

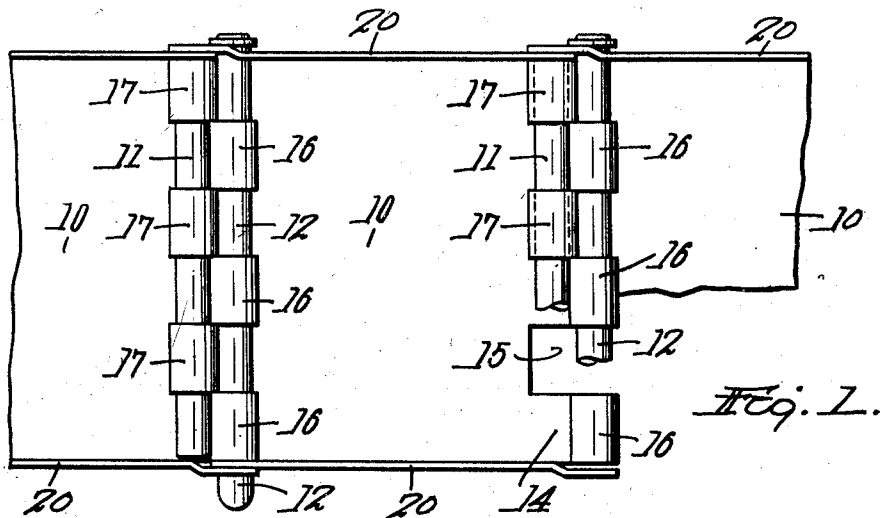
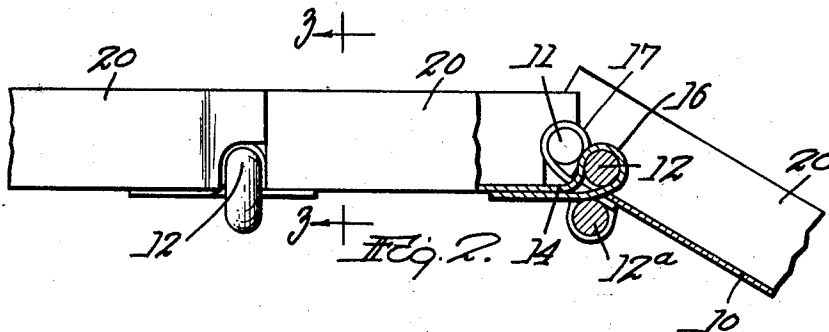
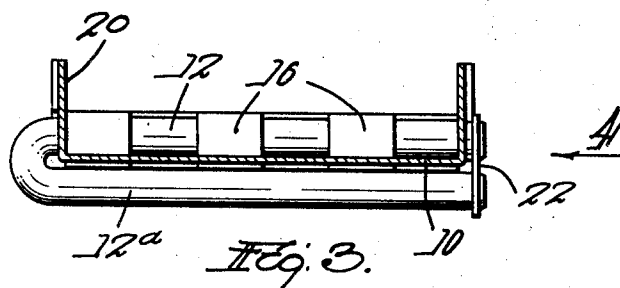
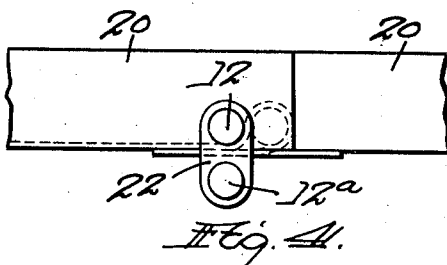
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LINK CONVEYER BELT

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LINK CONVEYER BELT

Application filed December 13, 1930. Serial No. 502,166.

This invention relates to conveyer belts used for transporting machine parts or other materials from point to point or for conveying articles or materials through drying apparatus or through heat-treatment furnaces.

It is the object of my invention to provide an improved construction of conveyer belt for such purposes, in which flat links are pivotally connected in such manner that their freedom of relative movement will be effectively maintained under long continued and adverse operating conditions.

A further object is to provide a conveyer belt having flat links so interlaced at their end portions that perfect flexing of the conveyer is afforded and that all possibility of "freezing" the joints is avoided.

With this and other objects in view, my invention relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawings, in which

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

Fig. 2 is a side elevation thereof, partly in section;

Fig. 3 is a transverse sectional elevation, taken along the line 3—3 in Fig. 2; and

Fig. 4 is a side elevation, looking in the direction of the arrow 4 in Fig. 3.

