April 15, 1958 R. S. ZEBARTH 2,830,694

HANGER FOR ENDLESS CONVEYORS

Filed June 1, 1954

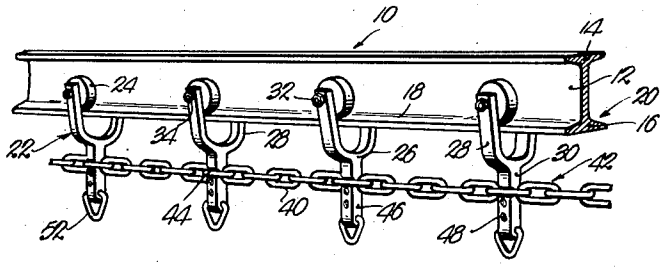


Fig. 1.

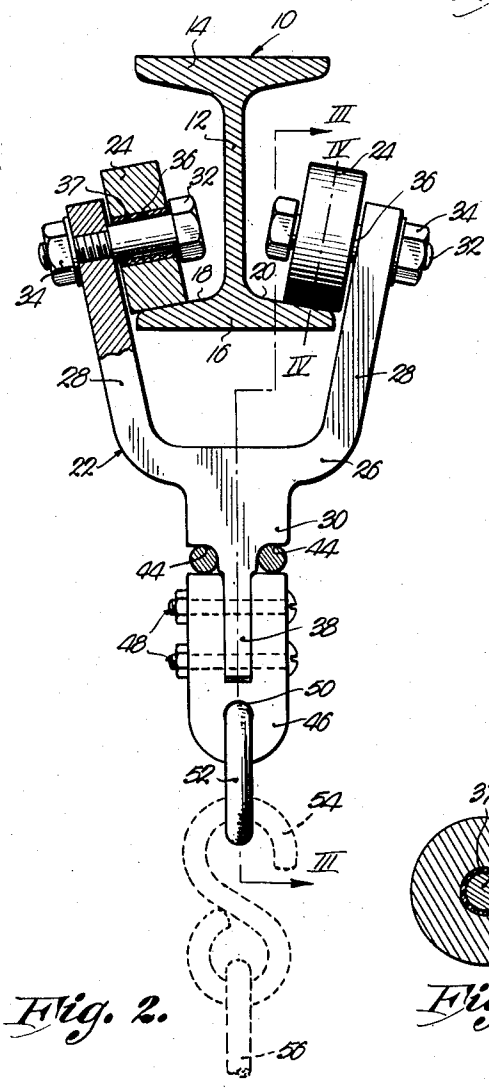


Fig. 2.

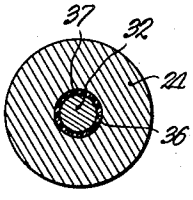


Fig. 4.

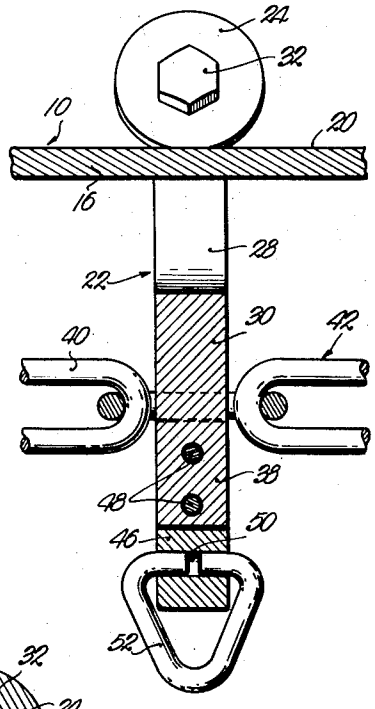


Fig. 3.

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United States Patent Office 2,830,694
Patented Apr. 15, 1958

2,830,694

HANGER FOR ENDLESS CONVEYORS

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Application June 1, 1954, Serial No. 433,494

2 Claims. (Cl. 198—177)

This invention relates to improvements in conveyors and particularly to that class of article-handling structure wherein is required a plurality of supports, one for each article respectively and adapted to hold the articles in suspended relationship beneath an overhead track.

