L. DAVIDSON.

MOVABLE RAILWAY PLATFORM.

APPLICATION FILED SEPT. 23, 1915.

1,189,669.

Patented July 4, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

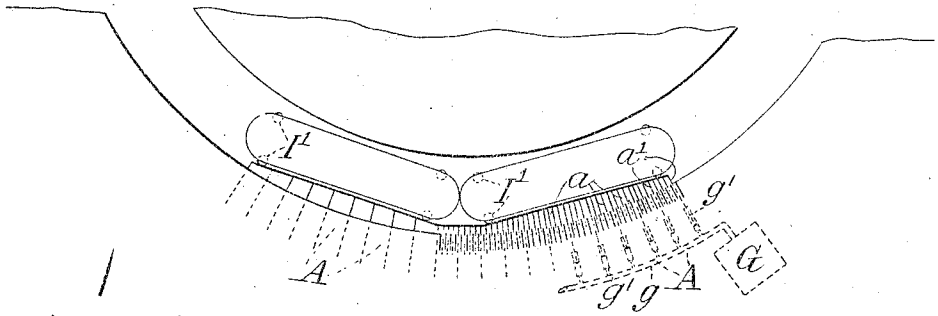


Fig. 5.

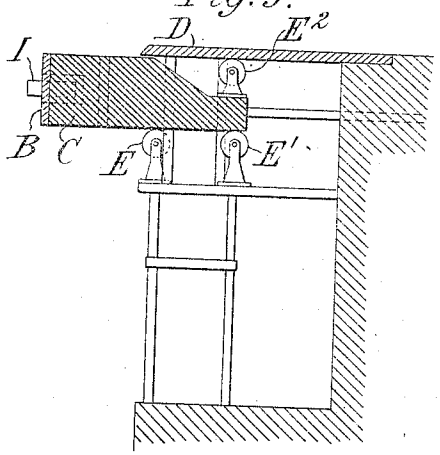


Fig. 3.

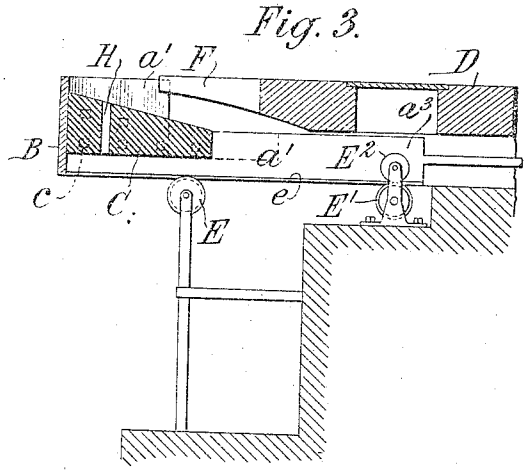


Fig. 4.

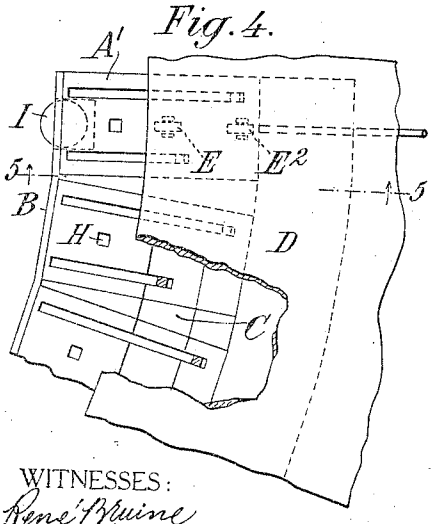
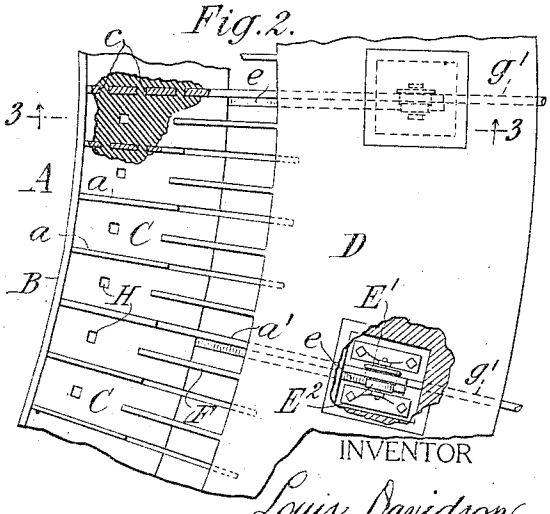


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 6.

