No. 749,691. PATENTED JAN. 12, 1904.

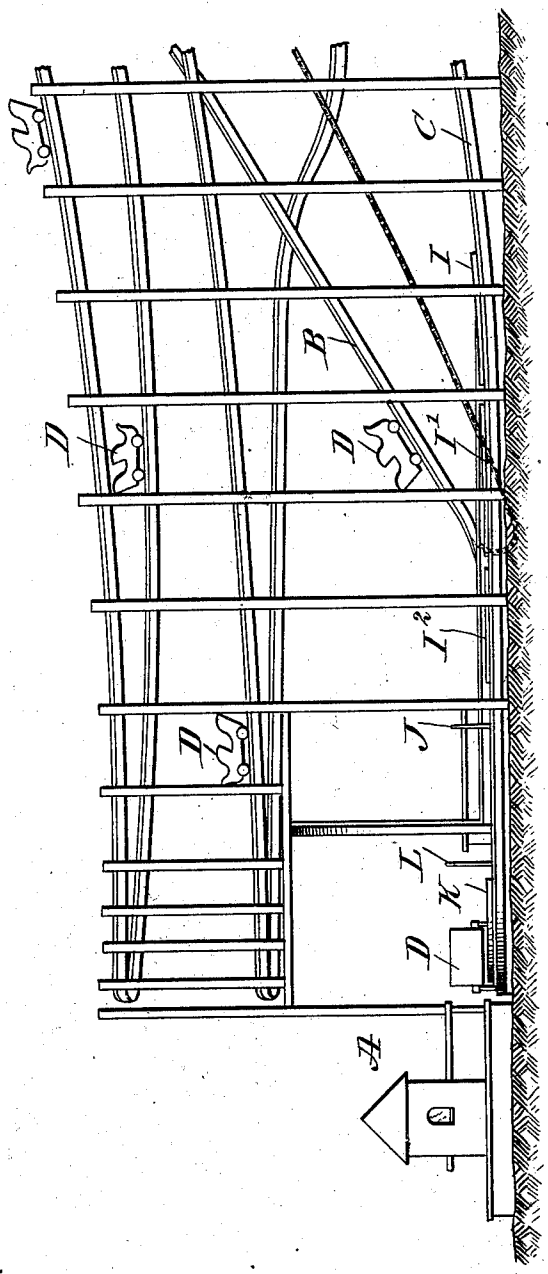
S. E. JACKMAN.

BRAKE MECHANISM FOR INCLINED RAILWAYS.

APPLICATION FILED AUG. 3, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

Paul Hunter

Geo. G. Hoskins

INVENTOR

Stephen E. Jackman

BY Munn & Co.

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2.

