F. J. HUEBSCH.

CONVEYER.

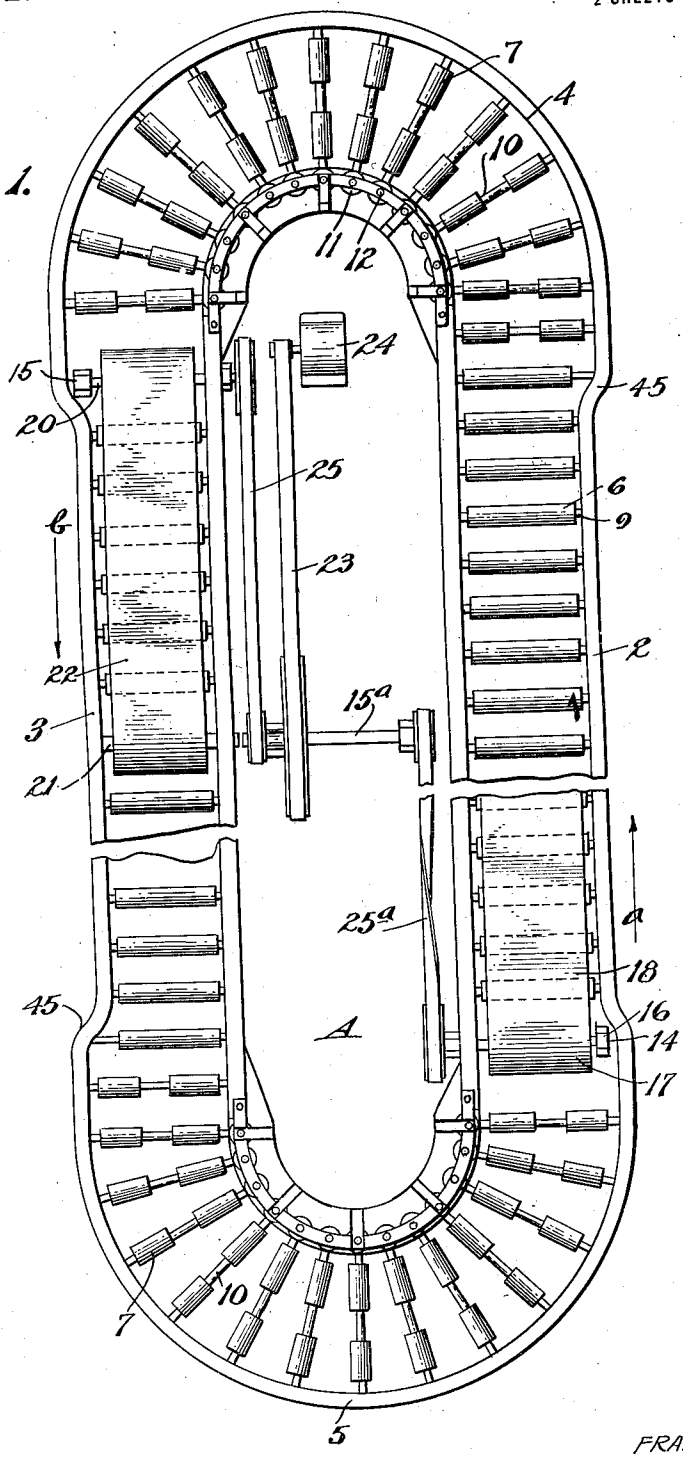
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1,428,234.

Patented Sept. 5, 1922.

2 SHEETS—SHEET 1.

Fig. 1.



