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Genname

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[54] **PACKING PLANT CONVEYOR TROLLEY**

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[52] **U.S. Cl.** **198/177,** 17/44.3, 105/150

[51] **Int. Cl.** **B65g 17/20**

[58] **Field of Search** ..... 294/79, 80; 17/24, 17/44, 44.2, 44.3; 105/150; 198/177 R, 177 T; 248/304

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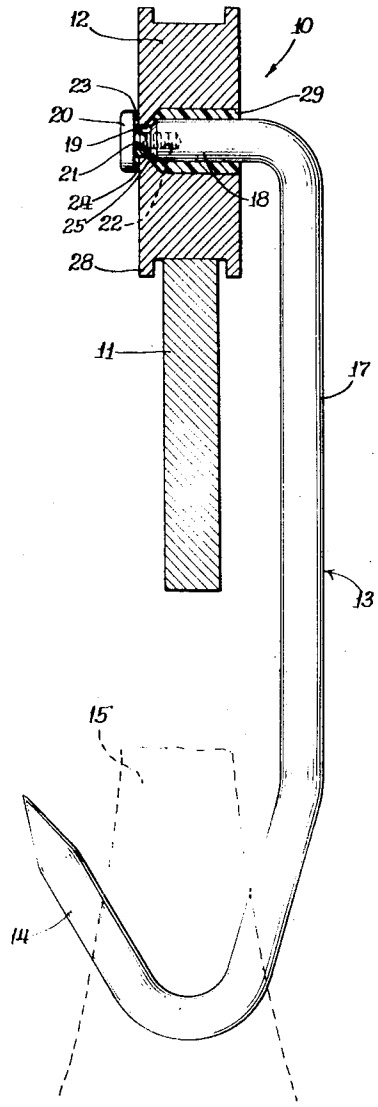
[57] **ABSTRACT**

The trolley hanger is formed from a cylindrical bar, the upper end of which is bent at right angles to form the axle for the trolley wheel. At the distal end of this axle is a button threadably connected to the remainder of the axle. The distal end of the axle immediately adjacent the button defines a groove. The wheel has an inwardly extending flange which projects into this groove to thereby position the wheel longitudinally of the axle. The bar is stainless steel and the wheel is an iron casting. In an alternative embodiment a supplemental member extends from the hanger at the proximal end of the axle up and over the top of the wheel to engage power driven conveyor pushers.

5 Claims, 2 Drawing Figures



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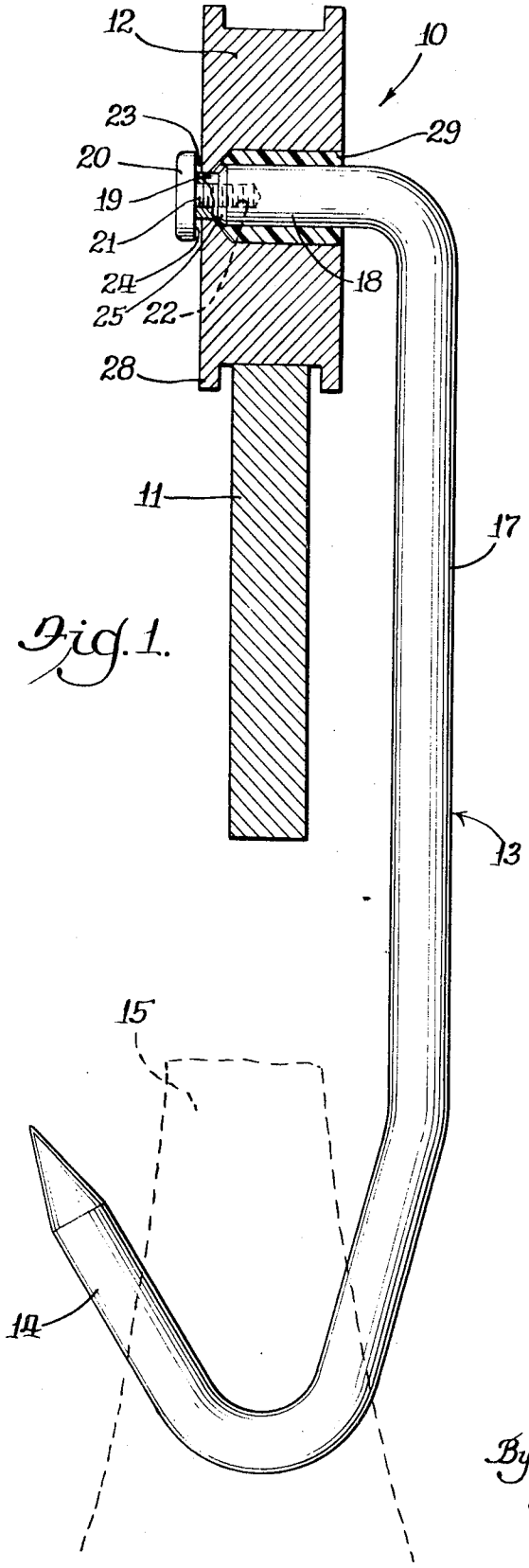

Fig. 1.

