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E. E. KENNEDY
MEANS FOR ADJUSTING THE RAILS OF CONVEYERS
RELATIVE TO THE CHAINS THEREOF
Filed June 3, 1929

1,785,315

Fig. 1.

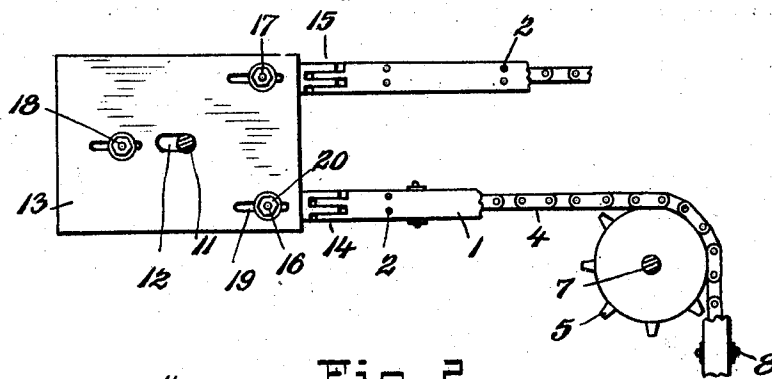


Fig. 2.

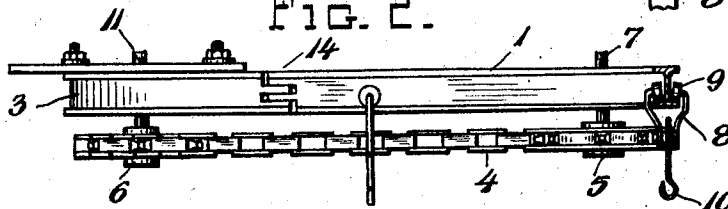


Fig. 3.

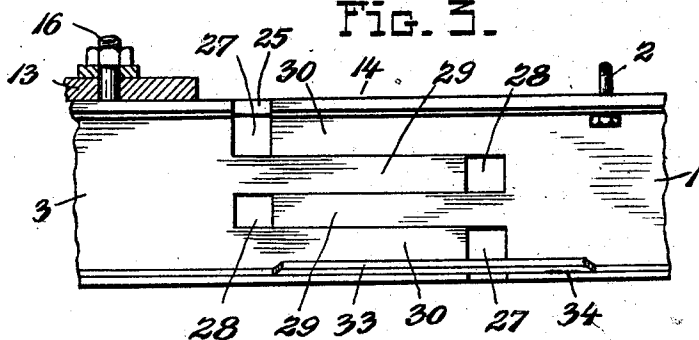


Fig. 4.

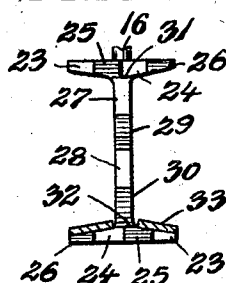
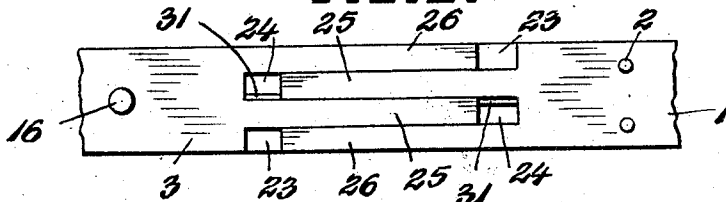


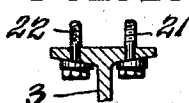
Fig. 5.



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Fig. 6.



By

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UNITED STATES PATENT OFFICE

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MEANS FOR ADJUSTING THE RAILS OF CONVEYERS RELATIVE TO THE CHAINS THEREOF

Application filed June 3, 1929. Serial No. 367,871.

This invention relates to means for adjusting the rails of conveyers relative to the chains thereof, and has for its principal object to provide means whereby the rails of overhead conveyers used in factories may be conveniently adjusted longitudinally to overcome the slackness in the chains of the conveyor due to stretching from wear.

Another object of the invention is to provide a means for accomplishing said purpose, which is simple, practical, and will permit easy and ready adjustment of the rails of the conveyers.

With the above and other objects in view, the invention will be hereinafter fully described as illustrated in the accompanying drawings, and the novel features thereof will be distinctly pointed out in the appended claims.

In the drawings, similar characters of reference are used to indicate corresponding parts.

Figure 1 is a plan view of a portion of an overhead conveyor having longitudinally adjustable rails in accordance with my invention,

Fig. 2 is a side elevation of Fig. 1,

Fig. 3 is a side elevation, on an enlarged scale, of the joint portion of the rail ends,

Fig. 4 is an end view of the left hand rail end of Fig. 3,

Fig. 5 is a plan view of Fig. 3, and

Fig. 6 is a cross sectional view showing two bolts instead of one for supporting the curved adjustable portion of the rail.

