R. OEHLER.

OVERHEAD ROLLER CONVEYER SYSTEM.

APPLICATION FILED MAY 5, 1919.

1,327,290.

Patented Jan. 6, 1920.

Fig. 1.

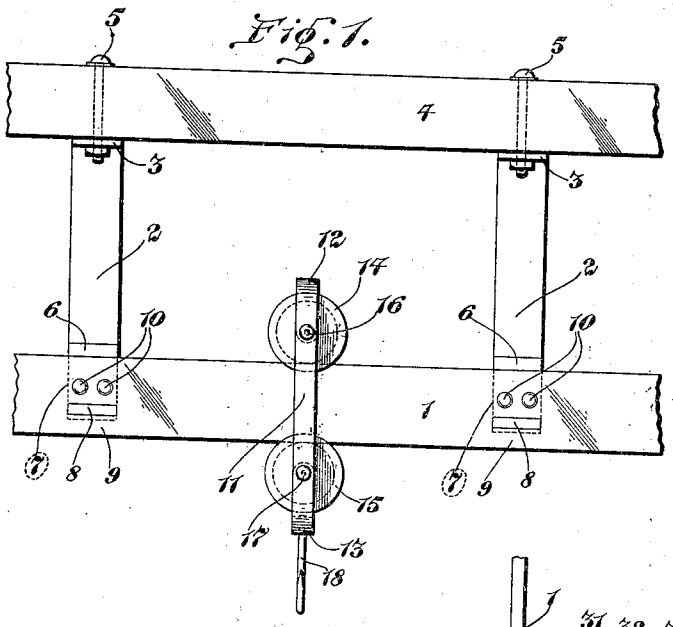


Fig. 2.

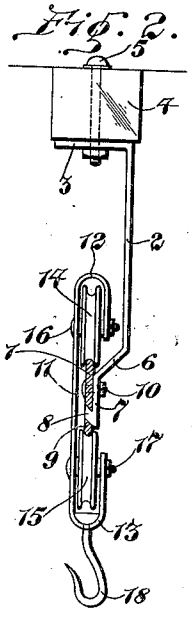


Fig. 3.

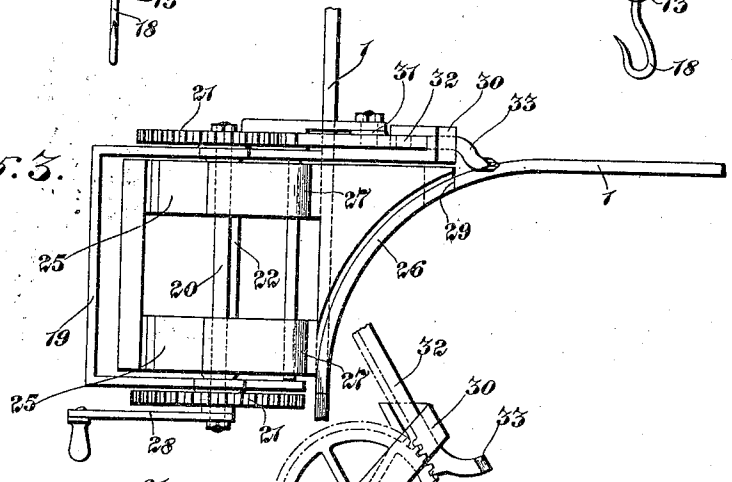
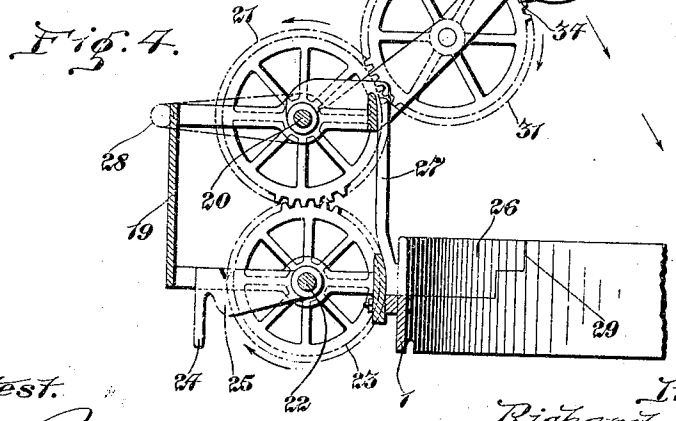


Fig. 4.



