April 12, 1938. R. J. GUBA 2,114,182

CONVEYER BELT

Filed March 3, 1937

Fig. 1.

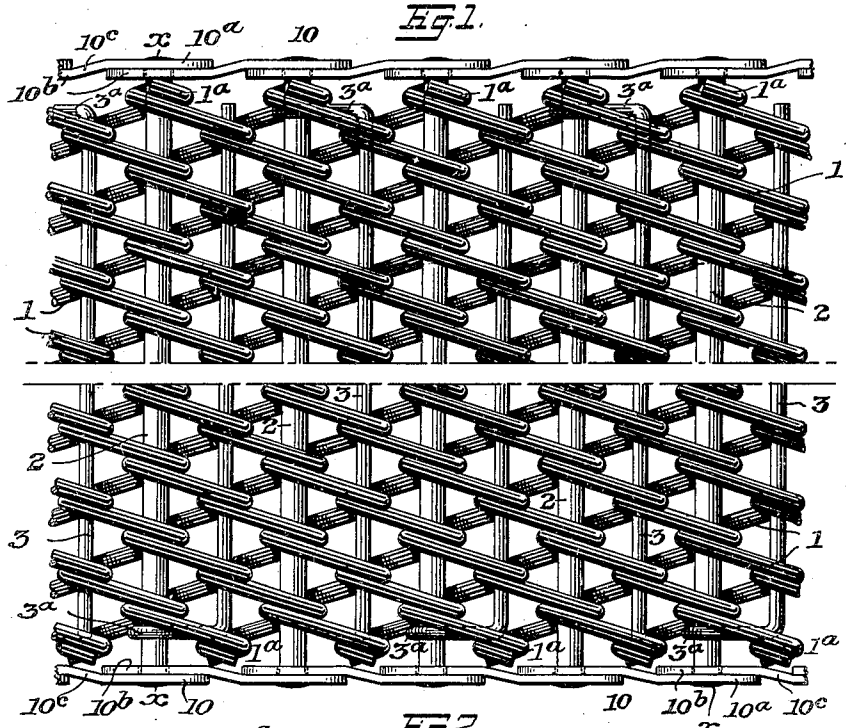


Fig. 2.

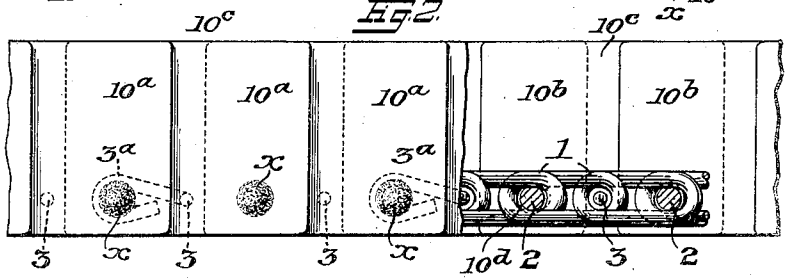
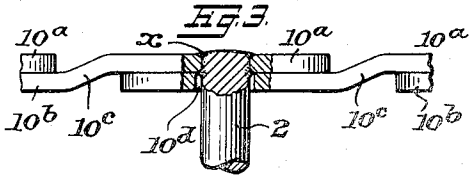


Fig. 3.



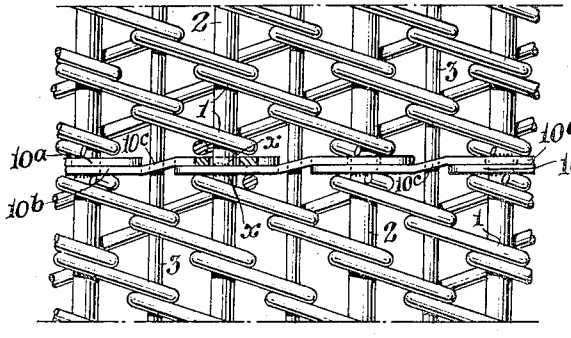


Fig. 1a

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CONVEYER BELT

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Application March 3, 1937, Serial No. 128,866

10 Claims. (Cl. 198—201)

My invention relates to conveyer belt structure and one object of my invention is to provide a continuous belt or apron made up of helically coiled wires associated with cross bars whose ends are connected to a series of overlapping, upstanding plate members at the marginal edges of the belt.