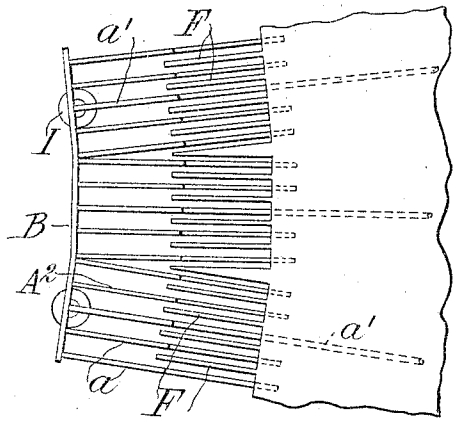
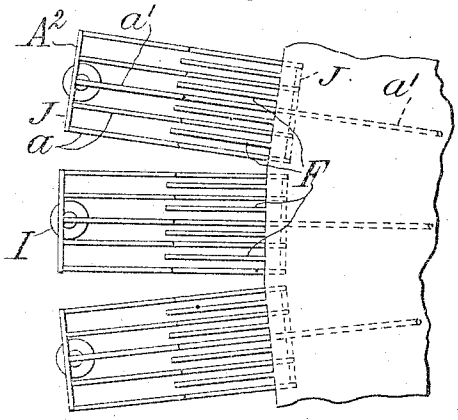


Fig. 7.



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LOUIS DAVIDSON, OF NEW YORK, N. Y.

MOVABLE RAILWAY-PLATFORM.

1,189,669. Specification of Letters Patent. Patented July 4, 1916.

Application filed September 23, 1915. Serial No. 52,248.

To all whom it may concern:

Be it known that I, LOUIS DAVIDSON, a citizen of the United States of America, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Movable Railway-Platforms, of which the following is a specification.

My invention relates to movable railway platforms, and has for its object to provide a platform of this character which may be used upon a curve in a railway to bridge over the space between the edge of the stationary platform and the car, and the invention consists in the provision of means whereby the said platform will effectively bridge over the said space between the stationary platform and the car no matter at what position the car may stop.

Devices to accomplish the object of bridging over the space between the edge of a curved platform and a car have been in use, and so far as I am aware, such devices have involved the use of platforms located at a fixed point and projecting to a stated distance from the platform, and their use has required that the car should stop in the right position. I have provided a device wherein the car may stop in any position, and the different portions of the platform will adapt themselves to cover the distance between the edge of the platform and the car, and in accomplishing this I have provided a moving platform in comparatively small sections or portions, the several portions of which are movable relatively to each other so that no large open space is permitted between the edge of the stationary platform and the car.

Desirable forms in which my invention may be embodied are illustrated in the accompanying drawings, wherein—

Figure 1 illustrates in plan the use of my invention with cars in position on a curve; Fig. 2 is an enlarged view of a part of the mechanism illustrated in Fig. 1; Fig. 3 is a cross section on the line 3—3 of Fig. 2; Fig. 4 is a plan view partly broken, illustrating a modified form of my invention; Fig. 5 is a cross section on the line 5—5 of Fig. 4; and Figs. 6 and 7 are plan views of still further modifications illustrating the use thereof on convex and concave curves.

According to my invention the moving platform is constructed so that its outer edge is flexible, and to accomplish this result the said platform is formed in relatively small sections or portions which have a slight but sufficient movement relative to one another to enable the outer edge of the various portions thereof to project to varying distances from the edge of the stationary platform.

