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(54) Base net for raschel laces.

(57) A Raschel Lace and a method of manufacturing such lace to form a base net whose openings display alternately a length of a first number of loops and a length of a second number of loops. Pillars of predetermined numbers are formed upon each needle then switched to the adjacent needle to similarly form a predetermined number of pillars on that needle, then switched to another needle to form a predetermined number of pillars on that needle so that a selected number of loops is created. The loops are connected after selected numbers of loops are formed so that predetermined openings are formed.

The size of the openings in the mesh thus formed may be varied by inlaying threads in a prescribed manner to either divide larger openings or to draw together wales at selected locations to accent the larger openings.

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BASE NET FOR RASCHEL LACES

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BACKGROUND OF THE INVENTION-FIELD APPLICATION

This invention relates to Raschel lace; and more particularly to the ground or base net for Raschel lace, and the method of manufacturing said ground or base net.

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuing application of application serial number 535,632 filed September 26, 1983 by M. Jablin, et al. titled Base Net For Raschel Laces.

BACKGROUND OF THE INVENTION-DESCRIPTION OF THE PRIOR ART

Laces are a class of fabric characterized by a pattern carried on a ground, mesh or base net. Raschel laces are named as such due to their being manufactured on Raschel machines. Most Raschel laces available today utilize a ground, mesh or base net of either chain stitch construction, or of hexagonal construction.

In the chain stitch construction each thread of a system of threads are caused to form a chain comprising a continuous series of loops; with each such thread forming its respective chain or series of loops on a single needle. Another system of threads when inlayed into the continuous chain or series of loops, are utilized to provide a uniform mesh size, or to vary the mesh size at will and in selected areas. The ability to so vary the mesh size in a selected manner is a highly desirable feature of better laces.

However, chain stitch ground, mesh and base nets have serious disadvantages in that they will unravel. If a chain loop is severed as the lace is being sewn into the garment, or during washing, or due to any other cause, the continuous loop can and often does unravel. Unravelling may occur immediately, during use of the garment, or during its washing, and will produce a defect comparable to a "run" in women's hosiery. Such lace and any garment incorporating the lace will be unacceptable for sale either completely or as first quality.

A ground, mesh, or base net of hexagonal construction, on the other hand, is fabricated by forming loops alternately on a first needle and a second needle in a respective manner

However, such hexagonal net construction suffers from the disadvantage that the net configuration cannot be varied by changing the size of the net openings by inlays or other means. Variations in mesh size when created must be uniform from selvedge to selvedge. Enlargement of base net openings in selected areas is not possible; and such effect is essential for high grade laces if they are to replace expensive web laces.

Another common construction which does not unravel is the power net, an example of which is shown in Chapter 5 of Raschel Lace Production by B. Wheatly published in 1972 by the National Knitted Outerwear Association. However, the power net also has the disadvantages similar to the hexagonal net in not permitting variations in the net openings.

It is therefore an object of this invention to provide a new and improved ground or base net, and the method of manufacturing the same.

It is another object of this invention to provide a new and improved ground or base net for Raschel lace which will not unravel, and method of manufacturing the same.

It is yet another object of this invention to provide a new and improved ground or base net for Raschel lace, and method of manufacturing the same, in which the loops will not run, or unravel.

It is still another object of this invention to provide a new and improved ground or base net for Raschel lace, and method of manufacturing the same, in which substantial variation is permissible in the size of the openings.

It is yet another object of this invention to provide a ground or base net construction for Raschel lace, and method of manufacturing the same, which can be varied by different placement of inlay threads.

It is a further object of this invention to provide a ground or base net construction for Raschel lace, and method of manufacturing the same, in which variation of the size of the net openings is possible.

This invention involves ground or base nets for Raschel lace and a mthod of manufacturing same, and contemplates forming the ground or base net by utilizing two systems of threads, to form selected numbers of stitches on a selected number of adjacent needles in a repetitive

manner, so that the net thus formed will not unravel and will not be susceptible to "runs", has adjacent openings of two selected lengths, and so that by using inlay threads the length and size of the net openings can be varied in selected areas. Each thread system stitches a first selected number of stitches on its own respective first needle; they then shog to an adjacent respective second needle and stitch a second selected number of stitches thereon, and then may shog in the same direction but, to a next adjacent respective third needle to stitch a third selected number of stitches thereon. The shogging movements are then reversed so that the respective thread systems shog back to their respective second needles to stitch a second selected number of stitches thereon, and then back to their respective first needles to stitch first selected numbers of stitches thereon. The movements and stitching process is thereafter repeated to form the mesh or net.

The present invention is characterized by the provision of a net base for Raschel laces which will not unravel. Concomitantly, no substantial constraint is imposed upon the variation of the net effect. In summary, the present invention basically entails a ground or base net for Raschel laces, characterized by the fact that the net consists of stitches whose loop threads, after a selected number of loops, switch to an adjacent wale and switch back in the same order so that the loop threads switch in the opposite direction and after a selected number of loops cross the first loop threads so that a non-run construction is produced.

Prefereably in the present invention, the base net openings next to and above each other display alternatively a first length and a second length. Typically in this case, the openings in the net are varied by additional inlay threads corresponding to the desired effect. Generally, at specified points, the openings are divided by inlay threads and/or the openings are contracted to emphasize the size of the adjacent openings.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the system, and article of manufacture hereinafter described, and of which the scope of application is as elucidated supra and as will be indicated in the appended claims. In this regard, numerous alternatives within the scope of the present invention, besides those alternatives, preferred embodiments or modes of practicing the invention mentioned supra, and those to be elucidated infra, will occur to those skilled in the art.

Other objects, features and advantages of the invention in its details of construction and arrangement of parts will be seen from the above, from the following description of the preferred embodiment when considered with the drawing and from the appended claims.

BRIEF DESCRIPTION OF THE DRAWING

In the drawing:

FIG. 1, is a schematic illustration of a base net, without inlay threads, for Raschel lace incorporating

the instant invention, and formed by the dual thread knitting system;

FIG. 2 is a schematic showing the movements of the guide bars for Raschel lace machine showing in portions A and B thereof the paths of movement of the knitting guide bars to form the net of FIG. 1, and in portions C and D thereof the paths of movement of the inlay guide bars to form the net of FIGS. 3 and 4 respectively;

FIG. 3 is a schematic illustration of a base net with inlay threads used to reduce the size of the larger mesh openings to make them approximately the same size as the smaller mesh openings;

FIG. 4 is a schematic illustration of a base net with inlay threads used to accentuate the larger mesh openings;

FIG. 5 is a schematic illustration similar to that of FIG. 2, but showing an alternative arrangement and movement for the knitting guide bars and inlay guide bars;

FIGS. 6a and 6b are schematic illustrations of base nets fabricated by utilizing the guide bar arrangement of FIG. 5;

FIG. 7 is a schematic illustration, similar to that of FIGS. 2 and 6, but showing still another alternative arrangement and movement for the knitting guide bars and inlay guide bars; and

FIGS. 8a and 8b are schematic illustrations of base nets fabricated by utilizing the guide bar arrangements of FIG. 7.

