

No. 747,090.

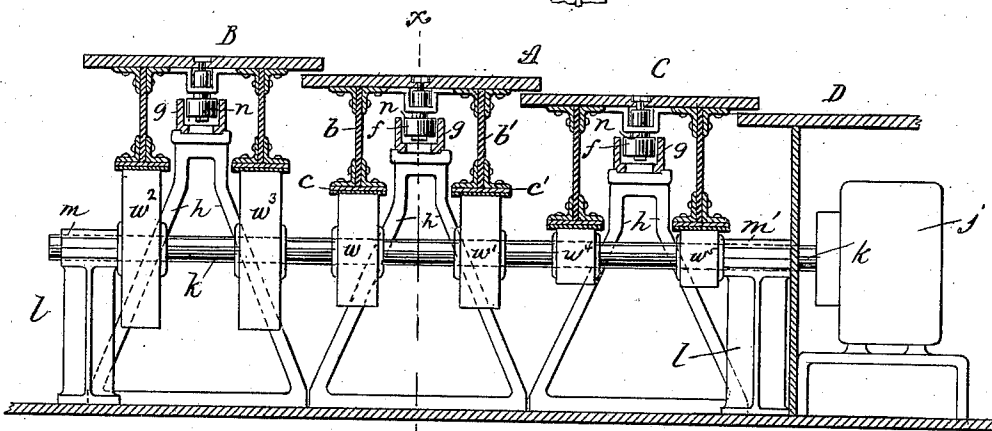
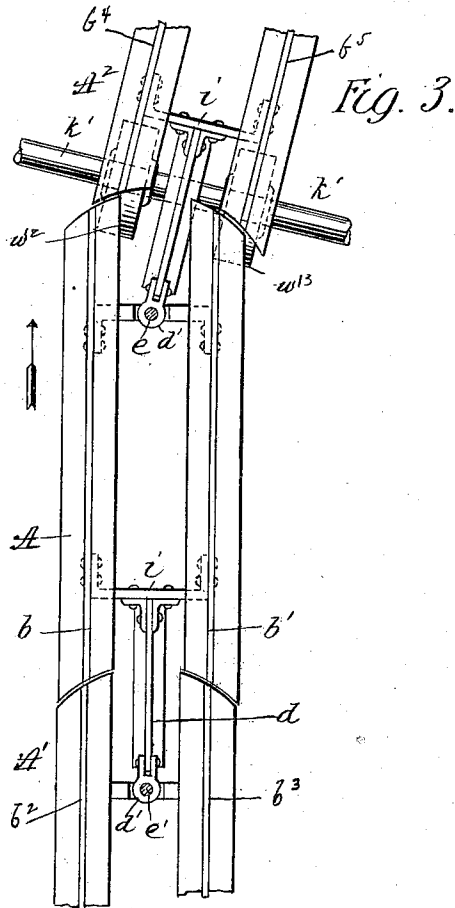
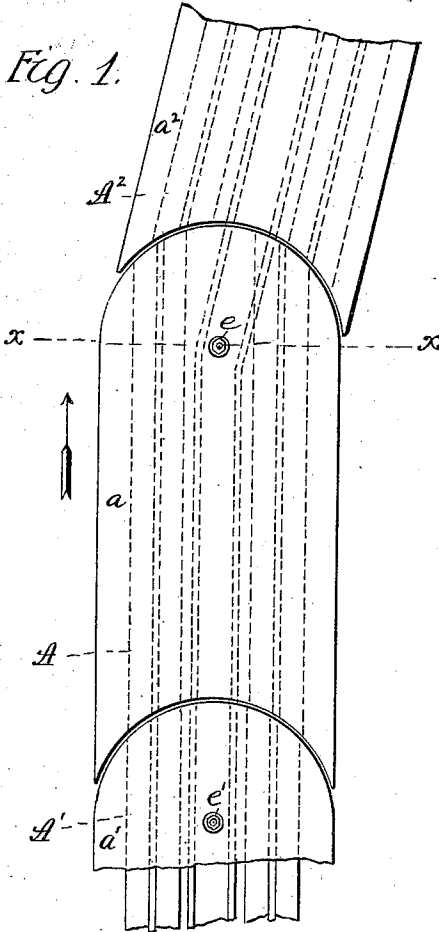
PATENTED DEC. 15, 1903.