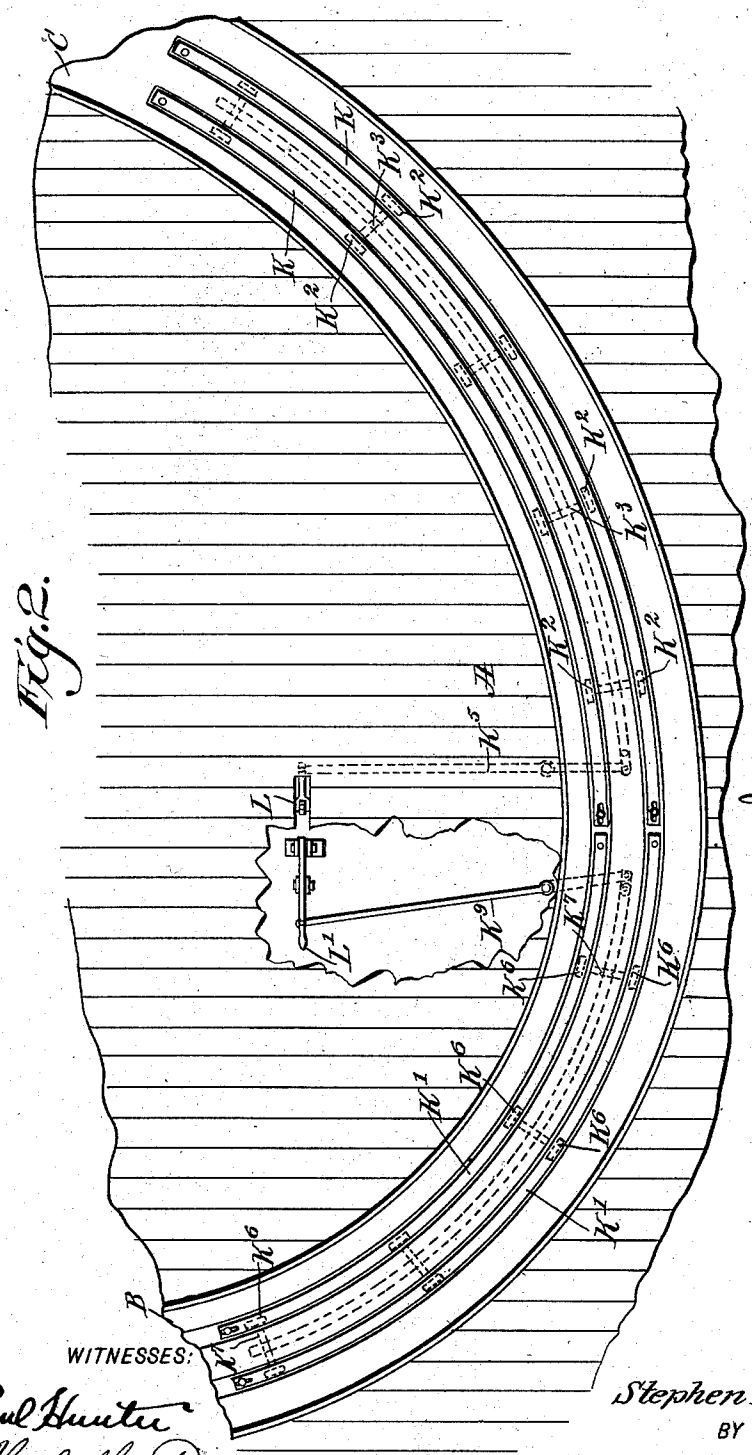
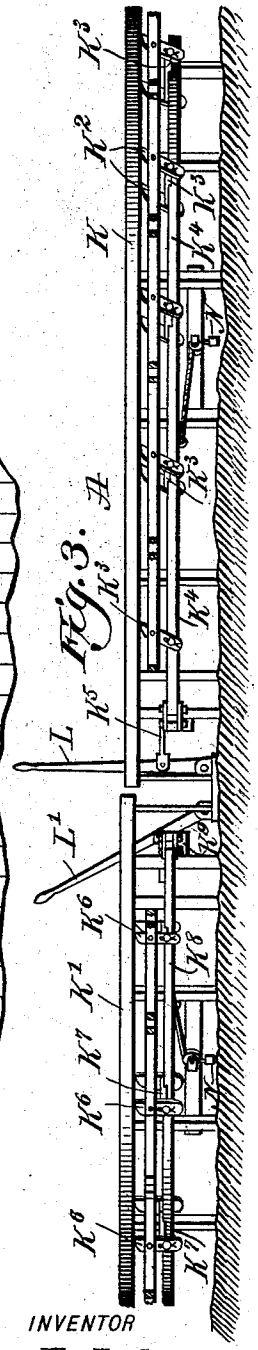


Fig. 3.



WITNESSES:

Paul Hunter

Reo J. Hoover

INVENTOR

Stephen E. Jackman

BY Munn & Co

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 4.

