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H. KLAUCKE

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CONVEYER

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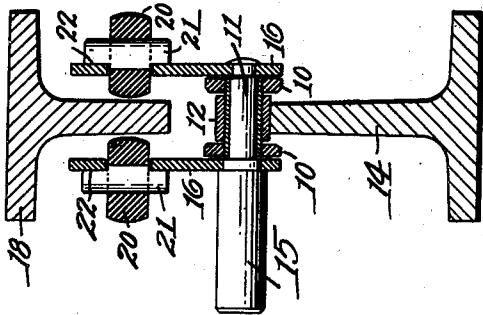


Fig. 1

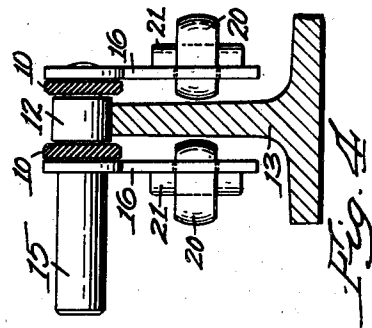


Fig. 2

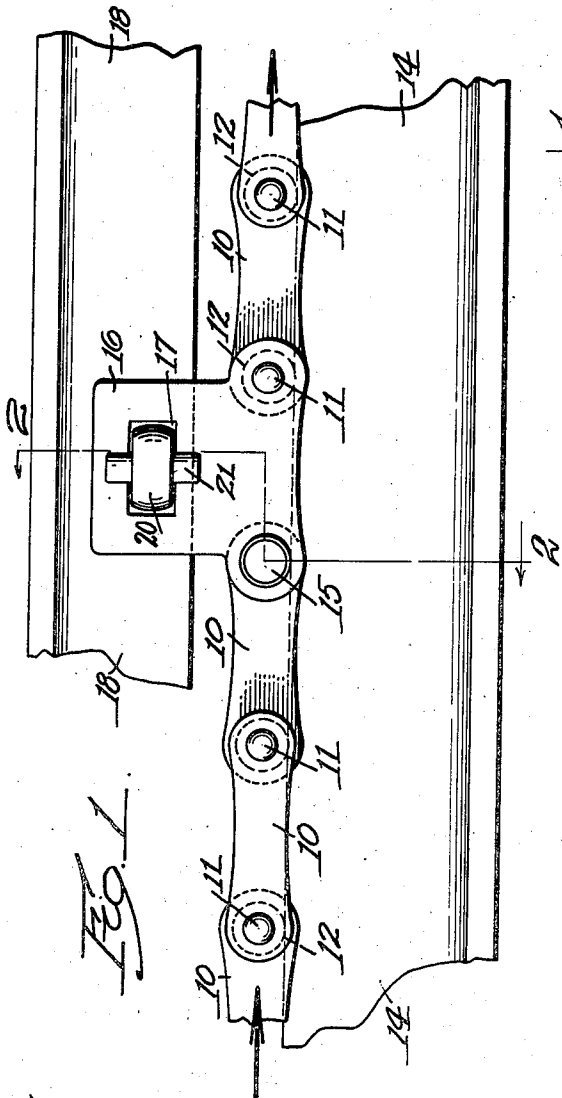


Fig. 3

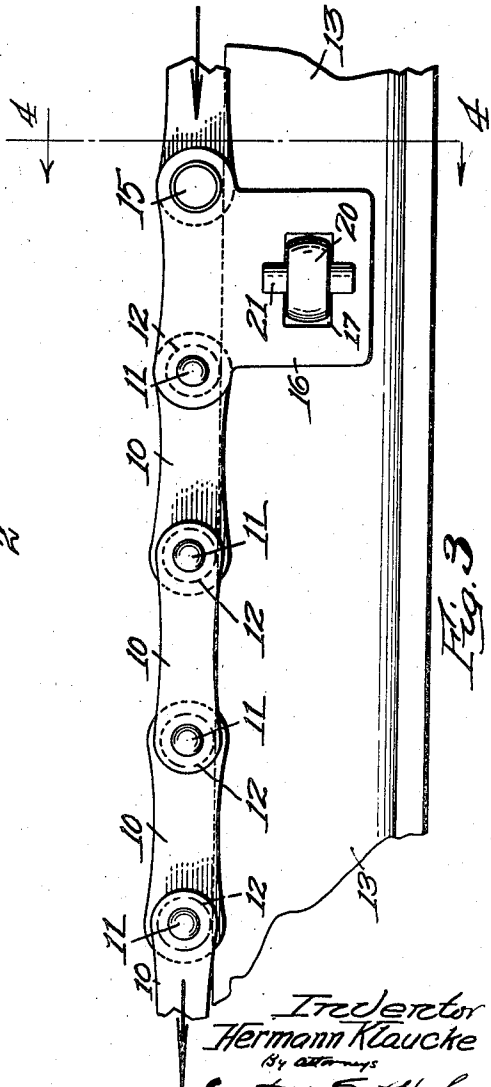


Fig. 4

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# UNITED STATES PATENT OFFICE

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CONVEYER

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Application April 10, 1935, Serial No. 15,616

9 Claims. (Cl. 198—189)

This invention relates to a carrier chain of the endless type.

The principal objects of the invention are to provide a simple and convenient means for preventing the sagging of the means on which the load is carried; to provide this means in a position in which it will work directly beyond the first named means, where the advantage of the leverage is at its best; to provide a simple means for mounting the arbors of the rollers which act as the means for reducing friction, and to provide a construction for this purpose which can be employed on commercial T-rails as supports for the rollers of the chains, thereby eliminating the finishing of the sides of the support.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing, in which

Fig. 1 is a side view showing parts of the upper strand of an endless chain, provided with a preferred embodiment of this invention;

Fig. 2 is a sectional view on the broken line 2—2 of Fig. 1.

Fig. 3 is a view similar to Fig. 1 of the lower strand, and

Fig. 4 is a section on the line 4—4 of Fig. 3.

This invention is shown as applied to a form of endless conveyer having upper and lower strands or, at least a pair of strands, which may run vertically or in an inclined direction. The conveyer is formed of two opposite chains, each comprising the usual links 10, connected together by hardened steel pins 11 on which are mounted rollers 12 which run on a lower rail 13 and an upper supporting rail 14.