Attest.

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UNITED STATES PATENT OFFICE.

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OVERHEAD ROLLER CONVEYER SYSTEM.

1,327,290. Specification of Letters Patent. **Patented Jan. 6, 1920.**

Application filed May 5, 1919. Serial No. 294,960.

To all whom it may concern:

Be it known that I, RICHARD OEHLER, a citizen of the United States, residing at the city of St. Louis and State of Missouri, have invented a new and useful Overhead Roller Conveyer System, of which the following is a specification.

This invention relates to improvements in overhead roller conveyer systems, and consists in the novel construction hereinafter described.

An object of the invention is to provide a conveyer system including rails, with improved means for supporting the same, together with a safety roller-conveying element, the rail system being arranged with an improved switch device, and a safety stop preventing the conveyer element from being accidentally derailed.

Another object of the invention is to improve the conveyer element so as to prevent the same from being derailed when it is moved upon the rail system.

Another object of the invention is to provide an overhead conveyer system, particularly adapted for the conveyance of meats in large packing houses, so arranged that there will be no danger of the derailment of the conveyer element, preventing the dropping of the meat or other object conveyed to the floor. Heretofore in many of the conveyer systems utilized in large packing houses there has been a troublesome tendency to derail particlularly when a large number of the conveyers are assembled on the rail system. In many instances the derailment of the conveyer devices has caused substantial loss by injury to the meat by dropping it to the floor, and also many accidents have resulted by the heavy weight carried by the conveyer devices dropping upon employees engaged in moving the conveyer devices on the rail system.

A general object of the invention is to so improve the roller conveyer systems as to prevent accidents of the kind mentioned and to insure the safe transportation of the meat or other objects carried by the conveyer from point to point in large packing house industry, or for similar work.

The specific features of the invention will be readily apprehended from the following detailed description thereof taken in connection with the accompanying drawings, in which

Figure 1 is a side view of a fragment of the rail system showing the roller conveyer in position thereon.

Fig. 2 is a transverse section through the same elements of the system.

Fig. 3 is a top plan of the switch mechanism of the rail system.

Fig. 4 is a vertical section through the switch mechanism of the rail system.

In the embodiment of the invention illustrated in the drawing the rail 1 is supported by a plurality of straps 2 which have an over-turned flange 3 at their upper end whereby they may be bolted to overhanging beams 4 in the building construction, the bolts 5 passing through the beams from top to bottom and through openings in the flanges 3 of the straps 2. The lower ends of the straps are deflected at 6 so that a space for the passage of the upper roller between the rail and the strap is provided. Below the inclined deflected section 6 of the strap is a vertical section 7 which parallels the main portion 2 of the strap. At the extremity of the section 7 is an upwardly deflected portion 8 which constitutes a hook for engagement with the rail. The rail 1 at suitable intervals is provided with slots 9 therethrough into which the hooked portion 8 of the straps engage. Above the hook and slot connection 8—9, between the strap and the rail, are securing bolts 10 which pass through registering holes in the rail and the section 7 of the strap. This double connection between the strap and the rail is provided so that should the bolts 10 become loose by the vibration of the heavy weights conveyed over the rails, the rails will still be suspended in position by the hook and slot connection 8—9.

The conveyer element that is mounted to ride upon the rail comprises a strap member 11 which has U-shaped extremities 12 and 13 at each end thereof. Within the arms of the U-shaped extremities 12 and 13 there are revolubly mounted rollers 14 and 15, said rollers being mounted upon bolts 16 and 17 supported by the arms 12 and 13 respectively, of the U-shaped extremities. The rollers 14 and 15 are grooved and are arranged in their support so that the interval between the two rollers is the exact width of the rail.

