United States Patent

Titone

[15] **3,653,233**

[45] **Apr. 4, 1972**

[54] MACHINE KNITTING

[72] Inventor: **Seymour C. Titone**, Birchrunville, Pa.

[73] Assignee: **Titone Research & Development Corporation**, Burlington, N.J.

[22] Filed: **Dec. 5, 1968**

[21] Appl. No.: **781,349**

[52] **U.S. Cl.** **66/177**, 66/195

[51] **Int. Cl.** **D04b 21/20**

[58] **Field of Search** 66/190–195, 177

[56] **References Cited**

UNITED STATES PATENTS

2,990,703	7/1961	Bialostok	66/87
2,403,793	7/1946	Feinstein	66/195
2,667,775	2/1954	Aibel	66/195
2,878,661	3/1959	Aibel	66/195
3,071,951	1/1963	Kurz	66/195
3,429,147	2/1969	Perrier	66/178 X
3,447,345	6/1969	Kurz	66/195

OTHER PUBLICATIONS

" The Hosiery Trade Journal" Raschel Seamless Tights, Vol. 74, No. 888, Dec. 67, pp. 116 & 117

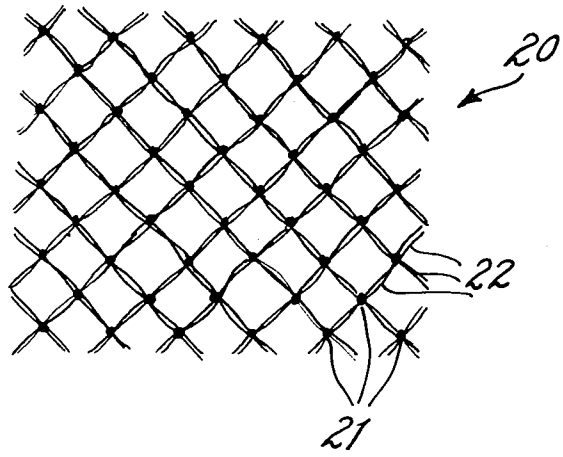
Primary Examiner—Ronald Feldbaum

Attorney—McClure, Weiser & Millman

[57] **ABSTRACT**

Seamless hosiery, panty-hose, and the like are warp-knit, preferably of retractable or so-called "stretch" yarn, in a marquisette-like pattern and modifications thereof to provide tubular garment fabrics characterized by sheerness of the leg portions thereof and by either sheer or opaque body portions.

10 Claims, 17 Drawing Figures



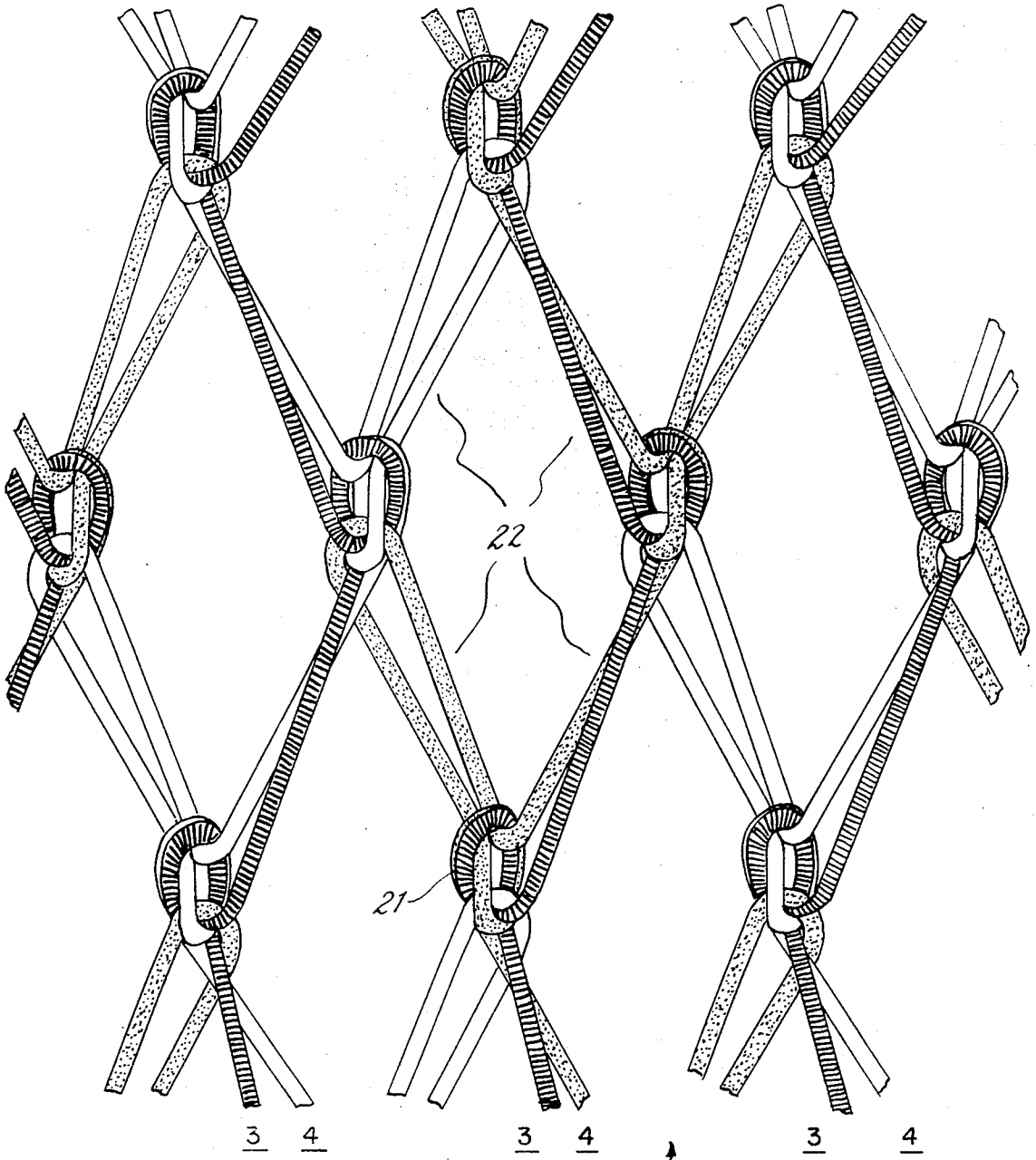


Fig. 2.

