March 14, 1933. S. SHAFER, JR 1,901,850

TROLLEY CONVEYER

Filed July 16, 1931

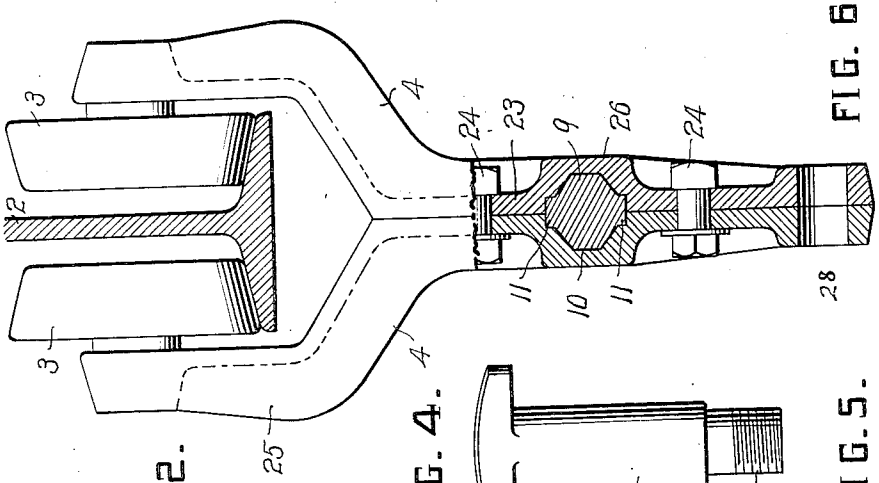


FIG. 2.

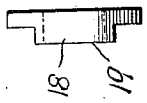


FIG. 6.

FIG. 4.

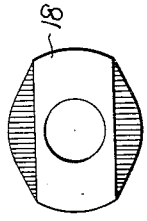


FIG. 5.

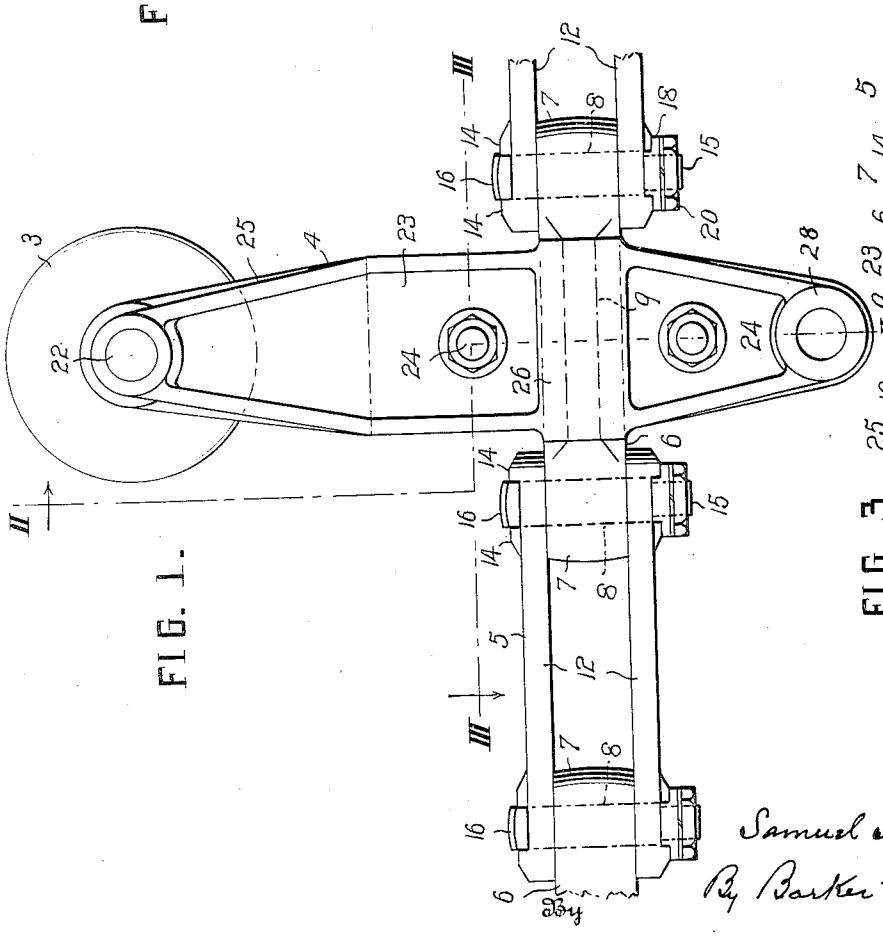


FIG. 1.

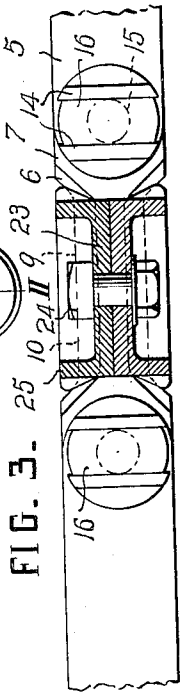


FIG. 3.

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UNITED STATES PATENT OFFICE

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TROLLEY CONVEYER

Application filed July 16, 1931. Serial No. 551,243.

The present invention relates to suspended power-driven conveyers of the overhead trolley type, and consists in improvements in the specific features or parts which go to make up the trolley and combinations of such parts.

