938, Serial No. 201,473

7 Claims. (Cl. 66—9)

My invention consists in the novel features hereinafter described, reference being had to the accompanying drawings which illustrate several embodiments of my invention and so much of the apparatus for carrying out the process of making the same as is necessary for the purpose of explaining them, and the said invention is fully disclosed in the following description and claims.

My present invention consists in a process of making an ornamented plain kunit, preferably circular seamless fabric, having an elastic thread incorporated under tension in certain courses (or in all of the courses) and secured to the fabric at separated wales in each course in which the elastic thread is knitted, without being drawn in a loop or loops at any point in the fabric, so that the elastic thread, preferably of rubber or the well known Lastex, lies in substantially undistorted lines around the circular fabric, and with sufficient tension to draw the fabric together into vertically disposed rib-like ridges, simulating rib knitting.

The fabric produced by my improved process is not claimed herein as it forms the subject matter of my former application, filed April 17, 1937, and given Serial No. 137,451, of which this application is a division.

In carrying out my present invention, I feed the elastic thread under tension to the needles in advance of the knitting wave in such manner that it passes on the front side of certain needles, usually every alternate needle, below the latches thereof and behind the intermediate needles, so that it will not be drawn into a loop by either set of needles. The needles are then divided into separate groups, and a backing or body thread is fed to the hooks of all the needles of all the groups, while a plating thread is fed alternately into the hooks of one group of needles and floated in rear of other groups of needles, the plating thread being fed preferably under slightly greater tension than the body thread so as to appear on the face of the fabric when fed to the hooks of the needles, while the body thread will appear on the face of the fabric where the plating thread is floated. Either the body thread or the plating thread, or both, may be thrown out of action and substituted by another thread according to the number of colors to be produced in the fabric. It will be understood that the selection of the needles which receive the elastic thread in the two ways mentioned, the further selection of the needles into desired and preferably alternating groups, and the manipulation of the thread guides for introducing and withdrawing the body thread, or the plating thread, or both, and substituting a different thread, will all be controlled by the usual pattern mechanism with which the knitting machine is or may be provided, the particular patterns produced by the various threads which are knitted to form the fabric itself, to wit, the body thread or threads, and the plating thread or threads, will ordinarily be of contrasting colors, and widely varied patterns of such colors as are selected for the purpose may be produced under the control of the pattern mechanism. It will also be understood that during the knitting of the ornamented fabric, the elastic thread will be continuously incorporated under tension in the selected courses and firmly locked in the selected wales of said courses in the manner previously described, preferably in the corresponding wales of each of said courses. The tension of the elastic thread will preferably be such that the wales formed by the needles which receive the elastic thread beneath the latches thereof, will be forced to and form the front face of the fabric, while the wales formed by the intermediate needles will be forced to and form the inner face of the fabric, which will be drawn together by the tension of the elastic thread into vertical rib-like ridges, closely resembling rib-knit fabric.

By reason of the incorporation of the elastic thread in the fabric in the manner described, the plain knit fabric will have imparted to it form-fitting characteristics similar to those of rib knitting, while at the same time the floated portions of the elastic thread on the inner face of the fabric will form a series of horizontally disposed beads to engage the skin of the wearer and supply a self-supporting characteristic to the circular fabric. This fabric finds its greatest use in the top portion of men's, women's and children's half hose and anklets, and the fabric per se without ornamentation is fully disclosed in my former application for Letters Patent of the United States, Serial Number 53,824, filed December 10, 1935. My present invention permits of the manufacture of such articles of hosiery, and particularly those intended for use by women and children, in which the tops of the socks or anklets are ornamented so as to present a more attractive appearance when displayed for sale and when actually worn in the distended condition on the leg of the wearer, without interfering with the introduction of the elastic thread, and fully preserving both the form-fitting and self-supporting characteristics of the fabric. In this connection it will be readily understood that as the hereinafter de-

scribed ornamented fabric is distended in use, the body thread which is used in all the stitches of the plain knit fabric will permit all necessary stretch of the fabric to accommodate the leg of the wearer, and that the float portions of the plating thread will be gathered together by the tension of the elastic thread when the fabric is removed from the knitting machine and will, with the elasticity of the intervening stitches in which the plating thread is knit, provide ample elasticity to the fabric without undue strain on the plating thread.