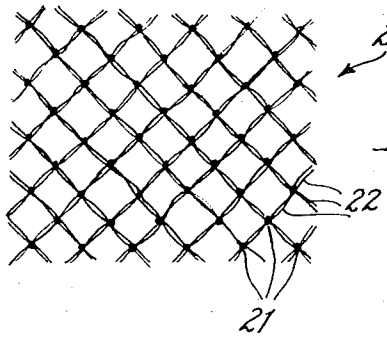


Fig. 1.

INVENTOR.
SEYMOUR C. TITONE
BY McCluer, Weiser + Millman
ATTORNEYS.

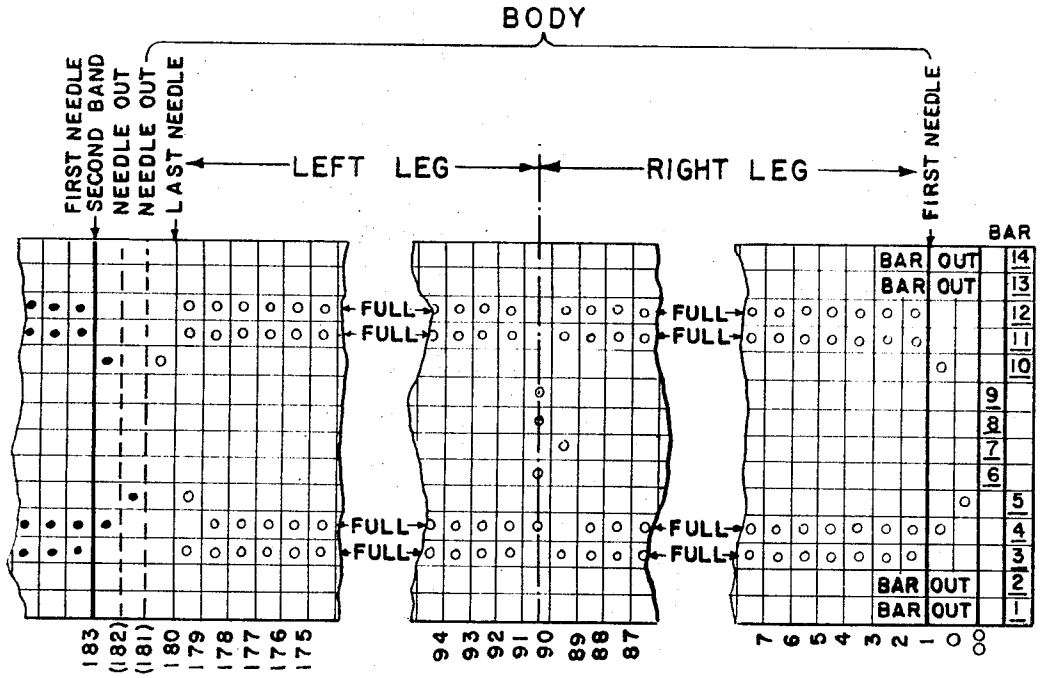


Fig. 3.

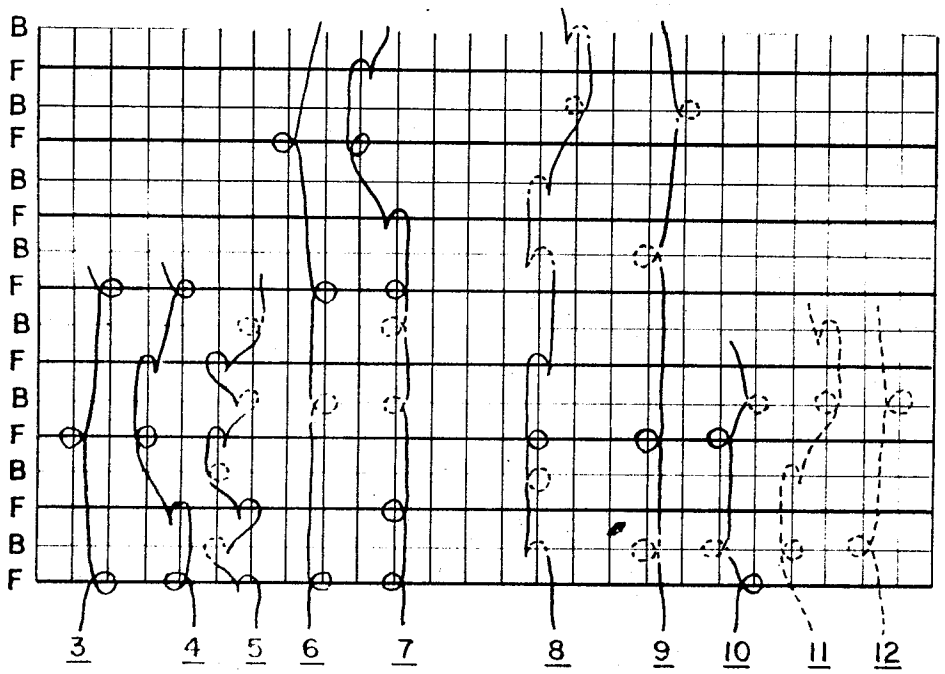


Fig. 4.

INVENTOR.
SEYMOUR C. TITONE
BY McCur, Weiser & Millman
ATTORNEYS.