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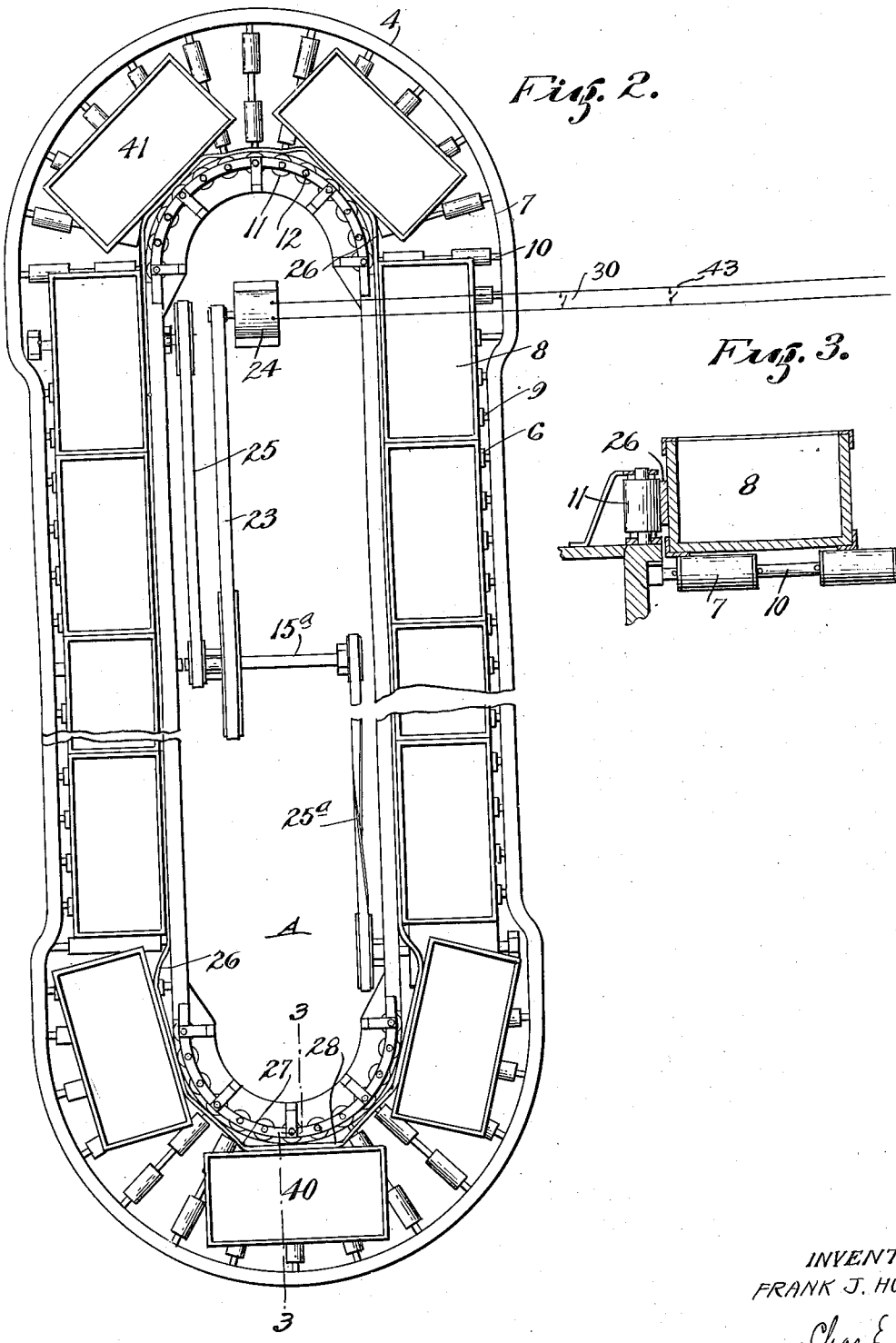


Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE.

FRANK J. HUEBSCH, OF SAN FRANCISCO, CALIFORNIA.

CONVEYER.

Application filed July 6, 1921. Serial No. 482,644.

To all whom it may concern:

Be it known that I, FRANK J. HUEBSCH, a citizen of the United States, residing at the city and county of San Francisco and State of California, have invented new and useful Improvements in Conveyers, of which the following is a specification.

This invention relates to a conveyer, and especially to a conveyer of the endless track type.

One of the objects of the present invention is to generally improve and simplify conveyers of the character described, and especially to conserve space, to facilitate collection and assembling of articles, whatever their nature may be, at one or more points along the line of travel and removal and distribution at other points.