It is the primary object of the instant invention to provide a conveyor that is inexpensive to manufacture and easy to assemble and maintain in part because of the utilization of conventional components readily available on the open market.

One of the most important objects of the present invention is to provide a conveyor wherein the series of individual article supports aforementioned take the form of hangers suspended from a track and utilizing a novel means of interconnection such as by employment of an ordinary chain wherein the links of the latter receive stems forming a part of the hangers.

Endless conveyors and the hangers therefor, which constitute the subject matter of this invention, are commonly employed in packing plants and other localities where the components of the mechanism are subjected to the action of moisture and liquids, all of which tend to oxidize and deteriorate the units and which cause constant uninterrupted care by way of providing lubrication at points of wear.

It is, therefore, another important object of this invention to provide a hanger for endless conveyors that is equipped with rollers mounted in such fashion as to preclude the necessity of frequent, periodic lubrication. The body of the hangers and the parts related thereto, are also cast or otherwise formed of nonoxidizable material which will not be attacked by moisture or the water which is usually encountered during the employment of the conveyor system.

An important aim of this invention is to provide a conveyor employing an ordinary I-beam as a track, the aforementioned hangers being in the nature of substantially Y-shaped yokes embracing the track and riding therealong by use of rollers on the legs of the yoke.

Another aim of this invention is to provide a novel retainer mounted on the stems of the yoke members to not only hold the links of the tying chain in place on the stems, but serving as attachments for articles to be suspended from the hangers.

Other objects include many important details of construction, all of which will be made clear or become apparent as the following specification progresses, reference being had to the accompanying drawing, wherein:

Figure 1 is a fragmentary, perspective view of the conveyor forming the subject matter of the present invention showing a plurality of interconnected hangers mounted on the track of the conveyor.

Fig. 2 is an enlarged, elevational view of one of the hangers showing the track in section, parts being broken away for clearness.

Fig. 3 is a cross-sectional view taken on irregular line III—III of Fig. 2; and

Fig. 4 is a cross-sectional view taken on line IV—IV of Fig. 2.

The conveyor assembly shown in the drawing is advantageous because of the fact that it is adapted to employ a conventional I-beam **10** as a track. The beam **10** readily obtainable on the open market, has a web portion **12**, together with integral flanges **14** and **16** at the edges thereof, the flange **14** being of course, readily adapted to permit simple and inexpensive mounting (not shown) on any overhead structure such as the ceiling of a building.

The flange **16** is utilized in the present invention as a track or more appropriately, a pair of tracks in uppermost, outwardly and downwardly inclined surfaces **18** and **20** of the lowermost flange **16**. By virtue of such inherent configuration of the I-beam **10**, each of a plurality of hangers **22** has been especially designed so that rollers **24** conform to the inclination of the track surfaces **18** and **20** and bear flatly thereagainst as the hangers **22** are advanced longitudinally along the beam **10**.

Each hanger **22** includes a yoke member **26** that is substantially Y-shaped, presenting a pair of legs **28** that diverge toward an integral stem **30** depending from the legs **28—28**. Legs **28** straddle the flange **16** of I-beam **10** and carry the rollers **24** on the innermost faces thereof through the medium of bolts **32** and nuts **34**. Bushings **36** on the bolt **32** rotatably receive the rollers **24**.

As clearly illustrated in Fig. 2 of the drawing, each roller **24** is mounted upon a bushing **36** which is disposed between the inner surface of the adjacent leg **28** and the head of bolt **32**. This bushing **36** is provided with a series of longitudinal grooves **37**, each of which provides a space between the smooth outer surface of that portion of bolt **32** and the bushing **36**. This space is, as shown in Fig. 4, filled with lubricating material and as roller **24** is turned upon bolt **32**, the grease or other lubricating substance within the grooves **37**, overcome friction and prevents the ingress of liquid to the bearing surfaces. The action of this lubricating material is assisted by the angle of inclination of bolt **32** and the roller **24** supported thereon. Any water that may drop upon any part of the roller, leg and bolt assembly **24**, **28** and **32** respectively, will, by gravity, be directed downwardly and outwardly to always maintain a desirable condition with respect to lubrication.