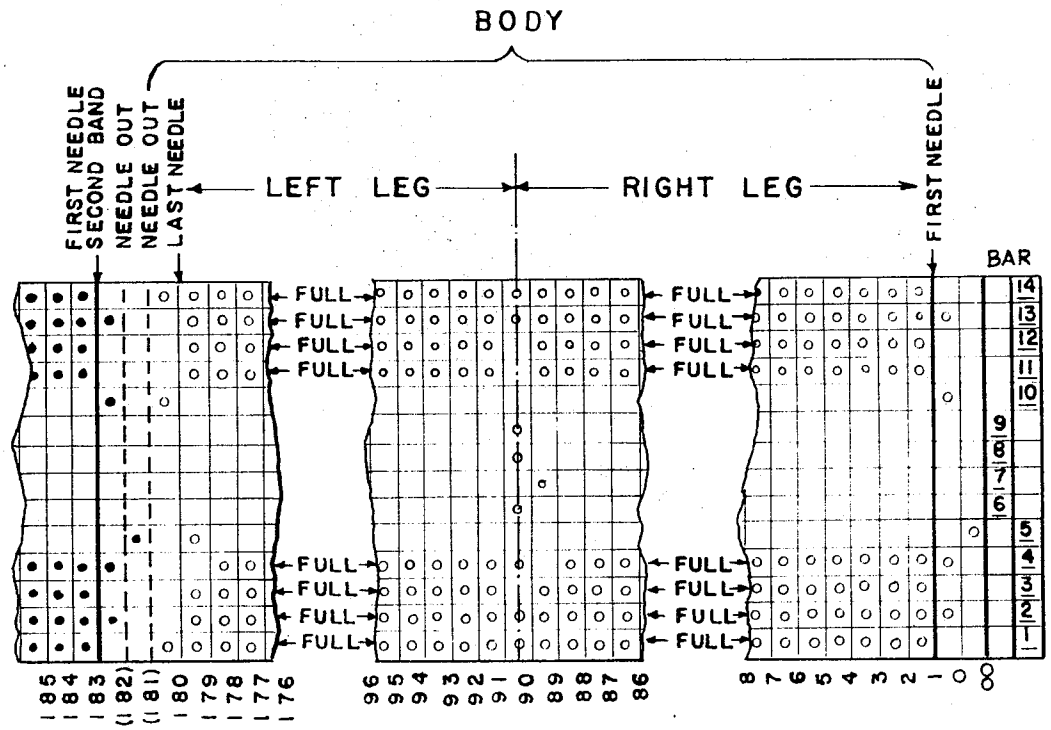


Fig. 9.

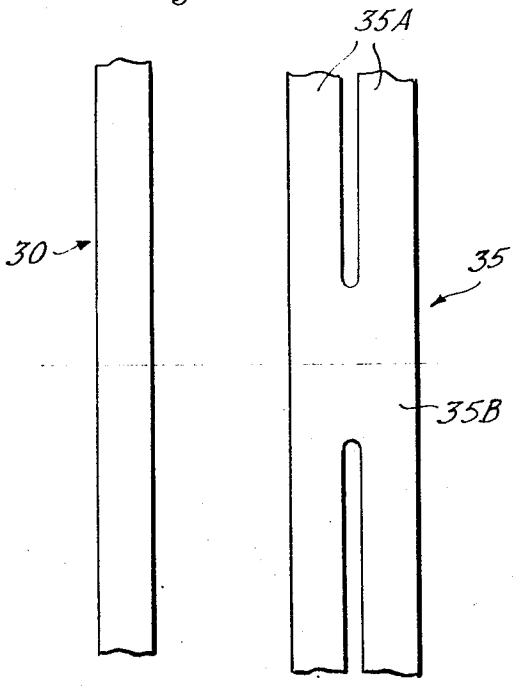


Fig. 5 Fig. 6.

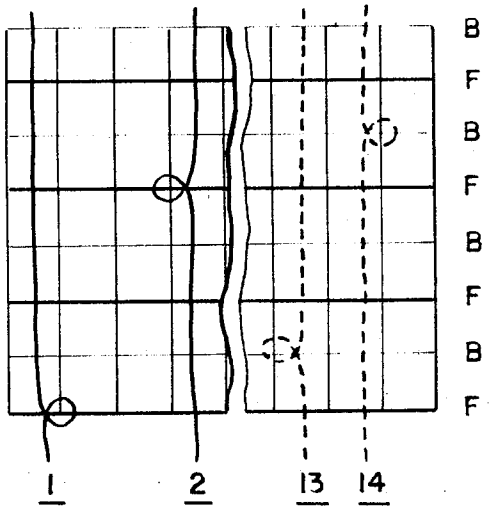


Fig. 10.

INVENTOR.
SEYMOUR C. TITONE
BY McGlew, Wieser + Millman
ATTORNEYS.

