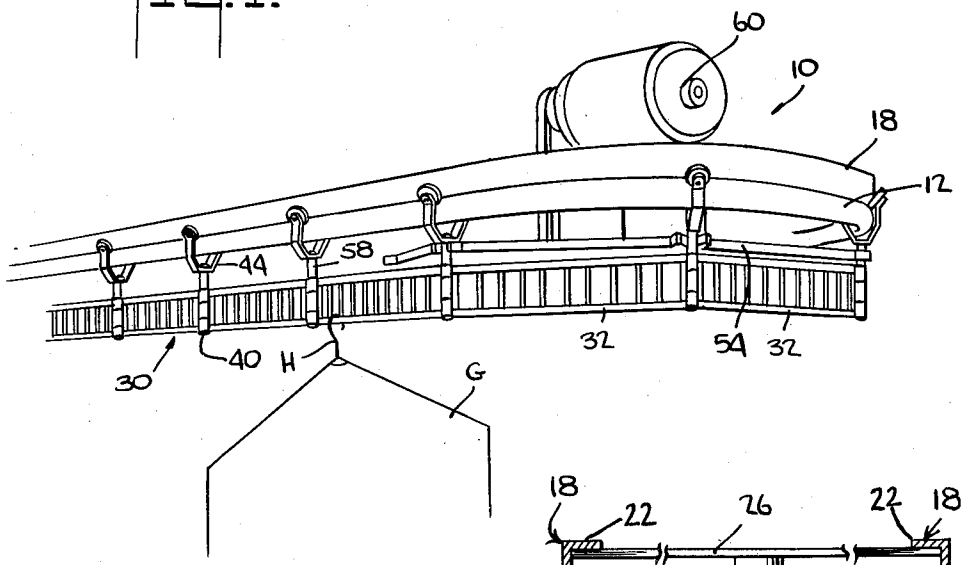
June 19, 1962 A. RUTKOVSKY ETAL 3,039,614

ARTICLE STORING AND DELIVERING APPARATUS

Filed May 17, 1960 2 Sheets-Sheet 1

Fig. 1.



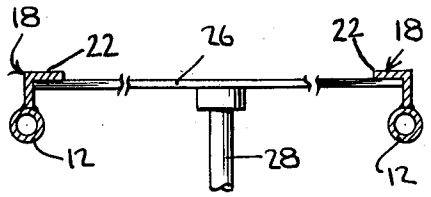


Fig. 4.

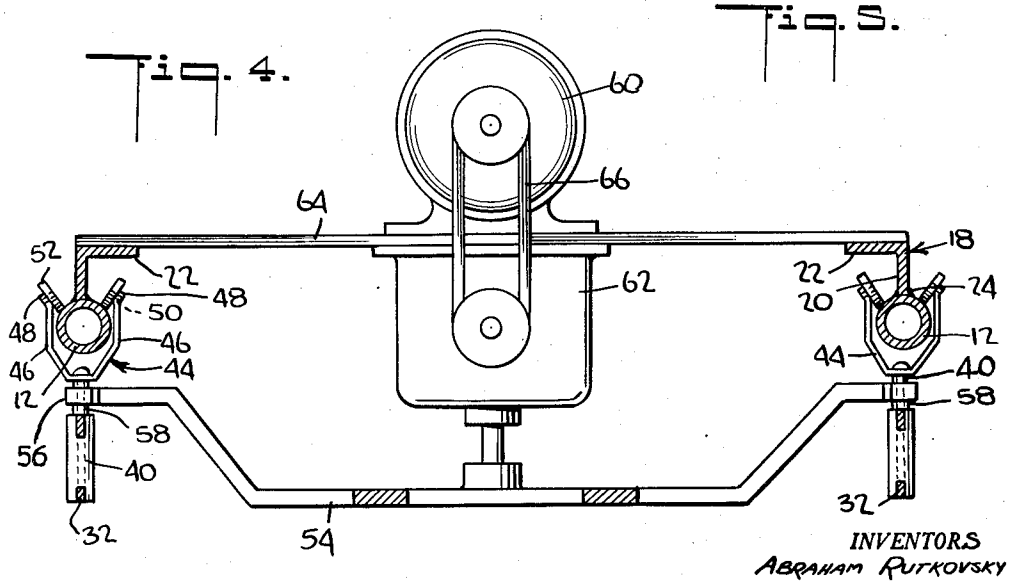


Fig. 5.

