Jan. 24, 1933. C. E. PINK 1,895,345

CONNECTERS FOR WOVEN WIRE CONVEYER BELTS

Filed Feb. 20, 1932

Fig. 1.

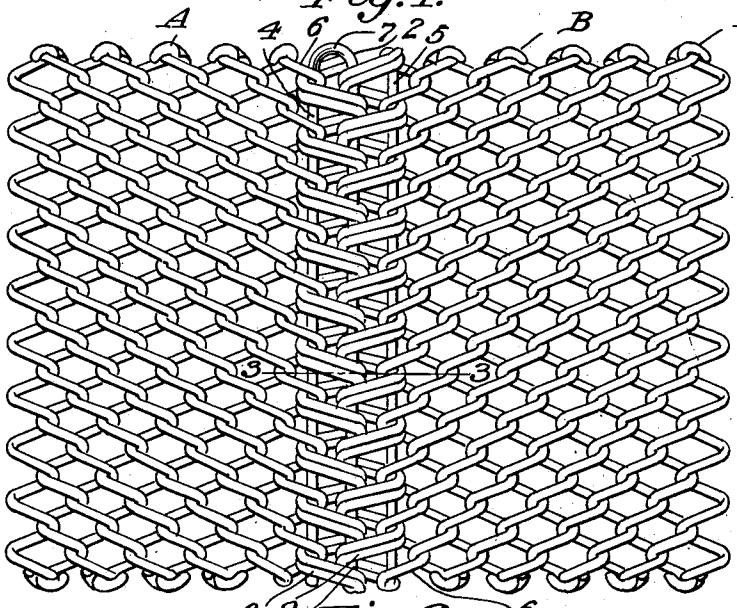


Fig. 2.

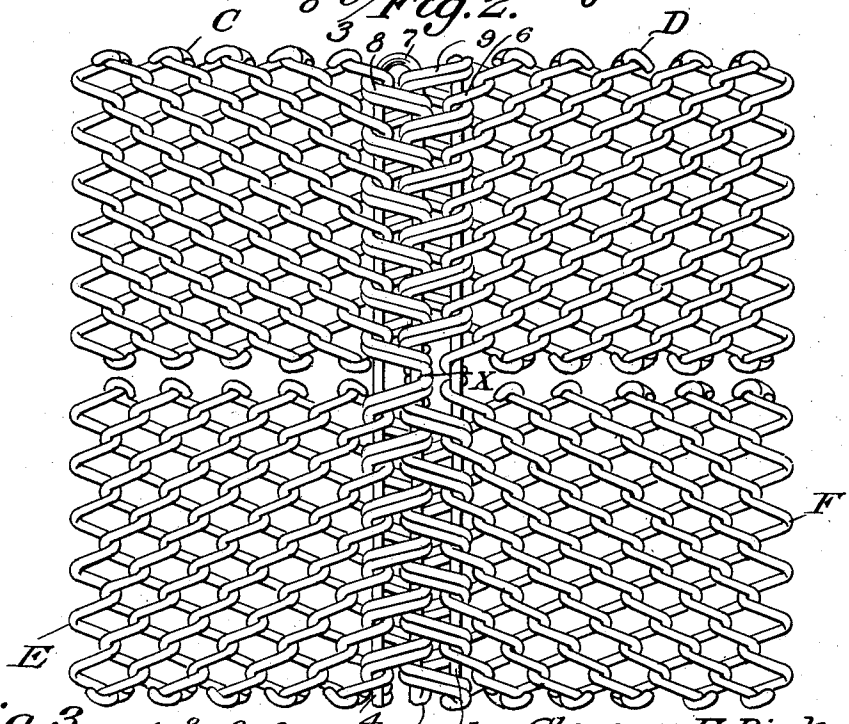


Fig. 3.



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UNITED STATES PATENT OFFICE

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CONNECTERS FOR WOVEN WIRE CONVEYER BELTS

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This invention relates to connecters for woven wire conveyer belts of the character employing a plurality of connected sections, wherein the sections are composed of right and left hand coiled wires with the sections of the right hand coiled wires alternately arranged to the sections of the left hand coiled wires or to the type of belt forming the subject-matter of a United States patent issued to Edward F. Pink under the date of February 16, 1932, and numbered 1,845,935 and has for the primary object, the provision of connecters which will prevent the shifting of the sections relative to each other and also relative to said connecters and which will resist strains heretofore capable of breaking connecters of the conventional type and further will contain sufficient rigidity to prevent uneven article supporting surfaces to the belt due to the sections buckling or moving upwardly and downwardly while the belt is in movement.

With this 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 drawing, in which—

Figure 1 is a fragmentary plan view of a conveyer belt illustrating a connecter joining the right and left hand coiled wire sections.

Figure 2 is a fragmentary plan view illustrating the connecter employed for joining the belt sections of the type of belt set forth in my co-pending application above referred to.

Figure 3 is a fragmentary sectional view taken on the line 3—3 of Figure 1.

Referring in detail to the drawing, the numeral 1 indicates a fragmentary portion of a woven wire conveyer belt. This belt is constructed from a plurality of sections, some of said sections composed of right hand spirally formed and interwoven wires while the other sections are composed of left hand spirally formed interwoven wires. The sections consisting of the right hand spirally wound wires being alternately arranged with the sections consisting of the left hand spirally wound wires, so that the tendency of one section of the belt to creep laterally of its supporting drums or pulleys will be counteracted by the adjacent sections. The sections described are joined together by connecters constructed in accordance with the present invention and which will be hereinafter more fully described. The sections constructed and assembled in the foregoing described manner set up in the belt internal strains, the strain developed in one section being diagonal of said section and in an opposite direction from the strain developed in the adjacent section so that where the strains meet upon the connecters between the sections have a tendency to destroy the connecters or to separate the sections from the connecters at one end of said connecters.

