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TRAVELING DISPLAY APPARATUS FOR STORES

Filed Oct. 27, 1938

2 Sheets-Sheet 1

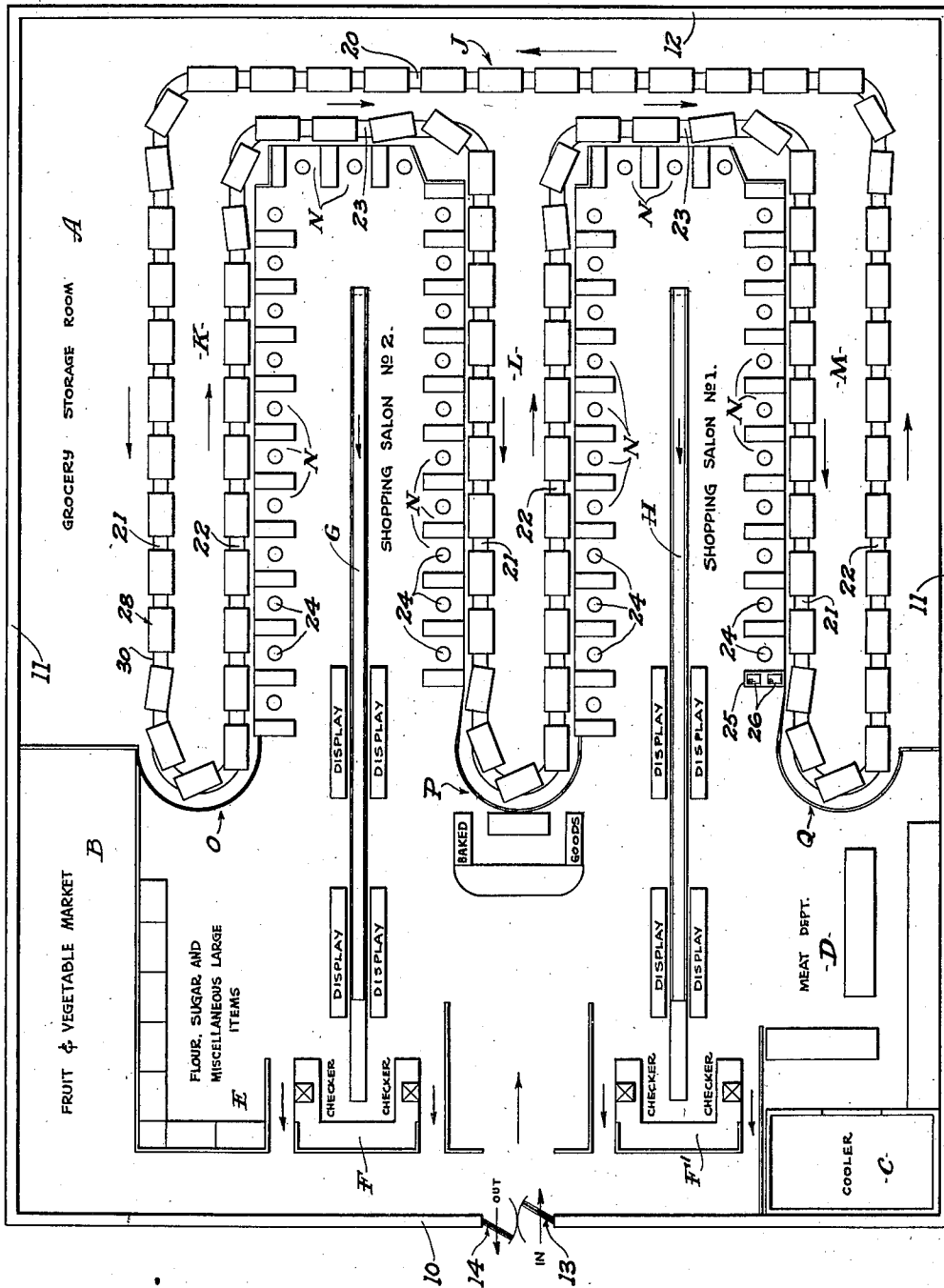


Fig. 1.

