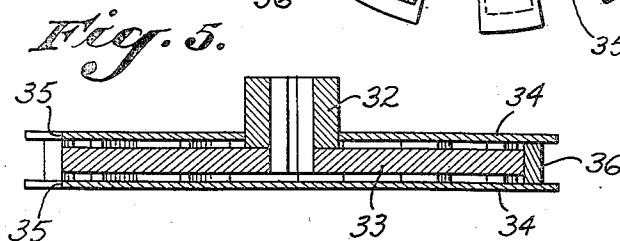
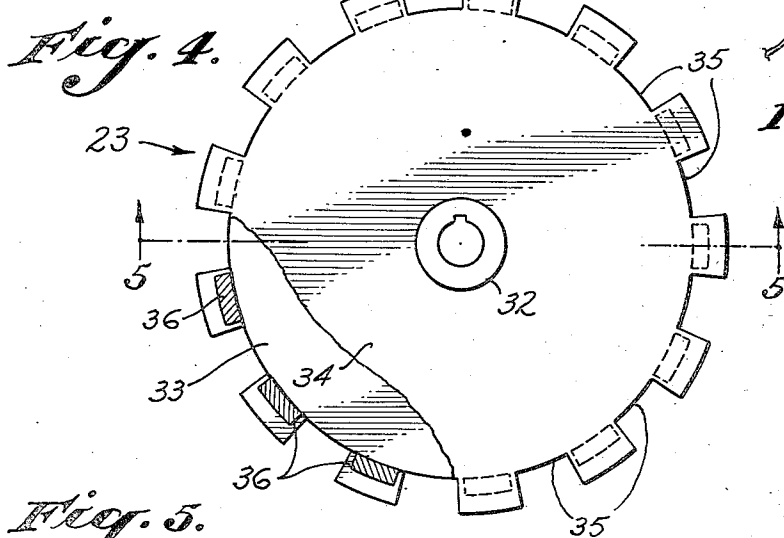
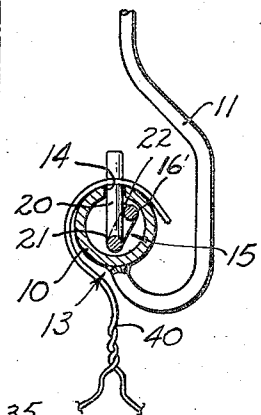
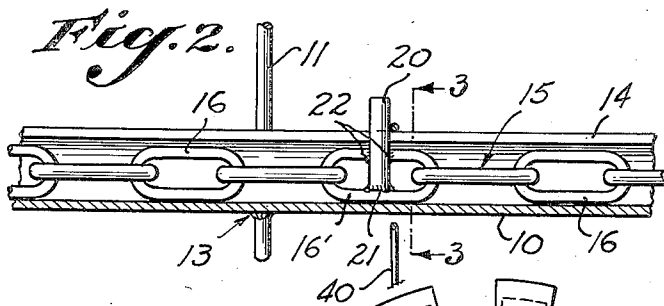
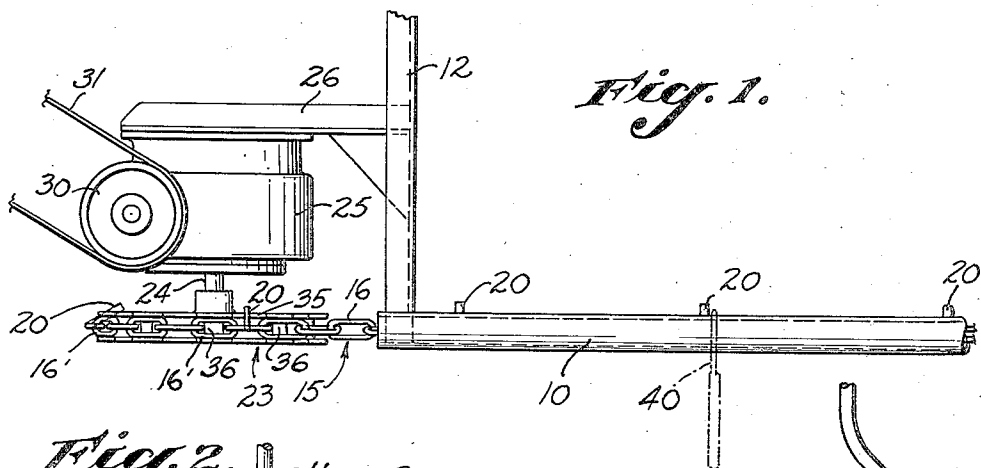