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ARTICLE STORING AND DELIVERING APPARATUS

Filed May 17, 1960 2 Sheets-Sheet 2

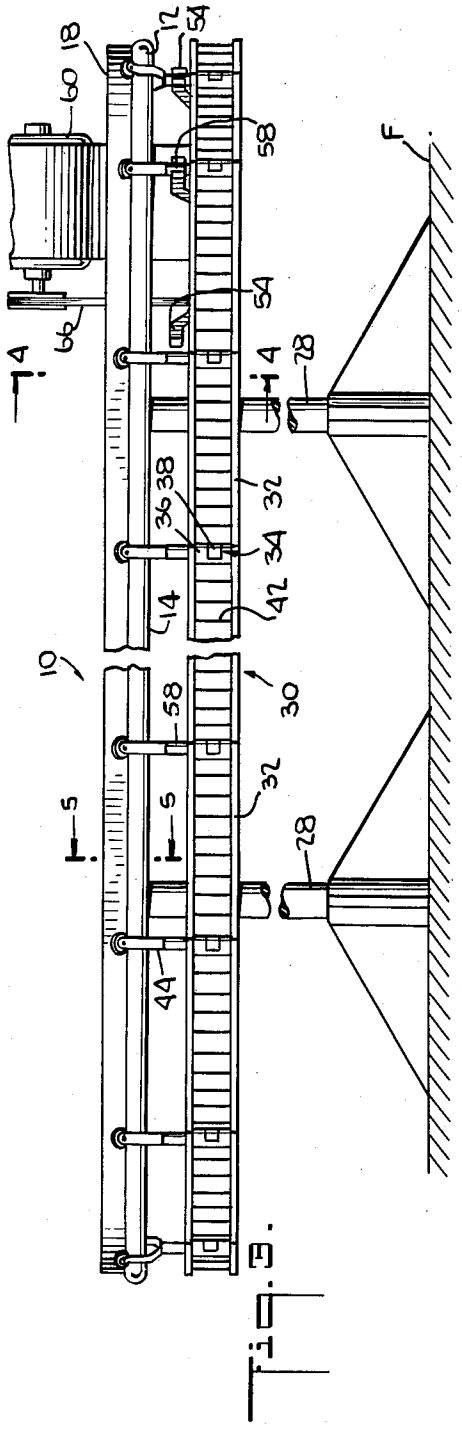


Fig. 1.

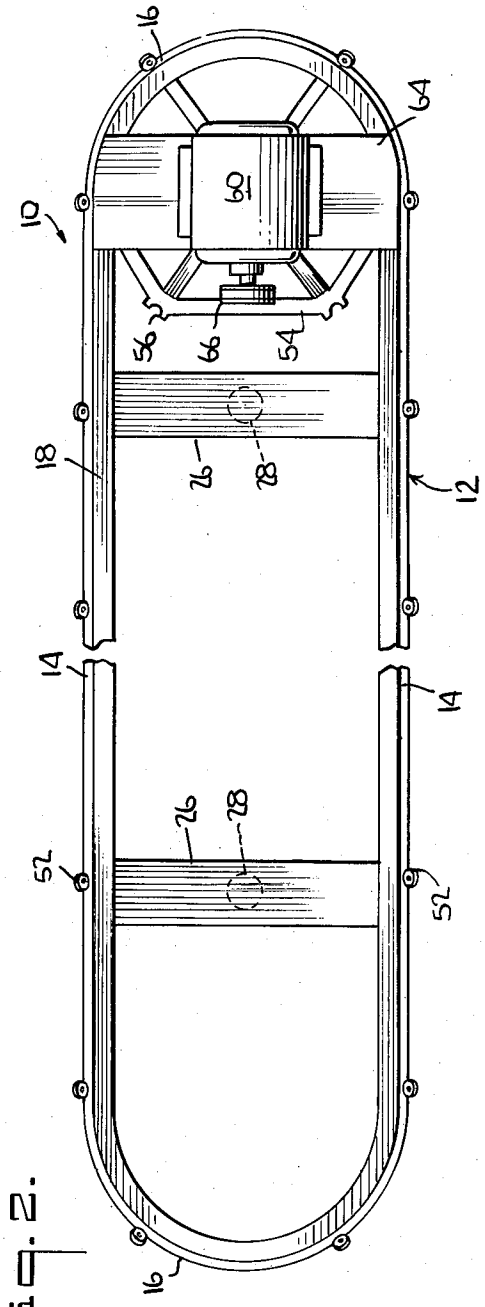


Fig. 2.