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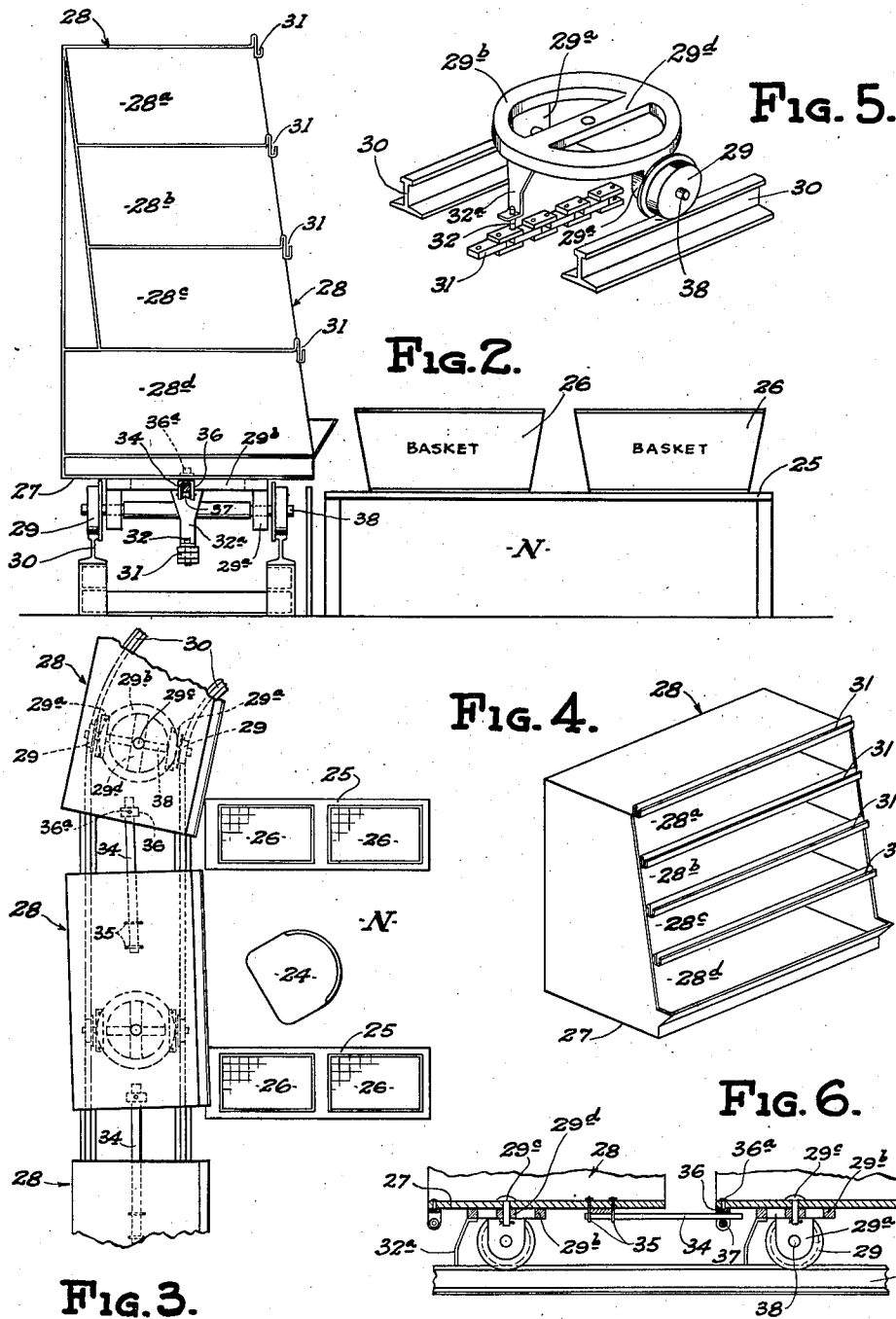
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TRAVELING DISPLAY APPARATUS FOR STORES

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8 Claims. (Cl. 186—1)

This invention relates to stores and more particularly to stores which are provided with an apparatus for enabling customers conveniently to inspect and make selections from merchandise on display. It is the general purpose and object of the invention to provide a store of this character with an apparatus or system so arranged as to enable the customers to serve themselves from merchandise which is being conveyed past the places or stations occupied by them; also to enable the articles selected by the purchasers to be conveyed to a suitable checking station, whereby it will be unnecessary for the customers to inspect and select articles by walking through one or more long aisles and to carry the articles thus selected to the approximate checking station.

