Feb. 13, 1934. C. E. PINK 1,947,357

FABRIC

Filed July 17, 1933 2 Sheets-Sheet 1

Fig. 1.

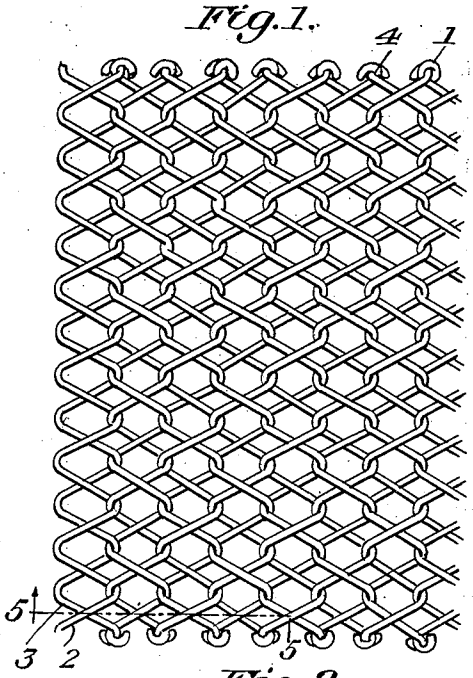


Fig. 2.

Fig. 3.

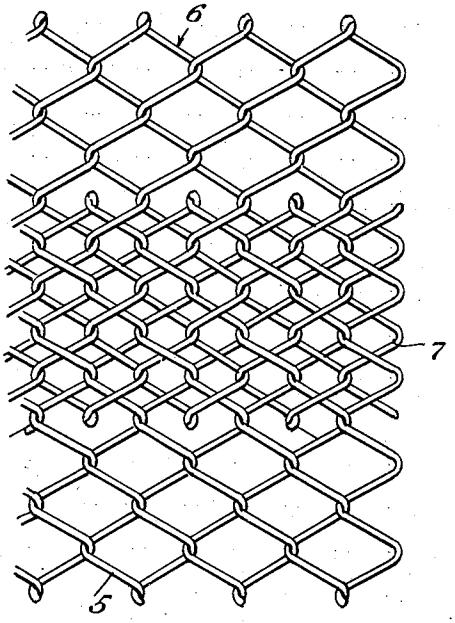


Fig. 4.

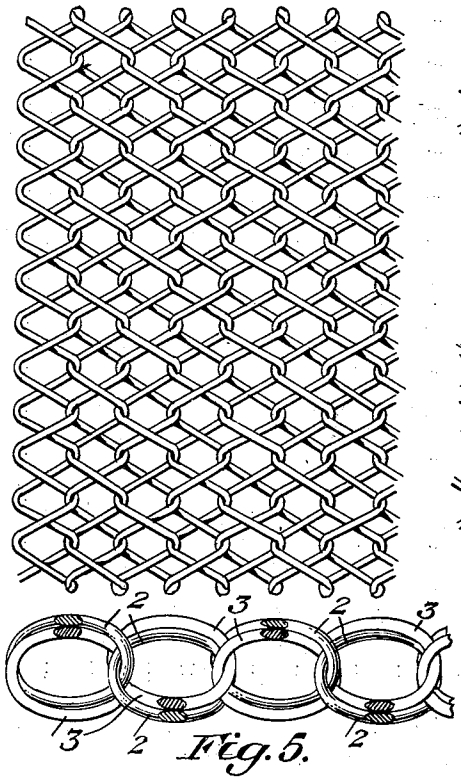
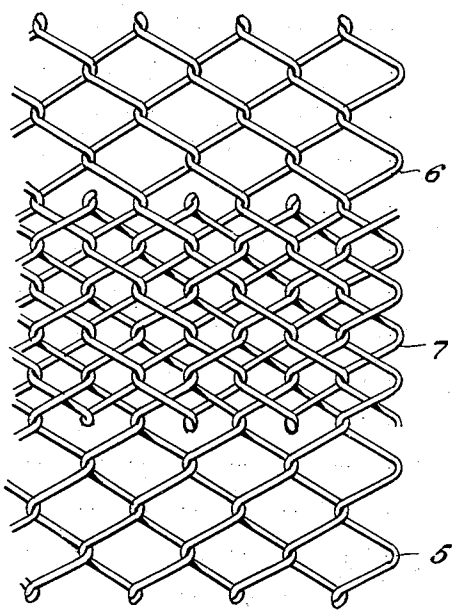


Fig. 5.