DESCRIPTION OF THE PREFERRED EMBODIMENTS.

With reference to FIG. 1, there is generally shown at 10 a schematic base net for Raschel lace. Base net 10 is fabricated on a conventional Raschel Lace manufacturing machine.

Base net 10 is fabricated from a plurality of threads 12 each formed into a plurality of loops 14. Thread 12 may be of nylon, rayon or other available synthetic material; of if preferred, threads 12 may be of natural material such as cotton or the like. Threads 12 are formed into loops by the needles (not shown) of the Raschel Lace manufacturing machine in conventional manner; except that the Raschel machine is set up so that each thread 12 is formed into a pillar of three loops 14 on a first needle, a pillar of three loops 14 on a second needle adjacent to the first needle, a pillar of three loops 14 on a third needle adjacent to the second needle, another pillar of three loops 14 on the second needle, and thereafter a pillar of three loops on the first needle as the process continues to repeat. Furthermore, alternate threads 12 are guided in their movement by alternate ones of two knitting guide bars (not shown) of the Raschel Lace manufacturing machine so that one set of threads 12 are moved or shogged from needle to needle first in one and then in the opposite direction; while the other set of threads 12 are moved or shogged opposite to that of the first set of threads 12.

Thus, FIG. 1, shows seven threads 12a, 12b, 12c, 12d, 12e, 12f, and 12g; knitted together to form a portion of base net 10. Since threads 12a-12g move or shog from needle to needle and back again, the rows or wales of base net 10 have been designated I through VII; such designations may also be considered as corresponding to needle positions of the machine.

In FIG. 2 (portion A) line 20 represents the path followed by a first knitting guide bar of the machine; while line 21 represents the path followed by the second knitting guide bar of the machine. The dots 24 symbolize needle positions along the base net rows or needle paths I-VII. Guide bar paths 20 and 21 are shown separated from each other in portion Aof FIG. 2 to more clearly show such paths. However, such knitting guide bar paths (20, 21) will in fact follow the actual paths designated 20, 21 in FIG. 2 (portion B) and will be disposed between similar knitting guide bar paths 16, 17, 18, 19, 22, 23, etc. It should be noted that the knitting guide bar paths proceed generally parallel for three loop positions and then the odd numbered knitting guide bar paths move or shog in one direction for the next three loop positions while the even numbered knitting guide bar paths move or shog in the opposite direction for three loop positions. This corresponds to shogging movements of the two knitting guide bars. Accordingly, a first knitting guide bar will guide its thread 12 along knitting guide bar paths corresponding to path 20 while the machine forms a pillar of three loops 14 in a first needle row (such as row IV). Then the knitting guide bar will move or shog thread 12 into the next adjacent rows (such as row V) and a pillar of three more loops 14 are formed.

Thereafter, the knitting guide bar will move thread 12 into the next adjacent row in the same direction (such as row VI) and a pillar of three more loops 14 are formed. The knitting guide bar then shifts direction and moves or shogs its thread back to the next adjacent row (such as row V) and a pillar of three more loops 14 are formed. The knitting guide bar then returns its thread 12 to its original row (such as row IV) and the process repeats. The other knitting guide bar moves its thread 12 along paths parallel to path 21 in a manner similar to but in opposition to the first knitting guide bar.

When a portion of base net 10 is thus formed, loops 14 appear as shown in schematic in FIG. 1, wherein the loops 14 of threads 12d and 12e are designated by the letters "d" and "e" respectively. While loops 14 for the other threads 12 have generally not been so designated in order to avoid cluttering FIG. 1, they have been designated for the other loops in base net rows IV and V to show how the complete row is interconnected. FIG. 1 shows seven wales or rows (designated I-VII respectively) and 15 courses in each such wale.

The resulting final base net 10 includes large openings or holes 40, 9 loops in length and small openings or holes 42, 3 loops in length. Holes 40 and 42 are separated by cross-overs 44 where threads 12 cross to the next adjacent row. Because threads 12 move from row to row and back, one thread does not form a single row or wale and the integrity of base 10 is maintained even if a thread is cut or otherwise severed. The spaces wherein holes 40 and 42 are formed are designated by correspondingly numbered dark lines in portion B of FIG. 2.

The base net of 10 of FIG. 1 may be formed into a finer mesh 100, as shown in FIG. 3. Loops 114 of threads 112 are formed identically to those of loops 14 formed from threads 12 in the FIG. 1 embodiment. However, inlay threads 120, 122 are inlayed into the base loop mesh by utilizing inlay guide bars which guide inlay threads 120 and 122 along paths designated by lines 120 and 122 in portion C of FIG. 2.

The base net of 10 of FIG. 1 may be formed into a mesh 200 with larger openings 202 as shown in FIG. 4. Here again, loops 214 of threads 212 are formed in the same manner as the loops of the embodiment of FIG. 1. However, inlay threads 220, 222 are inlayed into the basic loop mesh by utilizing inlay guide bars which guide threads 220 and 222 along inlay paths designated 220 and 222 in portion D of FIG. 2. Inlay threads 220, 222 are additionally drawn together so that openings 202 are emphasized.

In FIG. 5 (portion A) line 320 represents the path followed by the first knitting guide bar of the machine; while line 321 represents the path followed by the second knitting guide bar of the machine. The dots 324 symbolize needle positions along the base net rows or needle paths I-VII. Guide bar paths 320 and 321 are shown separated from each other in portion A of FIG. 5 to more clearly show such paths. However, such knitting guide bar paths 320, 321 will in fact follow the actual paths designated 320, 321 in FIG. 5 (portion B) and will be disposed between similar knitting guide bar paths 317, 318, 319, 320, 321, 322, 323, etc. It should be noted that the knitting guide

bar paths proceed generally parallel for three loop positions and then the odd numbered knitting guide bar paths move or shog in one direction for the next but single loop position while the even numbered knitting guide bar paths move or shog in the opposite direction for a single loop position. This corresponds to shogging movements of the two knitting guide bars. Accordingly, a first knitting guide bar will guide its thread 312 along knitting guide bar paths corresponding to path 320 while the machine forms a pillar of three loops 314 in a first needle row (such as row IV). Then the knitting guide bar will move or shog thread 312 into the next adjacent row (such as row V) and a single loop 314 is formed. Thereafter, the knitting guide bar will move thread 312 into the next adjacent row in the same direction (such as row VI) and three loops 314 are formed. The knitting guide bar then shifts direction and moves or shogs its threads 312 back to the next adjacent row (such as row V) and only a single loop 314 is formed. The knitting guide bar then returns its thread 312 to its original row (such as row IV) and the process repeats. The other knitting guide bar moves its thread 312 along paths parallel to path 321 in a manner similar to but in opposition to the first knitting guide bar.