M. E. SCHMIDT & G. A. MAYLAND.
CARRIER.

APPLICATION FILED OCT. 31, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
George D. Ober
Philip Beck

Max E. Schmidt
George A. Mayland Inventors
By their Attorney Walter Schmondt.

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2 SHEETS—SHEET 2.

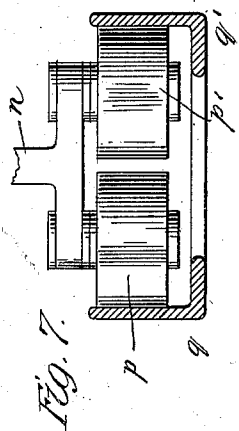
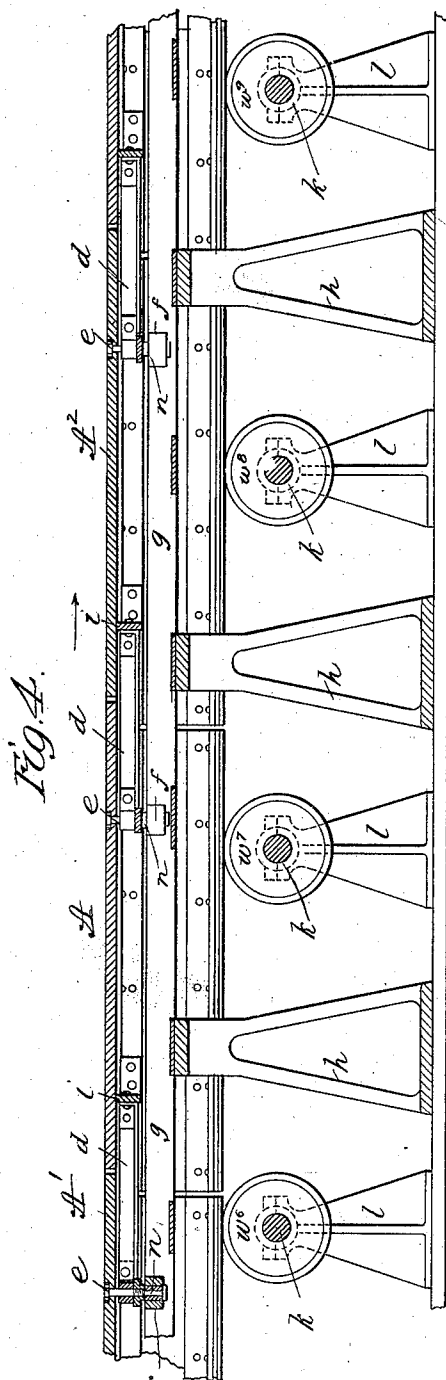


Fig. 7.

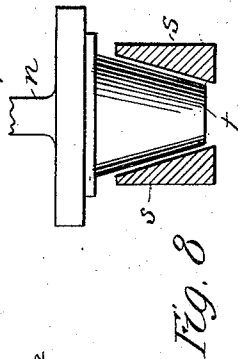


Fig. 8.

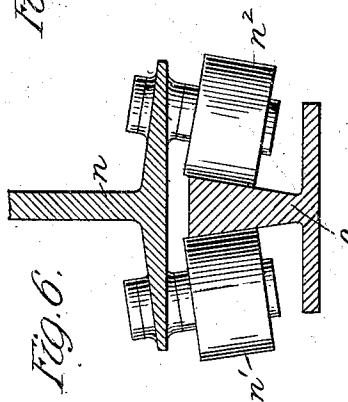


Fig. 6.

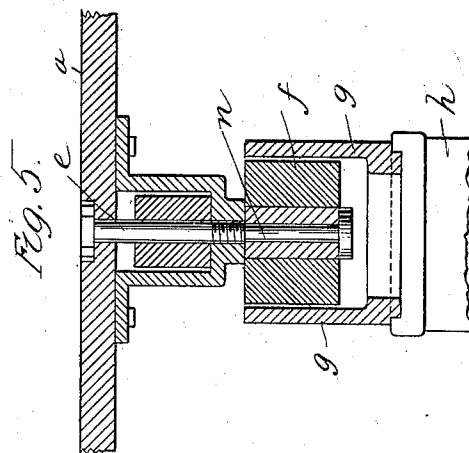


Fig. 5.

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UNITED STATES PATENT OFFICE.

MAX E. SCHMIDT, OF NEW YORK, AND GEORGE A. MAYLAND, OF BROOKLYN, NEW YORK; SAID MAYLAND ASSIGNOR TO SAID SCHMIDT.