The load of the conveyer in the form of baskets or pockets, not shown, is carried on extended hardened steel pins 15 oppositely located at intervals on the two chains. In other words, the two extended pins 15 of each pair on the two chains are located axially in alignment and support a rod or pocket or other element between them, this element constituting the carrying and load supporting part of the chain. Where these two pins are located on opposite sides they may be arranged singly or in pairs, as desired. In the present case they are shown as located singly. At this point two adjacent links 10 are pivotally connected by the pin 11 and a pin 15 extends inwardly from it. A side plate 16, having an opening 17 extending through it, extends outwardly from the chain. This plate extends outwardly. It is firmly anchored between two pins, constituting a feature of the chain.

Of course, on the upper strand this plate extends upwardly and for the purpose of the present invention a third rail 18 is employed, the purpose of which will presently appear.

Each of these plates 16 is completed as a guiding means by the provision of a hardened steel roller 20 which is rotatably mounted on a stud 21 arranged vertically. This stud is cylindrical, of course, and on one side at the top and bottom it is slabbed off to form two plane surfaces 22, these surfaces extending from each end inwardly to a point adjacent the rollers 20. These surfaces 22 are spot welded to the plate 16 above and below the opening 17, furnishing a stationary stud about which the roller is free to rotate.

One of these plates is located on each side of the rail 13 or 18 and the rollers take care of the tilting action due to the hanging of the load on the hardened steel pin 15. Also they take care of the reaction.

