H. J. BUCK.

GRAVITY CARRIER.

APPLICATION FILED DEC. 21, 1910.

1,022,823.

Patented Apr. 9, 1912.

3 SHEETS—SHEET 1

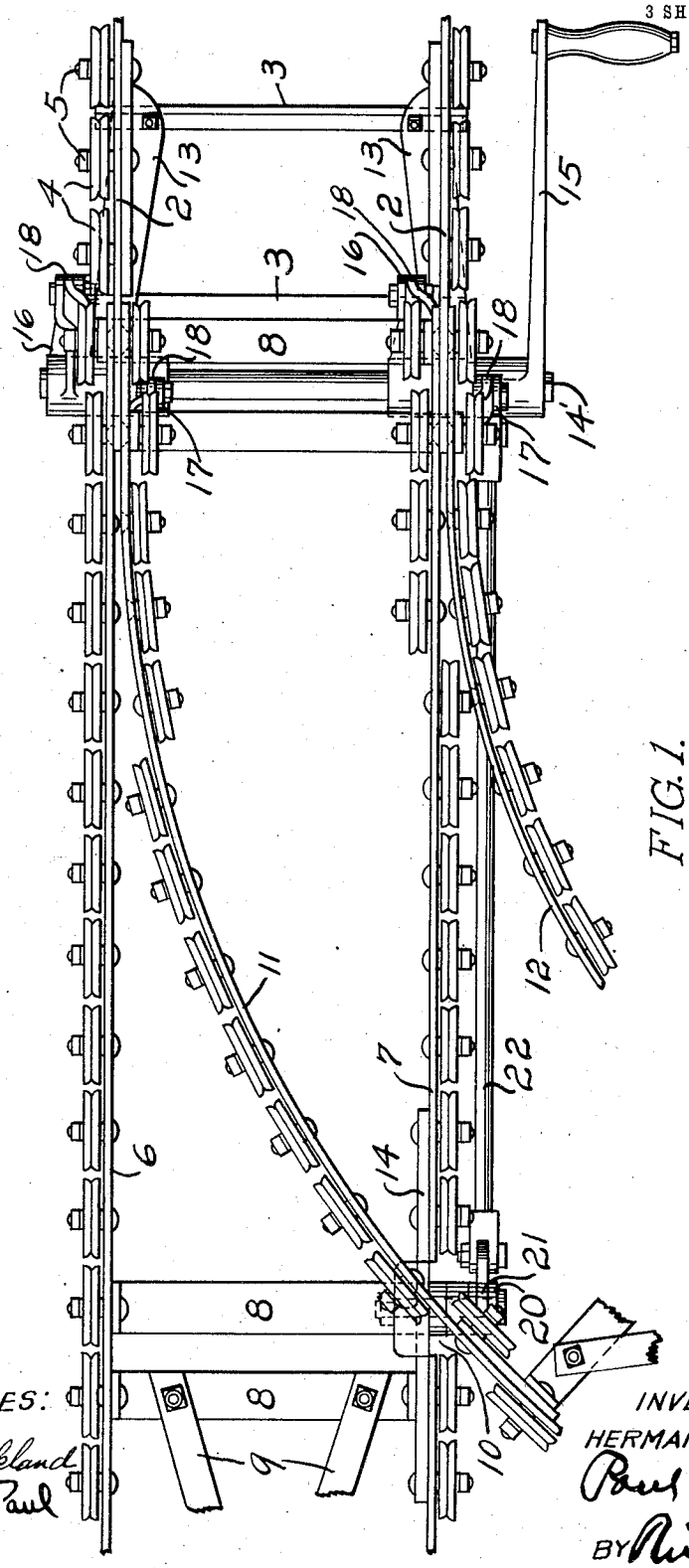

FIG. 1.

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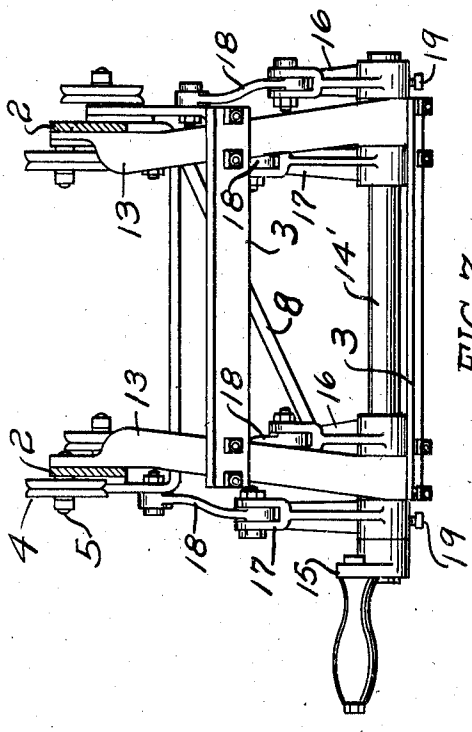

FIG. 3.