It will be observed that, when the conveyer device is assembled and mounted upon the rail, it will be impossible for the same to be derailed and that the conveyer device will

be held in a vertical position, and that lateral motion or swinging from side to side will be prevented. Any suitable form of engaging device which I have illustrated in the drawing in the form of a hook 18, may be attached to the lower extremity of the conveyer device.

In Figs. 3 and 4 I have illustrated a preferred form of switch mechanism to be installed in the rail system. This device comprises a frame 19 in the upper part of which is a shaft 20 which carries at either end and outside of the side members of the frame, a pair of gear wheels 21. In vertical alinement with the shaft 20 and in the lower part of the frame is a second shaft 22 running parallel with the shaft 20. This shaft 22 also carries in the same relative position a pair of gear wheels 23. Within the frame is a rail section 24 which is supported by arms 25, the arms 25 being rigid with the shaft 22. The rail section 24 has a straight section running parallel with the front of the frame 19. Another rail section 26 is supported by angular arms 27 which are rigid with the shaft 20. The gears 21 and 22 are arranged to mesh in pair so that when power is applied for instance, as illustrated, to the shaft 20 by a hand lever 28 and the shaft is thereby rotated, the two rail sections 24 and 26 will be moved to change their relative positions. That is to say, the section 26 will be raised out of position in contact with the side rail section and the section 24 will be brought in alinement with the main rail section. It is obvious that instead of operating the switch manually by the lever 28 any suitable form of power device may be applied thereto such, for instance, as an electric motor or other form of power mechanism.

In the construction of the rail system the main rail and side rail may be placed in any desired relative adjustment and the sections included in the switch mechanism formed to complete the rail. I prefer to cut out the main rail and side rail in a stepped formation as illustrated at 29 in Fig. 4, so as to improve the connection between the switch section and the rails. In Figs. 3 and 4 the side rail connection of the switch is shown in position to switch the conveyer device from another section of the main rail to the side rail. When the position of the switch is reversed the sections of the main rail obviously will be brought into position so that the conveyer devices will pass over the switch mechanism from one section of the main rail to the other. When the switch section from the side rail is up it is necessary, in order to insure the safety of the rail system, to provide a stop to prevent the conveyer devices from being derailed at the end of the side rail section. This stop device includes a support 30 upon which is journaled a gear 31 which meshes with one of the pair of gears 21. A stop member in the form of a bar 32 having a projection 33 at one end and a rack 34 on its inner face is so arranged that it will be moved downwardly when the switch mechanism is operated to raise the side rail switch section so that the projection 33 will be brought into contact with the side rail near the end thereof. This stop device being geared to operate with the general switch assembly, will be raised upwardly when the side rail switch section is dropped into position, the raised position being illustrated in Figs. 3 and 4 of the drawing.

I am aware that the invention may be modified in numerous details of construction without departure from the spirit and scope of the invention. I do not limit myself therefore to the exact construction shown and described, but what I claim and desire to secure by Letters Patent, is:—

1. In an overhead conveyer system; a rail; straps adapted to be supported by the building construction and having a hook and slot connection at intervals with the rail and being bolted thereto; a conveyer device mounted to move on said rail; and means in said conveyer device to prevent the derailment thereof from said rail.

2. In an overhead conveyer system, a rail having slots therein, supports for suspending the rail, projections extending obliquely upwardly from said supports into said slots, elements binding the rail against the supports, a strap member extending above and below the rail, and a pair of grooved rollers in connection with the strap member arranged to receive the rail between them.

3. In an overhead conveyer system, a rail, supports for suspending the rail, interlocking connections between the rail and the supports for supporting the rail in connection with the supports, elements binding the rail on the interlocking connections, a conveyer device arranged to operate on said rail.

4. In an overhead conveyer system, a rail having slots for suspending the rail, projections extending obliquely upwardly from the supports into said slots for supporting the rail in connection with said supports, and removable elements preventing said rail from becoming disconnected from said projections.

RICHARD OEHLER.