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ARTICLE STORING AND DELIVERING APPARATUS

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2 Claims. (Cl. 211—1.5)

This invention relates to article storing and delivering apparatus of the type which includes an endless conveyor rack for storing and delivering garments, shirts or other processed articles where it is necessary to have quick and easy identification and selection of the article.

Heretofore, in apparatus of the type indicated, the conveyor rack for the garment was provided with a series of horizontally spaced trolleys which were mounted for movement on an endless rail. The rail was supported by frame members which were secured to the upper edge of the rail and extended along the straight portions thereof but the curved circular end portions of the rail were not provided with any frame members. Accordingly, if a person's hand or other object were placed on the curved ends of the rail during the operation of the conveyor rack, the wheels of the trolleys would push the hand or object against the exposed end of the frame member so that the hand or object would be caught between the trolley and the end of the frame member. Since the conveyor rack was movable in both directions each exposed end of the frame member at each end of the rail presented a constant source of danger and potential injury.

The main object of the present invention is to obviate the deficiencies indicated above in article storing and delivering apparatus and otherwise to improve the safety, operation and appearance of such apparatus.

The above and other objects, features and advantages of this invention will be fully understood from the following description considered in connection with the accompanying illustrative drawings of the presently preferred embodiment of this invention.

In the drawings:

FIG. 1 is a perspective view of one end of an article storing and delivering apparatus in accordance with the present invention;

FIG. 2 is a top plan view of the apparatus;

FIG. 3 is a side elevational view of the apparatus;

FIG. 4 is a sectional view, taken on line 4—4 of FIG. 3, on a larger scale; and

FIG. 5 is a sectional view taken on line 5—5 of FIG. 3.

Referring now to the drawings in detail, the article storing and delivering apparatus **10** comprises a horizontal endless stationary rail **12** which is made preferably from a hollow tube and includes straight run portions **14** laterally spaced from each other and circular connecting end portions **16**. Disposed above the rail and continuous therewith throughout the length thereof is a peripheral continuous frame member **18** conforming in contour to rail **12** and which is constituted by an angle iron having a vertical web **20** and a horizontal flange **22**. The frame member is secured to rail **12** by a series of horizontally spaced welds **24** at the lower end of web **20**, but it will be understood that the frame member may be secured to the rail by other means. A pair of longitudinally spaced cross-members **26** underlie the flanges **22** of the straight portions **14** of the frame member and are secured to said flanges by welding or by other suitable connections. A pair of floor supported stanchions **28** are disposed laterally inwardly of rail **12** and underlie cross-members **26** so that the rail is supported above the floor F.

An endless conveyor rack **30** for carrying the articles is suspended below rail **12** and is mounted for horizontal

movement along the length of the rail. More particularly, conveyor rack **30** comprises a plurality of rack members or links **32** disposed in end-to-end relation and pivotally connected to each other by hinge connections **34**. Said hinge connections comprise the bifurcated end **36** of one link and the tongue end **38** of the adjacent link which is disposed within the bifurcated end of said one link. Pivot pins **40** are inserted through vertically aligned holes in ends **36** and **38** to complete the hinge connection between adjacent links. Each link includes horizontally spaced vertically extending dividing members **42** which form spaces to receive the hangers H of the garments G, as shown in FIG. 1.

A trolley yoke **44** is pivotally mounted on the upper end of each pin **40** and is provided with upstanding laterally spaced arms **46** in straddling relation with rail **12**. The arms terminate in angular bearing portions **48** which carry axle pins **50** upon which rotatable trolley rollers **52** are mounted. The trolley rollers are disposed in angular relation to rail **12** and ride upon opposite sides of the top surface of the rail, in straddling relation with web **20** of the frame member **18**, so that conveyor rack **30** is suspended from said rail and is adapted to travel along the length thereof.

