No. 780,345. PATENTED JAN. 17, 1905.

S. E. JACKMAN.

BRAKE MECHANISM FOR INCLINED RAILWAYS.

APPLICATION FILED SEPT. 19, 1904.

2 SHEETS—SHEET 1.

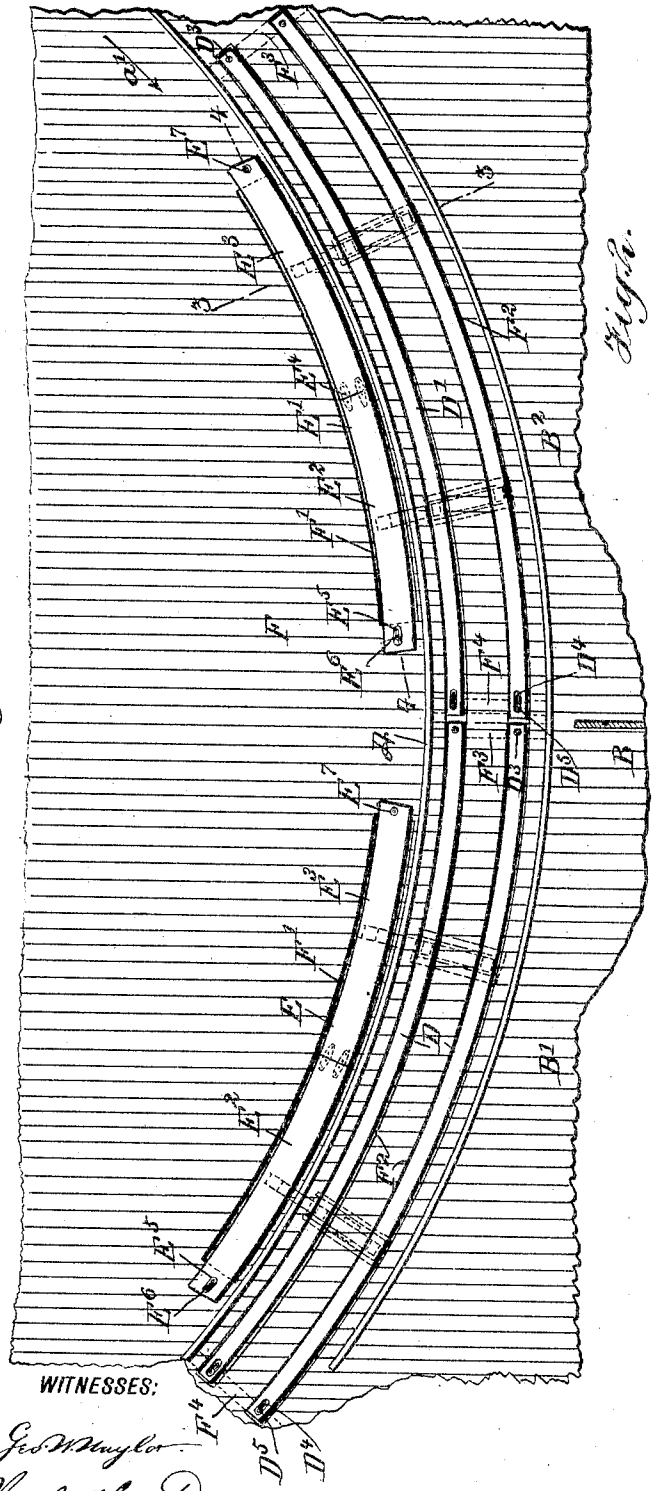

Fig. 1.

