

[54] TRANSFER TABLE

[72] Inventor: Andrew T. Kornylak, 400 Heaton St.,
Hamilton, Ohio 45011

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[58] Field of Search214/84; 198/36, 184, 75, 20,
198/198; 193/193

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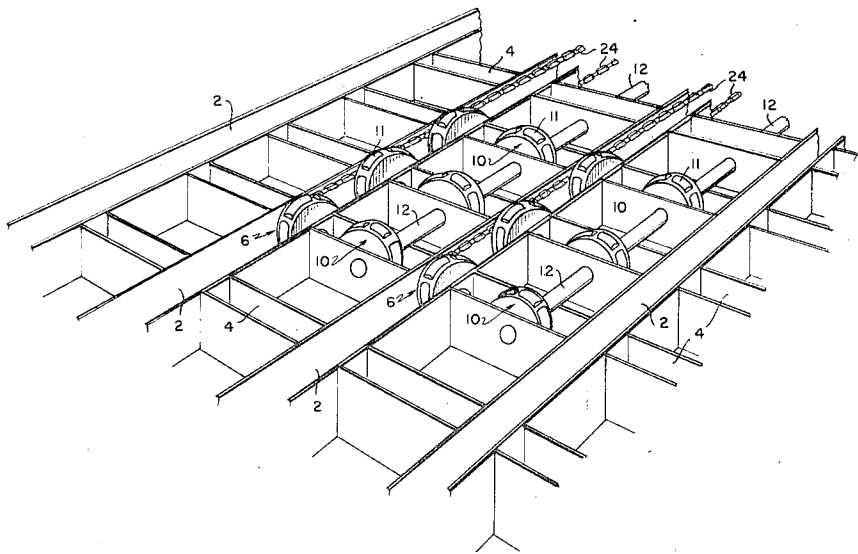
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Primary Examiner—Richard E. Aegerter
Attorney—Jay M. Cantor

[57] ABSTRACT

A transfer table for orienting and conveying articles. A network of rollers are mounted to orbit in normally related planes and to rotate about axes normal to the radius of orbit. In one form of the invention the rollers are power driven in the orbiting planes.

6 Claims, 3 Drawing Figures



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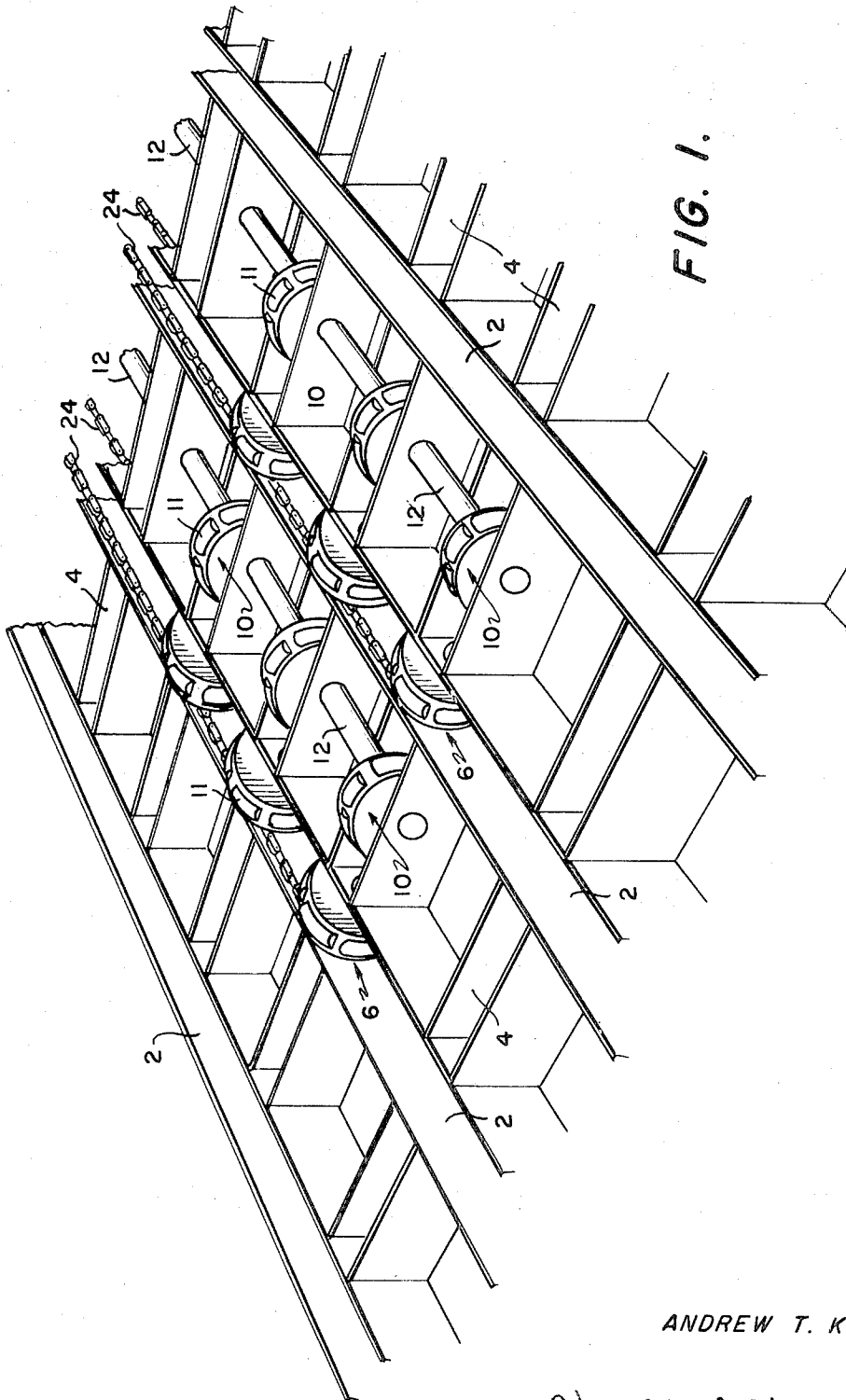


