Dec. 11, 1923. 1,477,494

M. R. HUTCHISON

MONORAIL CARRIER

Filed Jan. 23, 1923

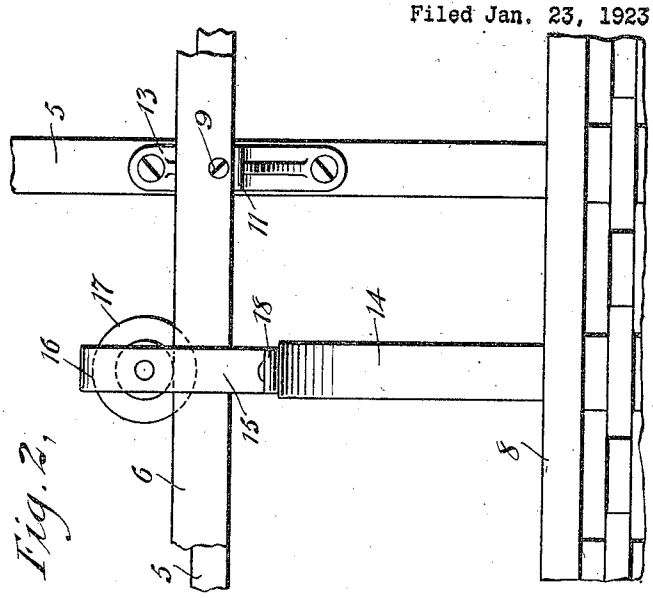


Fig. 2,

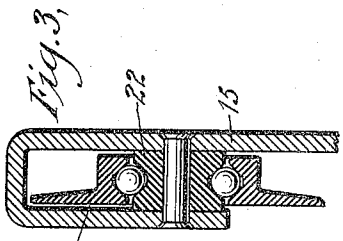


Fig. 3,

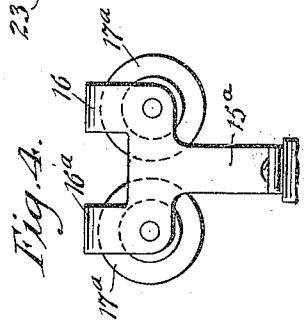


Fig. 4.

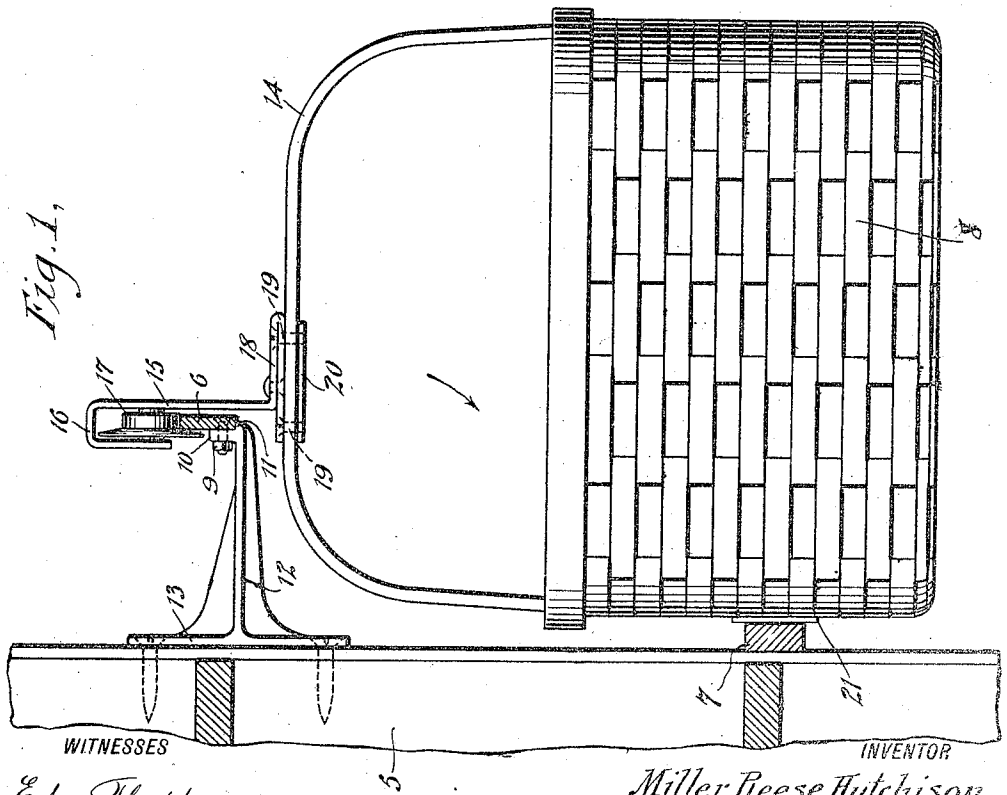


Fig. 1,

WITNESSES

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UNITED STATES PATENT OFFICE.

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MONORAIL CARRIER.

Application filed January 23, 1923. Serial No. 614,468.