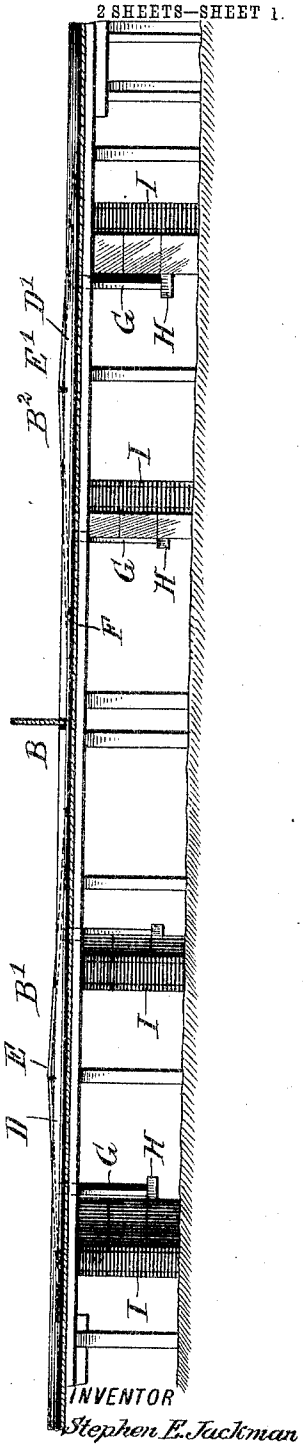

Fig. 2.

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Fig. 3.

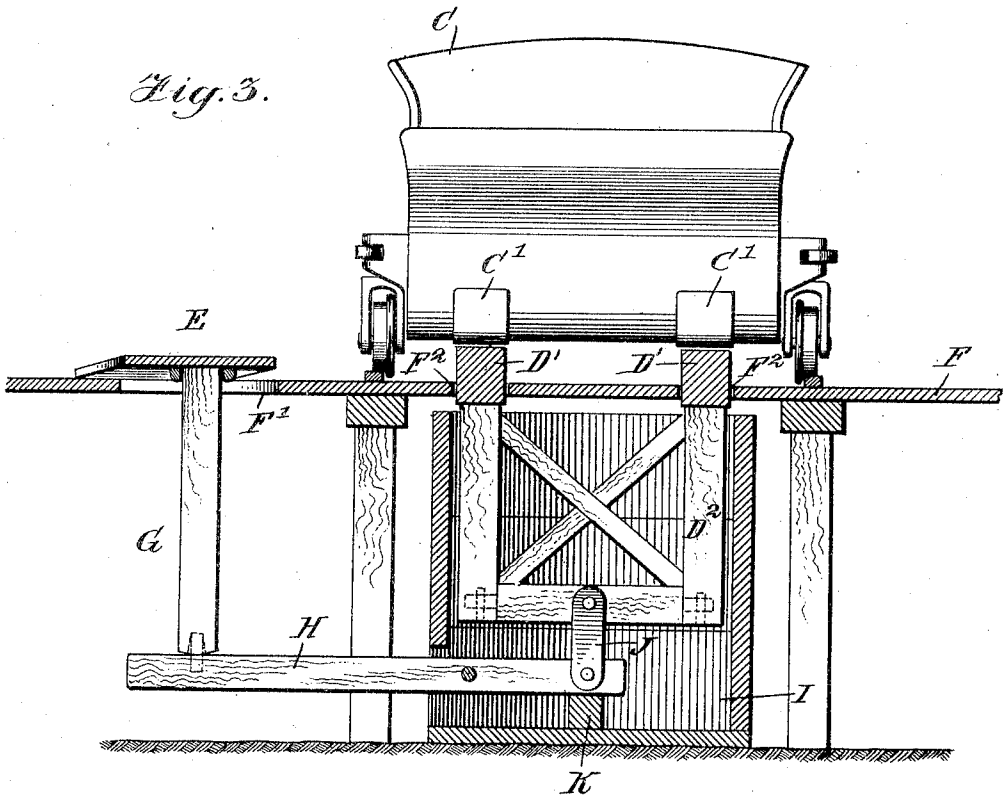
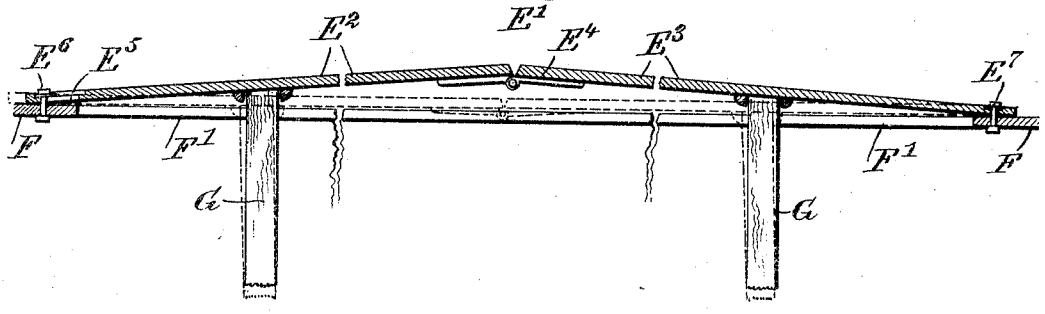


Fig. 4.