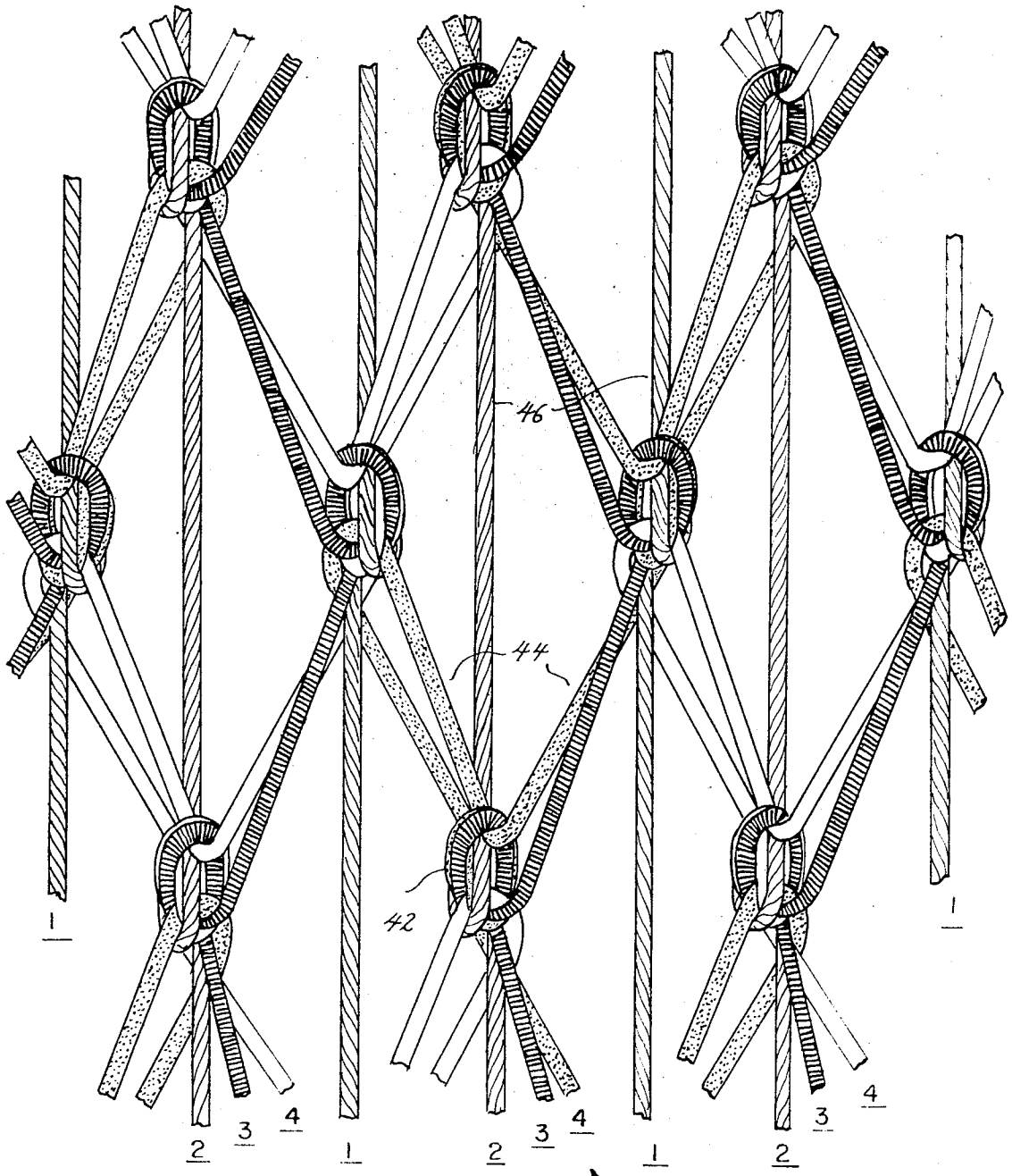


Fig. 8.

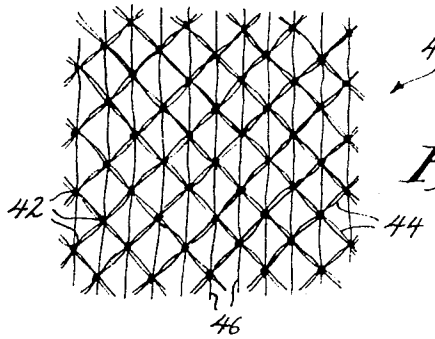


Fig. 7.

INVENTOR.
SEYMOUR C. TITONE
BY McCaul, Weiser & Mierman
ATTORNEYS

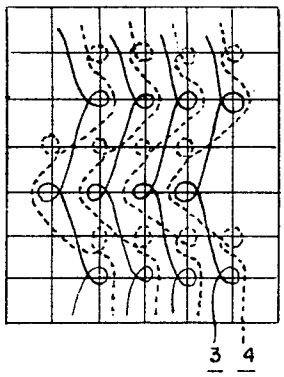


Fig. 11.

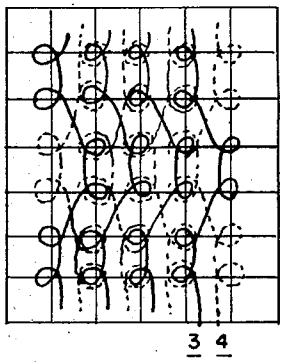


Fig. 12.

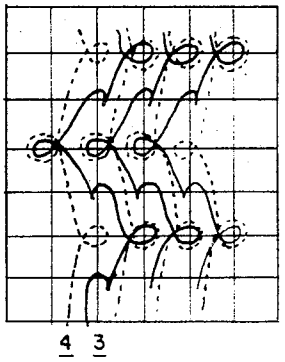


Fig. 13.

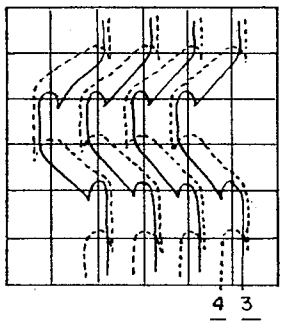


Fig. 14.

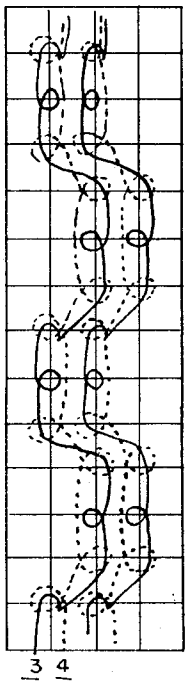


Fig. 15.

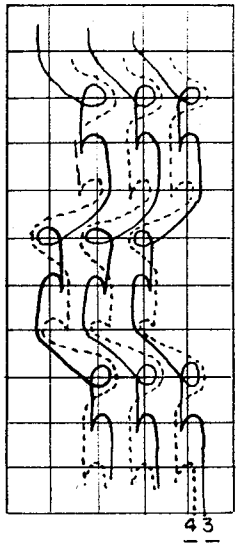


Fig. 16.

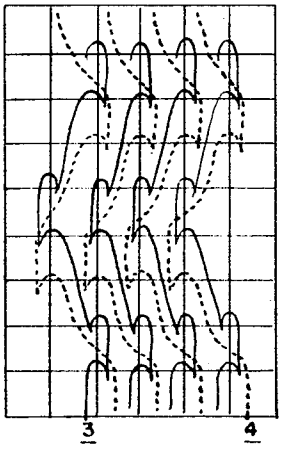


Fig. 17.

INVENTOR.
SEYMOUR C. TITONE
BY MacCord, Weiser & Millman
ATTORNEYS.

MACHINE KNITTING

Reference is made to my copending patent applications for Machine Knitting: Ser. No. 694,655 filed Dec. 29, 1967; Ser. No. 700,768 filed Jan. 26, 1968 now U.S. Pat. No. 3,564,876; and Ser. No. 759,587 filed Sept. 13, 1968. To the extent not set forth below, the contents of those applications are incorporated herein by such reference insofar as may be desirable.

This invention relates to warp-knitting of seamless hosiery, panty-hose, and similar tubular materials.

Factors entering into a wearer's evaluation of hosiery, panty-hose, or the like include appearance, durability, handle, and weight. Usually sheerness is a desired characteristic associated positively with appearance and handle and negatively with durability and weight. Particularly in tropical and subtropical climates or during the summer in more temperate climates, leg coverings as lightweight as conventional sheer stockings are considered too warm for ordinary wear.

Attempts to reduce the apparent warmth of hosiery or of at least the leg portions of panty-hose and similar garments have been directed toward openness of stitch and enlargement of mesh size while attempting to reduce the quantity of yarn therein. For any given chemical composition of yarn there is a minimum yarn denier commensurate with acceptable physical properties including reasonable durability, and for any given denier of yarn an increase in openness of stitch or increase in mesh size often involves a looseness in construction and accompanying decrease in dimensional stability, which is likely to produce a garment of low quality.