When a portion of base net 310 is thus formed, loops 314 appear as shown in schematics in FIGS. 6a and 6b; wherein loops 314 of threads 312d and 312e are designated by the letters "d" and "e" respectively. While loops 314 for the other threads 312 have generally not been so designated in order to avoid cluttering FIG. 6, they have been

designated for the other loops in base net rows IV and V to show how the complete row is interconnected.

The resulting final base net 310 includes large openings or holes 340, 5 loops in length and small openings or holes 342, 3 loops in length. Holes 340 and 342 are separated by cross-overs 344 where threads 312 cross to the next adjacent row. Because threads 312 move from row to row and back, one thread does not form a single row or wale and the integrity of base net 310 is maintained even if a thread is cut or otherwise severed. The spaces wherein holes 340 and 342 are formed are designated by correspondingly numbered spaces in portion B of FIG. 5.

Openings 340, 342 of net 310 are varied in size, shape and configuration as shown for example in FIGS. 5a and 6b by the use of inlay threads 420-424 in a manner similar to that described for the embodiments of FIGS. 3 and 4.

In FIG. 6a inlay threads 420a-425a are inlayed into a basis ground 310a in a manner similar to that described with respect to FIG. 3. The final construction for ground 310a thus provides one in which large openings 340a are divided substantially in half by those portions of inlay threads 420a-425a that are inlayed between adjacent wales, as shown; and as such all openings 340a, 342a in a selected area appear similar in size.

In FIG. 6b inlay threads 420b-425b are inlayed into a base ground 310b in a manner similar to that described with respect to FIG. 4. The final construction for ground

310b thus provides one in which the wales to each side of small openings 342b are drawn together in selected areas and large openings 340b are enlarged or accentuated by respective inlay threads 420b-425b, as shown.

Another variation is illustrated in FIG. 7 (portion A) line 520 represents the path followed by a first knitting guide bar of the machine; while line 521 represents the path followed by the second knitting guide bar of the machine. The dots 524 symbolize needle positions along the base net rows or needle paths I-VII. Guide bar paths 520 and 521 are shown separated from each other, in portion A ofFIG. 7 to more clearly show such paths. However, such knitting guide bar paths (520, 521) will in fact follow the actual paths designated 520, 521 in FIG. 7 (portion B) and will be disposed between similar knitting guide bar paths 516, 517, 518, 519, 520, 521, 522, 523, etc.

It should be noted that the knitting guide bar paths proceed generally parallel for two loop positions and then the odd numbered knitting guide bar paths (or wales) move or shog in one direction for the next loop positions while the even numbered knitting guide bar paths move or shog in the opposite for two loop positions. This corresponds to shogging movements of the two knitting guide bars. Accordingly, a first knitting guide bar will guide its thread 512 along knitting guide bar paths corresponding to path 520 while the machine forms a pillar of two loops 514 in a first needle row (such as row IV). Then the

knitting guide bar will move or shog thread 512 into the next adjacent rwo (such as row V) and a pillar of two more loops 514 are formed in that row. Thereafter, the knitting guide bar will move thread 512 into the next adjacent row in the same direction (such as row VI) and two more loops 514 in that pillar are formed. The knitting guide then shifts direction and moves or shogs its thread 512 back to the next adjacent row (such as row V) and two more loops 514 are formed. THe knitting guide bar then returns its thread 512 to its original row (such as row IV) and the process repeats. The other knitting guide bar moves its thread 512 along paths parallel to path 521 in a manner similar to but in opposition to the first knitting guide bar.

When a portion of base net 510 is thus formed, loops 514 appear as shown in schematic in FIGS. 8a and 8b; wherein the loops 514 of threads 512d and 512e are designated by the letters "d" and "e" respectively. While loops 514 for trhe other threads 512 have generally not been so designated in order to avoid cluttering FIGS. 8a and 8b, they have been designated for the other loops in base net rows IV and V to show how the complete row is interconnected.

The resulting final base net 510 includes large openings or holes 540, 6 loops in length and small openings or holes 542, 2 loops in length. Holes 540 and 542 separated by cross-overs 544 where threads 512 cross to the next adjacent row. Because threads 512 move from row to row and back again, one thread does not form a single row or wale and the integrity of base net 510 is maintained even if a thread is cut or otherwise severed. The spaces wherein holes 540 and 542 are formed are designated by correspondingly

numbered spaces in portion B of FIG. 7.

Openings 540, 542 of net 510 are varied in size, shape and configuration as shown for example in FIGS. 8a and 8b by the use of inlay threads 620-627 in a manner similar to that described for the embodiment of FIGS. 3, 4 and 6.

In FIG. 8a inlay threads 620a-627a are inlayed into a base ground 510a in a manner similar to that described with respect to FIGS. 3a and 6a. The final construction for ground 510a thus provides one in which large openings 540a are divided substantially in half by those portions of inlay threads 620a-627a that are inlayed between adjacent wales, as shown, and as such all openings 540a, 542a in a selected area appear similar in size.

In FIG. 8b inlay threads 620b-627b are inlayed into a base ground 510b in a manner similar to that described with respect to FIGS. 4 and 6b. The final construction for ground 510b thus provides one in which the wales to each side of small openings 542b are drawn together in selected areas and large openings 540b are enlarged or accentuated by respective inlay threads 620b-627b, as shown.

The base net thus formed possess all the advantages of the prior art base nets but eliminate the shortcomings therein, i.e., the tendency of the prior art base nets to run if a stitch is ruptured or, the inability of the prior art base net to be varied in the size and configuration of the openings in selected areas.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein described or show in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense. Thus, it will be understood by those skilled in the art that although preferred and alternative embodiments have been shown and described in accordance with the Patent Statutes, the invention is not limited thereto or thereby, since the embodiments of the invention particularly disclosed and described herein above are presented merely as an example of the invention. Other embodiments, forms, and modifications of the invention, coming within the proper scope and spirit of the appended claims, will of course readily suggest themselves to those skilled in the art. Thus, while there has been described what is at present considered to be the preferred embodiments of the invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein, without departing from the invention, and it is, therefore, aimed in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the invention, and it is understood that, although I have show the preferred form of my invention, that various modifications may be made in the details thereof, without departing from the spirit as comprehended by the following claims.