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No. 780,345. Patented January 17, 1905.

UNITED STATES PATENT OFFICE.

STEPHEN EDWARD JACKMAN, OF NEW YORK, N. Y.

BRAKE MECHANISM FOR INCLINED RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 780,345, dated January 17, 1905.

Application filed September 19, 1904. Serial No. 225,046.

To all whom it may concern:

Be it known that I, STEPHEN EDWARD JACKMAN, a citizen of the United States, and a resident of the city of New York, Coney Island, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Brake Mechanism for Inclined Railways, of which the following is a full, clear, and exact description.

The invention relates to brake mechanisms for inclined railways, such as shown and described in the Letters Patent of the United States, No. 737,409, granted to me August 25, 1903, and No. 749,691, granted to me January 12, 1904.

The object of the present invention is to provide a new and improved brake mechanism for inclined or pleasure railways arranged to permit the brake attendant at the station to conveniently actuate the brake mechanism in the track to brake and stop a car or to release the same, at the same time the attendant being enabled to give full attention to the passengers to prevent accidents when the passengers leave a car or embark in the same for a journey over the railway.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement as arranged at the receiving and despatching station of the railway. Fig. 2 is a side elevation of the same, the floor or platform being shown in section. Fig. 3 is an enlarged cross-section of the improvement on the line 3 3 of Fig. 1; and Fig. 4 is an enlarged longitudinal sectional elevation of the running-board, the section being on the line 4 4 of Fig. 1.

The inclined or pleasure railway on which the improvement is applied is provided with a continuous track of any approved shape having a station portion A, preferably semicircular in shape and connecting at the forward end with the lower end of an up-track and connected at its rear and somewhat-elevated end with the home or downward stretch of the continuous track, so that a car can travel from the station A over the continuous track and return to the station, as more fully shown and described in the Letters Patent of the United States No. 737,409, above referred to.

The station B at the station portion A of the track is provided with an embarkation-section B′ and a disembarkation-section B^2, separated one from the other to allow passengers to readily enter a car C at the section B′ and to allow passengers to leave or disembark at the section B^2, thus avoiding confusion on the passengers entering and leaving the cars. Now in the station portion A of the continuous track and at the said station-sections B′ and B^2 are arranged sets of brake-beams D and D′, supported at their ends and adapted to be sprung upward to engage rubbing-irons C′, secured to or formed on the under side of the car C, as plainly illustrated in Fig. 3. The brake-beams D and D′ are normally in a lowermost position out of engagement with the said rubbing-iron C′, and the said brake-beams are sprung upward between their ends when the brake attendant steps onto a running-board E or E′ in the corresponding station-section B′ or B^2 and located, preferably, at the inside of the track, as plainly indicated in Fig. 1.

Each of the running-boards E and E′ is supported at its ends on a platform F and extends over the opening or slot F′ of the station-platform F, and each running-board is preferably made in two sections E^2 E^3, connected with each other at their adjacent ends by hinges E^4, one end of each running-board being formed with an elongated slot E^5, engaging a bolt E^6, secured to the platform F to allow lengthwise movement of the corresponding running-board and to hold the same against lateral displacement. The other end of the running-board is held on a pin E^7, at-