A primary object of the present invention is provision of dimensionally stable lightweight hosiery, panty-hose, and the like.

Another object is increased productivity of hosiery, panty-hose, and the like on Raschel machines.

A further object is warp-knitting of readily air-permeable seamless tubular fabrics that do not feel hot against the skin.

A particular object is provision of seamless panty-hose fabric having the leg portions sheer and the body portion opaque.

Other objects of this invention, together with means and methods for attaining the various objects, will be apparent from the following description and the accompanying diagrams.

FIG. **1** is a plan view of a first embodiment of fabric according to this invention;

FIG. **2** is an enlarged view of a representative portion of the fabric of FIG. **1**, with the yarns therein differentiated by shading;

FIG. **3** is a threading diagram for manufacture of the same fabric on a Raschel machine; and

FIG. **4** is a point pattern diagram for component yarns of that first fabric embodiment;

FIG. **5** is a plan view of a band of hosiery fabric according to this invention; and

FIG. **6** is a like view of a band of panty-hose fabric according to this invention;

FIG. **7** is a plan view of a second fabric embodiment of this invention;

FIG. **8** is an enlarged view of a representative portion of the fabric of FIG. **7**, with the yarns therein differentiated by shading;

FIG. **9** is a Raschel threading diagram therefor; and

FIG. **10** is a point pattern diagram for added component yarns of that second fabric embodiment;

FIGS. **11** to **17**, inclusive, are point pattern diagrams for component yarns in alternative basic diamond fabrics according to this invention.

In general, the objects of the present invention are accomplished by providing a warp-knit fabric, preferably of stretch yarn, having a diamond mesh configuration characterized by a knot-like stitch configuration at each corner of the diamond design and a double bight along each side of the diamond design, and optionally with each diamond bisected walewise by a further bight of yarn. The production thereof, with and without modifications, is described below with reference to illustrative diagrams.

FIG. **1** shows fabric **20** of this invention in plan, much as it would appear flat against the skin of a wearer. It has a rhombic or equilateral diamond mesh configuration characterized by "knots" **21** at the corners of the diamonds and double bights **22** along the sides of the diamonds. Although the scale is enlarged somewhat as compared with a customary hosiery mesh or stitch size, the actual stitch configuration in the knotlike portions is not apparent in this view.

FIG. **2** depicts the stitch configuration of a representative portion of the fabric of FIG. **1** on a greatly enlarged scale. The underlined reference numerals denote yarns guided by the respective bars so numbered, as will become clear from subsequent views and related tabular data. The bar **4** yarns, which form the basic diamond pattern are represented alternately stippled and plain to aid the eye in distinguishing the stitches formed by adjacent yarns. The bar **3** yarns are shaded by transverse cross-hatching for increased distinctness. It is apparent that each knotlike corner of each diamond comprises a stitch of bar **3** yarn and a stitch of bar **4** yarn superimposed one on the other, as well as part of a second or immediately succeeding stitch, the loop of which forms the previously mentioned double bight along a side of the diamond. Thus, the double bights of yarn along two sides of each diamond are formed by stitch loops, one each from adjacent bar **4** yarns; however, the double bights of yarn along the other two sides of the diamond are formed by successive underlaps from both one of those bar **4** yarns and from a bar **3** yarn.

The construction of fabric **20** will be apparent to a person having ordinary skill in the art from the following tables and related threading and point pattern diagrams for a Raschel machine. Such machine should have at least the number of guide bars indicated as being threaded, of course, and also should have means for interchanging two alternative shogging patterns for certain of the guide bars, as disclosed in my aforementioned applications, being available commercially as the so-called Kidde "Fashion Master" machine from Cocker Machine and Foundry Company, Gastonia, North Carolina.

Table I gives the chain readings and starting points for a first embodiment of this invention with reference to the guide bars of a fourteen-bar Raschel machine, of which only 10 bars are threaded, leaving unthreaded the outermost two bars both front and rear. The pattern-chain drum at the left end of the machine accommodates the mentioned pattern interchangeability, as by carrying two separate chains for each of those certain guide bars, in conjunction with means for shifting the cams for the respective guide bars from the first set of chains to the second set and back as desired. The guide bar reference numerals are underlined or italicized to distinguish them from low-numbered needle reference numerals.

TABLE I

Drum	Guide Bar. No.	Pattern Link	Starting Point Between Needles
Right	1	—	—
Right	2	—	—
Right	3	2/0	1,2
Right	4	0/2	0,1
Right	5	0/2	00,0; 179,180
Left	6	2/4	90,91
Left	7	4/2	89,90
Left	8	2/2	90,91
Left	9	2/2	90,91
Right	10	2/0	0,1; 180,181
Right	11	2/2	1,2
Right	12	2/2	1,2
Right	13	—	—
Right	14	—	—

Note: All starting points are on the front bed, i.e., front needlebar up. Points 00 and 0 denote two consecutive needle-less positions immediately preceding needle 1.

FIG. **3** is a threading diagram for the Raschel machine of Table I set up to manufacture a plurality of bands of panty-hose fabric according to the first embodiment of the inven-

tion. Yarn is furnished to the guides as indicated by small circles (first band) and dots (second band) aligned with the respective guide bar numbers. It will be understood that the number of bands that can be produced simultaneously is limited only by the total number of needle positions in the machine. The description herein is limited to a single band, as each additional band is a duplicate thereof.

Table II presents the pattern chain readings for the fabric pattern of the first embodiment. Alternative bifurcated and unitary seamless constructions in the same pattern are provided by alternative chain readings A and B for each of yarn guide bars **5**, **6**, **7**, and **8**. It will be understood that the minimum complete set of courses (or "repeat") for each form of construction is four courses on each of the needlebeds and that converting from bifurcated to unitary construction, or vice versa, normally occurs only after enough successive repetitions of the prescribed set of courses to provide the desired length of the part of the fabric having that construction.

