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A. R. BECHTEL, JR
FLAT WIRE CONVEYOR BELT
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2,872,023

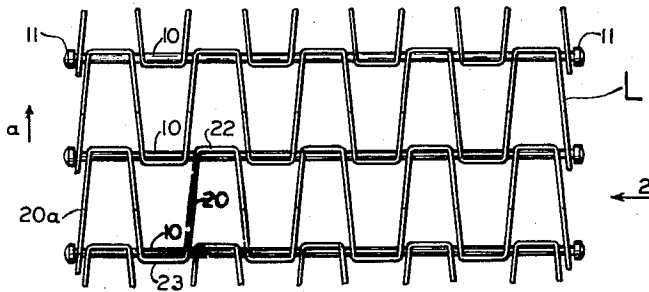


Fig. 1

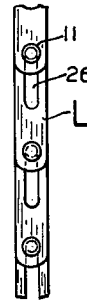


Fig. 2

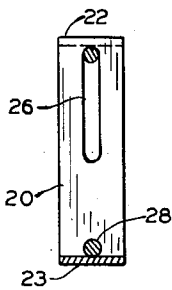


Fig. 4

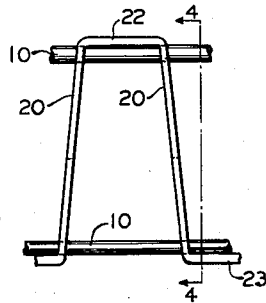


Fig. 3

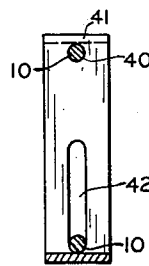


Fig. 5

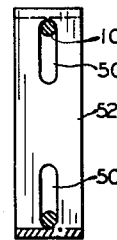


Fig. 6

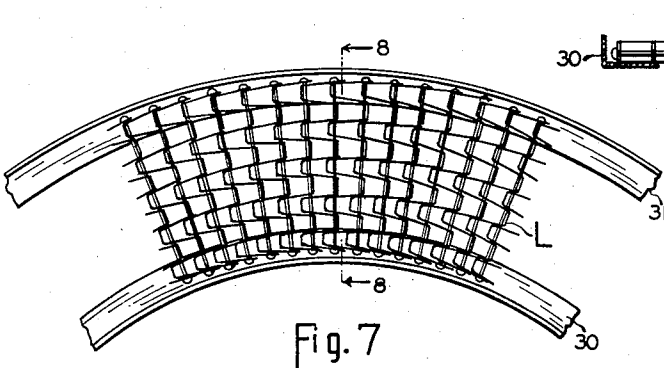


Fig. 7

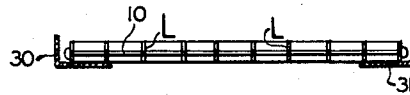


Fig. 8

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FLAT WIRE CONVEYOR BELT

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Application September 30, 1955, Serial No. 537,630

3 Claims. (Cl. 198—182)

This invention relates to a conveyor belt of the flat wire type in which the load-supporting links are formed of flat wire and are commonly continuous from edge to edge of the belt. Successive links are hinged together by cross-pins on which the links flex as the belt is drawn about a directing pulley. Belts of this type are in commercial use but are designed only for straight-line travel and with no substantial transverse deviation.

It is the general object of this invention to provide a flat wire conveyor belt which is adapted to follow a path which is curved transversely in the plane of travel of the belt. My improved belt will function effectively in a closed flat circular path or an elliptical path, or may be guided to follow a sinuous path to avoid one or more obstructions.

To the attainment of this general object, I provide cross-pin holes in at least one end of each link which are substantially slotted lengthwise of the link and parallel to the normal direction of belt travel. When the belt follows a transverse curve, the pull is on the outer ends of the cross-pins only, and the inner ends slip freely backward in the associated slots. In normal or straight travel, the pull is distributed across the entire width of the belt, as in the usual construction.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

Preferred forms of the invention are shown in the drawings, in which

Fig. 1 is a plan view of a portion of my improved belt;

Fig. 2 is a side view, looking in the direction of the arrow 2 in Fig. 1;

Fig. 3 is an enlarged detail plan view of a portion of the belt shown in Fig. 1;

Fig. 4 is a sectional side elevation, taken along the line 4—4 in Fig. 3;

Figs. 5 and 6 are views similar to Fig. 4 but showing slight modifications;

Fig. 7 discloses the operation of the belt when following a curved path; and

Fig. 8 is an enlarged sectional transverse elevation, taken along the line 8—8 in Fig. 7.

My improved belt comprises a plurality of links L (Fig. 1) pivoted together by cross-pins 10 which are held from transverse displacement by enlarged heads 11.

Each link L is formed of a single piece of flat wire which may be some three-eighths of an inch in width, more or less, and which is formed in a series of loops or bends which provide a plurality of adjacent legs 20

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which are alternately connected by end portions 22 and 23. The outer legs 20a are free at their rear ends, it being assumed that the belt travels in the direction indicated by the arrow a in Fig. 1. The belt is actually reversible, however, and may travel in either direction.

Each leg 20 or 20a is provided with an elongated slot 26 in its forward part and adjacent the associated end portion 22. A round hole 28 is provided in the rear part of each leg. Each cross-pin 10 extends through the holes 28 in one link and the slots 26 in the next following link.

With this construction, the pins 10 engage the end portions 22 and 23 of adjacent links during normal straight-line travel and the pull of the belt is distributed throughout its width.

When the belt rounds a curve as in Fig. 7, the load is carried by the outer edge portion of the belt, and the inner portion is free to contract as the cross-pins 10 slip rearward in the slots 26.

The belt can thus adjust itself freely to follow a curved path. Angle-iron guides 30 and 31 (Fig. 8) may be provided to direct the belt in the curved path.

In Fig. 5, round holes 40 are provided adjacent the forward ends 41 of the links and the slots 42 are at the rear. In Fig. 6, two short slots 50 are provided in each leg 52.

The modified constructions both operate as described for the form shown in Fig. 4.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A flat wire conveyor belt operable in a path substantially and transversely curved in the plane of the belt and having continuous transverse tractive links and pivotal tractive cross-pins, each link being formed to provide a plurality of adjacent legs having a cross-pin opening at each end of each leg and all of said legs being tractive in normal straight belt travel, and all of the legs in at least some of said links having the cross-pin opening in at least one end thereof substantially slotted in the normal direction of belt travel, and thereby maintaining traction at the outer and convex edge portion only of a belt following a path transversely curved in the plane of the belt, while the portions of the links adjacent the inner and concave edge of the belt are free to relatively approach each other.

2. A flat wire conveyor belt as set forth in claim 1, in which each leg has a round pivot hole in one end thereof and in addition to said elongated slot in the opposite end portion of each leg, and in which all of said round holes are transversely aligned in each link.

3. A flat wire conveyor belt as set forth in claim 1, in which the cross pin openings in the slotted legs are all substantially longitudinally slotted at both ends of said legs.

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