In Figs. 1, 2 and 3 I have illustrated a moving platform constructed in sections, the respective sections being lettered A. Each section A is illustrated as containing a plurality of spaced ribs a a^1. These ribs are preferably connected at their outer ends by a flexible connection B, which also connects adjacent sections. In this instance the ribs are composed of narrow slat-like form, say for instance a quarter of an inch wide and six inches deep, and are located apart a distance approximately three-quarters of an inch. The ribs a, a^1 composing each section are preferably connected one to the other by flexible connecting means, such, for instance, as a body of rubber C, which is vulcanized to the lower face of each rib and extends back less than the whole length of the rib. As a further means of anchoring the ribs in their proper places each rib is preferably perforated at c, and through these perforations the body of the rubber connection C flows, making a substantially integral mass of the rubber connecting the ribs in each section. Each section is provided with at least one rib a^1 which is of greater length than the others and has a lower rear portion a^3 which extends underneath the stationary platform D, sliding therein in a slot provided for that purpose and providing the means whereby the platform sections A are enabled to sustain the weight imposed upon them. If it is desired these lower ribs may slide on lower rollers E, E^1, and beneath rollers E^2, which bear upon the upper side of flanges e, with which the lower surface of the long ribs a^1 is provided. The stationary platform D is curved at its outer edge: this curve may be convex, as shown in Fig. 2, or concave, as shown in Fig. 7, as the application of my invention is not affected by the particular curve nor by its degree. Projecting forwardly from the stationary platform D are a series of stationary slat-like ribs F forming the edge of the stationary platform, each of which has its upper surface substantially level with the upper surface of the ribs a a^1, and which serve to provide additional support for the passen-

gers between the said ribs. As illustrated, the space between each rib F and its adjacent moving rib a or a^1 may be in the neighborhood of three-eighths of an inch. It will be seen, therefore, that the spaces between the several ribs are so slight that even in the extended position shown in Fig. 2 no possible opportunity is afforded for the feet of the passengers to pass between the ribs. The moving platform is propelled to its outward or operative position, which is the position shown in Figs. 1, 2 and 3, by any suitable elastic motive power which will permit the sections to conform to the position of the car body. Compressed air may well be used for this purpose and may be supplied from any suitable source, such as a tank G, through the pipe g, to cylinders g^1 wherein are pistons connected to the long ribs a^1, and which propel the latter to position. The particular propelling means illustrated may be varied, and are only shown diagrammatically, and no claim is based upon the particular constructions of motor for this purpose. The rubber body C by which the units a a^1 in each section A are connected is preferably provided with a series of light wells H to permit light from electric lamps, usually located below moving platforms, to shine through and indicate the position of the platform to the passengers.

In the modified form illustrated in Figs. 4 and 5 the movable platform sections A^1 are constructed in solid blocks of suitable material, such as wood, metal, rubber, reinforced rubber, etc., and are illustrated as substantially rectangular in shape and are of relatively narrow width as compared with their length, as illustrated in Figs. 1, 2 and 3, being about eighteen inches wide and three feet long, depending on the degree of the curve, and connected at their outer ends by a flexible connection B which may be of rubber band, as in Figs. 1, 2 and 3, or rubber in combination with fabric, or the band can be omitted. Preferably the adjacent sections A^1 are connected by a rubber connection C which is preferably secured to the body of each section as by being vulcanized thereto. Light wells H are provided through the body of each section. Each section has suitable means to ease its passage, such as the rollers E E^1 and E^2. The outer surface of each section is illustrated as provided with rollers I, which rollers roll against the surface of the car and provide means whereby the moving platform may be returned from its outward position by the motion of the railway car if it is not properly returned by its elastic propelling means.

In the modified form illustrated in Fig. 7 the several sections of which the moving platform is formed are lettered A^2. Each section in this form is constructed of a plurality of narrow, slat-like ribs a, and each section is also provided with an elongated rib a^1 of similar construction. The several ribs in each section are mounted in a frame J which holds the units rigidly together. In this form of my invention I have illustrated the several sections A^2 as being disconnected one from the other. I prefer to move the sections by means of compressed air through an air pipe g^1 for each section, as in Fig. 1. Thereby in this form of my invention the several sections which are relatively of great length as compared with their width, are movable independently one of the other, and the entire platform composed of a plurality of the sections A^2 has its outer edge flexible so that it is enabled to conform to the position of the car, no matter at what part of the curve the car may stop. The several sections may be provided with rollers I, as previously explained, or the rollers may, if desired, be attached to the car as illustrated in Fig. 1 where the rollers are lettered I^1. In this form of my invention the stationary platform slats F are illustrated and the construction, except for the connection between the adjacent sections A^2, may be the same as that illustrated in Figs. 1, 2 and 3.