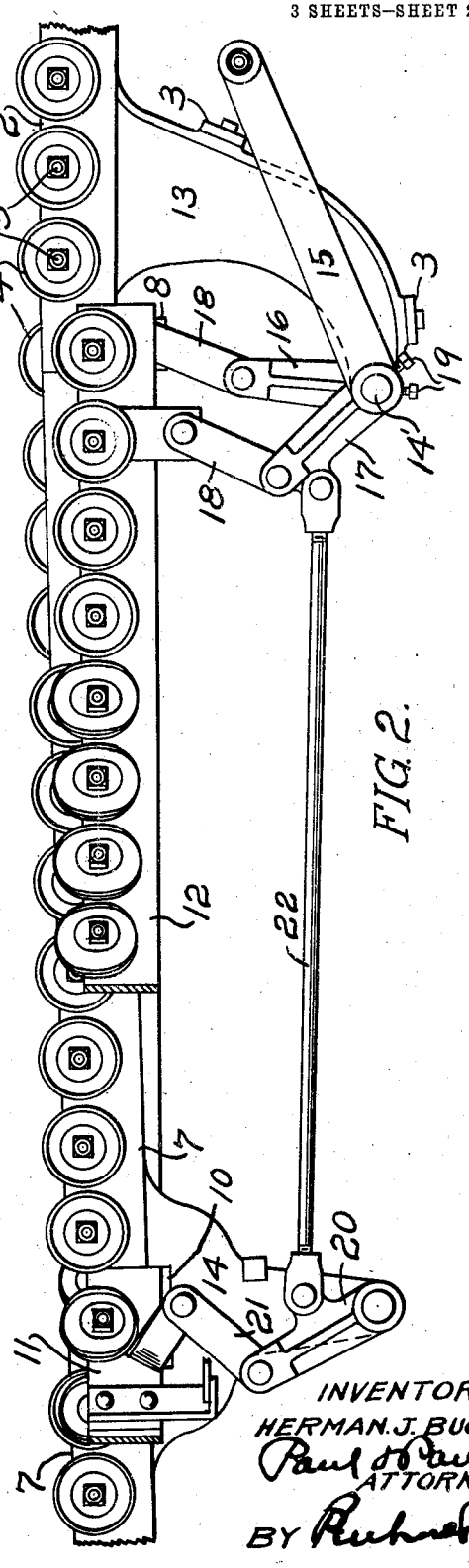

FIG. 2.