I have found that my invention may be conveniently carried into effect by means of the well known Scott and Williams spiral knitting machine, such as is illustrated for example in United States Letters Patent to Ernest W. Marshall and Lawrence B. Holt, No. 2,040,946, dated May 19, 1936, and in the accompanying drawings I have illustrated so much of that machine as is necessary for the purpose of explaining my invention.

In the accompanying drawings,

Fig. 1 is a diagrammatic view illustrating an arrangement of needles, thread guides and cooperating parts in a known type of circular knitting machine for carrying my invention into effect.

Fig. 2 is a vertical sectional view of a portion of the knitting cylinder on the line 2—2 of Fig. 1, showing a needle with its co-acting needle jack, selecting jack, and cooperating cams, the needle being in the lowered position.

Fig. 3 is a similar view on the line 3—3 of Fig. 1.

Fig. 4 is a view similar to Fig. 2, on the line 4—4 of Fig. 1, and showing a series of secondary selector cam levers, or reader cam levers, as they are sometimes termed.

Fig. 5 is a view similar to Fig. 2, on the line 5—5 of Fig. 1.

Fig. 6 represents a perspective view of a series of needles arranged in a straight line for purposes of illustration, and illustrating the manner of feeding the elastic thread thereto.

Fig. 7 is a similar view showing the manner in which the body or backing thread is fed to hooks of all of the needles, while the plating thread is fed to the hooks of certain groups of needles and floated in rear of other groups of needles.

Fig. 8 is a view similar to Figs. 6 and 7, showing loops drawn by both groups of needles, while the elastic thread passes in a straight line through the fabric and is locked in selected wales without forming any loops in the elastic thread.

Fig. 9 is a diagrammatic view of the inner face of my improved ornamented fabric in distended position, showing the arrangement of stitches to form a particular pattern.

Fig. 10 is a similar view illustrating the exterior face of the fabric.

Fig. 11 is a partial view similar to Fig. 9, showing the inner face of the fabric with the tension of the fabric partially released and the float portions of the plating threads relaxed.

Fig. 12 represents the upper portion of a sock or anklet, provided with a top composed of my improved ornamented fabric, showing a particular design.

Fig. 13 shows a sock or anklet top formed of my improved ornamented fabric, and provided with a different design.

Fig. 14 shows a similar top for sock or anklet illustrating another design.

Referring to the drawings:

Figs. 1 to 6 inclusive, the needle cylinder indicated at 1, is provided with a circular series of needles, alternate needles being indicated at 2, and being the needles which receive the elastic thread below the latches thereof, the intervening needles of the series being indicated at 2*a*, each needle being provided with the usual knitting butt or nib 3 for engaging the usual knitting cams, shown at 4, 5 and 6. The cam 4 is operated only in connection with reciprocating work, and is shown in dotted lines in Fig. 1. Below each needle is a needle jack 7 provided with a cam engaging butt or nib 8, below which is a selecting jack 9 having portions of its inner edge disposed angularly to other portions so as to permit it to rock against the action of an encircling spring 25, engaging said selecting jacks adjacent to their upper ends. Each selecting jack 9 is provided adjacent to its lower end with a plurality of selecting butts indicated at 11*a*, 11*b*, 11*c*, etc., preferably twenty-five in number below which is an operating butt 12 for normally engaging a selector cam indicated at 13, when the selecting jack is in the position in which it is normally held by the spring 25. This selecting cam 13 is intended to elevate the alternate needles 2 which are to receive the elastic thread *e* (from a suitable thread guide *e'*) below the latches thereof. In order that only the selected needles 2, which are in this instance alternate needles, shall be raised by the selecting cam 13, I provide means for knocking down the selecting jacks 9 for the intervening needles 2*a*, that is to say, the lower ends of the jacks for the intervening needles 2*a* are forced inward so as to carry their butts 12 out of engagement with the cam 13, as shown at the left in Fig. 2. Any suitable means may be employed for this purpose, and in this instance I have shown a stationary auxiliary selector cam 16 for engaging one of the butts or nibs 11 of the jacks for the needles 2*a*, the corresponding butts or nibs of the needles 2 being broken off so that the jacks for the needles 2 will not be knocked down. As a result of this selection, all of the needles 2 will be elevated by the selecting cam 13 to such a height that they will receive the elastic thread *e* below the latches thereof. This is accomplished in the present instance by giving the selecting cam 13 sufficient height to carry the latches of needles 2 above the point at which the thread guide *e'* delivers the elastic thread, but obviously the elastic thread could be fed on the latches of the needles and the needles thereafter elevated sufficiently to carry their latches above the elastic thread, if desired. The thread guide *e'* for the elastic thread, is preferably arranged to swing horizontally into and out of operative position, so that the elastic thread can be fed in every course of knitting, or in selected courses, under the control of suitable pattern mechanism, and the elastic thread will be fed under predetermined tension, all as fully disclosed in my former application for Letters Patent of the United States Serial Number 53,824, filed December 10, 1935. These specific constructions form no part of my present invention, and need not be more particularly referred to.

The selecting jacks 9 of the intervening needles 2*a* which are knocked down by the selector cam 13, pass alongside of and within the selecting cam 13, and are not raised. The selecting jacks 9 for the needles 2 will be returned to normal position by a cam 18 which engages the bu s 8 of the needle jacks 7. In Fig. 3, a needle 2 is shown elevated high enough to receive the elastic thread

e below the latch, while the needle 2a is in its lowest position, as indicated at 3—3 in Fig. 1. The intervening needles 2a, are meanwhile raised by a shedding cam 17 to the same height as the alternate needles 2, as shown in Fig. 1. As the intervening needles 2a rise, they pass in front of and behind adjacent needles, that is to say, in front of the alternate needles 2 below the latches thereof, and in rear of the intervening needles 2a.

It is now necessary to make a second selection of the needles into alternating groups. By the term "group" I wish it to be understood that I may include one or more needles, although as a matter of fact each of the alternating groups will ordinarily contain a plurality of needles in order to produce an effective part of the pattern. In this instance, and for purposes of explanation, I have shown the needles divided into alternate groups of three needles each. This secondary selection can be readily effected by a well known form of selecting means with which the Scott and Williams spiral machine referred to is provided. This selecting mechanism comprises a series of horizontally disposed pivoted selecting cam levers, or reader cam levers as they are sometimes termed, 20a, 20b, 20c, etc., as shown in Fig. 4, usually twenty-five in number, to accommodate a wide range of patterns. These levers are selectively operated by a series of butts or bits, somewhat similar to the butts 11, and arranged vertically on a trick wheel which is moved intermittently in a rotary direction by suitable connections with the pattern mechanism. This mechanism is well known and specifically forms no part of my invention, and it therefore will not be further illustrated nor described. It will be understood that one or more of the reader cam levers will be operated at the proper times to "knock down" certain of the selecting jacks, so as to prevent their operating butts 12 from engaging a group selecting cam 13a, the apex of which, indicated at 13b, is higher than the apex of the selecting cam 13, as shown in Fig. 1.