Further and more limited objects of the invention will appear hereinafter and will be realized in and through the construction and arrangement of the parts shown in the drawings hereof wherein Fig. 1 represents a diagrammatic plan view of a store embodying my invention; Fig. 2 a detail in section through the conveyor and a station adjacent thereto; Fig. 3 a detail in plan of a portion of the conveyor and a customer's station; Fig. 4 a detail in perspective of one of the cabinets with which the conveyor is provided; Fig. 5 a detail in perspective showing the manner of mounting the axles and wheels of the trucks and the means for driving the trucks; and Fig. 6 a detail in section showing the manner of connecting adjacent ends of trucks.

Describing the various parts of the drawings by reference characters, 10 denotes a front partition, which may be a railing, 11 the side walls and 12 the rear walls of a store room. Adjacent to one of the side walls 11 and shown as extending forwardly therealong from the rear wall is a storage room A in which articles to be placed upon the display cabinets are kept. Adjacent to the front of the store, there are shown a fruit and vegetable market B and a cooler C for a meat department D. A space for other articles which are of such nature as not to be adapted to be placed upon the cabinets is indicated at E. In the front partition is an entrance 13 and an exit 14.

In the installation shown herein, two checkers' stations are shown at F and F', arranged adjacent to and on opposite sides of the exit. Endless conveyors G, H, lead from the rear portion of the store to a point convenient of access to the checkers at each of the stations F and F' respectively.

J denotes generally an endless conveyor having a stretch 20 extending adjacent to the rear wall 12 and having forwardly extending loops comprising substantially parallel stretches 21, 22, three such loops being shown, the loops being connected by stretches 23 shown as extending substantially parallel with the stretch 20. By the construction thus far described, three forwardly extending loops K, L and M are provided, but it will be evident that the number and length of such loops will vary in accordance with the dimensions of the store room in which my system is installed.

N denotes generally series of inspection stations which are shown as located adjacent to the stretches 21 and 22 of the outermost loops K and M and adjacent to both stretches 21 and 22 of the central loop L and adjacent to both stretches 23. Each of these inspection stations comprises a seat 24 and a shelf 25 located adjacent to the seat and supporting baskets or other suitable containers 26 within which the customers may place the articles which they remove from the cabinets which are carried past them by the conveyor.

The conveyor is shown in detail in Figs. 2 and 3 and comprises a series of small trucks each having a floor 27 for the support of a cabinet 28, each of said trucks being shown as provided with wheels 29 mounted on rails 30, the rails determining the path which the conveyor trucks shall follow. These trucks are shown as driven by an endless chain 31 which is connected in any suitable manner to each truck, as by elongating certain of the pivot pins 32 which connect the blocks and side members of the links whereby the upper ends of these pins may be received within and anchored to posts 32^a depending from the trucks and preferably carried by the castings 29^b. The chain in turn will be driven from any source of power (not shown). Each cabinet has a base which is preferably substantially co-extensive with the supporting floor provided therefor on each of the trucks and each is provided with a plurality of compartments 28^a, 28^b, 28^c and 28^d in which the articles are displayed for the inspection of the customers, each compartment being provided with means, as indicated at 31, for supporting a card bearing the price or prices of the articles therein.

In order to conserve space, it is important that a minimum space will be required for reversing the direction of the stretches comprising the loops. The construction by which I accomplish

this result in the particular installation shown herein will be described in detail hereinafter.

In order to save the customers the task of carrying their basket or other containers from their respective inspection stations to the checker stations, I have provided the conveyors G and H referred to hereinbefore, it being noted that these conveyors are located for convenient access by the customers at all of the inspection stations. When a customer shall have placed in one or more baskets or containers 26 all of the articles desired to be purchased, the baskets or containers may then be placed upon the conveyors G or H whereby they will be carried to the appropriate checker station. The customers can then pay for their purchases at such station in the manner usual in stores of the self-service type.

Reference has been made hereinbefore to the ability of the conveyor shown herein to make short turns at the ends of the loops, whereby economy of space is obtained. I also accomplish this economy as well as economy in the construction of the trucks by providing each truck with a single pair of wheels located adjacent to one end thereof and by supporting the opposite end from the adjacent wheeled end of the truck next adjacent thereto. For convenience of description, the end of each truck adjacent to which the wheels are located will be referred to hereinafter as the "front" end and its opposite end will be referred to as the "rear" end. The means whereby this support is obtained is shown more particularly in Figs. 3 and 6 and comprises a bar 34 having one end secured to and beneath the rear end of each truck and its other end slidably and pivotally connected to and beneath the front end portion of the car next behind.