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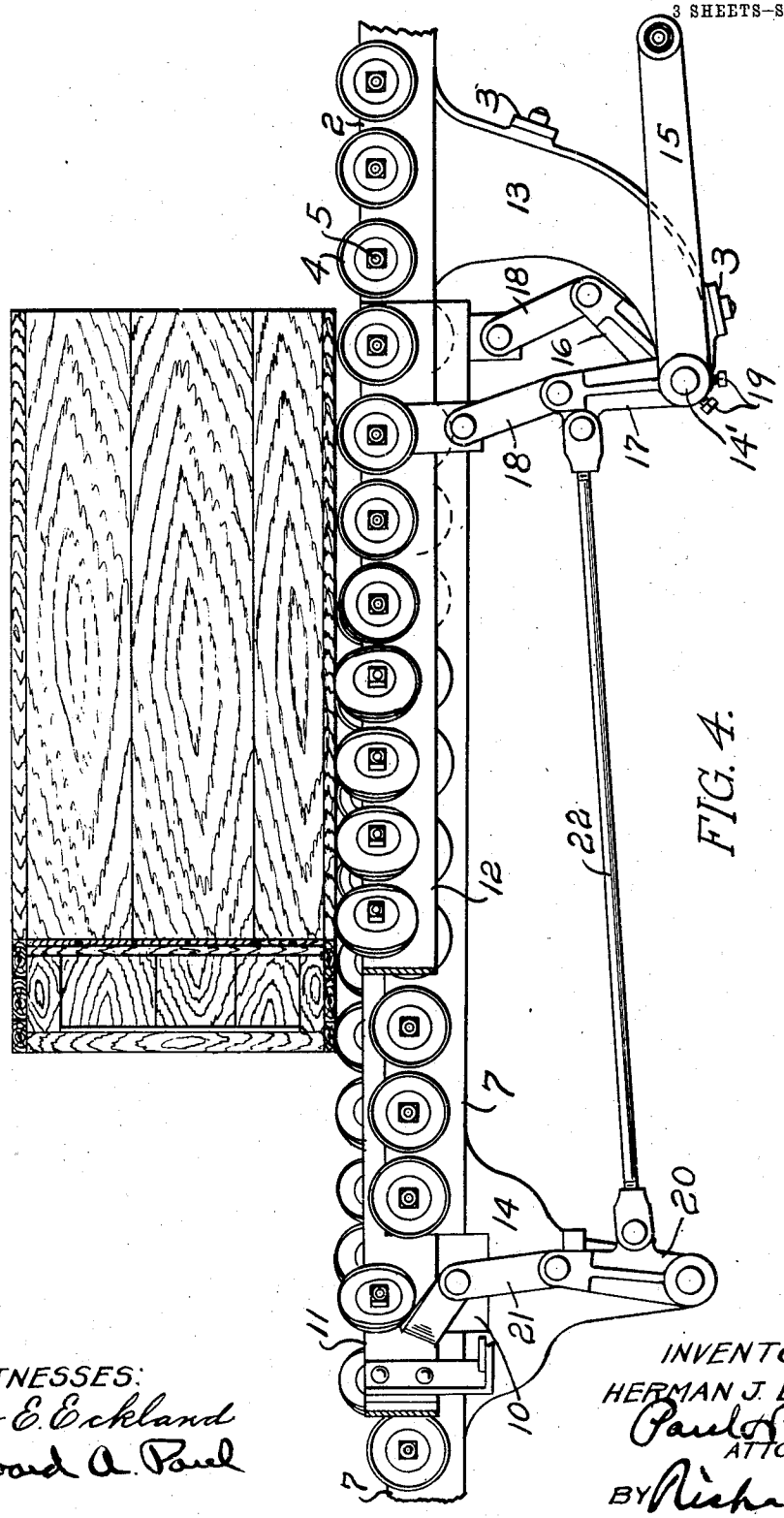

FIG. 4.

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UNITED STATES PATENT OFFICE.

HERMAN JOSEPH BUCK, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO MATHEWS GRAVITY CARRIER COMPANY, OF ST. PAUL, MINNESOTA, A CORPORATION.

GRAVITY-CARRIER.

1,022,823. Specification of Letters Patent. Patented Apr. 9, 1912.

Application filed December 21, 1910. Serial No. 598,651.

To all whom it may concern:

Be it known that I, HERMAN J. BUCK, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Gravity-Carriers, of which the following is a specification.

My invention relates to gravity carriers for transporting packages from place to place and the object of the invention is to provide means for changing the direction of movement of a package or switching it from one carrier line to another.

My invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a plan view of a gravity carrier and switch embodying my invention, Fig. 2 is a side elevation, partly in section, showing the switch in its lowered or inoperative position, Fig. 3 is a transverse sectional view of the same, Fig. 4 is a view similar to Fig. 2, showing the switch in its operative position to change the direction of movement of the package.

In the drawing, 2 represents the rails of the carrier connected by cross bars 3 and having a series of antifriction wheels 4 mounted on bolts 5. These wheels are arranged near together on the rails and form the supporting surface for the box or package moving over the carrier. 6 and 7 are the rails of another carrier section having wheels similar to those described and cross bars and braces 8 and 9. The rail 7 is cut or notched at 10 to receive the curved rail 11 of the switch, the other rail 12 of the switch being disposed on the outside of the rail 7. These rails, 11 and 12, have wheels mounted thereon corresponding to those described, the rail 11 having some of the wheels at the receiving end of the rail preferably mounted on the inner side, while a corresponding number of wheels are mounted on the corresponding side of the rail 7. The rail 11 extends through the notch 10 of the rail 7 and is movable therein. Brackets 13 and 14 are provided supported by the carrier sections. The rails 6 and 7 of the movable section normally form horizontal continuations of the rails 2 and have a vertical movement with the switch section to adjust one of them in its working position. Any suitable mechanism may be employed for moving these sections vertically, so that as the rails of the carrier section are depressed below the level of the rails 2, the rails of the switch section will be elevated so that their carrying surface will receive the package from the rails 2 and change its direction of movement. In carrying out this part of my invention, I mount a shaft 14′ in the bracket 13 having an operating crank 15 and arrange arms 16 and 17 on said shaft connected respectively by links 18 with the carrier shown as composed of straight sections, and with the curved switch section. These arms are so arranged on the shaft and capable of adjustment by means of the set screws 19 that, as the switch section is raised or lowered, the straight section will move oppositely thereto, the straight section extending a considerable distance toward the left and having freedom of vertical movement. I prefer also to raise the outer rail of the switch section and therefore mount an arm 20 on the bracket 14 connected by a link 21 with the rail 11. A rod 22 connects the arm 20 with the arm 17 so that they will move in unison, both ends of the switch section being raised or lowered simultaneously. The operation of the crank 15 will actuate the switch and straight carrier sections simultaneously, raising one to its working position and lowering the other. The operator is thus able to direct the package in a straight line from the carrier rails 2 or change the direction of movement of the package and switch it from one carrier line to another, or cut one or more packages and discharge them at the end of the switch line while the remaining packages may continue in the same direction from the starting point.