In this instance I have shown only the selecting cam lever 20a moved inward by the trick wheel, into position to engage the first butt 11a on groups of three needles successively, the intervening groups of three needles having the butts 11a of their selecting jacks broken off so that these jacks will ride up the cam 13a. In order to make this clear in the drawings, Figs. 1, 7 and 8, I have indicated the alternate groups of needles, the jacks of which engage the selecting cam 13a, with a bracket under the letter x, while the alternate groups of three needles each, the jacks of which are knocked down and do not engage the selecting cam 13a, are indicated under a bracket by the letter y. It will be understood that, as previously stated, all of the needles will have been raised to a height indicated by the dotted line z, in Fig. 1, after the first selection, previously described, the needles 2 having been raised by the cam 13 and their selecting jacks 9, preferably to the shedding point, and the intervening needles 2a having been raised independently of their jacks by the cam 17 engaging the butts 3 of said needles. All of the needles will, therefore, be at the same height (indicated by dotted line z), and as the jacks of the selected needle groups x approach the apex 13b of the cam 13a, carrying with them the needle jacks 7, the needle jacks 7 will engage the needles of the groups x and raise them to a higher level, indicated by the dotted line z', so as to enable the needles of groups x to receive in their hooks a thread f (which I have termed the plating thread) from a thread feed guide f', while the needles of groups y will remain at the level indicated by dotted line z, and will not take the plating thread f. All of the groups of needles, however, take a body or backing thread b from a thread feed guide b' as the needles are carried down the knitting wave by cams 5 and 6, engaging their butts 3. It will, therefore, be seen that all of the groups x of the needles will take both the plating thread and the body thread, while the needles of groups y will take only the body thread. As the needles engage knitting cams 5 and 6, the groups of jacks which have been raised by the selecting cam 13a, will be carried downward to their normal positions by the cam 18a, Fig. 1, which engages the butts 8 of the needle jacks 7.

As previously stated, I prefer to provide a plurality of thread feed guides for feeding alternately plating threads of different colors, and likewise I prefer to provide a plurality of thread feed guides for feeding body threads alternately of different colors. In this instance, I have shown in Fig. 1, an auxiliary thread feed guide f2 for feeding a different face or plating thread f3, and I have also shown in the same figure an additional thread feed guide b2 for feeding a different body thread b3, but I do not limit myself to the use of any particular number of plating threads or body threads. It will be understood that only one thread guide for a plating thread, and one thread guide for a body thread, are ordinarily in the feeding position at the same time, the other or others being held in inoperative position.

While I have, for convenience of reference, indicated the two inelastic threads of which the fabric is composed as body thread and plating thread, respectively, it will be understood that both of these threads are in fact body threads which form the body of the fabric, and are not to be confused with wrap threads used for ornamenting a body fabric, and which do not enter into the structure of the fabric itself.

In Fig. 6 I have illustrated in a straight line for convenience of description, a series of consecutive needles 2 and 2a, after the elastic thread e has been fed thereto, and it will be noted that the elastic thread is interlaced with the needles as previously described, and passes under the latches of the alternating needles 2 and behind the intervening needles 2a.

In Fig. 7 I have illustrated, in a similar manner, the same needles after they have been selected into groups x and y, respectively, and have passed the feeding points for the face or plating thread f and the body thread b. It will be noted that the needles of the groups x, receive both the plating thread f and the body thread b within their hooks, while the needles in groups y receive only the body thread b, while the plating thread f is floated behind these needles, as indicated at f4, in Fig. 7.

In Fig. 8 I have illustrated the same needles in their lowered positions after passing the knitting wave, and drawing their loops. It will be seen in this figure, that the needles of groups x will draw composite loops or stitches containing both the body thread b and plating thread f, it being understood that the plating or face thread f will be fed under slightly greater tension than the body thread, so as to cause it to appear on the face of the fabric. The needles of the groups y will draw single loops of the body thread b only, while the plating thread will be floated, as indicated at f4, on the back of the fabric in rear of

those needles. It will also be seen that as the needles descend, whether of one group or another, the needles 2 which have the elastic thread *e* below their latches, will permit the elastic thread to pass up over the closed latches and be cast off over the tops of said needles. The intermediate needles *2a*, however, will draw their loops over the elastic thread, as indicated at *e2*, in Fig. 8, and lock the elastic thread in the fabric whether the loops so drawn are single loops or composite loops at the wales formed by the needles *2a*.