WHAT IS CLAIMED IS

1. A base net for lace comprising a predetermined number of wales each including a predetermined number of loop courses: comprising

(a) a plurality of threads;

(b) each thread of a first group of threads from said plurality of threads, forming a plurality of loop courses in a selected and predetermined manner, for a first plurality of wales, in a first predetermined direction;

(c) each thread of a second group of threads, from said plurality of threads, forming a plurality of loop courses in a selected and predetermined manner, for a second plurality of wales, in a second predetermined direction;

(d) each of said threads of said first group of threads alternating in disposition with each of said threads of said second group of threads so that each group of said wales is formed by loop courses of a predetermined number of different threads and so that the base net thus formed resists any tendency to unravel and run;

(e) said threads of said first group of threads and said threads of said second group of threads crossing over each other at selected locations between adjacent wales;

(f) said cross-overs defining, with said loop courses of adjacent wales, first openings of a first predetermined number of loop courses in length and second openings of a second predetermined number of loop courses in length;

(g) An other group of threads from said plurality of threads, being inlayed in a selected manner into said wales and loop courses and thereby modifying said first and/or second openings in a predetermined manner.

2. The base net of Claim 1 wherein each thread of said other group of theads is inlayed so as to modify said first openings only.

3. The base net of claim 2 wherein each thread of said other group of threads is inlayed so as to divide the length of each of said first openings.

4. The base net of claim 2 wherein each thread of said other group of threads is inlayed so as to draw together adjacent wales in selected locations so that said first openings are enlarged.

5. The base net of claim 1 wherein said threads of said first group of threads and said threads of said second group of threads form their respective loop courses, by first forming a first predetermined number of loops on first respective wales, by second forming a second predetermined loops on second respective wales, adjacent said first respective wales in said respective first and second predetermined directions, by thirdly forming a predetermined number of loops on third respective wales adjacent said second

respective wales in said first and second predetermined directions, by fourthly forming said second predetermined number of loops on said second respective wales, and by thereafter proceeding in a repetitive manner to form said first, second, third and second predetermined number of loops on said first, second and third respective wales.

6. The base net of claim 5 wherein said first predetermined number of loops is three, said second predetermined number of loops is three and said third predetermined number of loops is three.

7. The base net of claim 5 wherein said first predetermined number of loops is two, said second predetermined number of loops is two and said third predetermined number of loops is two.

8. The base net of claim 1 wherein said predetermined number of threads for each wale is three.

9. The base net of claim 1 wherein said predetermined number of loop courses of said first openings is more than said predetermined number of said loop courses of said second openings.

10. The base net of claim 1 wherein said predetermined numbers of loop courses of said first and second openings are substantially the same.

11. The base net of claim 10 wherein said predetermined number of loop courses of said first openings is nine and said predetermined number of said loop courses of said second openings is three.

12. The base net of claim 9 wherein said predetermined number of loop courses of said first openings is six and said predetermined number of loop courses of said second openings is two.

13. The method of forming a base net for lace including a predetermined number of wales each including a predetermined number of loop courses; comprising

(a) selecting a plurality of threads from a plurality of thread courses;

(b) forming each thread from a first group of said plurality of threads into a plurality of loop courses in a selected and predetermined manner in a first predetermined direction;

(c) forming each thread from a second group of said plurality of threads into a plurality of loop courses in a selected and predetermined manner for a plurality of wales proximate one another in a second predetermined direction;

(d) alternating the disposition of each of said threads of said first group of threads with the disposition of each of said threads of said second group of threads so as to form each of said wales by loop courses of a predetermined number of different threads so that the base net thus formed resists any tendency to unravel and run;

(e) crossing over said threads of said first group of threads with said threads of said second group of threads which define with said loop courses of adjacent wales first opeings of a first predetermined number of loop courses in length and second openings of a second number of loop courses in length;

(f) inlaying a plurality of threads, forming another group of threads, in a selected manner into said wales and loop courses to thereby modify said first and/or said second openings in a predetermined manner.

14. The method of forming the base net of claim 13 including inlaying each of said threads of said other group of threads to modify said first openings only.

15. The method of forming the base net of claim 14 including inlaying each thread, of said third group of threads, to divide the length of each of said first openings.

16. The method of forming the base nat of claim 15 including inlaying each of said threads to draw together adjacent wales in selected locations to enlarge said first openings.

17. The method of forming the base nat of claim 13 including forming said threads of said first group of threads and said threads of said second group of threads, into a first predetermined number of loops in first respective wales, into a second predetermined number of loops in a second respective wale by shogging said threads in opposed directions, into a third predetermined number of loops in third respective wales

by shogging said threads in opposed directions, into a second predetermined number of loops said second respective wales by shogging said threads in opposite directions, and by thereafter proceeding in a repetitive manner to form said first, second, third and second predetermined number of loops in said first, second and third respective wales.

18. The method of forming the base net of claim 17 including forming said first, second and third predetermined number of loops each with three loops.

19. The method of forming the vase net of claim 17 including forming said first, and third predetermined number of loops each with three loops, and said second predetermined number of loops with two loops.

20. The method of forming the base net of claim 17 including forming said first, second, and third predetermined number of loops each with two loops.