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CHAIN CONVEYER

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CHAIN CONVEYER

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3 Claims. (Cl. 198—173)

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The present invention relates generally to conveyers, and more particularly to a specific type of conveyer chain adapted primarily for use with what are known as "speed rails" in dry cleaning establishments. These so-called "speed rails" consist of elevated, generally horizontal pipe rails that are usually supported from the ceiling by hangers, and that lead from one working area of the building to another. Loaded garment hangers are hooked over these rails, and the hangers are usually pushed in batches along the rails to and from the operators along the line. There are certain objectionable features to this prior arrangement, one of which is the irregularity of flow of garments along the line, which reduces the efficiency of the workers. Another objection is the fact that garments are crushed together when they are pushed along the rail in batches, which causes wrinkles to be pressed into the cloth.

The primary object of the present invention is to provide a simple and inexpensive conveyer for transporting garment hangers or the like along a supporting pipe rail in a constant, evenly spaced flow, with each garment separated from the others so that they are prevented from crushing or jamming together. To this end, I provide a longitudinally extending slot in the top side of the pipe rail, and traveling within the pipe is a conveyer chain having pins fixed to certain of its links, which project upwardly through the slot. The garment hangers are hooked over the rail in the usual manner and are engaged and pushed forwardly along the length thereof by the projecting ends of the pins. The pipe rails may be curved in the horizontal plane to carry around corners, or in the vertical plane to ascend or descend to different levels, and suitable means may be provided at any station along the rail for disengaging the hangers from the conveyer chain and collecting the garments into batches.

Another object of the invention is to provide an inexpensive and easily manufactured conveyer chain that is particularly adapted for use in a pipe rail having a longitudinal slot in the top side thereof.

A further object is to provide a conveyer chain which is so constructed and arranged that the links thereof are always maintained at an angle inclined to the vertical plane, whereby they are prevented from riding up through the slot in the pipe rail.

Still another object of the invention is to provide a driving sprocket which is particularly designed to accommodate a conveyer chain made of open-loop links, to which transversely extend-

ing driving pins are welded at regular intervals.

The foregoing and other objects and advantages of the invention will become apparent to those skilled in the art upon consideration of the following detailed description of the preferred embodiment thereof, reference being had to the accompanying drawings, wherein:

Figure 1 is a side elevational view of one portion of a conveyer system embodying the principles of my invention, showing the power unit and driving sprocket, and a section of one of the pipe rails through which the conveyer chain travels;

Figure 2 is an enlarged longitudinal vertical section through a portion of the pipe rail, showing the conveyer chain therein;

Figure 3 is a transverse vertical section through the same, taken along the line 3—3 in Figure 2;

Figure 4 is a partially cut away plan view of the driving sprocket; and

Figure 5 is a sectional view through the sprocket, taken at 5—5 in Figure 4.

In the drawings, the conveyer is seen to comprise a generally horizontal pipe rail 10 which is supported from the ceiling at a suitable level above the floor by hangers 11 and angle irons 12. The hangers 11 are more or less conventional, and consist of steel rods bent into the shape of a hook and welded at 13 to the bottom of the rail 10. The pipe rail 10 is preferably circular in cross section, and formed in its top side is a longitudinally extending slot 14.

Slidably disposed within the pipe rail 10 is an inexpensive conveyer chain 15 of elongated, loop-shaped links 16, such as are usually formed by bending short lengths of steel wire to the desired shape and then butt-welding the ends of the wire together. While relatively light and not particularly precise in construction, a chain of this type is entirely adequate for the light loads and loose fits of the system.