tached to the platform F. The under sides of the running-board sections E^2 and E^3 rest on posts G G, set on the outer ends of levers H, fulcrumed in a suitable framework I, arranged under the car-track, and the said levers H are pivotally connected by links J with a supporting-framework D^2 for the corresponding brake-beams D or D'. (See Fig. 3.) Now the beams D or D' and their connected parts overbalance the running-board, so that the beams D or D' are normally in a lowermost position, thus holding the running-board E or E' elevated above the upper surface of the platform F in peak shape, as shown in Fig. 2. The downward swinging movement of the levers H is preferably limited by stop-blocks K, forming part of the framework I, previously referred to. When the attendant steps on a running-board E or E', then his weight causes a downward movement of the running-board, so that a swinging motion is given by the posts G to the corresponding levers H, which by their links J cause the beams D or D' to spring upwardly, so as to bring the same in frictional contact with the under side of the rubbing-irons C' to brake the car and to finally bring the same to a standstill, especially as the brake-beams D or D' spring sufficiently upward to completely lift the wheels of the car C completely off the track-rails. While the car is in this raised and stopped position, passengers can readily embark in the car when the same is at the station-section B', and when the car has made the journey and returned to the station-section B^2 and is held there against further movement then the passengers can readily disembark without danger of accident to the passengers.

The brake-beams D or D' are preferably two in number for the track at each station-section B' and B^2; but more beams or only a single one may be employed at a station-section. Each of the beams extends in a slot F^2 in the platform F, and each beam rests at its ends on track-timbers or cross-beams F^3 F^4, one end of each beam being fastened by a bolt D^3 to the timber F^3 and the other end of the beam being formed with a slot D^4, engaged by a bolt D^5, attached to the other timber, F^4.

The running-boards E and E' are connected by the connections described with the brake-beams, between the ends thereof, to spring the beams D or D' upwardly when the attendant steps on the corresponding running-board E or E' for the car to gradually run on the said beams D or D' to bring the car to a stop. It is understood that as the brake-beams D and D' are free to slide at their slotted ends they readily spring into a curved shape when the attendant steps on the corresponding running-board, and hence the car is gradually lifted off its track-rails. Now when a car traveling over the continuous track nears the disembarkation-section B^2 of the station in the direction of the arrow a' then the attendant standing on the platform F at the inside of the track takes hold of the inner side of the car and walks with this car along to finally step onto the section E^3 at the bolt E^7 and walk along this section to cause the running-board to swing downward, and in doing so the beams D' are caused to engage the irons C' to gradually brake the car. The attendant walks with the car toward the middle of the running-board E' at the joint of the sections to use the sections at their greatest leverage, and hence give the utmost spring to the brake-beams D' for the latter to bring the car to a standstill and to lift the car-wheels completely off the track-rails. The passengers now disembark and the brake attendant can give his full attention to the passengers during the embarkation, as his weight on the running-board holds the car in a raised position and against traveling movement. As soon as the passengers have disembarked the attendant steps off the running-board E' to allow the brake-beams D' to return to their normal position by their own resiliency to disengage the car. The attendant now pushes the car along to the embarkation-section of the track and in doing so walks on the running-board E to gradually move the brake-beams D in engagement with the rubbing-irons C' on the car to bring the latter to a full stop at the embarkation-section B' of the station B. The attendant while standing on the running-board can give proper directions to the embarking passengers, and as soon as the passengers are seated the attendant steps off the running-board E to push the car to the foot of the uptrack, at which point the car is taken hold of by a propelling device to move the car up the up-track. The attendant now steps back over the platform to await the coming of the next car at the end of the homestretch and the beginning of the station-section B^2. As the track portion A is somewhat inclined, as previously stated, the attendant can readily push the empty car from the disembarkation-section B^2 to the embarkation-section B' and then push the filled car from the embarkation-section to the foot of the up-track, as above described.

It is understood that the speed of the car is checked on the homestretch section by special separate brake devices, such as shown and described in the patents above referred to, and hence when the car reaches the disembarkation-section B^2 the attendant on stepping on the running-board can readily and quickly bring the car to a final stop, as above described.

By the arrangement described the attendant does not use his hands for working brake-

levers to bring the car to a final stop, but simply steps on the running-board E' or E, and hence the attendant can give full attention to the disembarkation and embarkation of the passengers.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An inclined railway provided with a main track having a station portion provided with an embarkation-section and a disembarkation-section, and independent brake mechanisms arranged in the track at the said sections, each brake mechanism having an operating device actuated by the weight of the brake attendant and independent of the occupants of the car.