21. The base net of claim 1 wherein said inlay forms one side of said opening.

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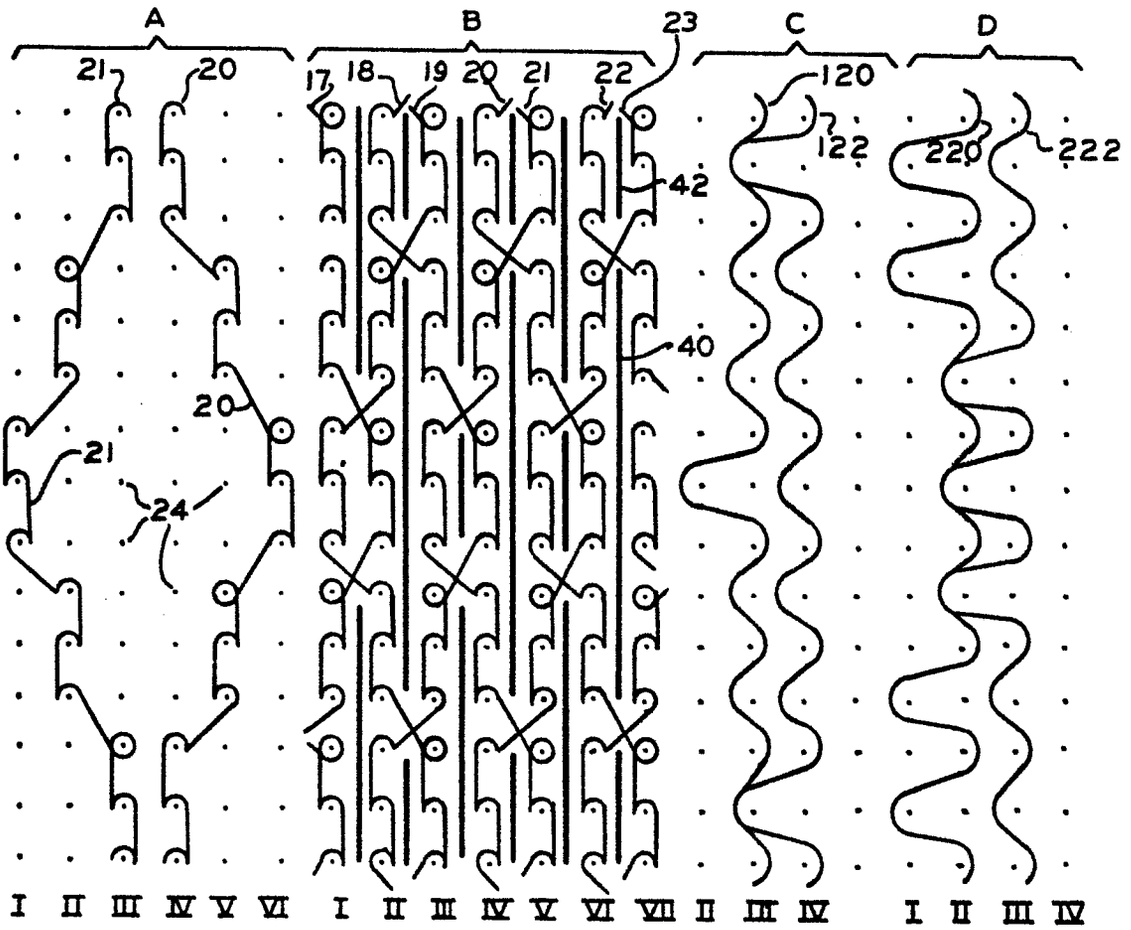


FIG. 2

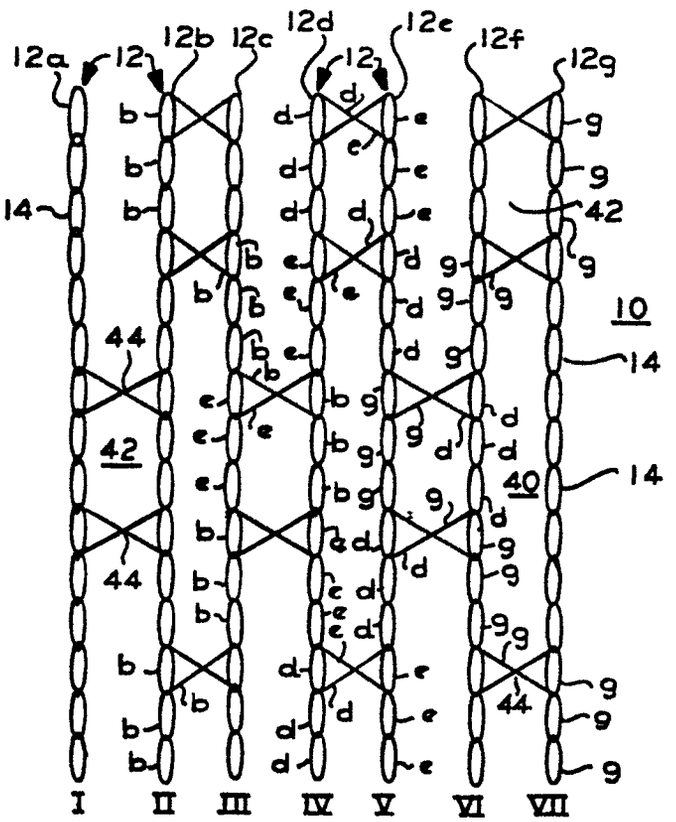
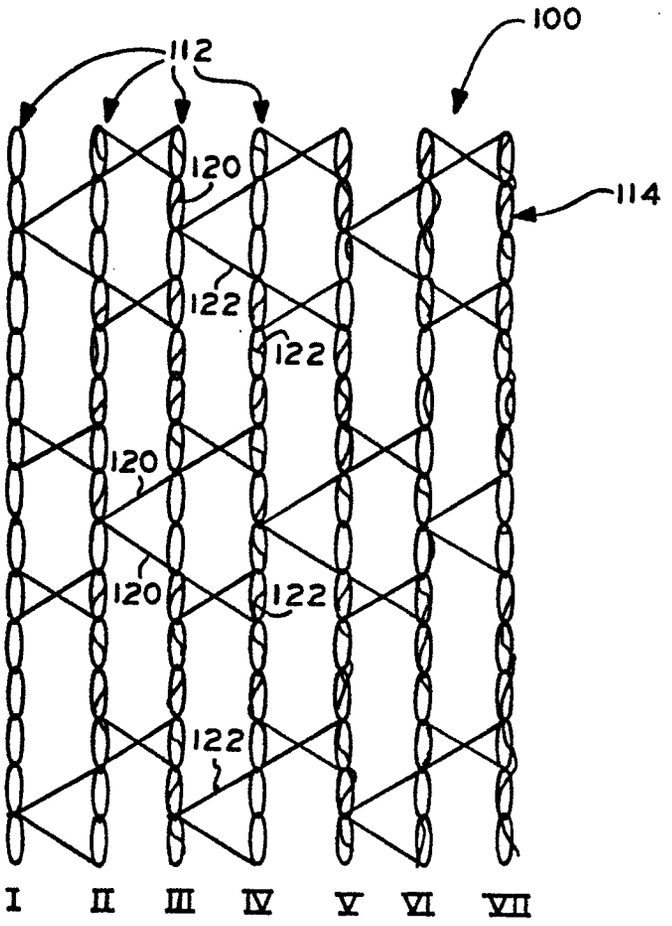


