

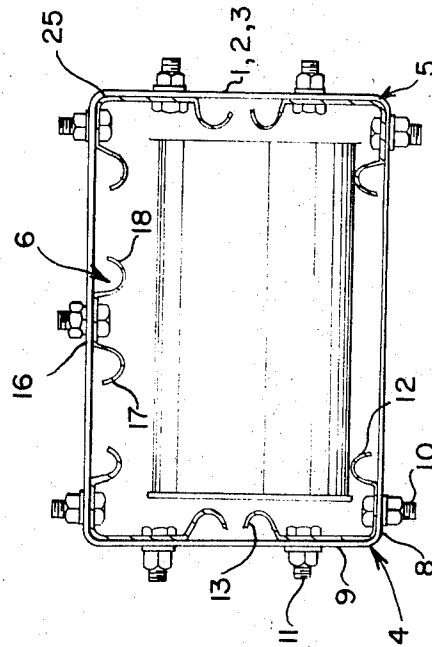
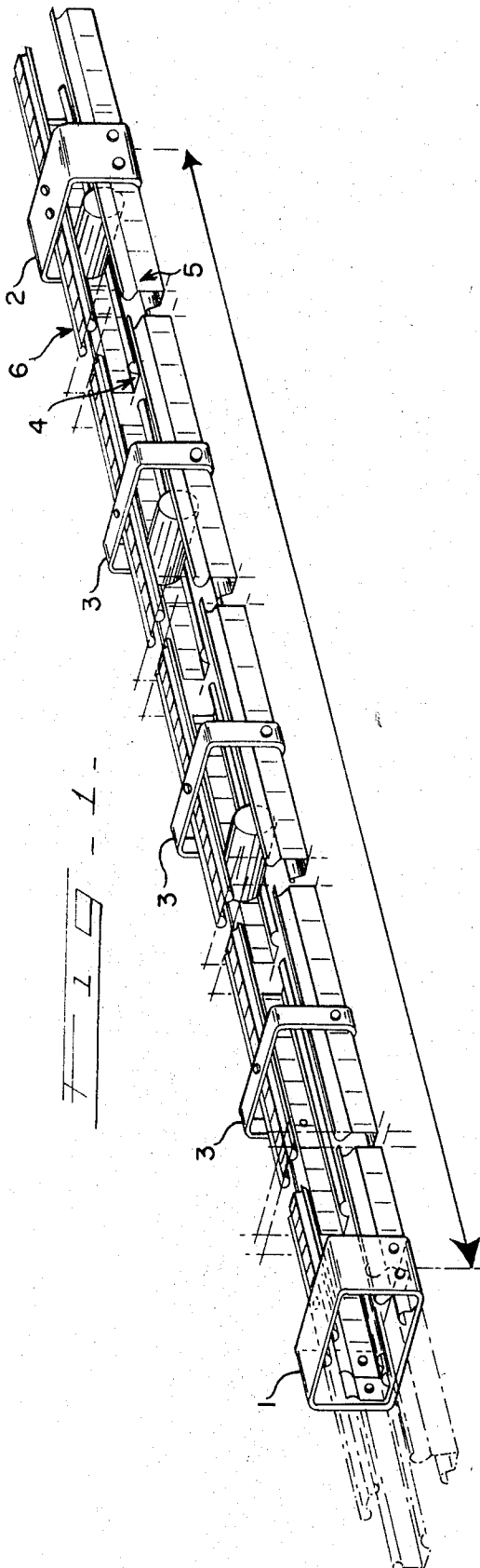
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FRAMES FOR ROLLER CHUTES

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FRAMES FOR ROLLER CHUTES

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4 Claims

ABSTRACT OF THE DISCLOSURE

A roller chute for rolling elements having frames spaced intermittently along it and rolling and guiding rails of a certain shape made of stainless-steel and attached to the frames.

My invention relates to handling chutes used for the passage of cylindrical articles from one location to another through the force of gravity, and especially to chutes for cans which serve for the packaging of goods.

