No. 869,849. PATENTED OCT. 29, 1907.

S. E. JACKMAN.

BRAKE MECHANISM FOR INCLINED RAILWAYS.

APPLICATION FILED MAY 15, 1907.

2 SHEETS—SHEET 1.

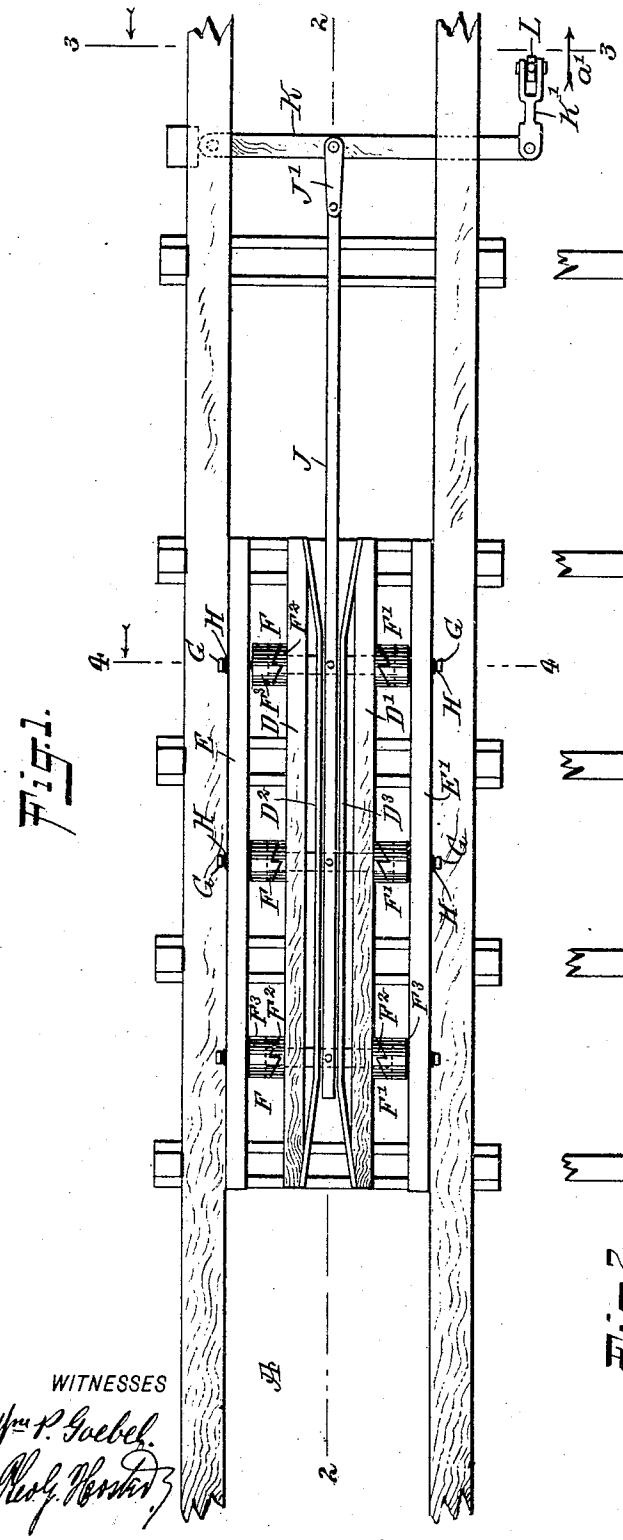

Fig. 1.