FIG. 1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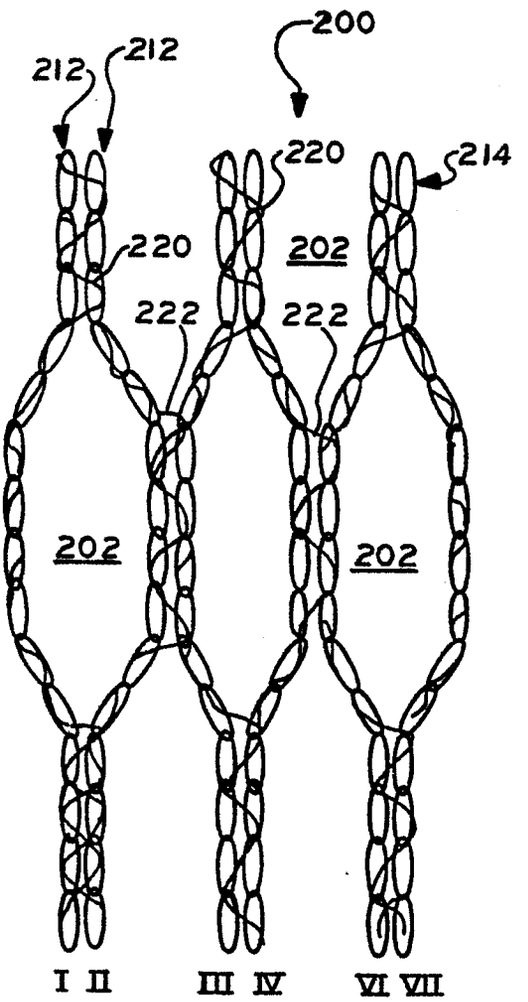
VII

FIG. 3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VII

FIG. 4

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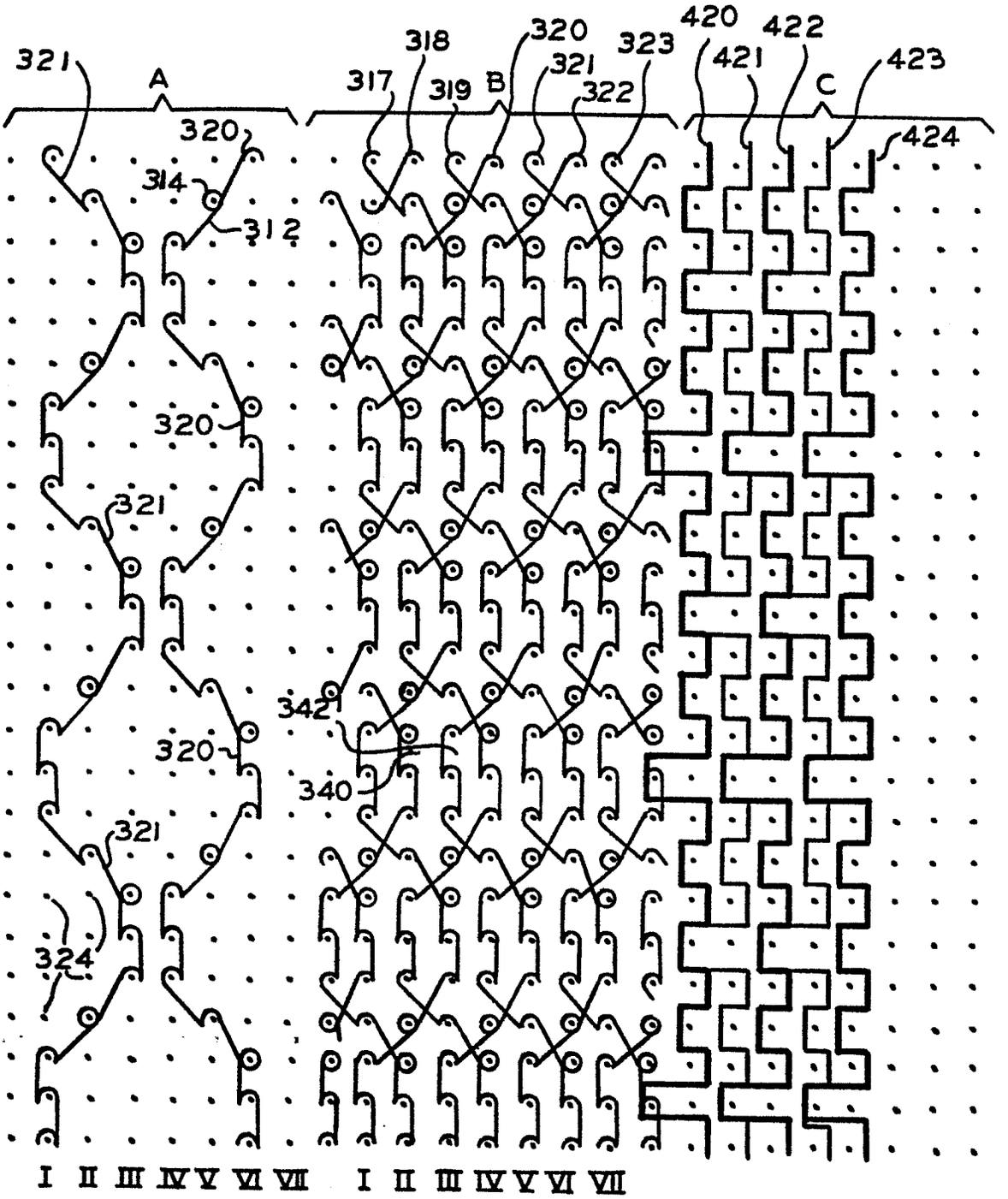

