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CARRIER-TYPE CONVEYORS

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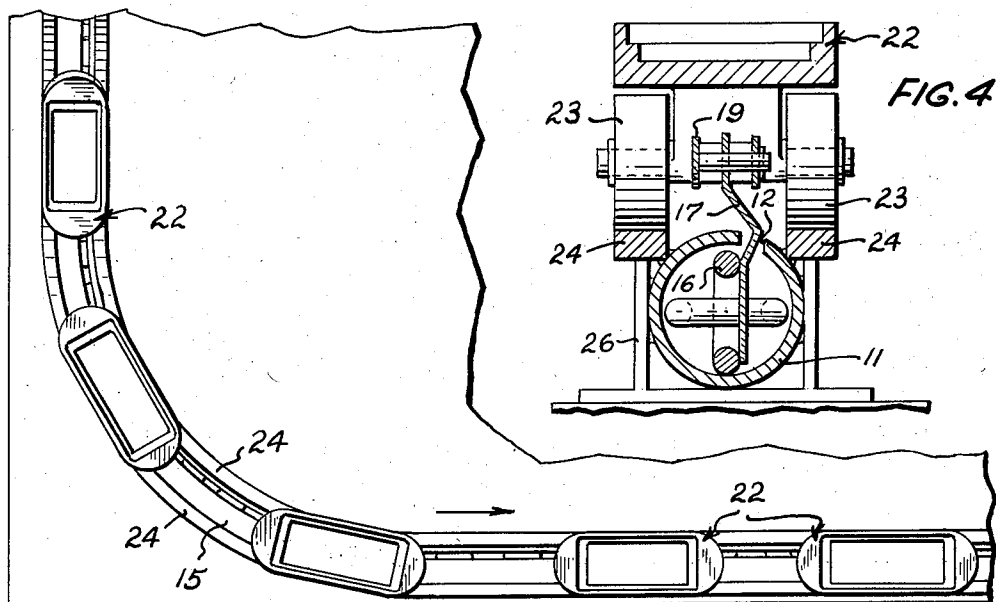


FIG. 1

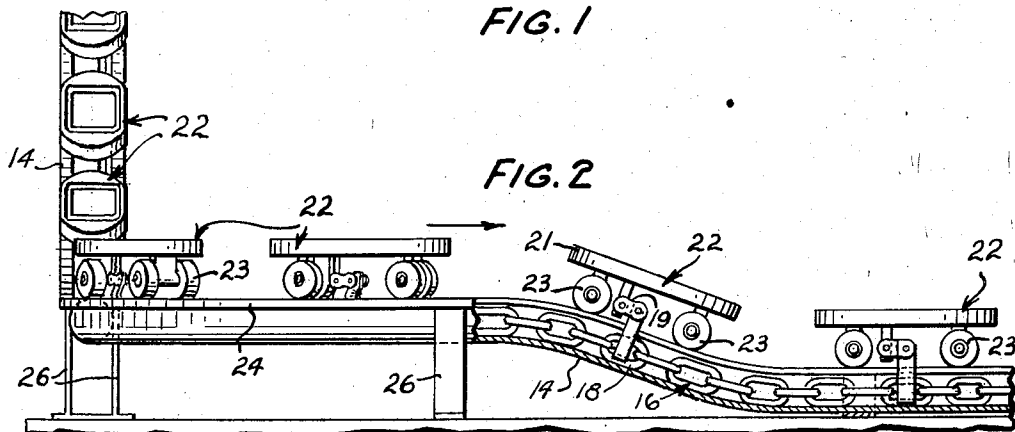


FIG. 2

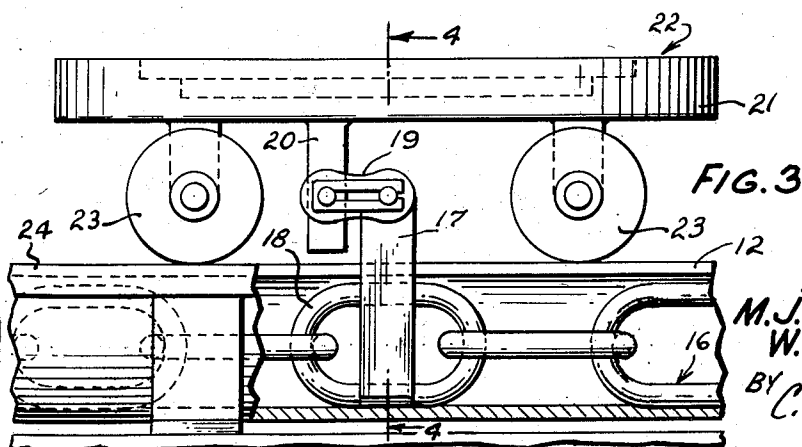


FIG. 3

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CARRIER-TYPE CONVEYORS

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4 Claims. (Cl. 198—189)

This invention relates to carrier-type conveyors, and more particularly to conveyors for pulling a plurality of cars.