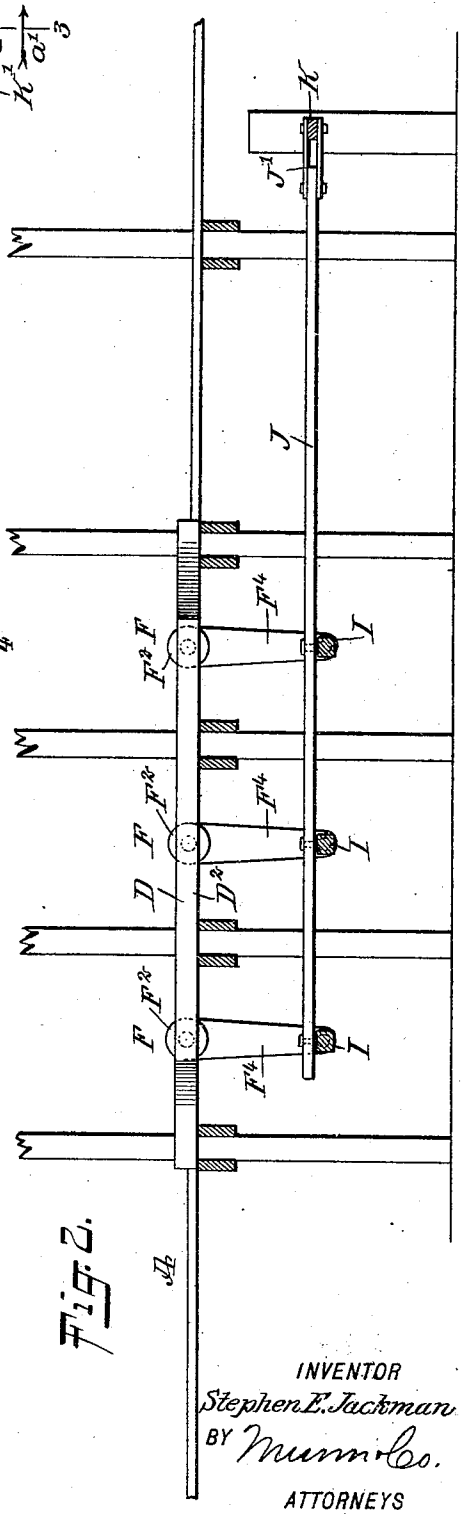

Fig. 2.

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Fig. 3.

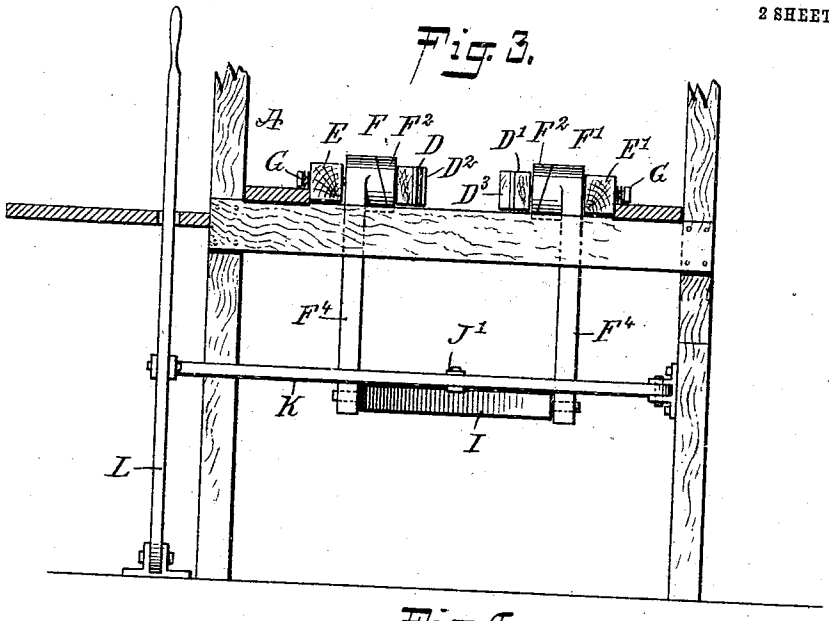


Fig. 4.

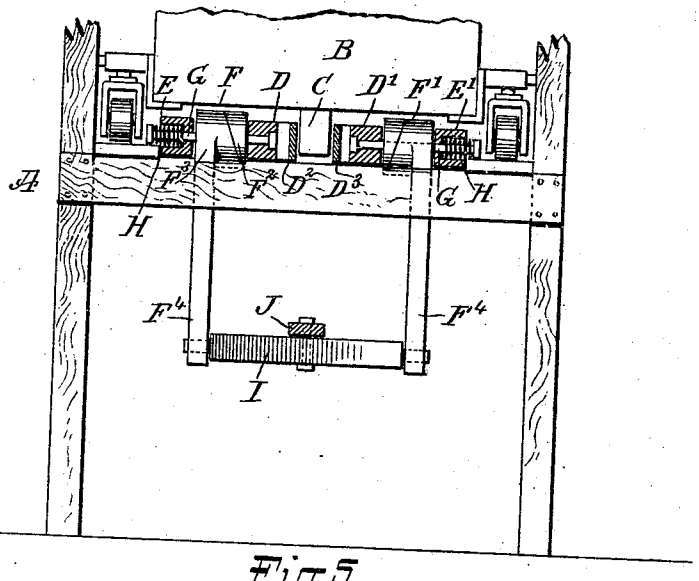
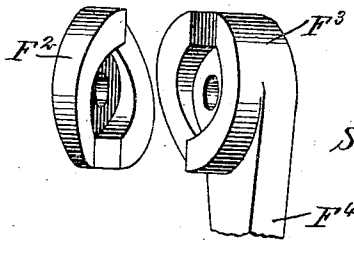


Fig. 5.



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BRAKE MECHANISM FOR INCLINED RAILWAYS.