To all whom it may concern:

Be it known that I, MILLER REESE HUTCHISON, a citizen of the United States, and a resident of Orange, in the county of Essex and State of New Jersey, have invented a new and Improved Monorail Carrier, of which the following is a full, clear, and exact description.

This invention relates to self-service stores for the merchandising of commodities of different kinds, and has reference more particularly to a store of this kind, in which means are provided for enabling the customer readily and easily to transport, on his way through the store, the merchandise which he has selected to take with him.

The invention particularly relates, as preferably carried out, to a self-service store of the kind just indicated and such as disclosed in my co-pending application Serial No. 566607, June 8th, 1922, wherein the customer is afforded convenient means for aiding him in the transport of the selected merchandise and at the same time predetermining his course through the store. As indicated in my co-pending application just identified, such means may very well be and preferably is a track running adjacent to merchandise holders and predetermining such course, in combination with a receptor for the selected merchandise adapted to travel along the track with the customer while he is covering such course.

The particular object of the invention is to provide a track and carrier system of a new and improved type, particularly characterized by an ease of installation, inexpensiveness of construction, ready detachability of the carrier relative to the track system, ease of manual portability of the carrier when thus detached, and as to the last-mentioned particular, exceeding light weight for the carrier and yet the incorporation of means for at once engaging a light weight portion of the carrier, for the purpose of better positioning the same while on the track and for facilitating movement of the same along the track, and yet adapted to preclude undue wear of said light portion of the carrier.

Another object of the invention is to provide a device to form a part of the carrier and to facilitate engagement of the carrier with and disengagement of the same from the track system, yet with such device of an antifriction character and including in addition to the rolling element or elements, a mounting for the latter of sturdy and reliable construction and yet of light weight and inconsiderable cost. In this connection, preferably the mounting includes a fixture formed of a unitary variously bent length of strip material.

Another object of the invention is to provide a very satisfactory and yet inexpensive type of track.

A further object of the invention is to provide a supporting hanger or the like, for a track length, inexpensive to manufacture, easy to be installed in the store, having very few surfaces to be machined, and so shaped as to permit quick and proper mounting of a track length thereon by simple and familiar attaching means and yet in such a way as to avoid placing much, if any, strain on such attaching means.

With these and other objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a view partially in vertical section as to the track system, this view showing a carrier on the track, such carrier being shown in end elevation;

Fig. 2 is a fragmentary view showing certain of the parts of Figure 1 in side elevation;

Fig. 3 is a vertical section taken through the upper part of the roller mounting fixture, showing a modification in which the roller is to a greater extent an antifriction element; and

Fig. 4 is still a further modification showing the fixture carrying at its upper end a plurality of rollers.

Before proceeding to a more detailed explanation of my invention, it should be understood that my self-service store may be used for the merchandising of any desired commodities; and while of the type of store particularly adapted for so-called "chain store systems" it may also be used as an individual or single store.

In establishments of this kind the merchandise is arranged on display in suitable

merchandise holders or containers, as on shelves or the like, so that the customer who enters passes through the store and selects from these holders the goods which he desires to purchase. As in my said co-pending application, Serial No. 566,607, the customer on entering the store is furnished with a carrier for the merchandise he is to select, and this carrier is adapted to be supported on a monorail track for travel along this track, thereby to direct and predetermine the course of the customer through the establishment so that he is guided past practically all the merchandise on display.

Referring more particularly to the drawings, one of such merchandise holders or containers is indicated at 5.

The track system of the present invention comprises a plurality of tracks 6 and 7.

Track 6 which is the main or suspending track for the carrier 8, is desirably of the rectangular cross section shown in Figure 6, and is bolted, as indicated at 9, or otherwise attached, to a terminal lug 10 (above a ledge 11 below the top of the lug) formed at the outer or free end of a horizontally offset extension 12 from a base 13 adapted to be screwed or otherwise attached to a suitable support, as the shelf fixture 5. It will be noted that track 6 is of the most economical construction, is mounted in place by simple and familiar attaching means, and such attaching means is saved much strain by virtue of the presence of ledge 11. It will also be noted that the hanger for the track including the parts just listed is a single casting having few if any surfaces to machine.

Carrier 8 is provided with a transverse bail 14, and below such bail is an open topped container or carrier proper. The carrier is preferably an ordinary basket, wherein the carrier proper is of very light weight, preferably reticulate, as indicated.

Bail 14 constitutes a manually engageable suspending handle when the carrier is not on track 6, as in the case of the ordinary basket handle.

This bail or handle 14, however, carries, but to one side of the center of bulk of the carrier, a fixture 15 at a high point on the bail to extend above the same. At its upper portion, this fixture is formed as a yoke 16 in which is horizontally journaled a grooved or flanged roller 17. Fixture and roller thus constitute a hook-over device on the carrier, for track 6.

In the present case it will be noted that fixture 15 is formed of a unitary length of strip material and includes a base 18 comprising a plurality of plies of such material. This gives the requisite strength at the base of the fixture and yet keeps weight down to the minimum. In order to further rigidify the bail where the fixture is secured thereto by screws 19, or the other simple securing means employed, a strip element 20 is incorporated and engaged by said securing means as illustrated.