It will be seen that the rails 13, 14 and 18 can be made of commercial rolled T-rail stock and not machined so that no expense for machining is required. The rollers 20 are located right in the middle of the plates 16 between two pins 11, so that they take care of the tilting as well on the upper strand as on the lower one and they are located in the most efficient place for resisting any tendency on the part of the pins 15 to sag.

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. In a conveyer, the combination of a rail, interconnected rollers in contact with the rail, pins passing through the rollers, outwardly extending pins located on the first named pins at intervals for supporting the load, plates extending transversely from the conveyer from each of said extended pins, said plates, each having a perforation therethrough, a stud secured to said plate and arranged with its axis normal to the length of the conveyer, and a roller on the stud freely rotatable and adapted to extend through said perforations and engage a guide rail to prevent distortion of the extended pin.

2. In a conveyer, the combination of two rails in vertical alignment, interconnected rollers in contact with one rail, pins extending laterally at intervals for supporting the load, a plate extending outwardly from the conveyer and parallel with the sides of the conveyer from each of said pins, and a roller carried by each plate and freely rotatable and adapted to engage the other rail

on its inner side to prevent distortion of the extended pin.

3. In a conveyer, the combination of a pair of rails, a third rail beyond one of said rails, a conveyer chain composed of links and rollers, said rollers engaging surfaces of the first two rails, means carried by the chain and extending laterally for supporting a load, plates extending outwardly from said load supporting means, and rollers carried by said plates and extending toward and engaging the third rail, for the purpose described.

4. In a conveyer, the combination of a pair of rails, each having a surface on the same side for supporting a conveyer chain, a third rail beyond one of said rails, a conveyer chain composed of links and rollers, said rollers engaging said surfaces of the first two rails, means carried by the chain and extending laterally for supporting a load, plates extending outwardly from said load supporting means, and rollers carried by said plates and extending from the inner side toward the third rail and engaging it, for the purpose described.

5. In a conveyer, the combination of a pair of rails, each having a surface on the same side for supporting the two strands of a conveyer chain, a third rail beyond one of said rails, a conveyer chain composed of links and rollers, said rollers engaging said surfaces of the first two rails, means carried by the chain and extending laterally beyond the chain for supporting a load, plates extending outwardly from said load supporting means, and rollers carried by said plates and extending from the outer side toward the third rail, for the purpose described.

6. In a conveyer, the combination of supporting rails, a chain composed of links and rollers, said rollers resting on said rails, pins extending through certain of the rollers, the links of the chain connecting said pins, means carried by said pins at intervals and projecting from the side of the chain for supporting the load, plates extend-

ing outwardly substantially in the plane of said links with respect to the direction of motion of said chain, a guide rail in the plane of said rails, and rollers mounted on said plates on axes at right angles to the pins and projecting inwardly to engage the guide rail to prevent tilting of the chain.

7. In a conveyer, the combination of a rail, interconnected rollers in contact with the rail, pins passing through the rollers, outwardly extending pins located on the first named pins at intervals for supporting the articles to be conveyed, a plate extending outwardly from the side of the conveyer from each of said extended pins, said plate having a perforation therethrough, a freely rotatable roller rotatably supported by the plate extending through the plate, and a guide rail above the first named rail which the roller is adapted to engage.

8. In a conveyer, the combination of a supporting rail, a chain composed of links and rollers, said rollers resting on said rail, pins extending through the rollers, the links connecting said pins, means carried by said pins at intervals for supporting the load, plates constituting arms of the links of the chain and extending outwardly, a guide rail in the plane of said rail, and rollers mounted on said plates and projecting inwardly from the plates to engage the guide rail to prevent tilting of the chain.

9. In a conveyer, the combination of a rail, interconnected rollers in contact with the rail, pins passing through the rollers, outwardly extending pins located on the first named pins at intervals and in alignment with the first named pins for supporting the articles to be conveyed, a plate extending outwardly from the side of the conveyer from each of said extended pins, said plate having a perforation therethrough, a guide rail and a freely rotatable roller supported by and extending through the plate and adapted to engage the guide rail.

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