Ordinarily, chutes of this type are assembled from frames and guide rails. These guide rails are usually made of round bars or some other heavy cross-section of ordinary steel material. Rails of this type have the disadvantage that when they are assembled particular care is necessary to avoid blockage of the chute due to breakage or because fastening elements (for example, nuts, bolts, rivets) protrude into the chute. After a chute assembled of ordinary steel has been in disuse for some time the rails rust and later when the chute is back in use and cans pass down over the corroded rails the cans are discolored by contact with the rails and present an unsightly appearance.

An object of the present invention is to make a chute overcoming the objections set forth above.

In brief, my invention comprises the improvement that the longitudinal rails are made of stainless-steel or other non-corrosive material in thin sections. The cross-section of each rail has at least one flat part for attachment on one side to the adjacent frame and a wing the flat side protrudes toward the inside of the frame so that the cans or similar objects roll upon the surface of the wings or are guided by them.

Other objects of the invention are more particularly set forth in the following detailed description and accompanying drawings in which:

FIG. 1 shows a perspective view of a handling chute according to my invention.

FIG. 2 shows a cross-sectional view of my invention.

An embodiment of my invention is shown and represented in FIG. 1. The channel or chute is assembled and constructed as shown in FIG. 1 and each of the channels or chutes is made up of rails of a predetermined length of about 8 feet. These rails are attached to frames, for example, end frames 1 and 2, and also attached to the rails are intermediate frames 3 of lighter construction than the end frames.

Looking now at the cross-section of FIG. 1 shown in FIG. 2, frames 1, 2, 3 each have essentially the same cross-section. Lower rail sections 4 and 5 are shown as an L section. These may be made in one piece or two and are shown in one piece for easy assembly. Each of these double rail sections has a horizontal flat element 8 and a vertical flat element 9 attached to the lower and adjacent lateral sides of the frame by bolts 10 and 11. Each of the flat elements 8 and 9 has at its ends a wing numbered 12 and 13. Each of the wings is in the general shape of a U with sufficient depth so that the upper frame or crest line of the U is sufficiently far into the chute that the can in passing over this crest line does not contact the at-

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tachment bolts 10 and 11. In this way the wings 12 of the lower branches of the elements 4 and 5 form a rolling path or chute for cylindrical articles like the metal can 15 shown in FIG. 2. The wings 13 of the vertical elements similarly define a guiding plane in the lateral direction.

The upper rail element 6 is essentially a flat central core 16 having at both of its sides wing elements 17 and 18 which in part determine the upper limit of travel of the can.

Rails made in this fashion are rigid and are easily attached to the frames. All the heads of the bolts are at a distance outside of the area of passage of the cans, yet are easily accessible. Since the materials are of a non-oxidizing character, for example, stainless-steel, it will not be necessary to polish the rails even if they have not been used for a long time.

As a variant the upper rail 6 may be replaced by two upper rails 24 and 25 which respectively resemble the lower rails 4 and 5. These rails are shown in FIG. 2 by the dot-dash lines. In this case, the central rail 6 is not employed. All the rails are uniform in type and guidance of rolling objects is improved.

Another possible variation is the employment of rail 6 in the middle of each flat section of the frame. However, this construction is the least favorable from the point of view of structural rigidity.

What is claimed is:

1. A chute for the channeling of rolling elements comprising:

frame members spaced along the length of said chute, rail members extending along the length of said chute, attachment means holding said rail members to the inside of said frame members,

said rail members being formed of thin non-corrosive material having the cross-sectional shape of a flat element with an integral wing protruding toward the inside of the chute and the rail and the protruding wing element is in the shape of a U with one leg of said U being bent away from said U and integral with said flat element, and the height of said U is greater than the height of said attachment means whereby said rolling elements roll against and are guided by said wing elements.

2. A chute for the channeling of rolling elements as set forth in claim 1 in which:

the flat side of each rail member is attached along its length to a plurality of frame members.

3. A chute for the channeling of rolling elements as set forth in claim 2, in which:

the flat element of each said rail member is attached to the flat element of another member so as to form a double rail element whereby greater ease of assembly is accomplished.

4. A chute for the channeling of rolling elements as set forth in claim 3 in which:

two said elongated double rail elements are mounted each at a lower corner of said frame elements and one said elongated double rail element is mounted at the center of the upper flat section of said frame whereby rigidity is imparted to said chute.

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