Another object of the invention is to provide a conveyer employing a pair of interspaced tracks, a roller bed intermediate the same, a plurality of containers adapted to be supported thereby, and means for imparting a continuous or intermittent movement to the containers.

Another object of the invention is to provide a conveyer in which a pair of tracks are disposed substantially parallel with relation to each other and connected at their opposite ends by curved or substantially semi-circular track sections to form an endless track. Further to provide means for maintaining the containers in engagement with each other while traveling over the parallel track sections, and which will permit separation of the containers and form a draw-bar or pulling connection between the same when rounding the curved track sections.

Other objects will hereinafter appear. The invention consists of the parts and the construction, combination and arrangement of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings in which:

Fig. 1 is a plan view of the conveyer.

Fig. 2 is a similar plan view showing the containers in position on the conveyer.

Fig. 3 is a cross section of the conveyer taken on line 3—3, Fig. 2.

Referring to the drawings in detail, A indicates in general an endless conveyer comprising a pair of interposed track or guide sections such as indicated at 2 and 3. These track sections are disposed substantially parallel with relation to each other and their opposite ends are connected by curved or substantially semi-circular track sections as shown at 4 and 5. These end sections form a continuous trackway or support for a roller bed disposed between the track sections, said roller bed consisting of a standard form of rollers such as indicated at 6 and a plurality of differential rollers such as indicated at 7. The differential rollers are disposed between the curved sections of the track and the ordinary or standard rollers between the parallel track sections 2 and 3. The roller bed thus provided serves as a support for a plurality of containers generally indicated at 8, and means are provided for imparting a continuous or intermittent movement to the containers as will hereinafter be described. The rollers indicated at 6 are secured on shafts 9 journaled between the parallel track sections, while the differential rollers 7 are freely turnable on shafts 10 secured between the curved track sections. By referring to Figs, 1, 2 and 3 it will be seen that a plurality of vertically disposed rollers are also employed. These rollers are indicated at 11 and are secured on shafts 12 vertically disposed and journaled between the inner sections of the track members 4 and 5, the vertical rollers being provided for the purpose of engaging the inner sides of the containers when rounding the curved sections of the trackway.

Disposed crosswise of the track section 2 are a pair of shafts such as indicated at 14 and 15. These shafts are supported in journal members 16 and each carries a pulley 17 by which is driven an endless conveyer belt 18 constructed of rubber or the like. The upper section of the belt 18 is supported by the rollers 6 and assumes a plane which is substantially parallel or on a level with the rollers 6. Disposed between the track sections 3 and supported by journal members 19 are a pair of shafts 20 and 21. These also carry rollers which support and drive a conveyer belt 22 constructed of rubber or like material. The belts 18 and 22 serve the same function and assume the same position with relation to the rollers 6, i. e., the function of intermittently or continuously imparting movement to the containers 8. Power to drive the conveyers or belts 18 and 22 is transmitted from an electric motor 24 through a main drive belt 23 and a pair of

secondary belts 25 and 25ª, the latter of which is twisted, as shown, for obvious reasons.

One of the important features of the present invention is the provision of a flexible connection between the containers, this connection being provided for the following reasons:

1st. To maintain the containers in engagement with each other while traveling between the parallel track sections 2 and 3.

2nd. To separate the containers while they are rounding the curved track sections 4 and 5.

3rd. To form a draw-bar or pulling connection between the containers while rounding the curved track sections.

The flexible connection employed in this instance is a continuous belt 26, the belt being secured to the several containers by any suitable means at the points indicated at 27 and 28. The distance between the points 27 and 28 is such that the flexible connection or belt will be taut when the containers assume an aligned formation between the parallel track sections. It is also such that it will permit the containers to assume an angular position and separate with relation to each other while rounding the curved sections as shown in Fig. 2.