A further object of my invention is to provide the cross bars with raised members at the marginal edges constituting walls or flanges designed to retain material conveyed by the belt.

A further object of my invention is to provide selvage members to which the cross rods are permanently connected.

A further object of my invention is to provide a complete, unitary structure that may be employed as a belt or conveyer for various objects under all conveying necessities.

And a still further object of my invention is to provide a belt having raised division walls longitudinally thereof and intermediate the selvages; such division walls being made up of overlapping scale-like plates in the form or character identical with those employed at the marginal edges of the belt.

These and other features of my invention are more fully described hereinafter; reference being had to the accompanying drawing, more or less diagrammatic in character, in which:

Figure 1 is a plan view of a portion of a belt structure within the scope of my invention, partly broken away.

Fig. 1[a] is a view similar to Fig. 1, illustrating a modified construction within the scope of my invention.

Fig. 2 is an edge view or side elevation of the same, partly in section, and

Fig. 3 is an enlarged view, partly in section, illustrating in detail the manner in which the cross rods may be connected to the marginal selvage-forming members.

In Fig. 1 of the drawing, I have illustrated a portion of belt structure sufficient to disclose the features forming the subject of my invention in which a series of interconnected helically coiled wires are indicated at **1**, and cross bars passing through the bights of these wires are indicated at **2** and **3**.

At the marginal edges of this structure, I provide a raised selvage in the form of overlapping, scale-like plates which extend some distance above the surface of the belt. These plates, indicated at **10**, comprise portions **10[a]** and **10[b]** offset in a longitudinal plane and joined by a diagonally disposed portion **10[c]**. Each plate is connected to the ends of the rods or bars **2**, which are of relatively heavy formation; said plates being permanently attached at the portion **10[a]** thereof. The portions **10[b]** of each plate is apertured at **10[d]** for the passage of an adjoining cross rod; such plates being free to move thereon at such connection. It will be seen therefore, that each plate is connected to a bar at one portion of the same; each bar having a plate at each end of the same, and that such plates in transverse alignment are apertured for the passage of the bar connected to the next adjoining plate. In this way, each pair of plates with a connecting cross bar is hinged and free to move when the belt passes around a pulley, drum, roller, or the like, in use.

The helically coiled wires in interconnected relation are mounted upon these cross rods **2** which pass through the interconnecting bights of pairs of the same. Intermediate the cross rods **2**, are a series of lighter cross rods **3** which lie within the margin of the belt portion formed by the ends of the helically coiled wires, and one end of each of these rods **3** is bent around one of the heavier bars **2**; such bent ends being disposed alternately at opposite sides of the belt structure.

The ends of the heavier bars **2** are welded, as indicated at *x*, Figs. 2 and 3, to the scale-like plates **10**, which make up the marginal edges of the belt. While other forms of fastening may be employed, I prefer to weld these parts together, as indicated; Fig. 3 showing the aperture in the part **10[b]** of each plate for the passage of a rod **2**.

If it be desired to provide partition walls longitudinally of the belt, these scale-like plates may be interposed at any point in the width of the belt, longitudinally thereof, as indicated in Fig. 1[a]; the helically coiled wires in such instance, lying between the marginal or selvage plates and the overlapping plates forming the partition disposed between such marginal plates.

This form of belt passes over driving and driven rolls or drums and the marginal edges perform no function in the driving operation. While I have shown the scale-like plates as having edges normal to the plane of the belt, it is within the scope of my invention to round the outer adjacent lower corners so as to facilitate passage over small drums or rollers. By extending the plates slightly below the lower surface of the wire belt portion, danger of wear upon the same is eliminated.

In lieu of knuckling the ends of the helically coiled wires together, they are simply closely bent

around the heavier cross bars 2, as indicated at 1a.

The scale-like plates provide a complete selvage at all times; the proportions of the same insuring a wall of full height even when passing over the drums or rollers.

While I have shown a series of helically coiled wires with the helices extending in one direction, it will be understood of course, that wires having helices extending in the opposite direction may be employed without departing from my invention. In the present instance, the helically coiled wires are shown in interconnected relation, with the rods or bars 2 and 3 passing through the interconnected bights, but it is within the scope of my invention to employ helically coiled wires which engage the bars only and which are not interconnected, and in such form of structure I may employ helically coiled wires of right hand twist alternating with helically coiled wires of left hand twist.

