

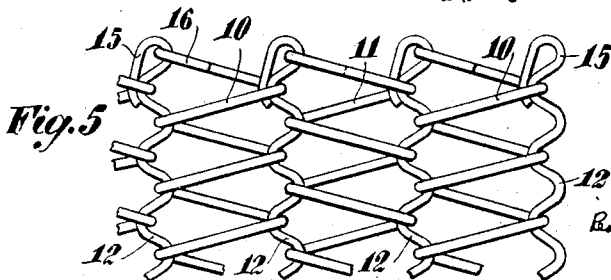
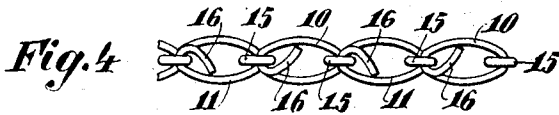
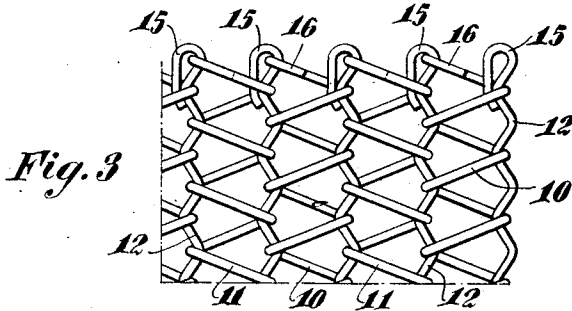
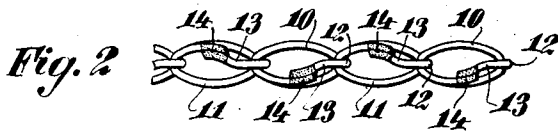
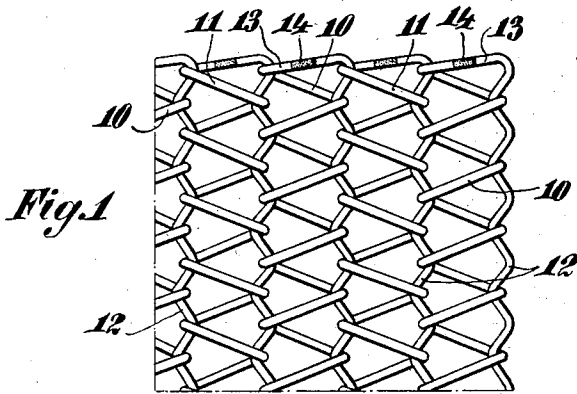
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BALANCED SPIRAL FABRIC

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BALANCED SPIRAL FABRIC

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3 Claims. (Cl. 245-6)

The present invention relates to metal fabric constructed particularly for use as conveyor belts and the like and embodies, more specifically, a spiral fabric structure formed in such fashion
5 that the spirals of the fabric produce a balancing action to prevent side travel of the belt during operation.

In manufacturing conveyor belts of spiral fabric it has been found that forming the belt of a plurality of spiral elements which are formed with spirals extending in the same direction producing a considerable side travel of the belt during operation. To overcome this side travel belts have been constructed of a plurality of sections,
10 each section comprising spiral elements wound in a common direction, the spiral elements of alternate sections extending in opposite directions. Even with belts formed in this fashion, side travel is produced and it is an object of the
15 present invention to provide a spiral fabric belt wherein all tendency to side travel is effectively eliminated.

A further object of the invention is to provide a spiral fabric belt wherein the spiral elements are so connected as to prevent substantial stretch of the belt under tension.

A further object of the invention is to provide a spiral fabric belt of such character that the width of the belt is not substantially diminished
20 when the belt is placed under tension.

Further objects, not specifically enumerated above, will be apparent as the invention is described in greater detail in connection with the accompanying drawing, wherein:

35 Figure 1 is a plan view of a portion of a spiral fabric belt constructed in accordance with the present invention.

Figure 2 is a view in end elevation showing the belt of Figure 1.

40 Figure 3 is a plan view of a modified form of belt constructed in accordance with the present invention.

Figure 4 is a view in end elevation of the belt shown in Figure 3.

45 Figure 5 is a plan view showing a further modification of the invention.

Referring to the above drawing, and particularly Figures 1 and 2, a belt is shown as being formed of a plurality of spiral elements 10, the
50 spirals of which extend in one direction. Between the elements 10, spiral elements 11 are connected, the spiral elements 11 extending in the opposite direction to the spirals of elements 10. Between adjacent spiral elements 10 and 11
55 and connecting the same are cross members 12

which are formed with a plurality of crimps to receive the portions of the adjacent spiral members. In the construction shown in Figures 1 and 2, the ends 13 of the transverse members 12 are suitably secured as at 14 to the adjacent ends
60 of the spiral elements. These ends may be welded or otherwise secured and the resulting structure is such as to form a plurality of unitary transverse spiral elements. The alternate elements are formed with the spirals extending in
65 opposite directions and thus side travel of the belt is effectively eliminated.

In the form of invention shown in Figures 3 and 4, the ends of the transverse members 12 are formed with loops 15 in order that they may
70 be properly secured in assembled position. The loops 15 are preferably engaged by loops 16 which are formed at the ends of the spiral elements.

In the construction shown in Figure 5, the transverse elements 12 are shown as being formed
75 with comparatively deep crimps within which the turns of the spiral elements engage. These transverse members 12 do not engage the supporting surface over which the spiral sections pass and thus have no effect upon the tendency
80 of the belt to side travel. By forming the crimps with a substantial depth longitudinal tension upon the belt is effectively resisted without substantial diminution in the width of the belt. This
85 will be readily apparent since the longitudinal stresses, when impressed upon the transverse members 12, are resolved into longitudinal and transverse components of such character that the transverse component of the forces is comparatively slight. The longitudinal component
90 of such forces is thus substantially equal to the forces themselves and no substantial stretch and diminution of width of belt result.

It will thus be seen that a belt has been provided of such character as to eliminate effectively
95 all tendency thereof to side travel during operation, the belt further being of such character that change in length and width under tension does not take place. The transverse members
100 of the belt not only serve as hinge elements but further serve as a positioning member for the spiral elements of the belt as well as a transverse reinforcement to prevent contraction in width thereof without engaging the supporting
105 surface over which the belt passes.

While the invention has been described with specific reference to the accompanying drawing, it is not to be limited, save as defined in the appended claims.

I claim as my invention:

1. A woven wire belt fabric comprising alternate spiral elements wound in opposite directions, and crimped wire connecting means lying in a plane between the outer surfaces of the elements to connect the elements together hingedly, the crimps of said connecting means being sufficiently deep to cause forces in the direction of the fabric to be transmitted with substantially no transverse component, whereby a decrease in the width of the fabric is substantially eliminated when the fabric is under tension.

2. A flat woven wire fabric comprising alternate spiral elements wound in opposite directions,

and crimped wire connecting means lying in a plane between the outer surfaces of the elements to connect the elements together hingedly, the ends of the crimped wire being welded to the ends of an adjacent element.

3. A flat woven wire fabric comprising alternate spiral elements wound in opposite directions and wire connecting means lying between each of the adjacent spiral elements in a plane between the outer surfaces of the elements to connect the elements together hingedly, the ends of the wire being welded to the ends of an adjacent element.

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