In actual operation if it is desired to start the train of connected containers moving in the direction of the arrows (see Fig. 1) it is only necessary to close the circuit through the motor 24 by means of one or more switches located along the travel of the conveyer as indicated at 30. Closing the circuit through the motor causes this to rotate and power is thus transmitted through the belt 23 to shaft 15ª. This rotary movement is in turn transmitted to the shafts 14 and 20 and a driving movement is thus transmitted to the conveyer belts 18 and 22, the conveyer 18 traveling in the direction of arrow "*a*" while the conveyer 22 travels in the direction of the arrow "*b*." The containers supported by the respective belts will thus move with the belt and the containers which are disposed in front of the belt will thus be pushed forwardly in the direction of the arrows "*a*" and "*b*," and movement in this manner is transmitted to all the containers in unison. The containers indicated at 40, which are rounding the curved track section 5 will be pulled through the medium of the flexible belt 26 and a pull will similarly be exerted on the containers indicated at 41 which are rounding the curved section 4 by the same means. In other words the containers disposed forward of the belt 18 are forced ahead by those resting upon the belt 18. A similar movement is transmitted to the containers disposed forward of the conveyer belt 22. It is also obvious that a pull will be exerted on the flexible belt 26 by the containers supported on the belt 18, thus pulling the containers 40 around curved section 5, and similarly a pull will be exerted through the flexible belt by the conveyer belt 22 to bring containers 41 around the curved section 4. If a continuous movement is desired as far as the containers are concerned it is only necessary to permit the motor 24 to continue its driving operation, while if an intermittent movement is desired switches 43 may be opened or closed as required.

By referring to Figs. 1 and 2 it will be seen that the outer sections of the tracks 4 and 5 are widened or expanded as at 45 to increase the spacing between the rollers 11 and the outer track sections. This is necessary as the containers assume angular position while rounding the curved sections and it is also necessary that a more or less free movement is permitted as jamming of the containers might otherwise take place. The differential rollers disposed between the curved track sections are also more or less essential as the outer edges of the box naturally travel at a greater speed than the inner edges. Such variation of speed being amply taken care of by the differential roller support provided. The pulling connection formed by the flexible belt 26 is also an important feature as it maintains snug engagement between the containers while traveling between the parallel track sections. It furthermore permits separation of the containers and angular disposition of the same while rounding the curved track sections, and it also forms a draw-bar or pulling connection between the containers, thus insuring positive movement when rounding the curved sections. The anti-friction rollers 11 are merely provided for the purpose of decreasing the friction between the containers and the track sections when rounding the curves and are thus also of importance as it materially reduces the amount of power required and the strain on the flexible belt or connection 26.

The parallel arrangement of the track sections 2 and 3 is an important feature as it permits conservation of space. The importance of this should be appreciated when it is stated that the conveyer system here shown in certain insulations has an over-all length of 300 feet. This distance, of course, may be increased or decreased as desired.

The conveyer at the present time is employed for laundry work. On the side indicated at 3 tables are disposed upon which the laundry to be sorted and assembled is placed. Heavy laundry is placed on the containers as they pass certain tables and lighter laundry is placed on top of the same as the containers advance. When the containers reach the opposite side or that indicated at

2 the laundry is removed from the containers, checked, wrapped and delivered to the shipping department. The laundry is delivered to the conveyers at different points and removed and distributed at other points. Since this is the case it is obvious that the conveyer may be usefully employed regardless of the nature of the work or articles handled.

I therefore wish it understood that while the conveying system has been described in connection with the assembling, collection and distribution, etc., of laundry work it is obvious that it may be employed for any use desired. Similarly, that the material and finish of the several parts employed may be such as the experience and judgment of the manufacture may dictate or varying conditions may demand. Such changes or variations being, however, limited to the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A conveyer comprising a pair of substantially parallel track sections, curved track sections connecting their opposite ends and forming a continuous trackway, a roller bed in the trackway, a plurality of container supported thereby, means for imparting a continuous or intermittent movement to the containers, and a plurality of vertical rollers disposed adjacent the curved track sections for engagement between containers when they are rounding the curved track sections.