CARRIER.

SPECIFICATION forming part of Letters Patent No. 747,090, dated December 15, 1903.

Application filed October 31, 1902. Serial No. 129,527. (No model.)

To all whom it may concern:

Be it known that we, MAX E. SCHMIDT, of the city and county of New York, and GEORGE A. MAYLAND, of the borough of Brooklyn, city of New York, county of Kings, and State of New York, have jointly invented certain new and useful Improvements in Carriers, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is plan or top view of part of a series of carriers embodying our invention, portions being shown broken away. Fig. 2 is a transverse elevation showing certain parts in vertical section taken on the dotted line $x x$ of Fig. 1. Fig. 3 is a plan or top view of part of a series of our improved carriers, their platforms being removed. Fig. 4 is a longitudinal vertical central sectional view taken on the dotted line $x x$ of Fig. 2 looking in the direction of the arrow shown in that figure and showing certain elements and members in side elevation. Fig. 5 is a detail, on an enlarged scale, partly in section and partly in elevation, to illustrate more fully the guiding and coupling devices. Figs. 6, 7, and 8 are views, partly in section and partly in elevation and also on an enlarged scale, showing variations in the guiding device.

Similar letters in the various figures refer to similar parts.

Our invention relates to that class of carriers which consist of a series of unitary members or carriers sequentially coupled to constitute a substantially continuous moving platform propelled by the rotation of a series of wheels disposed beneath the same and upon the treads or peripheries of which the said carriers are supported upon rails secured to the latter, the treads of which rails are downwardly presented and disposed, so as to bear upon and coact with the treads of said wheels in such manner that the rotation of the latter causes the said rails, with their connected carriers, to advance with approximately the same speed of movement as the peripheries of said wheels, whereby, other things being equal, the speed of the said carriers will be proportioned to the diameters or peripheries of the said supporting and propelling wheels, and it

becomes possible by varying the diameters of separate sets of wheels carried and rotated by the same axle to impart to separate series of the said carriers, thereby respectively supported and actuated, correspondingly various rates of speed relatively to each other.

Carriers of the type referred to are well understood and have been described, for instance, in United States Letters Patent No. 440,725 of November 18, 1890, to one of us and to J. L. Silsbee, to the specification of which reference may be had for more specific and detailed description of this class of carriers in its general aspect.

Among the objects of our present invention are to provide means whereby carriers of the class referred to may be better secured and controlled as against lateral movements transverse to the direction of propulsion, particularly when rounding curves, and also means whereby the continuous approximately flexible rails or controllers hitherto deemed requisite may be dispensed with, and thereby greater economy in construction and certainty, ease, and economy of operation secured. We attain these objects by the devices and combinations of devices hereinafter described, as follows, viz:

Our improved carrier or "endless platform," as it is sometimes termed, is composed of a series of unitary carriers $A A' A^2$, each such unitary carrier comprising a platform a , rigidly secured thereto and carrying said platform, two rigid laterally-disposed rail-bearing members $b b'$, having downwardly-presented treads $c c'$. The members $b b'$ are preferably constructed of metal—steel, for example—and of the conformation shown in the drawings and may be of a single integral piece of material or of separate elements combined and fortified, as shown in the drawings. The said rail members of each unitary carrier are similarly located in each, so that when the carriers are coupled together each of said members of the one carrier is in alinement, respectively, with the corresponding members of the adjacent carriers, and the ends of said members on adjacent carriers are preferably brought into close proximity to each other, so as to constitute beneath the cou-

pled unitary carriers as nearly as possible two continuous rail-bearing surfaces throughout the entire series.