An object of the invention is to provide car-type conveyors having universal movement.

Another object of the invention is to provide car-type conveyors in which the cars travel along a path having both vertical and horizontal turns.

A conveyor illustrating certain features of the invention may include a slit tube for guiding a universally movable chain and disposed along a path curving both universally and horizontally with the slit in the tube extending along the upper turn. A pair of guide rails are secured to the top of the tube on opposite sides of the slit and serve to support roller-type carriages connected by links to the chains.

A complete understanding of the invention may be obtained from the following detailed description of a conveyor forming a specific embodiment thereof, when read in conjunction with the appended drawings, in which

Fig. 1 is a top plan view of a conveyor forming one embodiment of the invention;

Fig. 2 is a front elevation of the conveyor shown in Fig. 1;

Fig. 3 is an enlarged, partially sectional, front elevation of a portion of the conveyor, and

Fig. 4 is a vertical section taken along line 4—4 of Fig. 3.

There is shown in the drawings a car or carrier-type conveyor for conveying wire spring relays along a processing line. The conveyor includes a tubular guide 11 having a slit 12 in the upper portion thereof and extending along a path including vertically curved portions 14 and horizontally curved portions 15. A chain 16 of a well known type is universally movable along the conveyor and bends through the horizontal curves and the vertical curves with ease. Lugs 17 secured rigidly to links 18 of the chain at spaced points therealong project upwardly through the slit in the tube and pull links 19 connected to the lugs for pivotal movement only in a vertical plane. The links 19 are secured at the other ends thereof to lugs or tabs 20 depending from receptacle-type bodies 21 of cars 22, which are supported by unflanged wheels or rollers 23 travelling along guide rails 24.

The tabs 20 are rigidly secured to the bodies of the cars 22, and the pivotal connection between the tabs 20 and the links permit pivotal movement therebetween only in a vertical plane. Hence, as the chain courses around a horizontal curve in the tubular guide 11, the lugs 17 are turned and turn the cars 22 through the links 19 and the tabs 20 to keep the rolls 23 on the rails 24. By this connecting structure between the cars and the chain, which prevents horizontal turning of each car relative to the portion of the chain to which that car is connected, the cars are kept travelling in the same direction as the guide 11 and the rails 24 so that there is never any danger of derailling, and this even though there are no flanges on the wheels 23. The rails 24 are welded to the upper portions of the guide tubes. The guide tube has support posts

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26 secured thereto in desired positions and suitable well known drive sprocket means (not shown) are provided for engaging and pulling the chain along the endless path formed by the tube.

The conveyor described above is simple and inexpensive in its construction, and is durable and easily maintained.

It is to be understood that the above-described arrangements are simply illustrative of the application of the principles of the invention. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

What is claimed is:

1. In a conveyor, a flexible conveyor element, a tubular guide circular in cross section for guiding the conveyor element along a path including horizontal and vertical curves, said tube having a slit extending along the upper portion thereof, a lug rigidly secured to a link of the chain and projecting upwardly through the slit, a pair of guide rails having flat horizontal upper surfaces secured to the tube in positions bracketing the slit, a roller car, and link means securing the car to the lug in such a manner as to prevent horizontal pivotal movement between the car and the lug to locate the car in a position riding on the rails.

2. A conveyor comprising a car having a front pair of wheels and a rear pair of wheels, a pair of tracks supporting the car and extending along a path including a horizontally curved portion, a guide tube extending along and below the tracks and having a slit in the upper portion thereof extending therealong between the rails, said guide being secured to said tracks, a universal chain movable along the tube, a lug secured rigidly to a portion of the chain in a position projecting upwardly through the slit in the tube, and a link connected to the lug and to the car in such a manner as to permit vertical pivotal movement and prevent horizontal pivotal movement between the lug and the car.

3. A conveyor comprising a car having a front pair of wheels and a rear pair of wheels, a pair of tracks supporting the car and extending along a path including horizontally curved and vertically curved portions, a guide tube secured to and supporting the tracks on the upper portion thereof and having a slit extending therealong between the rails, a universal chain movable along the tube, a lug secured rigidly to a portion of the chain in a position projecting upwardly through the slit in the tube, and a link connected pivotally to the lug and to the car and preventing horizontal pivotal movement between the lug and the car.

4. A conveyor comprising a car having a front pair of unflanged wheels and a rear pair of unflanged wheels, a pair of rails supporting the car and extending along a path including horizontally curved and vertically curved portions, a guide tube secured to and supporting the tracks on the upper portion thereof and having a slit extending therealong between the rails, a universal chain movable along the tube, a flat lug secured rigidly to a portion of the chain in a position projecting upwardly through the slit in the tube, and a link having a flat portion connected pivotally to the lug and a second flat portion connected to the car, said flat portions being in vertical planes.

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