No. 869,849. Specification of Letters Patent. Patented Oct. 29, 1907.

Application filed May 15, 1907. Serial No. 373,728.

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.

The invention relates to brake mechanisms for inclined railways, such as shown and described in Letters Patent of the United States, 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 railways, arranged in the track and under the control of an operator stationed near the track, to check the speed of the car wholly independent of the occupants of the car, and to bring the car to a standstill at the home station.

The invention consists of novel features and parts and combinations of the same, which 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; Fig. 2 is a longitudinal sectional elevation of the same on the line 2—2 of Fig. 1; Fig. 3 is a transverse section of the same on the line 3—3 of Fig. 1; Fig. 4 is a similar view of the same on the line 4—4 of Fig. 1, and Fig. 5 is a perspective view of a pair of the actuating cams for the brake shoe.

The inclined railway on which the improvement is applied may be of any approved construction, preferably, however, one such as is used in exhibition grounds, pleasure resorts and the like, and one having a continuous track A, over which travel the cars B usually drawn up the up-track by suitable machinery, with a view to permit the car to run by its own gravity down the down-track and home stretch back to a station leading to the foot of the up-track. This form of continuous track is well known, so that further description of the same is not deemed necessary.

Now in order to brake the car and to check its speed and gradually bring it to a standstill at the station, the following brake mechanism is provided, which brake mechanism is controlled wholly independently of the occupants of the car by an attendant standing adjacent to the track at or near the home station. A brake beam C is secured to the under side of the body of the car B, preferably at the middle thereof (see Fig. 4), and when the car nears the end of the home stretch the said brake beam C passes between the brake shoes D, D′ ranging in the direction of the length of the track and provided at their inner or opposite sides with rubbing irons D^2, D^3 inclined outwardly at their ends for the convenient entrance of the brake beam C when the car reaches the brake mechanism. On the track A and arranged parallel to the brake shoes D and D′ are secured longitudinally extending beams E and E′, between which and the corresponding brake shoes are arranged cam mechanisms F and F′ for moving the brake shoes D, D′ inwardly in braking engagement with the beam C to check the speed of the car B and to finally bring the same to a standstill.

The several brake mechanisms F and F′ are alike in construction, and each consists of a cam F^2 fixed on a transversely extending rod G secured to the corresponding brake shoe D or D′ and extending through the corresponding fixed beam E or E′.

The fixed cam F^2 has its cam surface in contact with the cam surface of a brake lever F^3 mounted to turn on the rod G and abutting against the fixed beam E or E′, so that when a turning motion is given to the cam lever F^3, then the cam F^2 and the corresponding brake shoe D or D′ is moved inwardly in braking engagement with the beam C. Normally the brake shoes D and D′ are held in an outermost inactive position by the action of springs H coiled on the rod G, and resting with their inner ends on the beams E and E′ and with their outer ends abutting against the outer heads of the rods G, as will be readily understood by reference to Fig. 4.

The brake mechanisms F and F′ are arranged in pairs in transverse alinement with each other, as plainly indicated in Fig. 1, and the cam levers F^3 of a pair of cam mechanisms have their depending arms F^4 connected with each other by a transverse bar I trunnioned in the arms F^4, and the several bars I are pivotally connected with a longitudinally extending reach rod J pivotally connected by a link J′ with a transversely extending lever K fulcrumed at one end to one side of the track A and connected at its free end at the other side of the track by a link K′ with an upwardly extending lever L under the control of the operator standing at one side of the track at or near the home station. Now when the operator pulls the lever L in the direction of the arrow *a*′ (see Fig. 1), then a swinging motion is given to the lever K which by the reach rod J and bars I impart a swinging motion simultaneously to all the cam levers F^3, to push the cams F^2 and the brake shoes D and D′ inwardly in engagement with the brake beam C on the car B now traveling over the track at the point where the brake mechanism is located. Thus when a car approaches the brake mechanism and the operator actuates the lever L in the manner described, then the brake shoes D and D′ engage the brake beam C to check the speed of the car and to bring the same gradually to a standstill, without shock or jar to the car and its occupants.

It is understood that when the brake shoes D and D′

are moved inwardly into active position by the action of the cam mechanisms, then the springs H are compressed, and when the operator returns the lever L to its normal vertical position then the cam levers F^3 are returned, and the springs H draw the brake shoes D and D′ back to their normal outermost inactive position, thereby releasing the brake beam C and consequently the car B.

It is understood that by the operator pressing the hand lever L with more or less force, any desired braking effect can be had on the car beam C and consequently on the car B to check the speed thereof. When the car has been brought to a standstill, the occupants thereof disembark and pass by way of the platform to the exit of the station, after which the car is usually pushed by an attendant to the embarkation side of the station, to be filled with passengers and to be finally passed to the foot of the up-track, at which the usual mechanism takes hold of the car and pulls the same up the up-track.