At uniformly spaced intervals along the length of the chain 15 are links 16' to which driving pins 20 are welded. Each of the pins 20 is disposed transverse to the longitudinal axis of the link 16', and at an angle to the plane of the link. One end of the pin 20 abuts against and is welded at 21 to the inner surface of one side bar of the link 16' at the midpoint thereof. At the opposite side of the link 16', the pin 20 passes to one side of the side bar of the link and is welded thereto at 22, as best shown in Figure 3. The pin 20 then passes upwardly through the slot 14 and projects for a short distance above the top surface of the

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pipe rail 10. The slot 14 is only slightly wider than the pin 20, and the tilted link 16' is thus prevented from riding up through the slot.

The conveyer chain 15 is driven by a sprocket 23 which is mounted on the bottom end of a shaft 24 projecting downwardly from a speed-reduction gear box 25. The gear box 25 is attached to the underneath side of a bracket 26 projecting laterally from the angle irons 12. A pulley 30 on one side of the gear box is connected to the gears on the inside thereof, and the pulley is driven by a belt 31.

The sprocket 23 comprises a hub 32 which abuts against and is welded to a circular plate 33. Welded to the plate 33 on opposite sides thereof are circular, slightly dished disks 34 of heavy gauge sheet steel, the top one of which is notched at 35 around its periphery for the pins 20. The notches 35 are square cut, of substantially the same length as the length of a chain link, and their bottom edges coincide with the periphery of the circular plate 33. Blocks 36 are welded to the periphery of the plate 33 and to the inside surfaces of the disks 34 between the notches 35. Each of the blocks 36 is slightly shorter than the length of a chain link, and each block is spaced apart from its adjacent blocks by a distance slightly greater than the length of a chain link. As the chain links move into engagement with the sprocket 23, the alternate links which are normally horizontal as they travel through the pipe rail 10 are laid flat against the outer surfaces of the blocks 36. The alternate links of the chain, which are normally substantially vertical as they travel through the pipe rail 10, are turned perpendicular to the outer faces of the blocks 36 between the latter, and the pins 20 project through the notches 35 as they travel around with the sprocket.

The operation of my invention is believed to be self-evident from the illustrations and the foregoing description. Garment hangers 40 are hooked over the pipe rail 10 and are engaged and pushed along the rail by the projecting ends of the pins 20 as the conveyer chain travels forwardly through the pipe.

While I have shown and described in considerable detail what I believe to be the preferred form of my invention, it is to be understood that such details are not restrictive, and that various changes may be made in the shape and arrangement of the several parts without departing from the broad scope of the invention, as defined in the appended claims.

I claim:

1. For use in a conveyer mechanism having an elevated, generally horizontal pipe rail with a longitudinal slot formed in the top side thereof, a link chain disposed within said pipe rail and

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slidable therein, and drive pins fixed to certain of said links at spaced intervals along the length of said chain, said drive pins projecting upwardly through said slot and above the top surface of said pipe rail, each of said drive pins being disposed transverse to the longitudinal axis of its associated link and at an angle to the plane of the link, whereby the link is tilted at an angle inclined to the vertical plane and is thereby prevented from riding up into said slot.

2. For use in a conveyer mechanism having an elevated, generally horizontal pipe rail with a longitudinal slot formed in the top side thereof, a link chain disposed within said pipe rail and slidable therein, and drive pins fixed to certain of said links at spaced intervals along the length of said chain, each of said drive pins being butt welded to the inner surface of one side bar of its associated link and extending upwardly therefrom along one side of the other side bar of the link, said pin being welded to said other side bar of said link, and projecting upwardly through said slot to a point above the top surface of said pipe rail, said pin acting to hold said link inclined to the vertical plane so that said link is prevented from riding up into said slot.

3. For use in a conveyer mechanism having an elevated, generally horizontal pipe rail with a longitudinal slot formed therein, a link chain disposed within said pipe rail and slidable therein, and drive pins fixed to certain of said links at spaced intervals along the length of said chain, said drive pins projecting upwardly through said slot and above the top surface of said pipe rail, each of said drive pins being disposed transverse to the longitudinal axis of its associated link and at an angle to the plane of the link, whereby the link is tilted to an angle out of the plane of said longitudinal slot and is thereby prevented from riding up into said slot.

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