Fig. 6 illustrates substantially the same construction as Fig. 7, the platform, however, being shown on a concave curve. In each of the figures the platform is shown in extended position. In Fig. 6 it is not necessary to have a separate moving mechanism for each section. A connector B is provided for the front ends of the sections and this serves in part the function of the front of the frame J which is not here illustrated. Said connector B also provides for independent relative movement of adjacent sections and serves to carry forward such sections as have no separate moving mechanism, and at the same time provides a flexible outer edge.

I have illustrated the most desirable forms of constructing my invention now known to me, but I do not intend to be understood as limiting myself to the precise mechanical details of construction illustrated. The essential principle of my invention consists in the provision of a movable railway platform constructed in sections of slight width as compared with their length, connected by a flexible connection, or disconnected and propelled by elastic propelling means, so that each section may lag behind or precede its adjacent sections as required by the situation of the car, and providing in effect a continuous platform having a flexible outer edge. This essential principle of my invention is illustrated as embodied in the construction illustrated in the accompanying drawings, but said construction may be varied within the limits of the appended claims.

The drawings accompanying this application are not drawn to scale, and present a diagrammatic illustration of the method of constructing my invention which is the best now known to me.

What I claim is:—

1. A railway station platform for use on a curve, comprising a stationary platform, a moving platform constructed in sections, elastic connections between adjacent sections, and elastic means for moving said connected sections to operative position.

2. A railway station platform for use on a curve, comprising a stationary platform, a moving platform constructed of sections, elastic connections between adjacent sections, and elastic means operating in approximately radial lines for extending the moving platform to operative position.

3. A railway station platform for use on a curve, comprising a stationary platform, a moving platform constructed of sections, elastic connections between adjacent sections, elastic means operating in radial lines for moving the sections to operative position, and rollers at the outer end of the moving platform adapted to bear against a car.

4. A railway platform comprising a stationary platform, a series of spaced ribs projecting outwardly therefrom, and a moving platform constructed in sections, each section comprising a plurality of spaced ribs adapted to pass between the stationary ribs and flexible and elastic connections between the ribs in the moving platform.

5. A movable railway platform constructed in sections, each section of relatively narrow width as compared with its length, and each section connected to an adjacent section by an elastic connection whereby each section is adapted to have a slight movement independent of adjacent sections, whereby the outer edge of the moving platform will conform to the car irrespective of its position.

6. A railway station platform for use on a curve, comprising a stationary platform, a moving platform constructed of sections having slat-like bearing faces, said sections movable in the same horizontal plane, elastic connections between adjacent sections, and elastic means operating approximately in radial lines for extending the moving platform to operative position.

7. A railway station platform for use on a curve, comprising a stationary platform, a moving platform constructed of numerous portions, elastic connections between adjacent portions, each portion adapted to have movement relative to adjacent portions, whereby the said platform presents a flexible outer edge adapted to conform to the position of the car, and elastic means for moving the platform to operative position.

8. A railway station platform for use on a curve, comprising a stationary platform having slat-like projecting ribs, a moving platform constructed of numerous slat-like ribs connected at their outer edges by a flexible connection, and having elastic connections between adjacent portions, and the ribs of the moving platform adapted to pass between the ribs of the stationary platform.

9. A railway station platform comprising a stationary platform, a series of spaced ribs projecting outwardly therefrom, and a moving platform constructed in sections, each section comprising a plurality of spaced ribs adapted to pass between the stationary ribs, and no appreciable open space between adjacent sections.

10. A railway station platform comprising a stationary platform, a series of spaced ribs projecting outwardly therefrom, and a moving platform constructed in sections and connected at the outer end by a flexible and elastic connection, each section comprising a plurality of spaced ribs adapted to pass between the stationary ribs, and forming a continuous movable platform.

11. A railway station platform comprising a stationary platform, a series of spaced ribs projecting outwardly therefrom, and a moving platform constructed of numerous ribs connected at the outer end by a flexible and elastic connection, and adapted to pass between the stationary ribs, and forming a continuous movable platform.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

LOUIS DAVIDSON.

Witnesses:
HENRY M. TURK,
FRED WHITE.