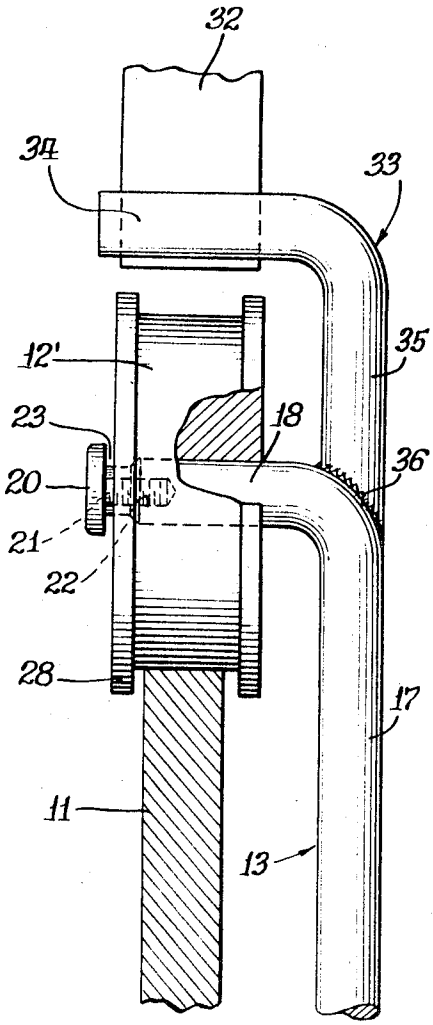

Fig. 2.

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PACKING PLANT CONVEYOR TROLLEY

SUMMARY OF THE INVENTION

The present invention relates to a simplified trolley for packing plant conveyors.

Meat packing plants employ an extensive amount of overhead conveyor apparatus on which carcasses (or portions thereof) are suspended and moved about the plant during processing operations. This apparatus in the main is in the form of a rail on which are suspended a plurality of trolleys. The lower portions of the trolleys have configurations suitable for engaging the carcasses or portions thereof. These trolleys take a great deal of abuse, both on and off the rail. They must be cleaned regularly. They cannot be lubricated to an extent such that the lubricant is likely to drip onto the meat suspended therefrom. Thus, when choosing a particular trolley to buy, the packing plant operator must select one that can easily be kept sanitary and yet which will have a long service life under the adverse conditions present. And, price is always a factor because of the large quantity required. The principal object of the present invention is to provide a trolley which will better meet these requirements than is the case with respect to the trolleys conventionally employed.

Another problem with which the packing plant operator is becoming increasingly concerned is the matter of exact weight. It is a relatively common practice to weigh the cut of meat while it is hanging on the trolley. That is, a section of the rail on which the trolley runs forms a part of a scale for performing this weighing operation. The total weight recorded is thus the weight of the trolley plus the weight of the meat. Obviously, the weight of the trolley must be subtracted from the total weight to obtain a figure representing the weight of the meat. To perform this operation expeditiously, it is important that all of the trolleys weigh a given amount (within preselected tolerance).

Considering the starting materials (strap iron, etc.) from which the conventional trolleys are fabricated, additional operations are required to cause the trolleys to have a predetermined weight. That is, the starting materials will vary sufficiently in weight per unit of length that two trolleys manufactured from the same lengths of material will vary significantly in weight (significantly to the extent that they are not all within the required weight tolerance). This is not the case with embodiments of the present invention. These embodiments are formed from stock whose weight per unit of length will not vary substantially and it is thereby relatively easy to maintain the finished trolleys to a given weight, within the permissible tolerance.

Further objects and advantages will become apparent from the following description.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a vertical section through an embodiment of the invention; and

FIG. 2 is an elevational view of a portion of a second embodiment.

DESCRIPTION OF SPECIFIC EMBODIMENTS

The following disclosure is offered for public dissemination in return for the grant of a patent. Although it is detailed to ensure adequacy and aid understanding, this is not intended to prejudice that purpose of a patent which is to cover each new inventive concept

therein no matter how others may later disguise it by variations in form or additions or further improvements.