FIG. 5

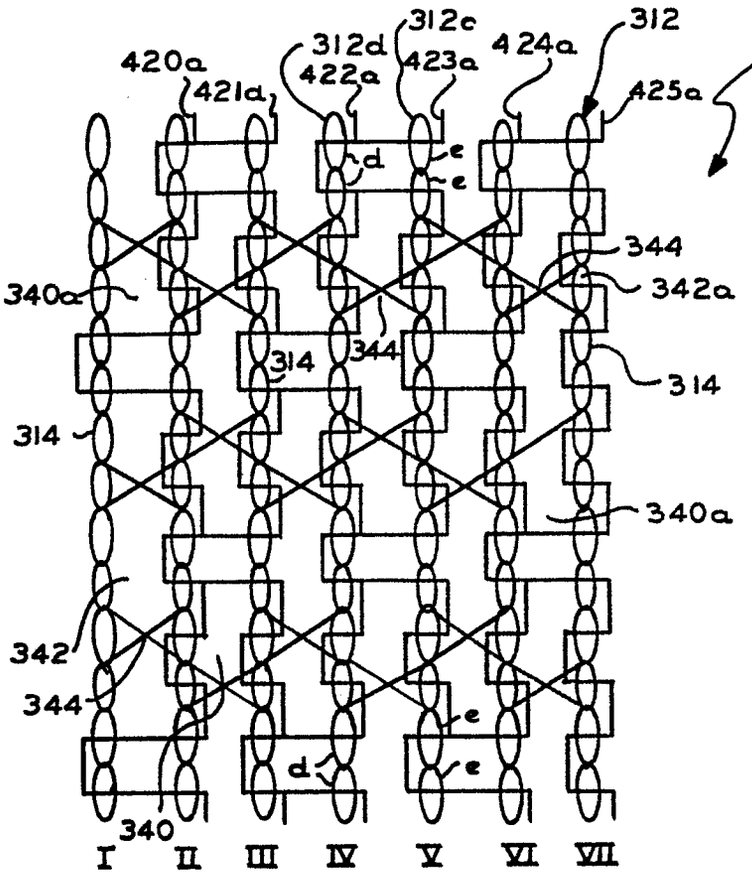
312c
312d
424a
312
420a
422a
423a
310a
421a
425a
d
e
e
344
340a
342a
344
314
314
314
340a
342
344
e
d
e
340
I
II
III
IV
V
VI
VII

FIG. 6a

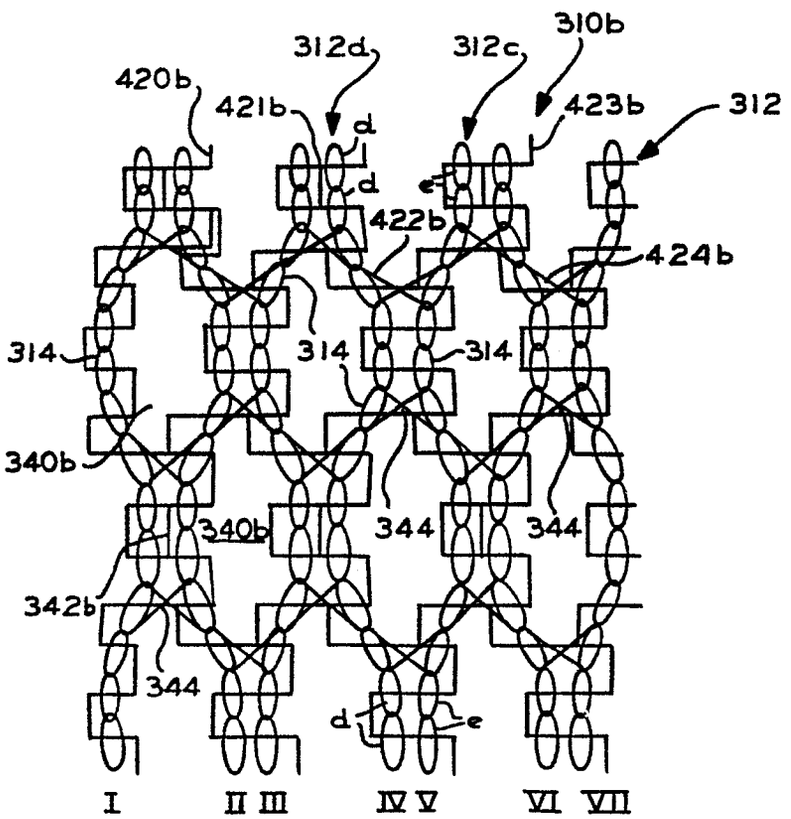
310b
312d
312c
420b
421b
423b
312
d
d
e
422b
424b
314
314
314
340b
340b
344
344
342b
344
d
e
I
II
III
IV
V
VI
VII