In Fig. 12, I have shown a sock or anklet L provided with a top T of my improved plain knit rubber incorporated fabric containing a design selected by me for purposes of illustration, and capable of being produced by the arrangement of selected needles operating in the manner which I have just described, it being understood that this is merely for purposes of explanation and that any desired pattern can be carried out in any desired colors in the manner previously described.

Referring to the top T, *t* represents the usual selvage or welt, which is preferably formed of a plurality of courses of stitches containing both the body thread as *b*, and a plating thread, as *f*, knit continuously, and preferably containing in each course, or in certain selected courses, the elastic thread *e*, incorporated as previously described, to form continuous plating. It is only necessary to rotate the trick wheel so that the selecting cam lever *20a* will be returned to normal position and the selecting jacks 9 for all of the needles will then be carried up by the group selecting cam *13a* to the level indicated by the dotted line *z'*, when all of the needles will take both the plating thread and the body thread. The trick wheel is then rotated to throw the selecting cam lever *20a* into the position shown in Fig. 4, when a series of courses indicated at *t'* in Fig. 12, may be knit in the manner previously described. This will result in the pattern herein shown in Fig. 12, in a transverse row of rectangular figures *t6* and *t7*, of which *t6* represents stitches produced by the needle groups *x* containing both the body thread and plating thread in plated relation with the plating thread on the face of the fabric, while the rectangles *t7* represent stitches of the body thread only, produced by the needle groups *y*.

t2 represents a series of courses of stitches containing a body thread and plating thread throughout, in plated relation, again accomplished by shifting the trick wheel so that none of the needles will be knocked down, and all will be raised by the cam *13a*.

t3 represents a series of courses of stitches containing alternating rectangles *t6*, *t7*, in which the pattern is varied by causing the plated stitches in the rectangles *t6* containing both the body and plating threads to be knit by the groups *y* of the needles, while the intervening groups of stitches forming the blocks *t7* are knit by the groups *x* of the needles. This is conveniently effected by a shift of the trick wheel in a well known way to bring another of the selecting cam levers, as *20b*, into position to engage butts *11b* of the groups *y* of the needles, the butts *11b* of the groups *x* of the needles being broken off, in accordance with the well-known operation of the Scott and Williams spiral machine, above referred to.

t4 represents a series of courses of continuous plating. *t5* represents a series of courses corresponding exactly to the courses *t'*, and in this instance a series of courses, indicated at *t8*, and corresponding with the series of courses *t* of continuous plating, completes this particular design.

It will be understood that the figures indicated at *t7* of the design, in this instance rectangles, will appear in solid color formed of the body thread with the plating thread floated on the inner face of the fabric, while the intervening spaces or figures will present the color of the plating thread. The intervening courses, as *t2*, *t4*, may also present the plating thread of the same or a different color on the surface of the fabric. It will also be understood that either the body thread or the plating thread, or both, may be changed by shifting the thread feed guides so that a variety of colors may appear in the pattern, or they may be confined to two colors, as desired. It will also be understood that when my improved fabric, as the fabric T for example, is removed from the knitting machine, the tension of the elastic thread *e* in the several courses (or all the courses) will draw the fabric into vertically disposed rib-like ridges resembling rib-work. The wales in which the elastic thread is locked at *e2* (Fig. 8), will be drawn to the inner face of the fabric, while the intervening wales will be drawn to the outer face of the fabric. This lateral contraction of the fabric relieves the float threads, indicated at *f4*, and provides slack therein, which permits thereafter the normal stretch of the fabric as in pulling a stocking over the heel and upon the leg without unduly restricting the fabric.

In Fig. 9 I have shown diagrammatically a portion of the inner face of my improved fabric showing the alternating groups of plain stitches and plated stitches in several courses, and the position of the elastic threads here shown in every other course:

Fig. 10 is a similar view showing the outer face of the same fabric illustrated in Fig. 9. In both of these figures the fabric is shown as it is knitted, that is, in distended condition, in which the floats *f4* of the plating thread *f* are shown straightened out and the elastic threads *e* are in a state of considerable tension.