Referring to the accompanying drawing wherein the invention is illustrated:

Figure 1 is a side elevation of a short section of a trolley conveyer embodying the present invention;

Figure 2 is a transverse sectional view of the same taken on the line II—II of Figure 1;

Figure 3 is a horizontal sectional view taken on the line III—III of Figure 1;

Figure 4 is an elevation of one of the connecting pintles of the chain, detached; and

Figures 5 and 6 are respectively, a plan and an edge view of a washer used in connection with the pintle shown in Figure 4, in the assembly of the chain.

In the drawing 2 indicates an I-beam, which may be suitably supported, the lower flanges of which serve as tracks upon which run the wheels 3 of the trolleys by which the loads to be transported by the conveyer are sustained. These wheels are carried by frame pieces or brackets 4 which, when united constitute the trolley, of which in the usual practice a plurality are employed in a single conveyer, being united and propelled by a power-driven chain 5 formed preferably of pintle-connected links, the axes of articulation of which are vertically disposed. The chain of the conveyer has features of novelty especially adapting it for the particular use to which it is put and herein described. This chain is formed of alternate, single member links 6 and two member links formed of spaced side bars 12, a type of chain, as to its main features, in common use, but having features of novelty in its construction which will be pointed out.

The links 6 of the chain are preferably each formed with enlarged heads 7 at their ends perforated at 8 to receive the connecting pintles, and with connecting waist portions 9, between such heads. The vertical dimensions of the waist portion of the link 6 are the same as the vertical dimensions of the heads 7, that is the opposite upper and lower faces of the links throughout, from end to end, are preferably in planes parallel one to the other. In speaking of the faces of the links as being upper and lower, these terms are used in contemplation of the chain being employed as represented in the drawing, that is with the connecting pintles disposed vertically. The transverse dimensions of the waist of the chain link 6 are reduced, as compared with the transverse dimensions of the heads 7, as clearly shown in Figures 2 and 3. The mid-portion, vertically considered, of the waist of the chain link is transversely expanded or enlarged as represented at 10, preferably on either side of the link, while the top and bottom portions of said waist part are reduced in their transverse dimensions as indicated at 11, 11.

The inner faces of the two bars which constitute a connecting link 12 have their ends in close engagement respectively with the flat top and bottom faces of the head of a link 6, to which they are united by a connecting pintle 15, the ends of the bars constituting the link 12 being perforated to receive the pintle. The outer faces of the bars 12, on either side of the pintle openings, are provided with ribs 14. The pintle is formed with a head 16 adapted to rest, when the pintle is in position connecting links of the chain, between the ribs 14 of link 12. 18 indicates a washer that is adapted to slip loosely over the reduced end of the pintle, which is opposite the head 16. This washer is provided with a flat-sided projection 19 adapted to lie between the ribs 14 of that bar of the link 12 which is opposite the one engaged by the head 16 of the pintle. A nut 20 engages with a screw-threaded portion 17 of the reduced portion of the pintle and serves to hold the pintle in working position, uniting the links of the chain, as clearly represented in the drawing, a split washer being preferably interposed between the nut and the outer face of the washer 18.

The shafts 22 upon which are supported the trolley wheels 3 are supported in the upper ends of the brackets 4, the latter being drawn inward toward each other below the

beam 2 and formed in their lower portions into shanks 23, the inner faces of which are fitted for close engagement one with the other, where they are held by nuts and bolts 24. The stem or body of the trolley thus constituted and the brackets that carry the trolley wheels, are preferably formed with marginal flanges 25, which form shallow chambers or recesses in which rest the projecting parts of the bolts and nuts employed to unite the two parts of the trolley frame, thus affording a measure of protection to these parts.

The central portion of a trolley frame, that is the part located between the upper and lower connecting bolts, is expanded as at 26 so as to embrace the waist portion 9 of the one part link 6. These expanded parts are recessed on their inner faces to fit the expanded central portions 10 of the link 6.

The external portions or faces of the expanded parts 26 of the trolley frame are shaped to lie in the planes of the faces of the end portions or enlarged heads 7 of the link 6 and also in the planes of the edges of the bars constituting the links 12. This is of advantage because it is common practice in using conveyers such as described, for the chains 5 to engage with stationary curved guides, in lieu of sprocket wheels, where the conveyers make horizontal curves and in such cases it is important that the trolley frames do not project beyond the side bars of the chain.

The trolley frame is preferably continued below the lower connecting bolt 24 and shaped to receive the load that the conveyer is to carry, or a hangar from which such load is suspended, being represented as formed into a perforated projection 28 adapted to receive a shackle, hook or other desired carrying member.

The trolley conveyer which has been described is formed of parts easy to fabricate and assemble; parts which each in itself is of great strength and without structural weakness in any of its portions and which in use is subject to a minimum of wear incidental to structural construction and manner of assembly. In case of breakage any of the parts can be easily removed and a new piece substituted quickly and without necessitating the disassembling of any part of the conveyer other than where the immediate break takes place.

What is claimed is:

1. In a trolley conveyer, the combination of a power chain formed of articulated links, certain of which are of single piece construction with narrow waist portions intermediate the end portions thereof, and a supporting trolley adapted to run on an overhead track, including a frame formed of parts adapted to closely embrace one of the said one-piece links at its narrow waist portion, the outer faces of the said frame being substantially in the planes of the end portions of said links; and means to hold together the said frame pieces.

2. In a trolley conveyer, the combination of a power chain formed of articulated links, certain of which are of single piece construction, the mid-portions of which are of reduced size as compared with the ends to form central waist portions, and a supporting trolley adapted to run on an overhead track, including a frame formed of parts adapted to closely embrace the said waist portion of the one piece links, and means to hold together the trolley frame pieces.

In testimony whereof, I affix my signature.

SAMUEL SHAFER, JR.