Each carrier is further provided with an extension or link d , firmly secured, as shown, to its rail-bearing members $b b'$ below the level of its platform a and preferably extending centrally and longitudinally beyond the latter. The said link d may be so secured in any convenient manner either directly to the platform a , but preferably, as shown, by bolting or riveting the same to a brace i , which is in turn rigidly secured to each of said rail-bearing members $b b'$. The free terminal of said link d is provided with an eye-bearing member d' , preferably pivotally coupled to said link by a horizontal pivot to admit of some vertical movement by said eyepiece relatively to said link. Each carrier is further provided with a coupling-pin or bolt e , centrally and medially disposed relatively to the carrier and its platform taken as a whole—that is to say, the coupling-pin is located in the carrier at a point substantially central relatively to the two side edges and the end of the platform of such carrier, which are nearest to said coupling-pin. (See Fig. 1.) Each of said unitary carriers is also provided with a downwardly-extending projection n , disposed centrally or in the line of the general longitudinal axis of such carrier. Such projection is preferably afforded by extending downwardly the said coupling-pin, as shown in Figs. 2, 4, and 5, and by providing such extension with a friction-roller f , rotatably secured thereto. The said roller f is fitted to the interior of a continuous guideway or slot in the guide-rail g , said guide-rail being rigidly supported independently of the said carrier A and its propelling mechanism and so disposed as to cause the said guideway or slot to extend longitudinally in relation to the direction of the movement of the carrier and centrally relatively to the transverse aspect of the carrier itself. The guideway and guide-rail may be so supported in any convenient manner—as, for instance, by a suitable series of independent supportors h , as shown in the form of construction illustrated in the drawings.

Support is afforded and forward movement simultaneously imparted to the carrier A and its associated sequentially-connected series of similar carriers by a plurality of wheels supported and maintained in operative position by any convenient means independently of the said carrier. The said wheels are preferably mounted in pairs upon the same axle—as, for instance, (see $w w'$), on axle k , as shown in Fig. 2—and are disposed so that their peripheries will contact and coast with the downwardly-presented treads of the rail members $b b'$. The axle k , to which the said wheels are rigidly secured, is supported in any convenient manner independently of the said carriers, as shown in the drawings—for instance, on columns $l l'$ —provided with suit-

able journal-boxes $m m'$, in which the said axle is supported and rotated from any source of power thereto applied—as, for instance, the motor j .

It will be understood that the carrier as it proceeds is supported and propelled as aforesaid by an indefinitely-extended series of wheels similar to the pair described and supported and rotated as aforesaid at proper intervals along the entire line of propulsion of the carrier—as shown, for instance, in Fig. 4—such wheels $w^6 w^7 w^8 w^9$ being each of them one of a similar pair of such wheels as aforesaid, their respective companion wheels corresponding in all particulars to w' in Fig. 2, (not appearing owing to the sectional character of the drawing.) It will also be observed that, as illustrated in Fig. 2, each axle k may carry analogous pairs of wheels $w^2 w^3 w^4 w^5$, each pair varying in diameter from its neighboring pair and adapted to similarly support and propel a similar sequentially-connected series of unitary carriers $B C$, and that the respective rates of propulsion of each series of such carriers so supported will vary relatively to each other, according to the diameters of their respective supporting and propelling wheels, though the said wheels are all rotated simultaneously by the same axle k , driven at a given rate of speed, by which means, as will be readily understood by those skilled in the art, passengers may safely pass from a stationary platform D over the carriers A and C to the carrier B while the latter is advancing at a comparatively high rate of speed, since a gradual and not injurious increase of momentum is imparted to the passenger by the intermediate and respectively slower-moving platforms thus intermediately traversed.

It will be particularly observed that the adjacent ends of the respective rail members of each unitary carrier are correspondingly curved, the one pair concavely and the other pair convexly, upon the arcs of circles of which the said coupling-pin is the center and that the same is true of the adjacent edges of the respective platforms of such carriers. For instance, as shown in Fig. 3, the ends of the rail members $b b'$ of the unitary carrier A are concavely curved and the corresponding rail members $b^2 b^3$ of the adjacent carrier A' are convexly curved upon the arcs of circles of which the coupling-pin e' is the center, and that likewise, as shown in Fig. 1, the end of the platform a of the unitary carrier A is concavely curved and the end of the platform a' of the carrier A' is correspondingly convexly curved upon the arcs of circles of which said coupling-pin e' is the center. By means of this novel arrangement and curvature of the parts provision is made for successfully maintaining continuity of contact by the treads of the rails with the actuating-wheels and proper support when the course of the carrier is caused to curve by the guiding mechanism, as hereinafter described, and likewise,

under similar conditions, the continuity of the surface of the carrier-platform taken as a whole is maintained. The operation of the rail members and of the platforms in the particulars last mentioned is illustrated in Figs. 1 and 3, as to the platforms by the relative positions of the platforms a a^2 as shown in Fig. 1, and as to the rail members by the relative positions of the rail members b^4 b^5 as compared with b b' as shown in Fig. 3, k' in the figure last mentioned showing the position on a curve of an axle similar to k of Fig. 2, w^{12} and w^{13} indicating the position of a pair of driving-wheels secured to said axle k' and supported, operated, and functioning the same as w w' in Fig. 2, though disposed angularly to the latter in order to accommodate the curve.