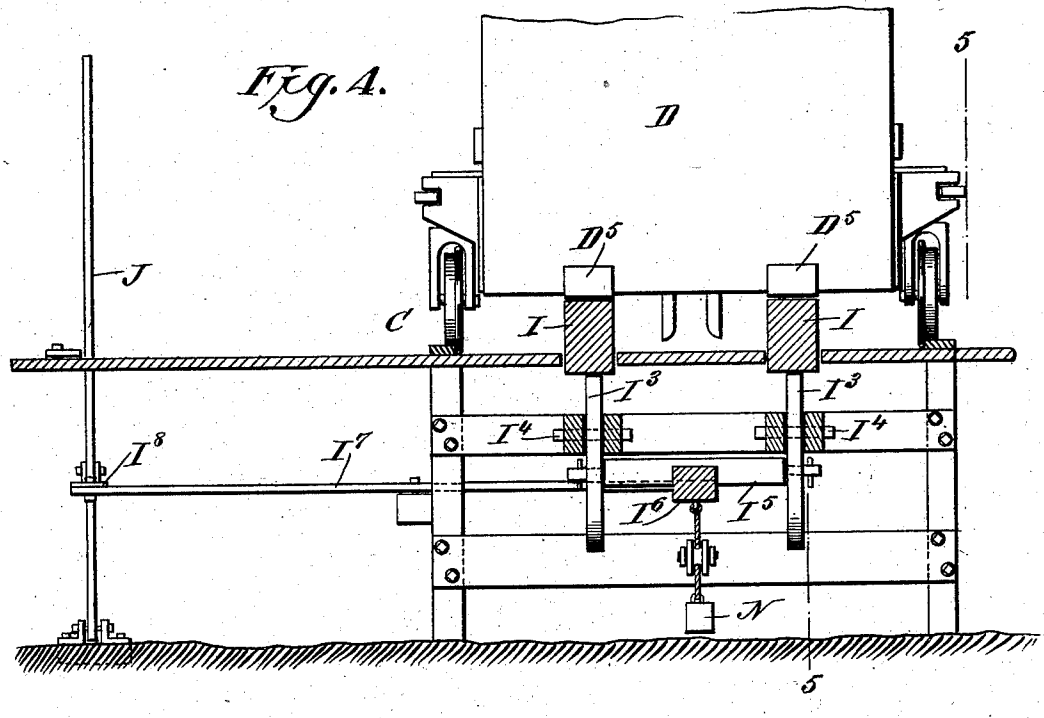
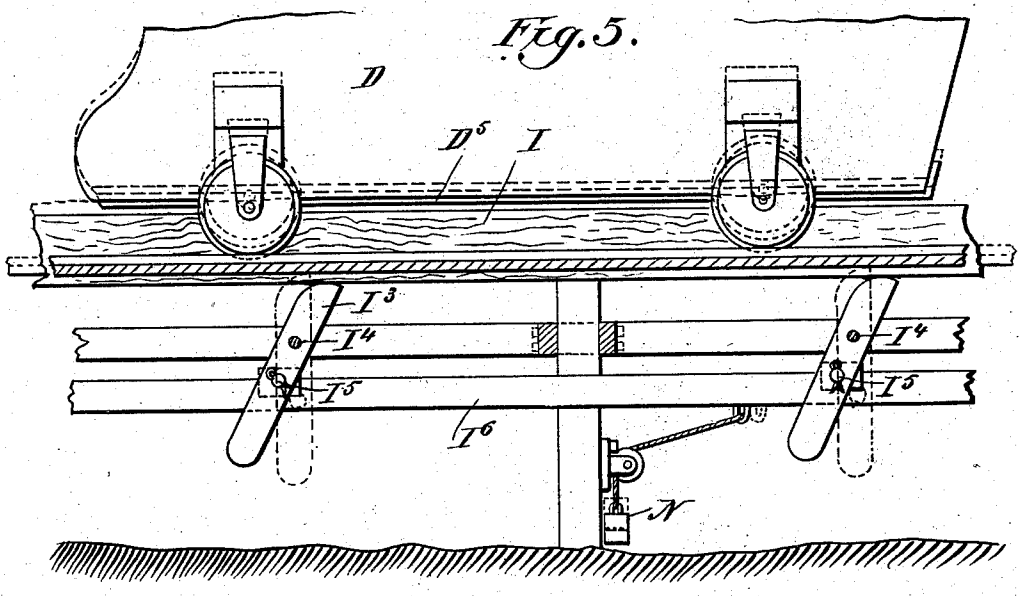


Fig. 5.



WITNESSES:

Paul Hunter

Reedy Hoskins

INVENTOR

Stephen E. Jackman

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 749,691. Patented January 12, 1904.

UNITED STATES PATENT OFFICE.

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

BRAKE MECHANISM FOR INCLINED RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 749,691, dated January 12, 1904.