Clarence E. Pink

INVENTOR

BY Victor J. Evans & Co.

ATTORNEYS

Feb. 13, 1934. C. E. PINK 1,947,357

FABRIC

Filed July 17, 1933 2 Sheets-Sheet 2

Fig. 6.

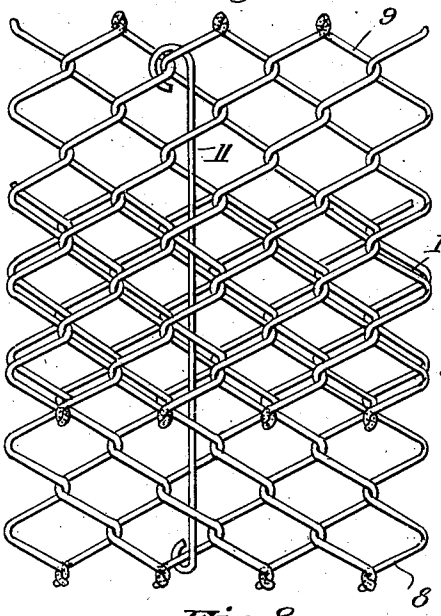


Fig. 7.

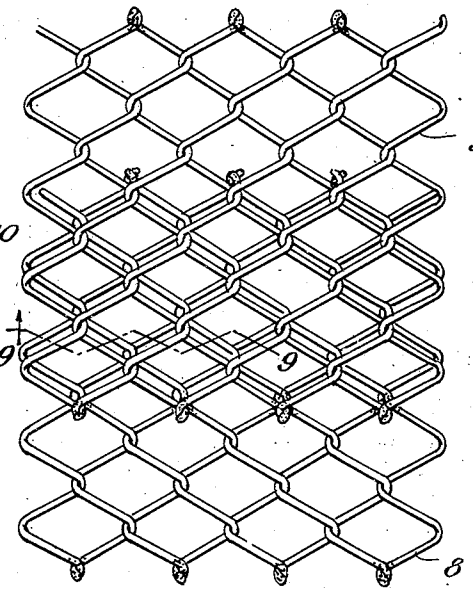


Fig. 8.

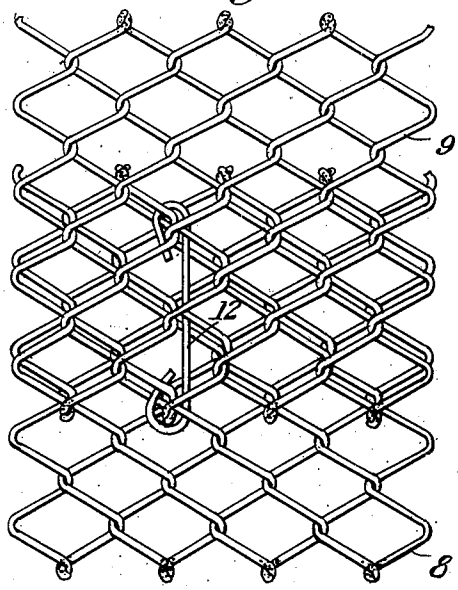
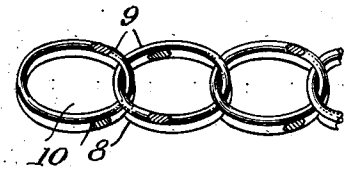


Fig. 9.



Clarence E. Pink
INVENTOR

BY Victor J. Evans & Co.
ATTORNEYS

Patented Feb. 13, 1934 1,947,357

UNITED STATES PATENT OFFICE

1,947,357

FABRIC

Clarence E. Pink, Cambridge, Md.