FIG. 1.

INVENTOR
ANDREW T. KORNYLAK

BY *Harold L. Halpert*

AGENT

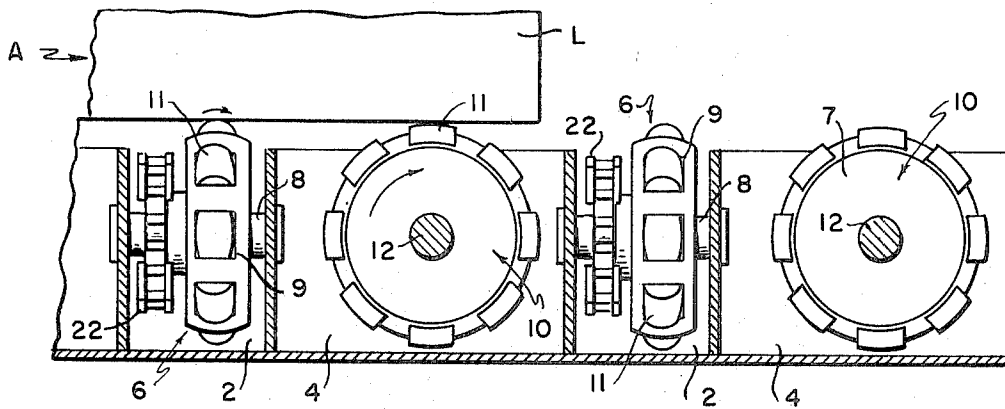


FIG. 3.

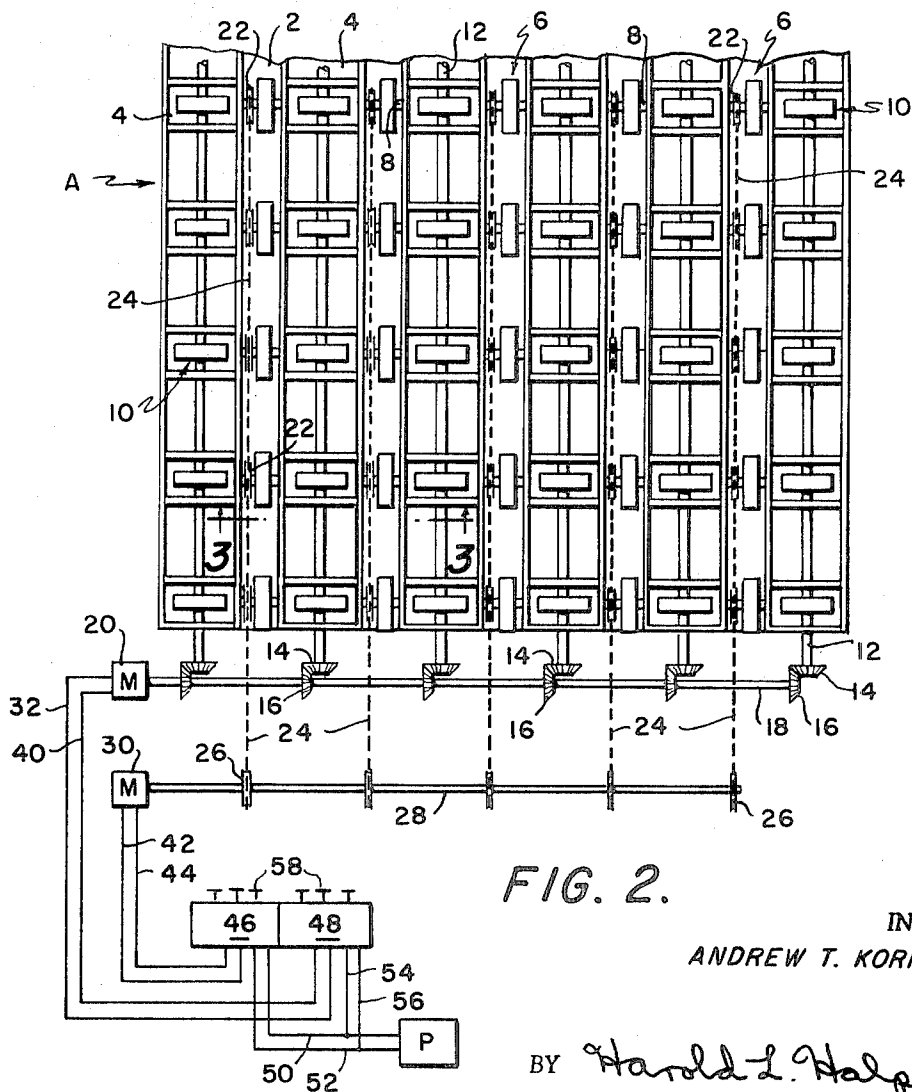


FIG. 2.