Original application filed September 27, 1902, Serial No. 125,091. Divided and this application filed August 3, 1903. Serial No. 168,019. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN E. 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, this being a division of the application for Letters Patent of the United States for an inclined railway, Serial No. 125,091, filed by me September 27, 1902.

The invention relates to apparatus for use in pleasure resorts, exhibitions, and the like; and its object is to provide a new and improved brake mechanism in the track of a railway to allow of controlling a car on the down-track or homestretch independent of the occupants, to stop the car for passengers to leave the car at the end of the journey, to release the now-emptied car for it to travel to the station, to lock it there for another complement of passengers to embark, and to finally release the car for it to start on its journey over the continuous track.

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 side elevation of the improvement. Fig. 2 is an enlarged plan view of the improvement at the station, parts being broken out. Fig. 3 is a front elevation of the same. Fig. 4 is an enlarged cross-section of the brake mechanism at the homestretch of the main track, and Fig. 5 is a longitudinal sectional elevation of the same on the line 5 5 of Fig. 4.

The improved inclined railway is provided with a single continuous track of an approximately oval shape, having a station portion A, preferably semicircular in shape and connecting at the forward end with the lower end of an up-track B and connecting at its rear somewhat-elevated end with the home or downward stretch C of the continuous track, so that a car can travel from the station over the continuous track and return to the station, as more fully shown and described in the application above referred to. Now in order to control a car D when it passes over the homestretch C back to the station portion A completely independent of the occupants and attendant of the car I provide the following arrangement: In the homestretch C of the continuous track are arranged a plurality of brake mechanisms, located one in front of the other, each consisting of pairs of longitudinally-extending beams I, I′, and I^2, (see Fig. 1,) mounted to slide up and down in the track lengthwise thereof to engage brake bands or shoes D^5, extending along the bottom of the car from one end to the other, as plainly indicated in Figs. 3 and 4. The brake-beams I, I′, and I^2 rest on the upper ends of arms I^3, fulcrumed at I^4 on the supporting structure of the main track, and the said arms I^3 are preferably arranged in pairs, for the two beams I and the arms of each pair I^3 are connected with each other by a cross-bar I^5, journaled in the said arms. The several cross-bars I^5 are connected with a longitudinally-extending link I^6, pivotally connected at the forward end by a lever I^7 and a link I^8 with a hand-lever J, arranged alongside the homestretch C and under the control of an operator. Now when a car swiftly moves down the down-slope C of the inclined railway and finally reaches the homestretch C under considerable speed, then the operator in charge of the lever J imparts a gradual swinging motion to the said lever to cause the link I^8 and lever I^7 to impart a longitudinal movement to the link I^6, which in turn, by the cross-bars I^5, imparts a swinging motion to the several arms I^3 to move the beams I upward to engage the under side of the brake-shoes D^5, and consequently brake the car D as the same travels downward on the homestretch C, the several pairs of brake-beams I, I′, and I^2 serving to reduce the speed of the car independent of any action on the part of the attendant of the car or the passengers therein.

It will be seen from the foregoing that, if

necessary, the operator in charge of the lever J can move the beams I to such an extent that the car D is lifted a sufficient distance to move its car-wheels off the rails of the main track to allow the car to slide over the said brake-beams to check the speed of the car. As soon as the car has left the lowermost brake-beams I^2 the operator returns the lever J to its former position to allow the brake-beams to move back into a lowermost position with the arms I^3, so that the next following car can run over the brake-beams and be braked thereon by the operator correspondingly manipulating the lever J. When a car reaches the station portion A under considerably-reduced speed, it is finally brought to a stop by brake-beams K, similar to the brake-beams I, I′, and I^2, but arranged in the segmental portion of the track at the station, the said beams K being under the control of an operator in charge of a hand-lever L similar to the hand-lever J. It is necessary that the car be brought to a stop at the station for passengers to get off, and when this has been done the brake-beams K are lowered to release the car to allow the latter to continue forward on the track to another set of brake-beams K′ under the control of an operator in charge of a lever L′, arranged at the station, to hold the car locked in place for new passengers to enter and seat themselves in the car D previous to beginning the journey. As soon as the passengers are seated in this car the operator releases the lever L′ to lower the brake-beams K′, so that the car can now run to the beginning of the up-track B, at which point a chain takes hold of the car and draws the same up on the up-track B.