It will be apparent from the foregoing that during the movement of the conveyor rack and the trolley rollers **52** along the length of rail **12**, a person's hand may no longer be caught between the exposed ends of the frame member and the moving trolley rollers because said exposed ends have been eliminated by continuing the frame member at the end portions **16** of the rail, whereby a continuous frame member is provided which is coextensive with the rail along the length thereof and conforms in contour to the rail. In addition, by providing the frame members at the ends of the rail a more pleasing appearance has been obtained for the apparatus.

The means for driving the conveyor rack for movement upon and around rail **12** comprises a sprocket **54** which is disposed in concentric relation to the semicircular end portions **16** of the rail. In this regard it will be noted that only one sprocket is provided and no follower sprocket has been found to be needed for the other end of the conveyor rack **30**. The links **32** of the conveyor rack are rigid members and very little clearance is provided between the pivoted connections of the links so that the conveyor rack remains taut without the necessity of a follower sprocket. Sprocket **54** is provided with teeth **56** spaced along the circumference of the sprocket and the length of the spaces between the teeth is equal to the distance between the pivot pins **40**. The pivot pins are provided with rotatable sleeves **58** which are engaged by the teeth **56** of the sprocket to drive the conveyor rack. The sprocket is driven by a motor **60** and a speed reduction unit **62** which are mounted on a supporting plate **64** secured to flanges **22** of frame member **18**, as best shown in FIG. 4. The motor is mounted above supporting plate **64** while the gear reduction unit is mounted below said plate and belt **66** constitutes the drive between the motor and the gear reduction unit. Suitable switch means (not shown) are provided for operating motor **60** which is of the reversible type so that the conveyor rack may be driven in opposite directions, as desired.

While we have shown and described the preferred embodiment of our invention, it will be understood that various changes may be made therein without departing from the underlying idea and principles of the invention within the scope of the appended claims.

What is claimed is:

1. Article storing and delivering apparatus, comprising a stationary endless rail, a power driven endless article-

supporting rack, means for suspending said rack from said rail for movement below said rail comprising a series of longitudinally spaced support means having upper parts engaging the upper surface of said rail for movement along said rail and having lower parts extending below said rail and connected to said rack for carrying said rack in suspended condition below said rail, a frame comprising transverse members spaced from each other longitudinally of said rail, and an endless frame member having parallel upper and lower edges coextensive in length with said rail and extending longitudinally thereof for supporting said rail, said endless frame member being connected to said transverse members at the opposite ends of said transverse members and to said rail at said upper surface thereof and extending upwardly from said upper surface to said transverse members, said upper parts of said rack supporting means being positioned adjacent said frame member to permit movement of said upper parts on said rail and the resulting movement of said rack below said rail, said endless frame member being sufficiently imperforate to provide safety means to prevent the projection of an object or a person's hand between said upper parts of said rack suspending means and said transverse frame members.

2. Article storing and delivering apparatus, comprising a stationary endless rail, a power driven endless article-supporting rack having a series of rigid links extending longitudinally of said rail in end-to-end relation, means for suspending said rack from said rail for movement below said rail comprising a series of longitudinally spaced support means each having a pair of laterally

spaced trolley wheels engaging laterally spaced portions of the upper surface of said rail for movement along said rail, means operatively connected to each of said pairs of trolley wheels and extending downwardly therefrom below said rail and being pivotally connected to said rack at adjacent ends of adjacent links for carrying said rack in suspended condition below said rail, a frame comprising transverse members spaced from each other longitudinally of said rail, and an endless frame member having parallel upper and lower edges coextensive in length with said rail and extending longitudinally thereof for supporting said rail, said endless frame member being connected to said transverse members at the opposite ends of said transverse members and to said rail at said upper surface thereof between said laterally spaced trolley wheels and extending upwardly from said upper surface to said transverse members to permit said movement of said trolley wheels on said rail and the resulting movement of said rack below said rail, said endless frame member being sufficiently imperforate to provide safety means to prevent the projection of an object or a person's hand between said trolley wheels and said transverse frame members.

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