INVENTOR
ANDREW T. KORNYLAK

BY *Harold L. Halpert*
AGENT

TRANSFER TABLE

This invention relates to a transfer table and particularly to a transfer table for orienting articles to be moved on a conveyor.

Conveyor systems for receiving a cargo that is transported in one direction and switching it for transport in another direction or for transport to a given destination are well known. However, the switching apparatus is complex and expensive and cannot be relied on to operate on random sized cargo.

It is therefore an object of this invention to provide a transfer table that is simple in structure.

It is a further object of this invention to provide a table as aforesaid that can be used to orient a cargo.

It is a further object of this invention to provide a table as aforesaid in which the orientation of the cargo can be remotely controlled.

It is a further object of this invention to provide a table as aforesaid in which the oriented cargo can be conveyed from the table by remote control.

These and other objects of the invention will become manifest upon reading the following description in conjunction with the accompanying drawing wherein:

FIG. 1 is a perspective view in diagrammatic form of the invention,

FIG. 2 is a plan view of a section of the table, and

FIG. 3 is a view taken on the line 3—3 of FIG. 2.

In accordance with the invention a network of rollers are mounted for orbiting in normally related planes and are freely rotatable on axes normal to the radius of orbit. The rollers are power driven in their orbiting planes by independently controllable power sources.

With reference to FIG. 1 there is illustrated a table comprising spaced parallel channels 2 interconnected by spaced parallel channels 4. Conveyor rolls 6, such as disclosed in my application Ser. No. 782,038 filed Dec. 9, 1968, are rotatably mounted in channels 2 on support shafts 8 which are mounted in the walls of the channel. Rolls 10, similar to rolls 6, are secured to the power-driven shafts 12 which extend through the walls of the channels 4 and are supported by the walls for rotation. The alternate arrangement of shafts 8 and 12 provide an interdigitated arrangement where the shafts extend normal to each other.

Each of the rolls comprises a hub 7 having peripheral pockets 9, in which are mounted rollers 11 for rotation about axes normal to radii from shafts 8 and 12.

A bevel gear 14 is mounted on one end of shaft 12 for driving engagement with a bevel gear 16 secured on a shaft 18 driven by a motor 20.

Sprockets 22 are secured on shafts 8 and are interconnected by a chain 24 trained about sprockets 26 secured on shaft 28

which is driven by a motor 30.

Motors 20 and 30 are illustrated as fluid motors connected by conduits 32,40 and 42,44 to control valves 46 and 48 respectively. The valves control the flow of fluid from a high-pressure fluid source P connected to the valves by conduits 50,52 and 54,56. Manual control buttons 58 control the flow of fluid through valves 46 and 48.

In operation a load such as L can be conveyed in the direction designated by arrow A and will roll onto the transfer table by rotating rolls 10 and rollers 11 of rolls 6 as indicated by the arrows. When the load is positioned on the table, motors 20 and 30 can be selectively energized, by operation of manual control buttons 58, to rotate the shafts 12 and run chains 24 at selected speeds which can be varied to orient the load. The oriented load can then be moved off the table in any desired direction by the proper manipulation of buttons 58 to control the rotation of the rolls.

While I have disclosed the rolls as power driven and controlled from a remote source, it is within the scope of the invention to omit the power drive and to mount the rolls for independent rotation. In this manner the loads can be oriented and propelled manually in the desired direction.

It is also within the scope of this invention to control the motors by coded signals whereby the loads can be received, oriented, and transferred to a selected position by automatic means.

I claim:

1. A transfer table comprising a network of rolls, means mounting one set of rolls for rotation about a first fixed axis, means mounting a second set of rolls for rotation about a second fixed axis angularly related to the first axis, the rolls of at least one of said sets each comprising a hub and rollers carried at the periphery of the hub for rotation in the same directions as the rolls of the other of said sets of rolls, the uppermost surfaces of said rolls lying in a common plane.

2. A transfer table as defined in claim 1 wherein the angularly related axes are normal to and interdigitated with each other.

3. A transfer table as defined in claim 2 further including means for driving at least some of the rolls on each axis.

4. A transfer table as defined in claim 3 wherein the driving means comprises independent power sources and means for selectively energizing each source.

5. A transfer table as defined in claim 4 wherein the means for selectively energizing each source is manually controlled.

6. A transfer table as defined in claim 1 wherein the rolls of both sets each comprise a hub and rollers about the periphery thereof for rotations in the same directions as the rolls of the other of the sets.

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