Referring to the drawings, 1 represents the single supporting rail, formed of a single I beam, of a conveyor of the overhead type used in manufacturing or assembling plants operating on a production basis. The rail 1 is supported, as at 2, at various points from the building structure in any suitable manner in a fixed position, and curves laterally, as at 3, to conform to the travel of the chain 4, which passes around and is driven by toothed wheels as 5 and 6 arranged at various points in the travel of the conveyor. The toothed wheel 5 is supported upon a fixed shaft 7. The chain 4 is supported at various points by frames 8 having their upper ends car-

ried by rollers, indicated by 9, which travel upon the upper sides of the lower flanges of the rail 1. Supporting or carrying hooks, as indicated by 10, depend from the chain 4 at the frames 8.

The chain 4 being under strain from the loads moved thereby naturally wears at the main joints and lengthens, and as a result thereof the chain sags. In order to be able to move the toothed wheel 6 bodily in the longitudinal direction of the chain 4 to take up the slack thereof and also adjust the length of the rail 1 to correspond to the length of said chain, the following described mechanism is provided. The shaft 11 of the toothed wheel 6 is supported in a longitudinal slot 12 of a fixed plate 13, and the curved portion 3 of the rail 1 is slidably jointed at transversely opposite points as indicated at 14 and 15. The curved portion 3 of the rail 1 is supported by the fixed plate 13, so that it may be adjusted longitudinally, by means of stud bolts 16, 17 and 18, which are fixed in said portion of the rail and pass through longitudinal slots, indicated by 19, of said plate. Nuts indicated by 20 on said stud bolts are adapted to secure the curved portion 3 of the rail to the plate 13 in an adjusted position. Instead of the single stud bolts 17, 18 and 19, pairs of headed bolts as 21 and 22 may be used. The joints at 14 and 15 of the rail 1 are formed by providing longitudinal recesses at 23 and 24 in the top and bottom flanges of the rail ends, thereby leaving longitudinally extending tongues 25 and 26, and longitudinal recesses at 27 and 28 in the web of the rail ends thereby leaving tongues 29 and 30. Said tongues of the top and bottom flanges of the rail are adapted to slidably co-operate with said recesses thereof and likewise said tongues of the webs with said recesses of the webs. Longitudinally extending ledges or shoulders at 31 of the webs of the rail ends support the top flange tongues 25 and similar ledges at 32 support the lower web tongues of the rail ends.

To cover or bridge the openings or gaps at the ends of the recesses 23 and 24 of the bottom flanges of the rail ends left when the same have been moved apart and thereby provid-

ing a continuous runway for the rollers 9, strips of thin steel, indicated by 33, are spot-welded or otherwise fixed at 34 to the upper side of the lower flanges of one of the rail ends and overlap said openings. Said strips of steel are thus held in position and do not interfere with the longitudinal adjustment of the rail ends relative to each other.

In practice, assuming that the chain 4 has become worn and stretched resulting in sagging thereof, and it is desired to take up the slack in said chain. The toothed wheel 6 is moved bodily longitudinally relative to the rail by moving the shaft 11 in the slot 12 of the fixed plate 13 until the chain 4 is at the proper tension, then said shaft is fixed in its adjusted position. The curved portion 3 of the rail is now moved, after releasing the nuts 20, the same distance as the toothed wheel 6 was moved, and then said curved portion of the rail is fixed in position by tightening said nuts. Thus the rail has been lengthened to correspond to the length of the stretched chain.

From the drawings and description, it is seen that this invention provides a ready, convenient and practical means for taking up the slack due to wear and stretching of conveyor chains. It will be understood that the details of construction for carrying out this invention may be changed within the scope of the claims.

Having fully described my invention, what I claim is:

1. In a means for adjusting the rails of conveyers relative to the chains thereof, the combination of a chain, a rail, the chain being supported from the rail, the rail being separated transversely into two portions, a wheel for driving said chain, the wheel being supported in an adjustable position relative to said chain, and one of said portions of said rail being adjustable relative to said wheel.

2. In a means for adjusting the rails of conveyers relative to the chains thereof, the combination of a chain, a rail, the chain being supported from the rail, a wheel for driving said chain, the chain passing around said wheel, the rail being curved to conform to the travel of said chain around said wheel, a plate, the plate having a slot therethrough, said wheel having a shaft, said shaft passing through said slot and being supported by said plate, the rail being separated transversely where said curved portion of said rail meets the other portion thereof, and said curved portion of the rail being adjustably fixed to said plate.

3. In a means for adjusting the rails of conveyers relative to the chains thereof, the combination of a chain, a rail, the rail having upper and lower flanges and a web, the chain being supported from said lower flange of said rail, said rail being separated trans-

versely into two portions, said flange and web of each of said portions having recesses and tongues adapted to slidably co-operate, and means for fixing one portion of the rail in an adjusted position relative to the length of said chain.

4. In a means for adjusting the rails of conveyers relative to the chains thereof, the combination of a chain, a rail, the rail having upper and lower flanges and a web, the chain being supported from said lower flange of said rail, said rail being separated transversely into two portions, said flange and web of each of said portions having recesses and tongues adapted to slidably co-operate, means for fixing one portion of the rail in an adjusted position relative to the length of said chain, and plates fixed to the lower flanges of one portion of said rail adapted to rest upon the lower flanges of the other portion of said rail for bridging the same when said curved portion of the rail is moved apart from the other portion thereof.

In testimony whereof I affix my signature.

EDWIN E. KENNEDY.