TABLE II

	Right drum			Left (double chain) drum								Right drum		
				6		7		8		9				
Guide bar No.	3	4	5	A	B	A	B	A	B	A	B	10	11	12
Needlebed:														
F	2/0	0/2	0/2	2/4	2/4	4/2	4/2	2/2	2/2	2/2	2/2	2/0	2/2	2/2
B	2/2	0/0	4/2	2/2	2/2	4/4	4/4	2/0	2/0	2/0	2/0	2/4	4/2	2/4
F	2/2	0/2	0/2	2/2	2/2	4/2	4/2	0/0	0/0	2/2	2/2	2/2	4/4	2/2
B	2/2	2/2	4/2	2/2	2/2	4/4	2/2	0/2	0/2	2/2	2/2	2/2	4/2	2/2
F	2/4	4/2	4/2	2/2	2/0	4/4	0/2	0/2	2/2	2/0	2/2	2/4	2/2	2/2
B	2/2	4/4	0/2	2/4	2/2	4/2	0/0	0/0	4/2	2/2	2/4	2/0	0/2	2/0
F	2/2	4/2	4/2	2/2	2/2	4/4	0/2	0/2	4/4	2/2	2/2	2/2	0/0	2/2
B	2/2	2/2	0/2	2/2	2/2	4/2	2/2	2/2	4/2	2/2	2/2	2/2	0/2	2/2

In visualization of the resulting fabric, or in graphical representation of it, as on point paper, it should be remembered that the readings for the pattern links in the chains on the left and right drums are oppositely directed, as an increase in link number indicates guide bar displacement from the drum end of the machine. Alternate row of readings are associated with the respective needlebeds, beginning at the top with the first course on the front bed (F) and then on the back bed (B), followed by the readings for successive courses. A reading of **0** indicates the smallest or reference linklocation of the guide bars, and readings of **2**, **4**, and **6** indicate displacement of the bar past one, two, and three needles, respectively.

For each of the guide bars actuated in either of alternative patterns A (bifurcated construction) and B (unitary construction) the readings for the first course are alike in both A and B patterns, whereupon conversion from either pattern to the other can be effected without disruption. The respective patterns for each bar differ more or less in at least some of the successive courses.

FIG. **4** is a point pattern for each threaded guide bar, the first four courses (beginning at the bottom) corresponding to the chain readings for bars **3**, **4**, **5**, **10**, **11**, and **12** and the A pattern of readings for bars **6**, **7**, **8**, and **9**. The pattern for the next four courses is not shown for the first mentioned half dozen bars because of being an exact repetition of what is already illustrated. The pattern for the next four courses of the four bars having the alternative patterns corresponds to the B or unitary construction. The resulting composite of stitches can be visualized, or actually be plotted, by appropriate superimposition of the respective patterns wherever the corresponding guide bars have threaded positions. The patterns for bars **11** and **12** are mirror images of those for bars **4** and **3**, respectively, and are in broken lines to indicate that bars **11** and **12** stitch on the back bed only.

It will be apparent that guide bars **5** and **10** stitch on both the front and back beds at the outer edges (v. FIG. **2**) of the band, thereby interconnecting those edges of the respective panels of fabric being formed on the two beds with a seamless construction indistinguishable from the stitch construction within the fabric panels. Whereas normally four bars would be required to do so, two of them are dispensed with in this construction by omission of a needle from each bed at each outer edge of the band, by analogy with such procedure in my aforementioned U.S. Pat. No. 3,564,876. At the inner edges of the bifurcated construction, guides bars **6**, **7**, **8**, and **9** interconnect the front and rear panels of fabric seamlessly (**6** and **7** on the right part, **8** and **9** on the left) to maintain the bifurcation throughout the A pattern and then convert to interconnecting laterally within the respective fabric panels (**6** and **7** on the front, **8** and **9** on the rear) to eliminate the bifurcation seamlessly throughout the B pattern.

From the foregoing Tables and illustrations it can be seen that substantially fully threaded (except at the bifurcation locus at the center of the band) bar **4** stitches on the front bed, and bar **11** stitches on the back bed, twice in succession on one of each two adjacent needles and then does likewise on the other of those two needles and so on. At each transfer between needles the last stitch loop is elongated by its interconnection to a stitch by an adjacent yarn on the former needle, thereby tightening the loop of the preceding stitch and producing a knotlike configuration like that at each corner of the repeating diamond pattern. Fully threaded bar **3** stitches on the front bed, and bar **11** stitches on the back bed, alternately on adjacent needles and only on every other course, laying-in on the intervening courses, and thereby matching its underlap to the underlap at the needle-to-needle transfer of the basic diamond-forming yarn.

FIG. **5** shows on a reduced scale hosiery band **30** broken off at each end and having a transverse line thereacross at an intermediate or medial location to indicate the locus for severance of such band into a pair of hosiery blanks. Two such hosiery bands, within what would be a single band-width for panty-hose and is so considered elsewhere herein, result from indefinite repetition of the A pattern of guide bars **6**, **7**, **8**, and **9**, as indicated above. Of course, a longer band normally will be severed into similar additional hosiery blanks at successive locations. Each blank may be finished appropriately at each end for use as a stocking, as will be apparent.

FIG. **6** shows similarly panty-hose band **35** having a similar severance locus, here extending transversely across the center of unitary body portion **35B**. Adjoining leg portions **35A** are cut away similarly to the ends of the hosiery band of FIG. **6**. Of course, a panty-hose blank can be finished at the waist and cuffs in any appropriate manner to provide a completed garment from such seamless blank produced according to this invention.

The gauge, yarn count, chemical composition, and physical characteristics of bulk, crimp, or stretch are matters for choice and can be selected suitably by persons ordinarily skilled in the art. Preferred conditions include **36** or **48** gauge, nylon yarn having total denier **12** to **15**, denier per filament **5** or **6**, manufactured or pretreated to retract to a greater or lesser extent, in accordance with the yarn composition and the number of needles used, when subsequently heat-relaxed for a suitable period of time at 150° to 300° C. Of course, monofilament may be used, as may other chemical compositions, such as polyester. The yarn preferably exhibits differential in shrinkage characteristics, such as may be provided by suitable bicomponent composition or by application of differential stress, as by edge-crimping or by subjection to transverse temperature gradient, providing (at least after heat-relaxation

under moist conditions) a reversibly extensible and retractable, or "stretch," property.

Apparel made of fabric constructed according to the present invention has the advantages of being and feeling sheer and lightweight and of being durable, lock-knit structurally, and stable dimensionally. It can be produced on a Raschel machine with less yarn per needle to yield several dozen stockings (of conventional ladies' hosiery size) per pound of yarn and at a rate upwards of ten times as fast as on a circular machine. A Raschel machine can accommodate about 50 percent more bands according to this invention than can the best existing seamless warp-knit construction and with several times the productivity per pound of yarn.