Stem **30** terminates at its lowermost end in a flat, polygonal projection **38** adapted to receive a link **40** forming a part of a tie element in the nature of an ordinary chain **42**.

The projection **38** of reduced width on the stem **30**, represents downwardly facing shoulders **44** that limit the extent of upward movement of the links **40** on the stems **30** and a U-shaped retainer **46** is employed to hold the links **40** in place on the stem **30** against the shoulders **44**. Retainer **46**, which embraces the projection **38**, is releasably secured to the latter through the employment of through bolts **48** that clamp the legs of the U-shaped retainer **46** tightly against opposed flat faces of the projection **38**.

Retainer **46** has an opening **50** through its bight for pivotally receiving a triangular-shaped eyelet **52** serving to attach any desired article to the hanger **22**. In this connection, it may be pointed out that the conveyor above described is especially adapted for use in slaughter houses wherein conveyor systems are extensively used to suspend poultry through a continuous operation including scalding, picking of feathers and other operations. Thus, as shown in Fig. 2 of the drawing, the pivotally mounted eyelet **52** may conveniently receive a swingable hook **54** that in turn may receive a poultry-receiving shackle shown in part and designated by the numeral **56**.

It is clear from the foregoing that the hangers **22** are all tied together and held in predetermined spaced relationship by virtue of the fact that their stems **30** project through, and are joined to a link **40** of chain **42**. This manner of tying together the hangers **22** provides for sufficient flexibility as to avoid all possibility of binding or locking of the hangers **22**. The inherent resiliency of the chain **42** permits limited freedom of movement of the hangers **22** so that at all times rollers **24** will roll freely on the surfaces **18** and **20** and not become twisted or otherwise misplaced so as to cause undue wear of any part of the hanger or break-down in the entire conveyor system.

It is particularly important to note that the special construction of hangers **22**, together with the use of chain **42**, and the employment of beam **10**, permits utilization of extremely sharp curves and, therefore, selection of predetermined paths of travel not heretofore made possible by conventional conveyor construction.

Still further, it is notable that the hangers **22** may be uniformly spaced or the distances therebetween may be varied to suit the desires and needs of the user since each link **40** is adapted to receive a stem **30**. Noteworthy also is the fact that each individual hanger **22** supports the weight of its own article notwithstanding the interconnection that is provided by use of chain **42** for the series of hangers **22**. While chain **42** is used in no way to support the articles to be conveyed, its strength is more than sufficient to permit its use in driving the conveyor, i. e., in causing the hangers **22** to roll along the track surfaces **18** and **20**. In this connection, chain **42** may pass over suitable sheaves, pulleys, rollers or sprocket wheels (not shown) for guiding purposes as well as for presenting an operable connection with a suitable prime mover for the conveyor system.

Details of construction hereinabove set forth are for the purpose of giving a full understanding of the principles of the invention and these may be varied without departing from the spirit thereof and, therefore, it is desired to be limited only by the scope of the appended claims.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

1. A hanger comprising a substantially Y-shaped yoke member having a pair of spaced elements and a stem depending from the elements, said stem being adapted to receive a single continuous link of a chain in surrounding relationship thereto and being provided with a pair of opposed shoulders facing downwardly away from the elements; a track-engaging roller mounted on each element respectively; a unitary, combination article support and retainer, said retainer being U-shaped, presenting a bight and a pair of legs, said legs embracing the stem and having a pair of uppermost ends engaging the link for holding the latter against the shoulders; means attaching the legs to the stem, said bight having an opening parallel to the path of travel of the hanger; and an article-receiving eyelet swingable in said opening transversely to said path of travel of the hanger.

2. An hanger as set forth in claim 1 wherein said bight is looped beneath the lowermost end of the stem.

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