Application July 17, 1933. Serial No. 680,847

8 Claims. (Cl. 245—6)

This invention relates to fabrics of the coil woven type heretofore composed of either right or left hand coil strands, fed in a spiral manner one into the other to form the fabric with the ends of pairs of said strands connected in a suitable manner to prevent the strands from working out from each other, and the present invention has for its primary object the provision of a fabric having increased durability, strength and flexibility by the construction thereof from both right and left hand coil strands, the right hand coil strands being fed into one another and the left hand coil strands being fed into one another and the right and left hand coil strands interlock with each other to prevent separation.

With these and other objects in view this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which

Figure 1 is a fragmentary plan view, illustrating a fabric constructed in accordance with my invention.

Figure 2 is a similar view, illustrating a modified form of fabric.

Figure 3 is a fragmentary plan view illustrating the same interlocking features between the right and left hand coil strands as shown in Figure 1, the interlocking feature providing a connector between fabric sections where one section consists of left hand coil strands and the other section constructed from right hand coil strands.

Figure 4 is a view similar to Figure 3 showing a connector of the same interlocking feature as that set forth in Figure 2.

Figure 5 is a fragmentary sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a fragmentary plan view illustrating a modified form of my invention wherein one section of the fabric is overlapped and interfitted with the other section of the fabric and connected by a tie to prevent one section from moving or dropping out of the other section.

Figure 7 is a view similar to Figure 6 showing the tie eliminated and welds provided between the right and left hand coil strands.

Figure 8 is a view similar to Figure 6 showing a tie of a shorter length.

Figure 9 is a fragmentary sectional view taken on the line 9—9 of Figure 7.

Referring in detail to the drawings, the numeral 1 indicates a fabric constructed both from right and left hand coil strands 2 and 3, respectively. To form the fabric right hand coil strands 2 are fed one into the other whereby said strands 2 hinge on one another and the left hand strands 3 are similarly connected to each other. During the assembling of the left hand coil strands 3 together, every other strand 3 is caused to pass over sides of the convolutions of the assembled right hand coil strands 2, thereby forming interlocking connections between the right and left hand coil strands which will prevent separation and will maintain the strands in a fabric of a single unit. The ends of pairs of strands are knuckled or otherwise connected to form selvages 4 to opposite edges of the fabric. It is to be understood that the ends of the right hand coil strands are connected in pairs and the left hand coil strands are similarly connected. The strands thus connected are prevented from becoming disconnected endwise with respect to each other. This fabric comprises two complete sections, one section consisting of the right hand coil strands and the other section consisting of the left hand coil strands and either section forming a complete fabric. Thus when said sections are interlocked together a fabric is produced which will be more durable, with increased strength and having maximum flexibility. A fabric of this character is especially adapted for the construction of conveyor belts. A belt made from this fabric will be prevented from creeping laterally in either direction when contacting with and passing over curved surfaces, such as drums and like supports. Due to the right and left hand coil strands both contacting with the curved supporting surface, the tendency of the right hand coil strands to cause creeping of the belt laterally in one direction is counteracted by the left hand coil strands having a tendency to cause creeping of the belt in an opposite lateral direction which assures the belt traveling in a straight course.

As shown in Figure 2, the interlocking feature of the right hand and left hand coil strands may be varied, that is, every third left hand coil strand is positioned at an opposite side of the convolution of the right hand coil strands from the adjacent pair of left hand coil strands. However, other combinations may be made to retain the right and left hand coil strands inter-

locked to prevent dropping out of one fabric section from the other.

The interlocking feature above described may be successfully employed in conveyor belts composed of parallel sections 5 and 6 made from right and left hand coil strands, respectively, and as shown in Figures 3 and 4 of the drawings. The strands of the section 5 when interlocked with the strands of the section 6 form longitudinally of the belt a connector 7 which will prevent separation or pulling apart of said sections. Heretofore, these sections have been connected longitudinally of the belt by welding or separable fasteners or ties, either of which in many instances are impractical especially where the fabric of the belt is composed of strands of light gage material and strands which have closely formed convolutions or where the strands are of material affected by heat from the welds and caused to crystallize. The ends of the strands with the connector may be left free or knuckled or otherwise secured to the strands of the adjacent section.