FIGS. 7 to 10 relate to a second embodiment of the invention wherein the fabric construction is like that of the first embodiment but with addition of a bight of yarn bisecting each diamond walewise, i.e., extending from one knotlike corner vertically to the opposite corner, and so on, perpendicularly across successive courses.

FIG. 7 shows such fabric **40** having "knots" **42** at the corners and double bights **44** along the sides of the diamonds, corresponding to (but having reference numerals twice as large as) the fabric previously shown in FIG. 1. Added single bights **46** bisect each diamond therein.

FIG. 8 depicts the stitch configuration of a representative portion of this second fabric embodiment if the invention on a greatly enlarged scale. It is like FIG. 2 except for addition of the vertical bight of yarn guided by bars **1** and **2** and shown shaded obliquely opposite to one another. (It will be understood that corresponding vertical bights would be provided from guides of bars **14** and **13**, respectively, on the back bed.) At the corners of the diamonds the stitches of these added yarns largely parallel those provided by bars **3** and **4**.

Table III gives the chain readings and starting points for the added (previously unthreaded) yarn guide bars **1, 2, 13,** and **14**. The chain readings and starting points for bars **3** to **12** remain as given in Table I.

TABLE III

Drum	Guide Bar. No.	Pattern Link	Starting Point Between Needles
Right	1	2/0	1,2
Right	2	6/6	0,1
Right	13	6/6	0,1
Right	14	2/2	1,2

FIG. 9 is a threading diagram for this second fabric embodiment, differing from FIG. 3 for the previous embodiment by addition of yarn for the guide bars of Table III, all four of which are similarly threaded.

Table IV presents the pattern chain readings for guide bars **1, 2, 13,** and **14** of the second embodiment, supplementing Table II, which prescribes the chain readings for bars **3** to **12** of the second embodiment as well as the first embodiment.

TABLE IV

	Guide Bar Nos.			(All Right Drum)
Needlebed	1	2	13	14
F	2/0	6/6	6/6	2/2
R	2/2	6/6	6/8	2/2
F	2/2	6/6	6/6	2/2
R	2/2	6/6	6/6	2/2
F	2/2	6/8	6/6	2/2
R	2/2	6/6	6/6	2/0
F	2/2	6/6	6/6	2/2
R	2/2	6/6	6/6	2/2

FIG. **10** supplements FIG. **4** and depicts the point pattern for the four newly threaded guide bars, it being understood that the patterns for bars **3** to **12** remain as in FIG. **4**. Superimposition of all the point patterns at the appropriate threaded position will produce a composite stitch diagram conforming to the illustration in FIG. **8**. It is apparent that guide bar **1** stitches on only the first course, and bar **2** on the third course, of the front bed in each repeat of four courses; bars **13** and **14** do likewise on the back bed.

This second fabric embodiment has the advantage of the first embodiment and also presents a novel appearance and permits use of a finer yarn count while maintaining desired dimensional stability and structural durability. Inasmuch as the Raschel machines now available with convertible pattern mechanism as required for both embodiments have no more than fourteen guide bars, four of which are required to form the basic pattern (two each on the front and back beds), four of which are required to interconnect the inner edges along the bifurcated portion, and four of which are required to add the vertical yarns (two on each bed), the benefit of interconnecting the outer edges with only two, instead of the customary four, bars may be even more apparent here than in the instance of the first embodiment.

Another advantage of the second fabric embodiment lies in the ease with which the yarns added as walewise bisectors in the leg portions may be converted by lateral shogging of their guide bars to a laid-in construction in the body portion of panty-hose fabric to render it desirably opaque. For example, a three-needle lay-in back and forth (corresponding to chain readings of 6/0, 0/6) is permissible, whereupon the added bights of yarn, which were vertical in FIGS. **7** and **8**, take on a laterally zig-zag appearance (not shown but readily visualizable) through two stitches to one side from and on the same course with the last stitch through which the vertical bight passed and then back under three successive underlaps to pass through the second stitch above in the first wale. A shorter lay-in or combination of laying-in and stitching may be employed instead to produce a desirably opaque or semi-opaque appearance.

To change the pattern in this manner at the transition from leg to body portion, the guide bars involved (here **1, 2, 13,** and **14**) must have a suitable alternative or B pattern chain or equivalent element available. The "Fashion Master" Raschel machine, previously mentioned, can be obtained with double-chain drums at its right, as well as the previously indicated left, end and are quite satisfactory for this purpose. It should be mentioned that with the simple modification just described, the basic diamond pattern of the fabric may be distorted (and constricted) somewhat from its previously described and illustrated geometrical shape, and the overall uniformity (though not the continuity) of stitch construction throughout the tubular fabric may be interrupted by a fashion stripe at the extreme right and left edges of the unitary body portion only. The "Fashion Master" machine is equipped with a variable takeup mechanism, which is readily operable to shape the tubular body portion larger so as to compensate for any construction in size that otherwise would accompany such laying in of yarns therein.

FIGS. **11** to **17** are alternative point patterns for seven optional modifications of the basic diamond pattern formed by guide bars **3** and **4** (and by bars **11** and **12**). There are two groups of these modifications: the first four, each of which has a repeat of four courses, as did the first two embodiments; and the last three, which have a six-course repeat and consequently some distortion of the pattern from the basic rhombic or equilateral diamond, although the overall result remains marquisette-like and has most of the advantages and benefits of the invention. Set forth in the following tables are chain readings for these respective fabric modifications, insofar as guide bars **3** and **4** are concerned, the readings for bars **12** and **11** on the back bed being deducible therefrom by analogy with the relationship of the readings in the previous embodiments, and the readings for the other bars remaining unchanged therefrom. It will be understood also that the bisecting bights

of the second previous modification can be superimposed likewise on each of these basic pattern modifications.

Table V

(FIG. 11)
Guide Bar No.

	3	4
F	2/2	0/0
B	0/0	0/0
F	2/2	2/2
B	2/2	0/0
F	2/2	4/4
B	4/4	4/4
F	2/2	2/2
B	2/2	4/4

Table VI

(FIG. 12)
Guide Bar No.

	3	4
F	2/2	2/2
B	4/4	0/0
F	2/2	2/2
B	4/4	0/0
F	2/2	2/2
B	0/0	4/4
F	2/2	2/2
B	0/0	4/4

Although bars 3 and 4 stitch only on the front bed, the point patterns for bar 4 yarns are shown in broken lines in FIGS. 11 to 17 to aid in distinguishing them from the solid pattern for bar 3 yarns. This is not to be confused with broken-line showing of stitches on the back bed in previous views.