It is understood that as long as the hand lever L is in the applied position, the car is practically held locked by the brake mechanism, and when it is desired to release the car it is only necessary for the operator to swing the hand lever L back to its normal vertical position.

By the arrangement described, it is not necessary to send an attendant with the car over the track, as the speed of the car when reaching the end of the home stretch is perfectly under the control of the operator manipulating the hand lever L, on seeing a car approaching the brake mechanism, as the home stretch of the track A is usually straight.

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 brake mechanism arranged in the track for braking a car traveling on the track, the said brake mechanism comprising a beam on the car, a brake shoe on the track for engagement with the said beam, and a manually controlled cam mechanism for moving the brake shoe transversely in engagement with the said beam.

2. An apparatus of the class described provided with a brake mechanism arranged in the track for braking a car traveling on the track, the said brake mechanism comprising a beam on the car, a brake shoe on the track for engagement with the said beam, a manually controlled cam mechanism for moving the brake shoe transversely in engagement with the said beam, and spring-pressed means connected with the said brake shoe, to return the latter to an inactive position.

3. An apparatus of the class described provided with a brake mechanism arranged in the track for braking a car traveling on the track, the said brake mechanism comprising a beam on the car, a brake shoe on the track for engagement with the said beam, and cams movable one on the other for moving the brake shoe transversely in engagement with the said beam.

4. An apparatus of the class described provided with a brake mechanism arranged in the track for braking a car traveling on the track, the said brake mechanism comprising a beam on the car, a brake shoe on the track for engagement with the said beam, cams movable one on the other for moving the brake shoe transversely in engagement with the said beam, and a manually controlled device connected with one of the said cams to actuate the latter.

5. An apparatus of the class described provided with a brake mechanism arranged in the track for braking a car traveling on the track, the said brake mechanism comprising a beam on the car, a brake shoe on the track for engagement with the said beam, a brake shoe cam for moving the brake shoe toward the said beam, and a manually controlled cam for actuating the said brake shoe cam.

6. An apparatus of the class described provided with a brake mechanism arranged in the track for braking a car traveling on the track, the said brake mechanism comprising a beam on the car, a brake shoe on the track for engagement with the said beam, a brake shoe cam for moving the brake shoe toward the said beam, a manually controlled cam for actuating the said brake shoe cam, and a spring for returning the brake shoe to normal inactive position.

7. An apparatus of the class described provided with a brake mechanism comprising a brake shoe movable transversely on the track and adapted to engage the car traveling over the track to brake the same, a manually controlled cam mechanism for moving the said brake shoe transversely in engagement with the car, and a spring for returning the brake shoe to normal position.

8. An apparatus of the class described provided with a brake mechanism comprising a brake shoe movable transversely on the track and adapted to engage the car traveling over the track to brake the same, a fixed cam, and a cam lever under the control of the operator for actuating the said fixed cam to shift the brake shoe into active position for braking the car.

9. An apparatus of the class described provided with a brake mechanism comprising a brake shoe movable transversely on the track and adapted to engage the car traveling over the track to brake the same, a fixed beam arranged approximately parallel to the said brake shoe, and a cam mechanism interposed between the said brake shoe and the fixed beam for shifting the brake shoe.

10. An apparatus of the class described provided with a brake mechanism comprising a brake shoe movable transversely on the track and adapted to engage the car traveling over the track to brake the same, a fixed beam arranged approximately parallel to the said brake shoe, a cam mechanism interposed between the said brake shoe and the fixed beam for shifting the brake shoe into locking position, and a spring for returning the brake shoe to normal inactive position.

11. An apparatus of the class described provided with a brake mechanism comprising a brake shoe movable transversely on the track and adapted to engage the car traveling over the track to brake the same, a fixed beam arranged approximately parallel to the said brake shoe, transverse rods on the brake shoe and extending through the said beam, springs on the said rods for moving the brake shoe into a normal inactive position, cams fixed on the said rods, and cam levers mounted to turn on the said rods, the said cams having contacting cam faces.

12. An apparatus of the class described provided with a brake mechanism comprising a brake shoe movable transversely on the track and adapted to engage the car traveling over the track to brake the same, a fixed beam arranged approximately parallel to the said brake shoe, transverse rods on the brake shoe and extending through the said beam, springs on the said rods for moving the brake shoe into a normal inactive position, cams fixed on the said rods, cam levers mounted to turn on the said rods, the said cams having contacting cam faces, and manually controlled means for actuating the said cam levers simultaneously.

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

STEPHEN E. JACKMAN.

Witnesses:
C. W. JACKMAN,
D. W. LEWIS.