Referring to Figures 6 to 9 of the drawings a modified form of connector between belt sections 8 and 9 is provided and is indicated by the character 10. The section 8 is composed of right hand coil strands and the section 9 of left hand coil strands. The section 9 is positioned to overlap the section 8 with the convolutions of the coil strands nested in the convolutions of the coil strands of the section 8 and said sections are connected by a tie 11 to prevent one section from falling out of the other section. Said sections nested as above described will be prevented from separation longitudinally of the belt. The tie is interwoven with its strands and has its ends bent about certain strands outwardly of the connector 10 or a shorter tie 12 may be employed, as shown in Figure 8, which lies within the connector between the sections 8 and 9. The ends of the strands in the connector, as shown in Figure 7, may be welded to adjacent strands or knuckled thereto if desired eliminating the use of a tier.

A connector for belt sections of the character heretofore set forth will possess the same strength, durability and the resistance of strains as the sections themselves afford and will not be affected by high temperatures. The form of connectors shown in Figure 3 will cause the belt to travel in a straight course over curved supporting surfaces and also will aid in balancing internal strains of the belt. The width of the connector between belt sections may be varied to suit different conditions.

The heretofore described connection between two fabric sections may be employed for the following purpose: Fabric which has been injured or torn while in use may be successfully repaired by nesting in the coiled strands of the fabric about the injured portion, coiled strands of a second fabric which has the strands thereof reversely wound to the strands of the injured fabric and securing the nested strands against separation by ties, welds or the knuckling of the ends of the repairing strands to the strands of the injured fabric.

While I have shown and described the preferred embodiment of my invention, it will be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of my invention, as claimed.

Having described the invention, I claim:

1. A fabric comprising right and left hand coil strands, said right hand coil strands spirally fed one into another and the left hand coil strands spirally fed one into another, and the right and left hand coil strands interlocking with one another to prevent separation.

2. A fabric comprising right and left hand coil strands and the right hand coil strands spirally fed one into another to form a fabric section and the left hand coil strands spirally fed one into another to form a second fabric section, said right and left hand coil strands interlocking with each other to connect the fabric sections into a single unit.

3. A fabric comprising right and left hand coil strands and the right hand coil strands spirally fed one into another to form a fabric section and the left hand coil strands spirally fed one into another to form a second fabric section, said right and left hand strands interlocking with each other to connect the fabric sections into a single unit, said sections being of the same width and length.

4. A fabric comprising right and left hand coil strands and the right hand coil strands spirally fed one into another to form a fabric section and the left hand coil strands spirally fed one into another to form a second fabric section, certain of said right hand coil strands passing over opposite sides of the convolutions of the left hand coil strands from the other of said right hand coil strands to interlock the fabric sections together.

5. A connector comprising fabric sections, one section consisting of right hand coil strands and the other section consisting of left hand coil strands, the strands of one section being superimposed and nested in the convolutions of the strands of the other section and means connecting the sections.

6. A connector comprising fabric sections, one section consisting of right hand coil strands and the other section consisting of left hand coil strands, the strands of one section being superimposed and nested in the convolutions of the strands of the other section the ends of the strands of each section connected to strands adjacent thereto.

7. A connector comprising fabric sections, one section consisting of right hand coil strands and the other section consisting of left hand coil strands, the strands of one section being superimposed and nested in the convolutions of the strands of the other section and a connector secured to certain strands of both sections for retaining the sections together.

8. In combination with a fabric consisting of interwoven spirally formed strands, a second fabric consisting of interwoven spirally formed strands wound in an opposite direction to the strands of the first fabric and superimposed and nested in said last mentioned strands and secured thereto.

CLARENCE E. PINK.