As will be appreciated from the foregoing, our carriers are controlled as against transverse displacement relatively to the general direction of propulsion by the coaction of their downwardly-extended projections, having friction-rollers f , with the continuous centrally grooved and disposed guide-rail g . Said guide-rail is disposed so as to center the direction of forward movement at all points on the line, and as the carriers are propelled forward as described said guide-rail imparts to each unitary carrier through contact with its aforesaid projection and roller the required direction of movement.

It will be understood that the construction, proportions, and shape of the respective elements and parts comprised in our said carriers and their motive power may be varied in details from those shown in the drawings without departing from our inventions except in the particulars of the described curvatures of adjacent rail and platform members upon arcs of circles, of which the said coupling-pins are centers, and also that motive power may be applied in a variety of ways, and that, for instance, certain of the wheels described may be used merely to support the carrier and certain of such wheels positively rotated according to the different requirements of each particular case. It will be particularly understood that the guiding devices may be likewise varied—as, for instance, instead of the type referred to and illustrated in Figs. 2, 4, and 5 a guide-rail may be employed having a vertical cross-section of the form o , (illustrated in Fig. 6,) in which case the coacting downward projection n from the carrier should be bifurcated, as shown, to straddle the rail and each bifurcation provided with a friction or guide roller n' n^2 , arranged, preferably, as shown in Fig. 6, or, as shown in Fig. 7, the end of the projection n may be bifurcated, each bifurcation thereof being provided with a friction-roller p p' , each engaging from within against the opposite vertical walls of a continuously-extended pair of parallel guide-rails q q' , or, again, as in Fig. 8, the guide-rails may have the vertical cross-section shown in that figure, in

which case the guiding projection t should be correspondingly shaped, as shown. It will also be understood that without departing from our invention the series of supporting and propelling wheels referred to may be supported by and so as to themselves roll forward upon a suitably-positioned railway instead of upon an axle the supports of which are stationary, as in the present drawings, in which case the said guideways instead of being supported on stationary supports, as shown in the drawings, would be supported ultimately by the axles of the said propelling and supporting wheels.

What we claim as new, and desire to secure by Letters Patent, is the following, viz:

1. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each coöperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin.

2. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each coöperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with a centrally-disposed longitudinally-extending guideway and a projection coöperating with said guideway to control lateral displacement of the carrier.

3. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each coöperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with a centrally-disposed longitudinally-extending guideway and a roller-bearing projection coöperating with said guideway to control lateral displacement of the carrier.

4. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each coöperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier

provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with an independently-supported centrally-disposed longitudinally-extending guideway and a centrally-disposed projection from each carrier cooperating with said guideway to control lateral displacement of the carrier.

5. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with an independently-supported centrally-disposed longitudinally-extending guideway and a centrally-disposed roller-bearing projection from each carrier cooperating with said guideway to control lateral displacement of the carrier.

6. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with a series of wheels disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

7. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with a centrally-disposed longitudinally-extending guideway and a projection cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels disposed beneath said carriers so that the treads of said

wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

8. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with a centrally-disposed longitudinally-extending guideway and a roller-bearing projection cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

9. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with an independently-supported centrally-disposed longitudinally-extending guideway and a centrally-disposed projection from each carrier cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

10. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with an independently-supported centrally-disposed longitudinally-extending guideway and a centrally-disposed roller-bearing projection from each carrier cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels disposed beneath said carriers so that the treads of said

wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

11. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with a series of wheels rotatable in stationary bearings disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

12. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles, the center of which is said coupling-pin, in combination with a centrally-disposed longitudinally-extending guideway and a projection cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels rotatable in stationary bearings disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

13. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with a centrally-disposed longitudinally-extending guideway and a roller-bearing projection cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels rotatable in stationary bearings disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

14. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on

the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with an independently-supported centrally-disposed longitudinally-extending guideway and a centrally-disposed projection from each carrier cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels rotatable in stationary bearings disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

15. A carrier-platform comprising a series of unitary carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed coupling-pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carriers, and having downwardly-presented treads, the adjacent ends of the respective rail members of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin, in combination with an independently-supported centrally-disposed longitudinally-extending guideway and a centrally-disposed roller-bearing projection from each carrier cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels rotatable in stationary bearings disposed beneath said carriers so that the treads of said wheels shall coact with treads of said rails to propel said carriers when said wheels are rotated.

16. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carrier and having downwardly-presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly.

17. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carrier and having downwardly-presented treads, the adjacent ends of the respective

rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with a centrally - disposed longitudinally - extending guideway and a projection cooperating with said guideway to control lateral displacement of the carrier.

18. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carrier and having downwardly-presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with a centrally - disposed longitudinally - extending guideway and a roller-bearing projection cooperating with said guideway to control lateral displacement of the carrier.

19. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carrier and having downwardly - presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with an independently-supported centrally-disposed longitudinally-extending guideway and a centrally-disposed projection from each carrier cooperating with said guideway to control lateral displacement of the carrier.

20. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carrier and having downwardly-presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with an independently - supported centrally-disposed longitudinally-extending guideway and a centrally-disposed roller-bearing projection from each carrier cooperating with said guideway

to control lateral displacement of the carrier.

21. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carrier and having downwardly-presented treads, the adjacent ends of the respective rail members and of the platform of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of one carrier concavely and of the other carrier convexly, in combination with a series of wheels disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

22. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carrier and having downwardly-presented treads, the adjacent ends of the respective rail members and of the platform of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of one carrier concavely and of the other carrier convexly, in combination with a centrally-disposed longitudinally-extending guideway and a projection cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

23. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carrier and having downwardly-presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with a centrally-disposed longitudinally-extending guideway and a roller-bearing projection cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

24. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively aligned with the corresponding members of its adjacent carrier and having downwardly - presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with an independently-supported centrally-disposed longitudinally-extending guideway and a centrally-disposed projection from each carrier cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

25. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin on the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively aligned with the corresponding members of its adjacent carrier and having downwardly - presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with an independently-supported centrally-disposed longitudinally-extending guideway and a centrally-disposed roller-bearing projection from each carrier cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

26. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively aligned with the corresponding members of its adjacent carrier and having downwardly - presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with a series of wheels rotatable in stationary bearings disposed beneath said carriers so that

the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

27. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively aligned with the corresponding members of its adjacent carrier and having downwardly - presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with a centrally-disposed longitudinally-extending guideway and a projection cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels rotatable in stationary bearings disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

28. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively aligned with the corresponding members of its adjacent carrier and having downwardly-presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with a centrally-disposed longitudinally-extending guideway and a roller-bearing projection cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels rotatable in stationary bearings disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

29. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier, and each said carrier provided with rigid laterally-disposed rail members respectively aligned with the corresponding members of its adjacent carrier and having downwardly-presented treads, the adjacent ends of the respective rail members and of the platforms of adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with an independently-supported centrally-disposed lon-

5 longitudinally-extending guideway and a centrally-disposed projection from each carrier cooperating with said guideway to control lateral displacement of the carrier, in combination with a series of wheels rotatable in stationary bearing disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

10 30. A carrier-platform comprising a series of unitary platform-bearing carriers sequentially coupled by a link secured to each cooperating with a medially and centrally disposed pin in the adjacent carrier, and each

15 said carrier provided with rigid laterally-disposed rail members respectively alined with the corresponding members of its adjacent carrier and having downwardly-presented treads, the adjacent ends of the respective

20 rail members and of the platforms or adjacent carriers being curved on arcs of circles the center of which is said coupling-pin those of the one carrier concavely and of the other carrier convexly, in combination with an independently-supported centrally-disposed longitudinally-extending guideway and a centrally-disposed roller-bearing projection from

25 each carrier cooperating with said guideway to control lateral displacement of the carrier,

30 in combination with a series of wheels rotatable in stationary bearings disposed beneath

said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

31. A carrier-platform comprising a series of unitary carriers sequentially coupled and each provided with a centrally-disposed downwardly-extending projection coacting with an independently-supported correspondingly-disposed and longitudinally-extending guideway whereby the said platform and its component members are controlled as against movement transverse to the direction of propulsion.

32. A carrier-platform comprising a series of unitary carriers sequentially coupled and each provided with a centrally-disposed downwardly-extending roller-bearing projection coacting with an independently-supported correspondingly-disposed and longitudinally-extending guideway whereby the said platform and its component members are controlled as against movement transverse to the direction of propulsion.

MAX E. SCHMIDT.
 GEO. A. MAYLAND.

Witnesses:

PHILIP C. PECK,
 WILLIAM STAHL.