The purpose of the centrally offset location of fixture 15 on bail 14 will be appreciated when it is remembered that as the carrier 8 progresses along track 6 in the store, the weight of the merchandise contents of the carrier is continually being augmented; and by virtue of such offset construction, the carrier is given a tendency to swing as indicated by the arrow of Figure 1. This prevents all looseness and accidental side sway; in view of the provision of the auxiliary track 7. Track 7 extends parallel with track 6 preferably throughout the length of the latter, and track 7 along its entire length presents a smooth anti-friction surface against which the inner side of the carrier proper travels.

In order to maintain the light weight construction above described for the last mentioned part of the carrier 8, and yet without subjecting the necessarily rather fragile wall of the carrier to wear, the exterior of the side of the basket last mentioned carries a wear plate, desirably of metal like track 7, as indicated at 21.

Referring now particularly to Figure 3, fixture 15 at its yoke portion has riveted therebetween a spool 22 constituting the inner race of a ball bearing, the outer race of which is constituted by a flanged ring 23 and forming the roller.

Referring to Figure 4, a fixture 15^a is shown which carries at its upper end a plurality of yoke portions 16^a. In each of these yoke portions is revolubly mounted a suitable roller 17^a, both for engaging track 6 pursuant to the invention.

I claim:

1. In a self-service store including display merchandise holders, the combination of a monorail track extending in the vicinity of said holders, and a carrier detachably carried by the track and adapted to be propelled along the same, said carrier being a container having a manually engageable suspension handle, said handle carrying at one side of the center of bulk of the carrier a hook-over element to engage the track.

2. In a self-service store including display merchandise holders, the combination of a track extending in the vicinity of said holders, and a carrier detachably carried by the track and adapted to be propelled along the same, said carrier being a container having a manually engageable suspension handle, said handle carrying at a point removed from the midpoint thereof a roller for detachable engagement with the track to suspend the container.

3. The track and carrier system defined

in claim 2, wherein said handle is a transverse bail and said roller is mounted on the top of the bail.

4. The track and carrier system defined in claim 1, wherein there is provided an auxiliary rail substantially paralleling the first rail but below the same for participating in holding the carrier predeterminately suspended from the first-mentioned rail.

5. The track and carrier system defined in claim 1, wherein there is provided an auxiliary rail substantially paralleling the first rail but below the same, and horizontally displaced from the first-mentioned rail, for engaging a side of the carrier below the bail.

6. The track and carrier system defined in claim 1, wherein there is provided an auxiliary rail substantially paralleling the first rail but below the same, and horizontally displaced from the first-mentioned rail for engaging a side of the carrier below the bail, the latter portion of the carrier being of comparatively light material to decrease weight, and there being provided on the exterior of said portion of the carrier a wear member for directly engaging the second-mentioned rail.

7. The track and carrier system defined in claim 2, wherein there is provided a journalling fixture for the roller comprising a base and a standard, said standard at its upper end defining an inverted U, said fixture being formed of a unitary member.

8. The track and carrier system defined in claim 2, wherein there is provided a journalling fixture for the roller comprising a base and a standard, said standard at its upper end defining an inverted U, said fixture being formed of a unitary length of strip material.

9. The track and carrier system defined in claim 2, wherein there is provided a journalling fixture for the roller comprising a base and a standard, said standard at its upper end defining an inverted U, said fixture being formed of a unitary length of strip material, the base of the fixture including a plurality of plies of the length.

10. In a self-service store including display merchandise holders, the combination of a track extending in the vicinity of said holders, and a carrier detachably carried by the track and adapted to be propelled along the same, said carrier being a container having a manually engageable suspension handle, said handle being a transverse bail, and said carrier also having a track-engaging hook-over structure, said structure including a grooved wheel and a fixture journalling the same on substantially a horizontal axis and mounted on a high point of the bail to extend above the same.

11. The track and carrier system defined in claim 10, wherein said fixture includes a base comprising an integral strip portion offset from the remainder of the fixture and laid against one side of the bail, there being a strip member located on the opposite side of the bail, and securing elements for mounting the fixture on the bail, said elements also engaging said strip member.

12. The track and carrier system defined in claim 1, wherein said track is substantially rectangular in cross-section and there are provided a plurality of hangers therefor, each hanger including a base, and a substantially horizontal offset extension, said extension at its free end carrying an upstanding lug for engaging a side of the track, said lug having below its top a ledge for sustaining the lower edge of the track.

13. In a self-service store including display merchandise holders, the combination of a track extending in the vicinity of said holders, and a carrier detachably carried by the track and adapted to be propelled along the same, said carrier being a container having a manually engageable handle, said container also having a hook-over device to engage said track, there being further provided an auxiliary track horizontally and vertically offset from the first track for coacting with said first track in predeterminedly suspending the carrier during travel thereof.

14. The track and carrier system defined in claim 13, wherein the last-mentioned track engages continuously a part of the carrier below said handle, said part being a wear plate for directly engaging said track, the carrier in back of and in the vicinity of said plate including a wall of lightweight comparatively fragile construction.

MILLER REESE HUTCHISON.