It is to be understood, of course, that modifications may be made in the construction and arrangement of the several elements making up my improved conveyer belt structure, without departing from the spirit of my invention; all of which is deemed to be within the scope of the appended claims.

I claim:

1. A belt structure comprising spaced cross rods of different length, plate members permanently secured to the ends of each of said longer cross rods; said plate members being bent transversely to form portions in different planes longitudinally of the belt for overlapping relation; each of said plates having an aperture through which an adjacent cross rod passes, and helically coiled wires in interlooped engagement around said cross rods.

2. A belt structure comprising cross rods, plate members permanently secured to the ends of said cross rods; said plate members extending above the ends of the cross rods and being bent transversely to form overlapping portions in different planes longitudinally of the belt; each of said plates having an aperture through which an adjacent cross rod passes, helically coiled wires carried by said cross rods, and short rods extending longitudinally of the helically coiled wires and engaging bights of the same intermediate the cross rods connected to the edge plates.

3. A belt structure comprising cross rods, plate members extending above the cross rods and being bent transversely to form overlapping portions; each of said plate members being connected to a cross rod and having an aperture through which an adjacent cross rod passes and upon which it is pivotally mounted, and helically coiled wires in interlooped engagement around said cross rods.

4. A belt structure comprising spaced cross rods, plate members permanently secured to the opposite ends of said cross rods in transverse registry; said plate members being bent transversely to form overlapping portions; each of said plates having an aperture through which an adjacent cross rod passes, helically coiled wires carried by said cross rods, and short rods extending longitudinally of the helically coiled wires and engaging bights of the same intermediate the cross rods connected to the edge plates, said intermediate rods having end portions bent into engagement with the fixed rods

5. A belt structure comprising spaced cross rods, plate members permanently secured to the opposite ends of said cross rods in transverse registry; said plate members extending above the cross rods and being bent transversely to form overlapping portions; each of said plates having an aperture through which an adjacent cross rod passes, helically coiled wires carried by said cross rods, and short rods extending longitudinally of the helically coiled wires and engaging bights of the same intermediate the cross rods connected to the edge plates, said intermediate rods having end portions bent into engagement with the fixed rods.

6. A belt structure comprising spaced cross rods, plate members in transverse alignment secured to the opposite ends of said cross rods, said plate members being bent transversely to form portions in overlapping relation and each of said plate members being secured to a cross rod and having an aperture through which an adjacent cross rod passes, and helically coiled wires in interlooped engagement around said cross rods and disposed between the plates fixed to the ends of the same; said helically coiled wires being connected intermediate said cross rods.

7. A belt structure comprising spaced cross rods of different length, plate members secured to the opposite ends of each of said longer cross rods; said plate members being bent transversely to form portions in overlapping relation; each of said plates having an aperture through which an adjacent cross rod passes, and pairs of interconnected helically coiled wires disposed between and carried by said cross rods.

8. A belt structure comprising spaced cross rods, plate members secured to the ends of said cross rods, said plate members being bent transversely to form overlapping portions; each of said plates having an aperture through which an adjacent cross rod passes, sets of helically coiled wires carried by said cross rods, and short rods extending longitudinally of the helically coiled wires and engaging bights of the same intermediate the cross rods connected to the edge plates; said intermediate rods having bent end portions which engage the fixed rods and pairs of said helically coiled wires hinging on the intermediate short rods.

9. A belt structure comprising a series of helically coiled wires in interlooped relation, cross rods passing through the interlooped portions of said helically coiled wires, and plate members bent transversely to form overlapping portions; each of said plate members being connected to a cross rod and having an aperture for the passage of an adjacent cross rod upon which it is pivotally hung.

10. A belt structure comprising a series of helically coiled wires in interlooped relation, cross rods passing through the interlooped portions of said helically coiled wires, and plate members extending above the cross rods and bent transversely to form overlapping portions; each of said plate members being connected to a cross rod and having an aperture for the passage of an adjacent cross rod upon which it is pivotally hung.

RAYMOND J. GUBA.