The rails may be made of any suitable size and in various ways the details of construction herein may be modified without departing from my invention.

In moving the switch device to an operative position it is not only necessary to operate the receiving end or raise it to the level of the carrier wheels from which it receives the package, but the outer rails of the switch section must be raised at the point where it crosses the straight carrier or otherwise the package might run off the switch at this point. This movement of the switch

rail I have accomplished by means of the connecting rod 22 and the mechanism extending therefrom to the switch rail.

I have shown the main line carrier composed of straight sections, but the switch section may be used with a curved main line carrier, if preferred.

I claim as my invention:—

1. A gravity carrier comprising a section having side rails and anti-friction bearing wheels mounted thereon, a portion of said carrier section being vertically movable, a curved switch section also composed of side rails and anti-friction wheels thereon and also vertically movable, and means for raising both rails of said switch section to an operative position and lowering the movable portion of said carrier section to an inoperative position simultaneously.

2. A gravity carrier consisting of fixed and movable sections, each having side rails and anti-friction wheels mounted thereon, a switch section also composed of side rails and anti-friction wheels, one of the side rails of said movable section being notched to receive the outer rail of said switch section and means for raising both rails of said switch section and simultaneously lowering said movable section or raising said movable section and lowering both rails of said switch section.

3. A gravity carrier comprising a straight carrier section having side rails and anti-friction wheels mounted thereon, said straight carrier section having a vertically movable portion capable of being lowered so that its anti-friction wheels are below the level of the other wheels of said straight carrier, a curved switch section also composed of side rails and anti-friction wheels mounted thereon, one rail of said straight section having a notch therein to receive the outer rail of said switch section, and means for lowering the movable portion of said straight section and lifting both rails of said switch section simultaneously

4. A gravity carrier comprising a carrier section composed of side rails and anti-friction wheels thereon, a vertically movable switch section having curved side rails and wheels thereon, a rock shaft, an arm mounted thereon, a link pivotally connecting said arm with one end of said switch section and means operatively connecting said arm with the opposite end of said switch section, whereby both ends of said section will be raised or lowered simultaneously.

5. A gravity carrier comprising a straight section having a vertically movable portion and provided with anti-friction carrier wheels, a curved switch section also vertically movable, a rock shaft having an operating means, arms 16 and 17 mounted on said rock shaft, links connecting said arms respectively with one end of said switch section and with the corresponding end of the vertically movable portion of said straight carrier section, an arm 20 pivoted near the opposite end of said switch section, a link pivotally connecting said arm 20 with the outer rail of said switch section, and a rod connecting said arms 17 and 20, whereby the outer rail of said switch section will be raised simultaneously with the receiving end of said section.

6. A gravity carrier comprising a section having side rails provided with a carrying surface, a portion of said carrier section being vertically movable, a curved switch section also composed of side rails and provided with a carrying surface, and also vertically movable, and means for moving both rails of said switch section and both rails of said carrier section in opposite directions.

7. A gravity carrier comprising a carrier section composed of side rails provided with a carrying surface, a portion of said carrier section being vertically movable, a curved switch section also composed of side rails provided with a carrying surface and also vertically movable, means for raising the receiving end of said switch section and lowering the movable portion of said carrier section and simultaneously elevating the opposite end of the outer rail of said switch section.

8. A gravity carrier comprising a section having side rails provided with a carrying surface, a curved switch section also composed of side rails provided with a carrying surface and vertically movable, means for raising and lowering the receiving end of said switch section, and means for raising and lowering the opposite end of the outer rail of said switch section simultaneously with the movement of the receiving end thereof.

In witness whereof, I have hereunto set my hand this 13th day of December 1910.

HERMAN JOSEPH BUCK.

Witnesses:
GENEVIEVE E. SORENSEN,
C. H. REHFUSS.