FIG. 6b

0137091

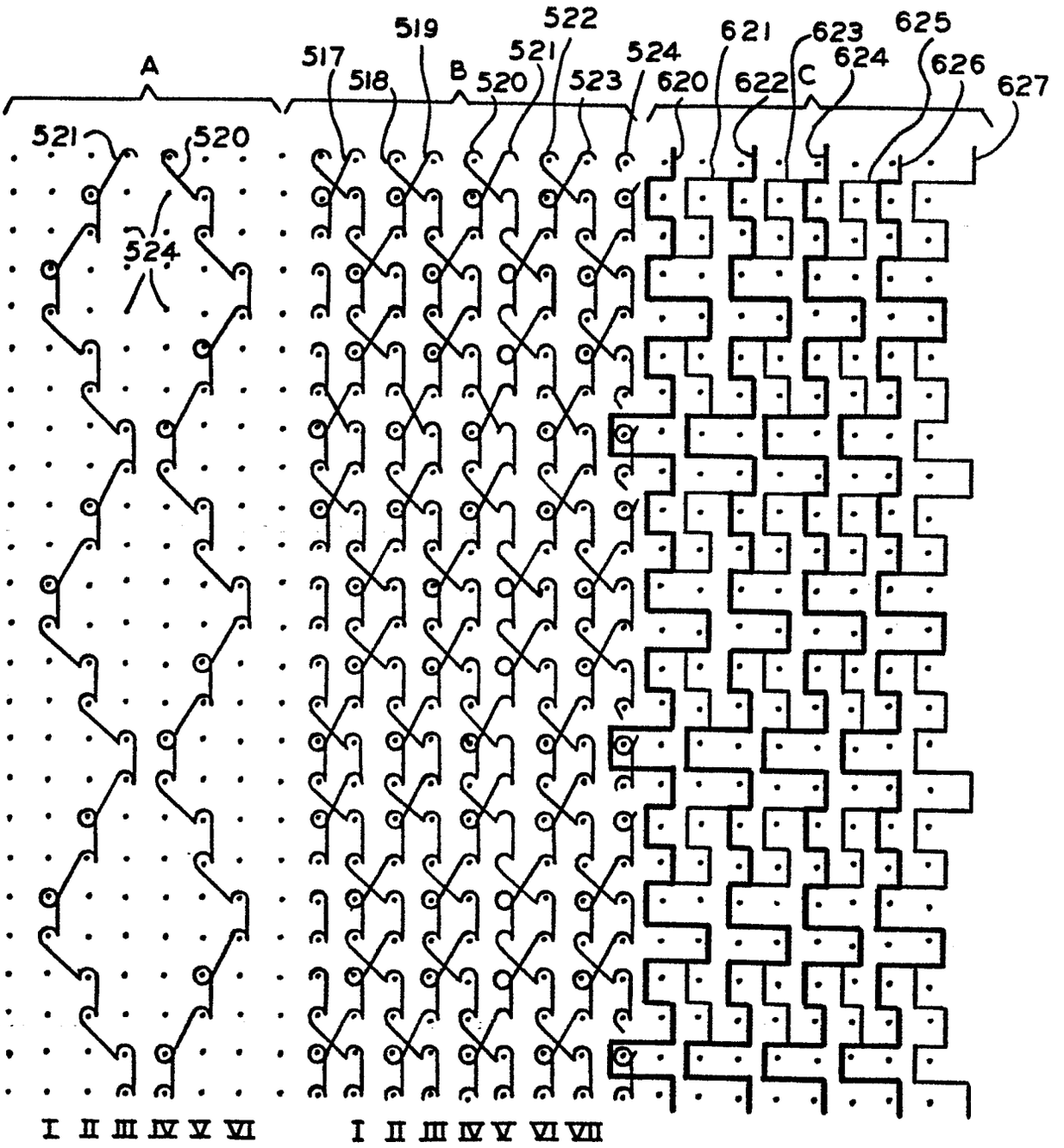

FIG.7

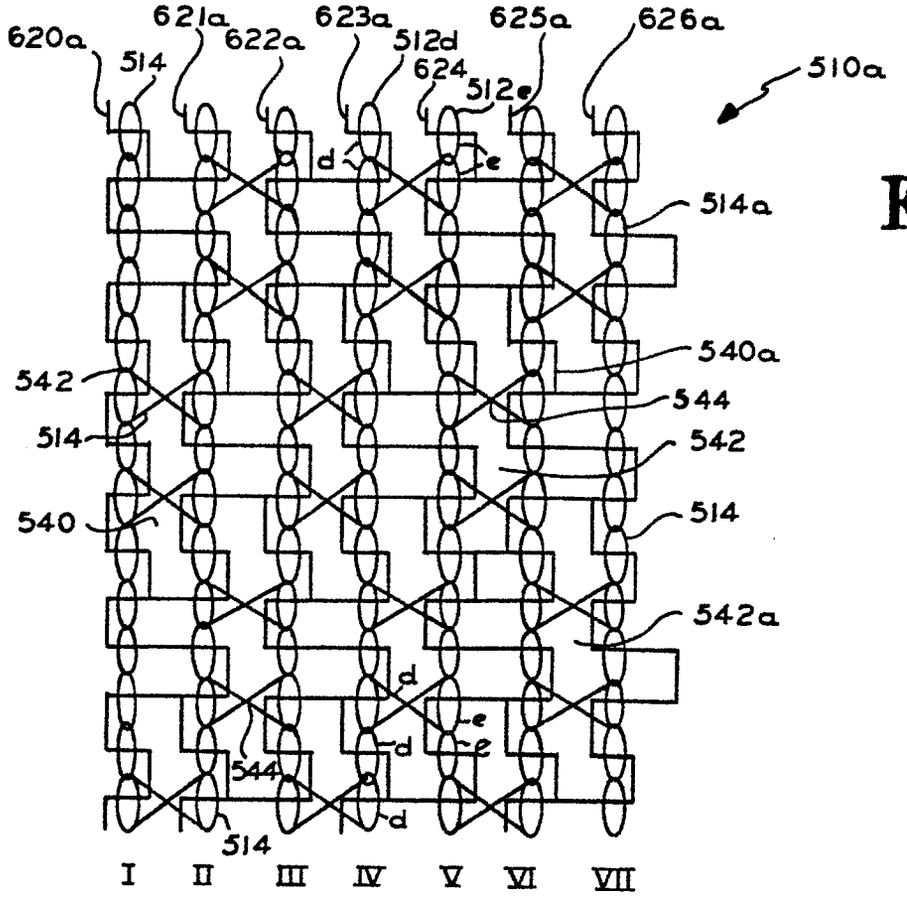
620a
621a
622a
623a
512d
624
625a
626a
514
512e
510a
514a
540a
542
544
514
542
540
514
542a
d
e
d
e
d
544
514
d
I
II
III
IV
V
VI
VII

FIG. 8a

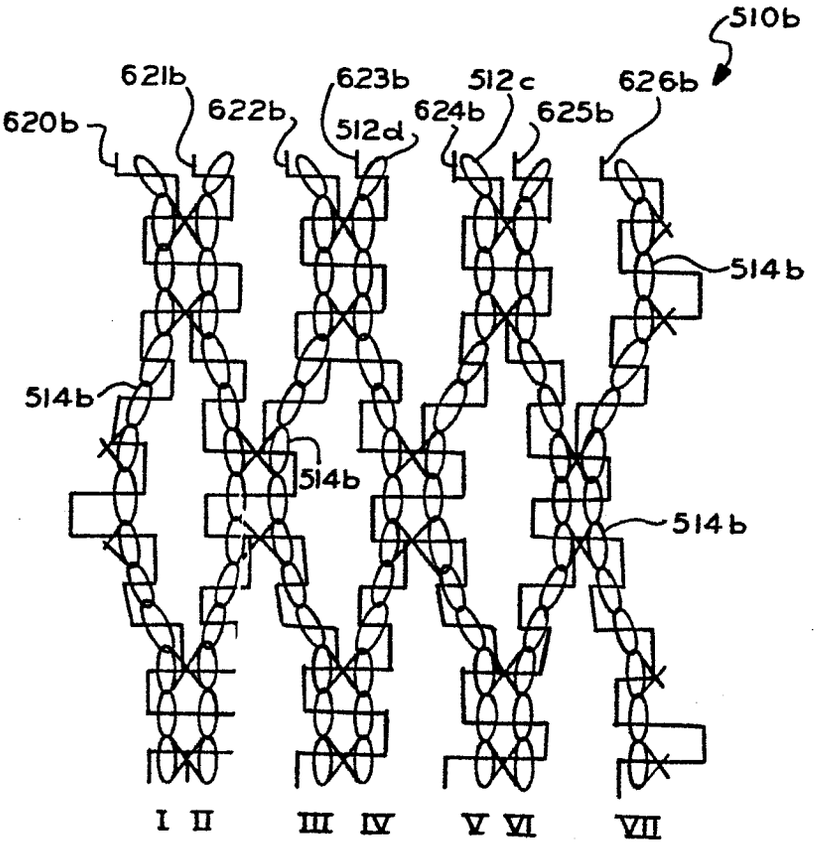
510b
621b
620b
622b
623b
512d
512c
624b
625b
626b
514b
514b
514b
514b
I
II
III
IV
V
VI
VII

FIG. 8b