The connection between the brake-beams K and the lever L is similar to the one between the brake-beams I and the lever J—that is, the brake-beams K rest on pivoted arms K^2, connected with each other by cross-bars K^3, attached to a link K^4, having its forward end connected by links and levers K^5 with the hand-lever L. The other brake-beams K′ are also supported by arms K^6, connected with each other by cross-bars K^7, attached to a link K^8, having its forward end connected by links and levers K^9 with the lever L′ previously mentioned.

In practice one operator is required for manipulating the levers L and L′; but another operator is employed for manipulating the lever J to insure perfect safety of the passengers.

In order to insure a quick downward or return movement of the brake-beams I I′ I^2 and K K′, I may provide counterweights N, having flexible connections with the links I^6, K^4, and K^8 or other suitable part of the brake mechanisms. (See Figs. 3, 4, and 5.)

It is understood that the cars D may be and are preferably provided with special brake mechanisms under the control of an attendant of the car; but by having the brake mechanism described under the control of operators entirely independent of the car attendant it is evident that cars are not liable to run into each other at the home stretch or station, and hence injury to passengers and damage to property are avoided. By having the separate car controlling or braking mechanisms at the station ingress and egress of the passengers to and from the cars is facilitated to such an extent that a large number of cars can be safely run at suitable intervals over the continuous course to render the apparatus very remunerative to the proprietor.

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

1. An apparatus of the class described, provided with a main track having a manually-controlled brake mechanism arranged in the track, to engage and brake the car on its downward travel, as set forth.

2. An apparatus of the class described, provided with a main track, a brake mechanism arranged in the track and adapted to engage and brake a car on its downward journey on the main track, and means under the control of an operator, to actuate the said brake mechanism independent of the occupants of the cars, as set forth.

3. An apparatus of the class described, provided with a main track having a manually-controlled brake mechanism arranged in the track, to engage and brake the car on its downward travel, the said brake mechanism comprising a brake-beam arranged longitudinally in the track, a brake-plate arranged longitudinally on the car, in vertical alinement with the said brake-beam, and manually-controlled means for raising and lowering the said brake-beam, as set forth.

4. An apparatus of the class described, provided with a main track having a manually-controlled brake mechanism arranged in the track, to engage and brake the car on its downward travel, the said brake mechanism comprising a brake-beam arranged longitudinally in the track, a brake-plate arranged longitudinally on the car, in vertical alinement with the said brake-beam, pivoted arms in the track, a link connecting the arms with each other, and a hand-lever connected with the said link, as set forth.

5. An apparatus of the class described, provided with a main track, brake mechanisms located in the track at a station, one in front of the other, adapted to engage an approaching car, and independent levers connected with the said brake mechanisms, to throw the same into action independent one of the other, to brake a car successively, as set forth.

6. An apparatus of the class described, provided with a main track, a plurality of brake-beams arranged longitudinally in the track, one in front of the other, and adapted to engage a brake-surface on the car traveling on

the track, a lever under the control of the operator, located in advance of the brake-beams, and a connection between the lever and the said brake-beams, to operate the same, as set forth.

7. The combination with an inclined railway having a station-section, and a homestretch leading to the station-section, of a brake mechanism in the homestretch-section, for checking the speed of a car, and a brake mechanism in the exit side of the station-section, for stopping and temporarily locking the car, for the disembarkation of the passengers in the car, as set forth.

8. The combination with an inclined railway having a station-section, and a homestretch leading to the station-section, of a brake mechanism in the homestretch-section, for checking the speed of a car, a brake mechanism in the exit side of the station-section, for stopping and temporarily locking the car, for the disembarkation of the passengers in the car, and a second brake mechanism in the station-section, at the entrance end thereof, for stopping and temporarily locking the car, for the embarkation of the passengers, as set forth.

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

STEPHEN E. JACKMAN.

Witnesses:

THEO. G. HOSTER,

WILLIAM P. GOEBEL.