Fig. 11 is a partial view of the inside of the fabric with the tension somewhat relaxed, showing the slack in the floats *f4* of the plating thread, the elastic threads being still in a state of tension which in the actual fabric holds the oppositely facing alternating wales close together, thus producing a smooth faced fabric comprising the alternate wales which project to the outer face, the intermediate wales being substantially concealed when the fabric is not distended. Obviously, when the fabric is stretched to a greater or lesser extent, as it is when it is worn on the leg of the wearer, the units of the pattern will be slightly extended transversely of the top, and will ordinarily show to even better advantage than they do in the undistended condition of the fabric.

As before stated, a wide variety of patterns can be produced in a wide variety of colors, and in Figs. 13 and 14 I have illustrated diagrammatically and suggestively, two additional patterns which can readily be produced by proper manipulation of the pattern mechanism previously described.

Where in the following claims I have referred to the plating thread and a contrasting body thread, or vice versa, I intend to indicate either contrast of color or contrast of material, or finish, or any other type of contrast which will cause one of said threads to be easily distinguishable from the other in the fabric.

In an ordinary float plated fabric the presence of floats tends to increase the width of the fabric and to materially limit and reduce the extent to which it may be stretched. Such fabric is, therefore, not commercially usable in any part of the stocking except the leg and foot. By the incorporation of the elastic thread, as herein described, it is particularly adaptable for use for the top of a stocking, by knitting it so as to provide the necessary width when stretched, while the elastic threads draw the fabric together to reduce the diameter to form-fitting size, both at and between the elastic carrying courses, and producing slack in the floats of the body thread on the inner face of the fabric to permit the fabric to be expanded as necessary when drawn on the foot and leg, in addition to providing the transverse beads on the inner face of the fabric to indent the leg and support the stocking thereon.

What I claim and desire to secure by Letters Patent is:

1. A method of making tubular plain knit seamless ornamented form fitting and self-supporting fabric, which consists in producing continuous courses of plain knitting with two contrasting inelastic body threads, introducing in certain courses an elastic thread in front of spaced selected needles, and in rear of intervening needles, and in certain courses, feeding one of said inelastic body threads in front of separated selected groups of needles, and the second inelastic body thread in rear of said selected groups and feeding both inelastic body threads to the intervening groups of needles, in plated relation with said second thread on the outer face of the fabric, and applying sufficient tension to said elastic thread to draw the fabric together when disengaged from the needles to reduce its diameter and draw wales thereof together and bring the floated portions of said second inelastic body thread into slackened condition.

2. A method of making tubular plain knit seamless ornamented form-fitting and self-supporting fabric, which consists in producing continuous courses of plain knitting with two contrasting inelastic body threads, and in certain courses effecting a needle separation to bring spaced selected needles at a higher level than non-selected needles, and feeding an elastic thread under tension in front of said selected needles and in rear of the non-selected needles, and in certain courses effecting an independent needle separation to bring spaced groups of needles at a higher level than intervening groups and feeding one of said inelastic body threads to the hooks of the said selected groups of needles and the second inelastic body thread in rear thereof, and feeding both of said inelastic body threads to all the needles of the intervening groups in plated relation, with the said second thread on the outside of the fabric, and applying sufficient tension to the elastic thread to draw the fabric together when disengaged from the needles, and submerge certain wales thereof, and form vertical rib-like ridges in the fabric.