Figure 1 shows right and left hand coiled sections A and B respectively of the type of conveyer belt set forth and these sections are joined by a connecter 2 capable of preventing the sections A and B from shifting laterally of each other and permitting one section to flex or hinge relative to the other section.

The connecter 2 consists of a connecting bar 3 arranged transversely of the belt and positioned between reinforcing bars 4 and 5. The reinforcing bars 4 and 5 extend through the coils of the end wires 6 of the sections A and B with the ends of the coiled wire of the section B suitably secured to the ends of the reinforcing bar 5. One end of the reinforcing bar 4 is connected or formed integrally with one end of the connecting bar 3 as shown at 7.

The bars 3, 4 and 5 are connected together by spirally formed connecting elements 8

and 9. The connecting elements 8 and 9 may be either constructed from heavy gage wire or each connecting element made from two or more closely related and spirally formed wires. The spirally formed connecting element 8 is woven about the bars 3 and 4 and also woven through the end spiral wire 6 of the section A. The ends of the connecting element 8 are secured to the connecting bar 3 adjacent the ends thereof. The spiral connecting element 9 is woven about the connecting bar 3 and the reinforcing bar 5 and also through the end coiled wire 6 of the section B and has its ends secured to the ends of the reinforcing bar 5, thus it will be seen that a connecter has been provided capable of withstanding severe strains and the section B due to the spiral connecting element 9 may hinge on the connecting bar 3 and the reinforcing bar rigidly connected to the connecting bar 3 may hinge relative to the section A. The connecter 2 with the hinging movements described permits said connecter to readily conform to the contour of a supporting drum or pulley.

The reinforcing bars 4 and 5 provide the connecter 2 with greater strength than the conventional type of single bar connecter and if desired the reinforcing bar 4 may be disconnected or form a single unit from the connecting bar 3 however with the reinforcing bar 4 secured to or formed integral with the connecting bar 3, the connecter is provided with greater flexibility. The connecting elements 8 and 9 extending through the coils of the end wires 6 of the sections A and B form spaces therebetween due to the connecting elements 8 and 9 being of heavy gage material or of larger size than the end wires 6 of the sections A and B and the reinforcing bars 4 and 5 fill or take up said spaces and thereby limit the shifting of the sections A and B relative to the connecter 2.

Figure 2 shows the connecter 2 employed for securing together the sections of the conveyer belt set forth in my co-pending application above referred to and the section C is composed of left hand spirally formed wires while the section D is composed of right hand spirally formed wires. The section E is composed of right hand spirally formed wires while the section F is composed of left hand spirally formed wires. The sections C and D of a belt of this character are arranged on opposite sides of the longitudinal axis of the belt from the sections E and F and the sections may or may not be joined along the longitudinal axis of the belt. As shown in Figure 2 the four sections C, D, E and F due to their arrangement relative to each other develop internal strains which meet or intercross each other at the point X placing on the connecter severe strains intermediate the ends of the latter and also have a tendency to cause the sections to bulge at the point X. These strains or forces during the use of the belt are sufficient to break a conventional type of connecter or cause separation thereof from the various sections and with the connecter applied to the sections as shown in Figure 2 and constructed in accordance with the foregoing description, will withstand the strains referred to and also prevent bulging in the belt or at the point indicated by X in Figure 2, thereby rendering the belt of this construction capable of efficient use over a long period of time.

The spirally formed connecting elements 8 and 9 where they pass about the connecting bar 3 engage with each other and with their ends anchored, shifting of one belt section laterally of the other belt section is prevented. As the connecting elements 8 and 9 cannot shift endwise of the connecting bar 3 or relative to each other, a connecter is provided, which will maintain the belt sections in alignment with each other and at the same time provide the connecter capable of hinging within itself.

The size of the material of the connecting elements 8 and 9 is such, that strains from the belt sections delivered to the connecting bar 3 through said connecting elements 8 and 9 will be distributed over large areas of the bar 3 and close together to prevent the bar 3 from bending out of shape at spaced intervals, permitting said bar 3 to maintain its original straight shape from end to end. Conventional types of connecters will after use under severe strains become bent wherever the end coiled elements of the belt sections engage and deliver strains thereon, which within a short period of use wear or cut the bar to such an extent that breaking thereof is frequent. My present connecter having the coiled connecting elements 8 and 9 engaging the bar as described overcomes this serious disadvantage.

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 thus described my invention, what I claim is:

A connecter comprising a center hinge bar, reinforcing bars located at opposite sides of the center hinge bar and extending through end coiled wires of belting sections, and spirally formed connecting elements passing about the center hinge bar and contacting with each other where passing about said center hinge bar, said connecting elements passing about the reinforcing bars and through the end coiled wires of the belting sections and engaging the coils of said end coiled wires to prevent the belting sections from shifting relative to each other and the

reinforcing bars, one of the connecting elements having the ends thereof secured to one of the reinforcing bars and the other connecting element having its ends secured to the center hinge bar, each of said connecting elements including a pair of coiled wires contacting with each other throughout their length and lying in the same plane with each other and also in the plane of the coiled wires of the belting sections, said center hinge bar having one end thereof fixed to one end of one of the reinforcing bars.

In testimony whereof I affix my signature.

CLARENCE E. PINK.