In Figs. 3 and 6, U-bolts 35 are shown as securing an end of the bar beneath the rear end portion of one of the trucks while the other end of the said bar is slidably supported by and beneath the front of the next truck as by means of a U-shaped yoke 36 which is supported by a swiveled pin 36^a mounted in the floor or other convenient portion of the last mentioned truck, the yoke supporting a roller 37 and the end of the bar 34 being received within the yoke on top of the roller.

As pointed out hereinbefore, the trucks are provided each with a pair of wheels located adjacent to one end thereof. These wheels are mounted on shafts 38 which are journaled in hangers 29^a shown as depending from opposite sides of a casting 29^b which casting is pivotally supported from the floor of the truck, as by means of a vertical pivot pin 29^c extending through an aperture located centrally between the hangers, the said aperture being shown herein as located in the center of a cross bar 29^d carried by the said casting and extending thereacross. The pivot pin may be supported from the floor or other convenient portion of the truck.

By the manner of mounting the wheels and connecting the ends of the trucks, it will be evident, as indicated in Figs. 1 and 3, that the trucks will be enabled to make very short turns where the direction of the stretches of the conveyor is to be reversed as, for instance, at the points O, P and Q.

From the foregoing description, taken with the drawings, it will be evident that I have produced a store and an apparatus to be used therein which will not only enable the customers to in-

spect and select articles without the necessity for walking through long aisles as well as without the necessity for carrying articles which they may purchase to a checker station, but that I have also produced an apparatus or system which is capable of being installed in rooms available for use as stores which may vary greatly in dimensions. While I have shown a conveyor apparatus comprising a plurality of loops, it will be evident that, where the room available for use is narrow, a conveyor using only one or two loops may be employed; also, that when the space available for use as a store is materially wider than that indicated herein, a corresponding increase in the number of conveyor loops may be employed, together with a like increase in the number of inspection stations, checking stations, and conveyors leading to such checking stations.

Having thus described my invention, what I claim is:

1. In an apparatus for the vending of merchandise, a conveyor comprising a plurality of trucks, rails on which said trucks are arranged to travel, the said rails being arranged to form one or more looped projections, trucks adapted to travel on the said rails and each having a pair of wheels having a swiveled connection therewith adjacent to one end thereof, a bar connected to the opposite end of the said truck and slidably connected to the adjacent end of the truck, and a flexible endless driving member connected to one or more of said trucks.

2. In the combination recited in claim 1, the endless driving member being located and supported between the rails.

3. In an apparatus for the vending of merchandise, rails arranged to form one or more extended looped projections, trucks each having a display cabinet thereon and each having a pair of wheels mounted upon the rails, and means connecting the adjacent ends of the said trucks, said means comprising a bar connected to one end of each truck and slidably and pivotally connected to the adjacent end of the next adjacent truck, and means for moving the trucks along the rails provided therefor.

4. In an apparatus for the vending of merchandise, rails arranged to form one or more extended looped projections, trucks each having a display cabinet thereon and each having a pair of wheels adjacent to one end thereof and mounted upon the rails, means connecting the other end of each truck with the wheeled end of a truck adjacent thereto, said means comprising a bar connected to such other end and slidably and pivotally connected to the wheeled end of the truck adjacent thereto, and means for driving the trucks along the said rails.

5. In the combination recited in claim 4, means pivotally supporting each pair of wheels from its respective truck and the means for driving the trucks along the rails comprising a chain located between the rails and means for connecting one or more of said trucks to and for disconnecting the same from the said cable.

6. In an apparatus for the vending of merchandise, a track arranged to form one or more extended looped projections, trucks each having a display cabinet thereon and each mounted to travel along said track, means connecting the adjacent ends of the said trucks, said means comprising a bar connected to one end of each truck and slidably and pivotally connected to the adjacent end of the next adjacent truck, and means for moving the trucks along the track.

7. In an apparatus for the vending of merchandise, rails arranged to form one or more extended looped projections, trucks each having a display cabinet thereon and each having a pair of wheels pivotally supported adjacent to one end thereof and mounted upon the rails, means connecting the other end of each truck with the wheeled end of a truck adjacent thereto, said means comprising a bar connected to such other end and slidably and pivotally connected to

the wheeled end of the truck adjacent thereto, and means for driving the trucks along the said rails.

8. In the combination recited in claim 7, the means for driving the trucks along the rails comprising a cable located between the rails and means for connecting one or more of said trucks to and for disconnecting the same from the said cable.

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