TABLE VII

(FIG. 13)
Guide Bar No.

Bed	3	4
F	2/2	2/2
B	0/0	0/0
F	2/2	2/2
B	4/4	2/2
F	4/4	2/2
B	6/6	4/4
F	4/4	2/2
B	2/2	2/2

TABLE VIII

(FIG. 14)
Guide Bar No.

Bed	3	4
F	0/0	2/2
B	0/0	0/0
F	0/0	0/0
B	2/2	0/0
F	4/4	2/2
B	4/4	4/4
F	4/4	4/4
B	2/2	4/4

TABLE IX

(FIG. 15)
GUIDE Bar No.

Bed	3	4
F	0/0	2/2
B	0/0	0/0
F	0/0	2/2
B	2/2	2/2
F	0/0	2/2
B	0/0	0/0
F	4/4	2/2
B	4/4	4/4
F	4/4	2/2
B	2/2	2/2
F	4/4	2/2
B	2/2	4/4

TABLE X

(FIG. 16)
Guide Bar No.

Bed	3	4
F	0/0	0/0
B	0/0	2/2
F	0/0	2/2
B	2/2	2/2
F	2/2	0/0
B	0/0	0/0
F	4/4	4/4
B	4/4	2/2
F	4/4	2/2
B	2/2	2/2
F	2/2	4/4
B	4/4	4/4

TABLE XI

(FIG. 17)
Guide Bar No.

Bed	3	4
F	2/2	0/0
B	0/0	0/0
F	0/0	2/2
B	2/2	2/2
F	2/2	2/2
B	2/2	4/4
F	2/2	4/4
B	4/4	4/4
F	4/4	2/2
B	2/2	2/2
F	2/2	2/2
B	2/2	0/0

While the invention has been illustrated and described with reference to certain embodiments and alternatives thereto or modifications thereof, it will be understood that other examples could be provided and that modifications might be made therein as by adding, combining, or subdividing parts or steps while maintaining many of the advantages and benefits of the present invention, which itself is defined in the following claims.

I claim:

1. Marquisette-like knit fabric characterized by an overall diamond pattern having double bights along each side of each diamond therein, two sides of each diamond being made up of stitch loops of two separate yarns and the other two sides of each diamond being made up of successive underlaps of one of those yarns and successive underlaps of another yarn whose stitch loops are confined to the corners of the diamonds, wherein each diamond is bisected from corner to opposing corner walewise by a further yarn making a stitch at alternate courses, being confined respectively to the first formed and last formed corners of the diamond, and laid-in therebetween.

2. Fabric according to claim 1 in seamless tubular form.

3. Fabric according to claim 1 bifurcated into a pair of side-by-side tubular portions for part of its length.

4. Bifurcated tubular fabric according to claim 3 in seamless form.

5. In marquisette-like knit fabric characterized by an overall diamond pattern having double bights along each side of each diamond therein, two sides of each diamond being made up of stitch loops of two separate yarns and the other two sides of each diamond being made up of successive underlaps of one of those yarns and successive underlaps of another yarn whose stitch loops are confined to the corners of the diamonds, the improvement comprising a further yarn bisecting diamonds walewise from corner to opposite corner thereof by stitching on alternate courses, at which the respective first formed and last formed corners thereof are formed, and being laid-in therebetween.

6. Warp-knit tubular fabric according to claim 5, wherein the lapping formulas of the yarns making up the marquisette-like mesh of such structure are as follows:

	Front Yarns		Back Yarns	
F	2/0	0/2	2/2	2/2
B	2/2	0/0	4/2	2/4
F	2/2	0/2	4/4	2/2
B	2/2	2/2	4/2	2/2
F	2/4	4/2	2/2	2/2
B	2/2	4/4	0/2	2/0
F	2/2	4/2	0/0	2/2
B	2/2	2/2	0/2	2/2

wherein F and B denote, respectively, front and back yarn lapping positions.

7. Warp-knit tubular fabric according to claim 5, wherein the lapping formulas of the diamond-bisecting yarns are as follows:

	Front Yarns		Back Yarns	
F	2/0	6/6	6/6	2/2
R	2/2	6/6	6/8	2/2
F	2/2	6/6	6/6	2/2
R	2/2	6/6	6/6	2/2
F	2/2	6/8	6/6	2/2
R	2/2	6/6	6/6	2/0
F	2/2	6/6	6/6	2/2
R	2/2	6/6	6/6	2/2

wherein F and R denote, respectively, front and back yarn lapping positions.

8. In a marquisette-like knit fabric, the improvement comprising a diamond-shaped mesh formed by sets of first and second background yarns, such mesh being bisected form corner to corner walewise by an added yarn, having the following mesh structure; a first corner having superimposed

thereat a stitch of a first background yarn and a loop stitch of a second background yarn and also a stitch of the added yarn, interlocking a loop from an adjacent mesh; a second corner adjacent the first corner and defining therewith a side composed of the bights of the loop of the second background yarn, and having superimposed thereat and interlocking such loop a loop stitch of another first yarn and a stitch of another second yarn from the respective sets thereof; a third corner, opposite the second corner and adjacent the first corner, defining with the first corner a side composed of underlaps of both the first and second yarns and having superimposed thereat stitches of both such yarns interlocking a loop of another second yarn from an adjacent mesh; and a fourth corner opposite the first corner and adjacent the second and third corners, defining with the second corner a side composed of the loop of the other first yarn and defining with the third corner a side composed of underlaps of both the first mentioned first and second

yarns, the fourth corner having superimposed thereat a stitch of the first yarn and a loop stitch of the second yarn and also a stitch of the added yarn, interlocking the loop of the other second yarn.

9. Fabric according to claim 8 and having an overall pattern made up of such diamond-shaped mesh.

10. Fabric according to claim 1, wherein the respective stitches of the further yarn are superimposed at the opposing walewise corners of the diamond onto corresponding stitches of the previously mentioned yarn having its stitches confined to the corners, that previously mentioned yarn having such a stitch at each course, each corner of each diamond being characterized by a stitch of the yarn confined to the corners and also by the first stitch of a pair of successive stitches in superimposition thereon, the second stitch in each pair having a loop thereof elongated along a side of the diamond.

* * * * *