2. An inclined railway provided with a main track having a brake mechanism arranged in the track, to engage and brake the car, to lift the same bodily off the track and hold the car against movement while held off the track, the said brake mechanism being actuated by the weight of the brake attendant and independent of the occupants of the car.

3. An inclined railway provided with a main track having a brake mechanism arranged in the track, to engage and brake the car, the said brake mechanism having a running-board for the attendant to pass on and thereby actuate the brake mechanism.

4. An inclined railway provided with a main track having a brake mechanism arranged in the track, to engage and brake a car, the said brake mechanism having a running-board for the attendant to pass on and thereby actuate the brake mechanism, the latter, on relieving the running-board of the weight of the attendant, returning automatically to a normal position and out of engagement with the car, to release the latter.

5. An inclined railway provided with a main track, embarking and disembarking stations for the passengers, located adjacent one to the other, and brake mechanisms in the said track at the said stations, to engage and brake a car and hold the same against movement, the said brake mechanisms being controlled by the weight of the attendant, independent of the occupants of the car.

6. An inclined railway provided with a main track having a brake mechanism arranged in the track, to engage and brake a car, the said brake mechanism having a running-board for the attendant to pass on and thereby actuate the brake mechanism, the latter, on relieving the running-board of the weight of the attendant, returning automatically to a normal position and out of engagement with the car, to release the latter, the said running-board being made in sections hinged together.

7. An inclined railway provided with a main track having a brake mechanism arranged in the track, to engage and brake a car, the said brake mechanism having a running-board for the attendant to pass on and thereby actuate the brake mechanism, the latter, on relieving the running-board of the weight of the attendant, returning automatically to a normal position and out of engagement with the car, to release the latter, the said running-board being made in sections hinged together at their inner adjacent ends and having their outer ends slidingly supported.

8. An inclined railway provided with a main track, embarking and disembarking stations for the passengers, located adjacent one to the other, and brake mechanisms in the said track at the said stations, to engage and brake a car and hold the same against movement, each of the said brake mechanisms having a running-board for the attendant to pass on and thereby actuate the brake mechanism by his weight.

9. An inclined railway provided with a main track, embarking and disembarking stations for the passengers, located adjacent one to the other, and brake mechanisms in the said track at the said stations, to engage and brake a car and hold the same against movement, each of the said brake mechanisms having a running-board for the attendant to pass on and thereby actuate the brake mechanism by his weight, the said stations being located on one side of the said track and the running-boards on the other side of the said track.

10. A brake mechanism for inclined railways, comprising brake-beams arranged lengthwise in the track of the railway, to engage the under side of a car traveling over the track, a running-board alongside the track, and a connection between the said running-board and the said brake-beams.

11. A brake mechanism for inclined railways, comprising brake-beams arranged lengthwise in the track of the railway, to engage the under side of a car traveling over the track, a running-board alongside the track, and a connection between the said running-board and the said brake-beams, to lift the latter on the brake attendant stepping on the running-board, the beams overbalancing the running-board, for the beams to drop on the attendant leaving the running-board.

12. A brake mechanism for inclined railways, comprising brake-beams arranged lengthwise in the track of the railway, to engage the under side of a car traveling over the track, a running-board alongside the track, made in connected sections and supported at their outer ends, and connections connecting the said running-board sections with the said brake-beam.

13. A brake mechanism for inclined railways, comprising brake-beams arranged lengthwise in the track of the railway, to engage the under side of a car traveling over

the track, a running-board alongside the track, made in connected sections supported at their outer ends, and connections connecting the said running-board sections with the said brake-beams, each of the connections consisting of a lever connected at one end with the brake-beams and at its other end with the corresponding running-board section.

14. A brake mechanism for inclined railways, comprising brake-beams arranged lengthwise in the track of the railway, to engage the under side of a car traveling over the track, a running-board alongside the track, made in connected sections supported at their outer ends, and connections connecting the said running-board sections with the said brake-beams, each of the connections consisting of a lever, a link connecting one end of the lever with the brake-beams and a post interposed between the other end of the lever and the corresponding running-board section.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

STEPHEN EDWARD JACKMAN.

Witnesses:

THEO. G. HOSTER,

EVERARD BOLTON MARSHALL.