3. A method of making tubular plain knit seamless ornamented form-fitting and self-supporting fabric, which consists in producing continuous courses of plain knitting with two contrasting inelastic body threads, and in certain courses effecting a needle separation to bring spaced selected needles at a higher level than non-selected needles, and feeding an elastic thread under tension in front of said selected needles and in rear of the non-selected needles, bringing the needles to the same level and thereafter in certain courses effecting an independent needle separation to bring spaced selected groups of needles at a different level to that of intermediate groups of needles, feeding one of said inelastic threads to said spaced groups only, and floating the second inelastic body thread in rear thereof, and feeding both inelastic body threads to said intermediate groups in plated relation with the said second thread on the outer face of the fabric, and applying sufficient tension to the elastic thread to draw the fabric together, to bring certain wales thereof into contact, and submerge intervening wales, and thereby form vertical rib-like ridges in the fabric.

4. A method of making tubular plain knit seamless ornamented form-fitting and self-supporting fabric, which consists in producing continuous courses of plain knitting with two contrasting inelastic body threads, and in certain courses interlacing an elastic thread in front of and below the latches of alternate needles and in rear of intervening needles and in certain groups effecting a needle separation to bring spaced selected groups of needles at a higher level than intervening groups, and feeding one of said inelastic body threads to the hooks of said selected groups of needles and the second inelastic body thread in rear of said selected groups, and feeding both inelastic body threads to the hooks of the needles of the intervening groups in plated relation with the said second thread on the outer face of the fabric, and applying sufficient tension to said elastic thread to draw the alternate wales together and submerge the intervening wales of the fabric when released from the needles, and bring the floated portions of said second inelastic body thread into slackened condition.

5. A method of making tubular plain knit seamless ornamented form-fitting and self-supporting fabric which consists in producing continuous courses of plain knitting with two contrasting inelastic body threads, effecting a needle separation to bring alternate needles at a higher level than intervening needles, feeding an elastic thread in front of and below the latches of said alternate needles and in rear of the intervening needles, bringing said needles to a common level, effecting a second needle separation to bring spaced selected groups of needles at a higher level than intervening groups, feeding one of said inelastic threads to the hooks of the needles of said selected groups and floating the second inelastic body thread in rear of said selected groups and feeding both inelastic body threads to the hooks of the needles of the intervening groups in plated relation with the second thread on the outer face of the fabric and applying sufficient tension to said elastic thread to draw the alternate wales of the fabric together and submerge the intervening wales and bring the floated portions of said second inelastic body thread into slackened condition.

6. A method of making tubular plain knit seamless ornamented form-fitting and self-supporting fabric which consists in producing continuous courses of plain knitting with two contrasting inelastic body threads, and in certain courses raising alternate needles, feeding an elastic thread thereto below the latches thereof, bringing the needles to a common level to interlace said elastic thread therewith, effecting a second and independent needle separation, bringing spaced selected groups of needles at a

higher level than intervening groups, feeding one of said inelastic body threads to the hooks of the needles of said selected groups only and floating the second inelastic body thread in rear of said selected groups, and feeding both inelastic body threads to the hooks of the needles of the intervening groups in plated relation with said second thread on the outer face of the fabric and applying sufficient tension to said elastic thread to draw the alternate wales of the fabric together when disengaged from the needles to reduce its diameter, and submerge intervening wales and bring the floated portions of said second inelastic body thread into slackened condition.

7. A method of making tubular plain knit seamless ornamented form-fitting and self-supporting fabric by the aid of a circular knitting machine and a single circular series of needles which consists in producing continuous courses of plain knitting with two contrasting inelastic body threads, and in certain courses raising alternate needles to the shedding point, and feeding thereto an elastic thread under tension below the latches thereof in advance of the throat, raising the intervening needles to the shedding point to interlace the elastic thread therewith, in certain courses effecting a second needle selection by raising the needles of selected alternating groups above the shedding point and feeding to the hooks thereof one of said inelastic body threads, and floating it in rear of the needles of intervening groups, feeding the other inelastic body thread to all of the needles of the circular series with the said thread having floated portions on the inside of the fabric, and in certain courses feeding both inelastic body threads to the hooks of all the needles throughout the entire course in plated relation, and applying sufficient tension to the elastic thread to draw alternate wales of the fabric together and submerge intervening wales, and bring the floated portions of the body thread into slackened condition.

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