The trolley, generally **10**, rides along a rail **11**. The trolley comprises a wheel **12** rotatably mounted upon a hanger **13**. The lower end of the hanger is bent into the form of a hook **14** for supporting the meat carcass **15**. Various other forms of supporting elements, other than hook **14**, are conventional in the industry and can be employed as a part of embodiments of the present invention. The weight carrying portion (e.g. the center of hook **14**) should be centered under the wheel **12**.

The hanger **13** is formed from a five-eighths inch diameter stainless steel bar. The upper end of the bar is bent at right angles to the adjacent portion **17** to define an axle **18**. At the distal end **19** the axle is reduced to a one-half inch diameter. A button **20** is releasably affixed to the distal end of the axle. To this end the button has a threaded stud **21** which is received in a threaded opening **22** in the axle. This construction thereby forms a groove **23** adjacent the distal end of the axle with an abutment **24** at one side of the groove and defined by a part of the button and an abutment **25** at the other side of the groove and defined by the axle **18**.

The wheel **12** has an inwardly extending annular flange **28** which is received in groove **23**. This holds the wheel in a given position longitudinally of axle **18**. This arrangement minimizes pockets likely to hold contamination and difficult to clean. Furthermore, it aids in protecting the running surfaces. The wheel has a bearing insert **29**. While this might be one of a variety of bearing materials, the purposes of the invention are best served if it is of a plastic, e.g. nylon, Teflon, etc. In the usual embodiment in which the axle **18** is of stainless steel and the wheel **12** is of cast iron, a bearing insert, such as **29**, can be eliminated. Such a construction is illustrated in FIG. **2**.

Some packing house conveyors of this type are power driven. They employ an overhead chain or cable (not shown) which is power driven and has a plurality of pushers **32** suspended therefrom to engage the trolleys and move them along the rail. For use with this type of equipment, the embodiments of the present invention have a supplemental stainless steel member **33** affixed thereto. Member **33** has an upper horizontal portion **34** which extends across the top of the wheel and a vertical portion **35** which has its proximal end welded to a hanger **13**, as indicated at **36**. The wheel **12'** illustrated in FIG. **2** corresponds to the structure described in connection with FIG. **1** except that it does not include a bearing insert. The cast iron wheel itself forms the journal for the axle **18**.

It will be noted that this is a very simple arrangement to construct. The raw bars from which the hangers **13** are manufactured are relatively constant in weight per unit of length. It is not very difficult to maintain the weight of the cast wheels rather constant. From the standpoint of sanitation, it is a relatively "clean" arrangement that is simple to thoroughly wash. The manufacturing operations necessary to its production are simple and not unduly expensive.

I claim:

1. In a conveyor apparatus for a meat packing plant comprising a plurality of conveyors movable along a rail wherein each conveyor includes a hanger, a shaft attached to the hanger and a wheel rotatably mounted on the shaft, the improvement comprising:

said hanger having a portion immediately adjacent said shaft, said portion being a rod and being integral with said shaft with the distal end of the shaft being free of connection with the hanger other than through the proximal end of the shaft; means on said wheel and shaft for maintaining said wheel in a given position longitudinally of said shaft, said means comprising said shaft having a groove immediately adjacent the distal end of said shaft and thereby defining abutments at each side of said groove, and said wheel having an inwardly extending flange at the corresponding side of the wheel with the flange positioned between said abutments and having an opening through which the grooved part of the shaft extends, whereby the abutments may contact the flange to prevent movement of the flange, and thus the wheel, longitudinally of the shaft; and

means forming a part of the wheel between the flange and the opposite side of the wheel and forming a journal opening to receive that part of the shaft between the groove and the proximal end and provide bearing contact with the last mentioned part of the part of the shaft, said journal opening being substantially larger than said flange opening.

2. In a conveyor apparatus as set forth in claim **1**, wherein the shaft includes a button at the distal end of the shaft which button defines the abutment furthest from the proximal end of the shaft, means releasably affixing said button to the remainder of said shaft.

3. In a conveyor apparatus as set forth in claim **1**, wherein said integral shaft and hanger portion are a stainless steel bar, and said wheel is an iron casting.

4. In a conveyor apparatus as set forth in claim **2**, wherein the last mentioned means includes a bearing insert between said wheel and said shaft, said insert being plastic.

5. In a conveyor apparatus as set forth in claim **1**, including a member attached to said portion and extending upward therefrom and across the top of the wheel, said member being free at its distal end.

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