Referring to the drawings, my improved belt comprises a series of links 10 joined together by pivot pins 11 and 12. Each link 10 comprises a body portion having alternately arranged projecting portions 14 and recesses 15.

The projecting portions 14 are bent upwardly and then reversely, as indicated in Fig. 2, to form raised bearing loops 16 at one end of each link and raised bearing loops 17 at the opposite end of each link. The loops 17 are arranged in alignment with the recesses 15 at the opposite end of the link, and the loops 16 are similarly aligned with recesses between the loops 17.

The ends of the projections 14 may be secured in position by welding or riveting or in any other convenient manner. The loops

16 and 17 are substantially spaced longitudinally from the body portions of the links 10, so that when assembled they overlap as shown in Fig. 1, with the two series of loops out of alignment with each other.

A hinge-pin 11 is then inserted through the loops 17 at one end of a link 10 and a hinge-pin 12 is inserted through the links 16 adjacent thereto. When the belt is thereafter put under tension, it will be seen that the hinge-pin 11 engages the peripheral outer surfaces of the adjacent loops 16, and the hinge-pin 12 similarly engages the outer surfaces of the adjacent loops 17. The hinge-pins are thus firmly supported at all points and there is no tendency to pull the loops 16 or 17 out of alignment. The links 10 may be provided with side flanges 20 to prevent lateral displacement of the material being conveyed. When used at high temperature, the links 10 are preferably made of a special alloy steel adapted to retain its strength under such conditions.

When the belt is flexed, as indicated in Fig. 2, the links do not turn upon the hinge-pins extending through the loops thereof but the links have a relative rocking movement, with each hinge-pin sliding along a contact surface of the adjacent link. Consequently there is no possibility of the pivoted links becoming so tightly engaged that they refuse to turn or are in the state commonly described as "frozen".

The hinge-pin 11 may be a straight cylindrical rod of such length as to fit between the side flanges 20 and to be held from displacement thereby. The hinge-pin 12, however, is preferably formed in U-shape, as indicated in Figs. 2 and 3, with the return portion of the pin lying below the associated link. A double washer 22 may be forced on to the ends of the hinge-pin 12 after assembly to prevent displacement thereof.

The lower or return portions 12^a of the hinge-pins 12 act as supports for the ends of the links as the belt is flexed over a driving or guiding pulley. Otherwise the link would be engaged at its center only and the tension on the conveyer would tend to distort the links. When the U-shaped hinge-pins

are used, however, the links are supported at both ends against the surface of the pulley and no such distortion occurs.

Having described the details of my invention, it will be evident that I have provided a conveyer belt of very simple construction which is well adapted for the purpose intended and which will retain its free flexibility during long periods of service and even under adverse conditions such as continued exposure to high temperatures.

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 link conveyer belt comprising a plurality of flat links having spaced loops at each end, the loops of successive links being alternately disposed at each joint, and a pair of hinge-pins at each joint, one hinge-pin extending through the loops of one link and the second hinge-pin extending through the associated loops of the associated link.

2. The combination in a conveyer belt as set forth in claim 1, in which one of said hinge-pins is substantially U-shaped, with one portion of said pin underlying the belt when assembled and being effective to support the joint when the belt is flexed about a supporting pulley.

3. A link conveyer belt comprising a plurality of flat links having spaced loops at each end, the loops of successive links being alternately disposed at each joint, and a pair of hinge-pins at each joint, each hinge-pin extending through the loops of one link only and engaging the peripheral surfaces of the adjacent loops of the associated link.

4. A link conveyer belt comprising a plurality of flat links formed from sheet metal and having extensions at both ends bent to form loops, said loops being spaced by recesses of substantially equal width, with each loop at each end longitudinally aligned with a recess at the other end, and a separate hinge-pin for the set of loops at each end of each link.

5. A link conveyer belt comprising a plurality of flat links formed from sheet metal and having extensions at both ends bent to form loops, said loops being spaced by recesses of substantially equal width, with each loop at each end longitudinally aligned with a recess at the other end, said loops overlapping and being positioned out of alignment when assembled to form a joint, and a separate hinge-pin for each set of loops at each joint.

6. A link conveyer belt comprising a plurality of flat links each having a body portion and a plurality of laterally spaced extensions supporting bearing loops at each end of said body portion, said extensions overlapping when assembled to form a joint

and positioning the bearing loops out of alignment, and a pair of hinge-pins for each joint, each pin extending through the bearing loops of one link only and lying above the extensions of the associated link.

In testimony whereof I have hereunto affixed my signature.

FRANCIS N. WOODMAN.

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