2. A conveyer comprising a pair of substantially parallel track sections, curved track sections connecting their opposite ends and forming a continuous trackway, a roller bed in the trackway, a plurality of containers supported thereby, means for imparting a continuous or intermittent movement to the containers, and a flexible element connecting all of the containers.

3. A conveyer comprising a pair of substantially parallel track sections, curved track sections connecting their opposite ends and forming a continuous trackway, a roller bed in the trackway, a plurality of containers supported thereby, means for imparting a continuous or intermittent movement to the containers, and means connecting the containers, such means maintaining the containers in engagement with each other while traveling between the parallel track sections and permitting separation of the containers while rounding the curved track sections, said means also forming a draw-bar or pulling connection between all the containers.

4. A conveyer comprising a pair of substantially parallel track sections, curved track sections connecting their opposite ends and forming a continuous trackway, a roller bed in the trackway, a plurality of containers supported thereby, a pair of conveyer belts supported by and operating over the rollers disposed between the parallel track sections, and means for imparting movement to said conveyer belts in unison.

5. A conveyer comprising a pair of substantially parallel track sections, curved track sections connecting their opposite ends and forming a continuous trackway, a plurality of rollers disposed between the parallel track sections, a plurality of differential rollers disposed between the curved track sections, a pair of conveyer belts supported by the rollers disposed between the parallel track sections, means for imparting a continuous or intermittent movement to said conveyer belts, and a plurality of containers supported by the conveyer belts and the respective rollers.

6. A conveyer comprising a pair of substantially parallel track sections, curved track sections connecting their opposite ends and forming a continuous trackway, a plurality or rollers disposed between the parallel track sections, a plurality of differential rollers disposed between the curved track sections, a pair of conveyer belts supported by the rollers disposed between the parallel track sections, means for imparting a continuous or intermittent movement to said conveyer belts, a plurality of containers supported by the conveyer belts and the respective rollers, and a flexible belt connecting the containers.

7. A conveyer comprising a pair of substantially parallel track sections, curved track sections connecting their opposite ends and forming a continuous trackway, a plurality of rollers disposed between the parallel track sections, a plurality of differential rollers disposed between the curved track sections, a pair of conveyer belts supported by the rollers disposed between the parallel track sections, means for imparting a continuous or intermittent movement to said conveyer belts, a plurality of containers supported by the conveyer belts and the respective rollers, and a flexible connection between each container, said connection maintaining the containers in engagement with each other while traveling between the parallel track sections and permitting separation and angular disposing of the containers while rounding the curved sections.

8. A conveyer comprising a pair of substantially parallel track sections, curved track sections connecting their opposite ends and forming a continuous trackway, a plurality of rollers disposed between the parallel track sections, a plurality of differential rollers disposed between the curved track sections, a pair of conveyer belts supported by the rollers disposed between the parallel track sections, means for im-

parting a continuous or intermittent movement to said conveyer belts, a plurality of containers supported by the conveyer belts and the respective rollers, a flexible connection between each container, said connection maintaining the containers in engagement with each other while traveling between the parallel track sections and permitting separation and angular disposing of the containers while rounding the curved sections, and a plurality of vertical rollers disposed adjacent to the curved track sections and forming an anti-friction support which the containers engage when rounding the curved track sections.

9. A conveyer comprising a pair of substantially parallel track sections, each including inner and outer side members, curved track sections connecting the opposite ends of the side members of the substantially parallel track sections and forming a continuous trackway, a plurality of substantially equidistant rollers journaled in the side members of the substantially parallel track sections and a plurality of differential rollers disposed in the curved track sections, means for imparting movement to said conveyer belts, and a plurality of containers supported by the conveyer belts and the rollers.

10. A conveyer comprising a pair of substantially parallel track sections, curved track sections connecting their opposite ends and forming a continuous trackway, a roller bed in the trackway, a plurality of containers supported by the rollers and being of a width less than the width of the trackway and movable over the rollers within the outer side of the trackway, and means for imparting movement to the containers.

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