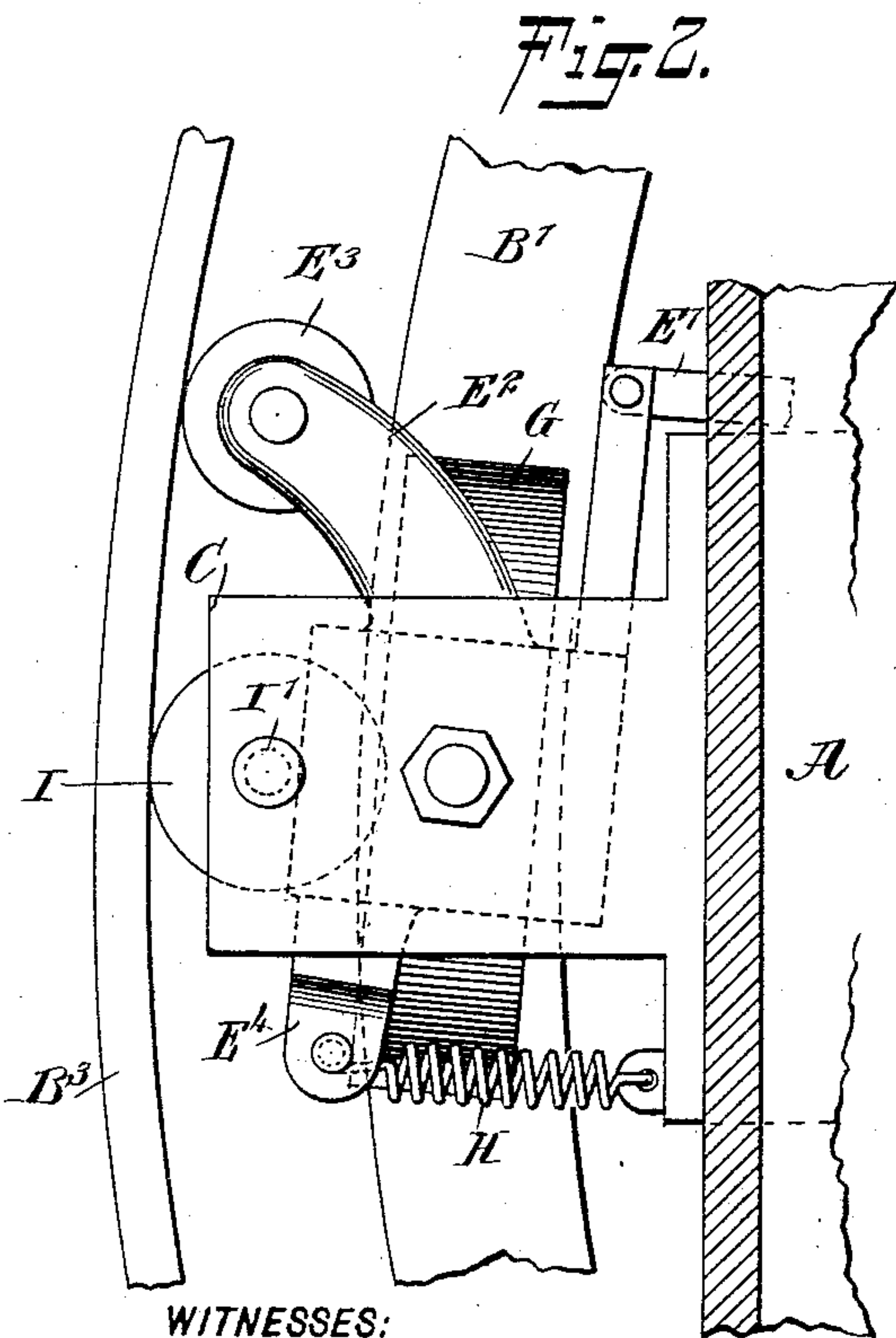
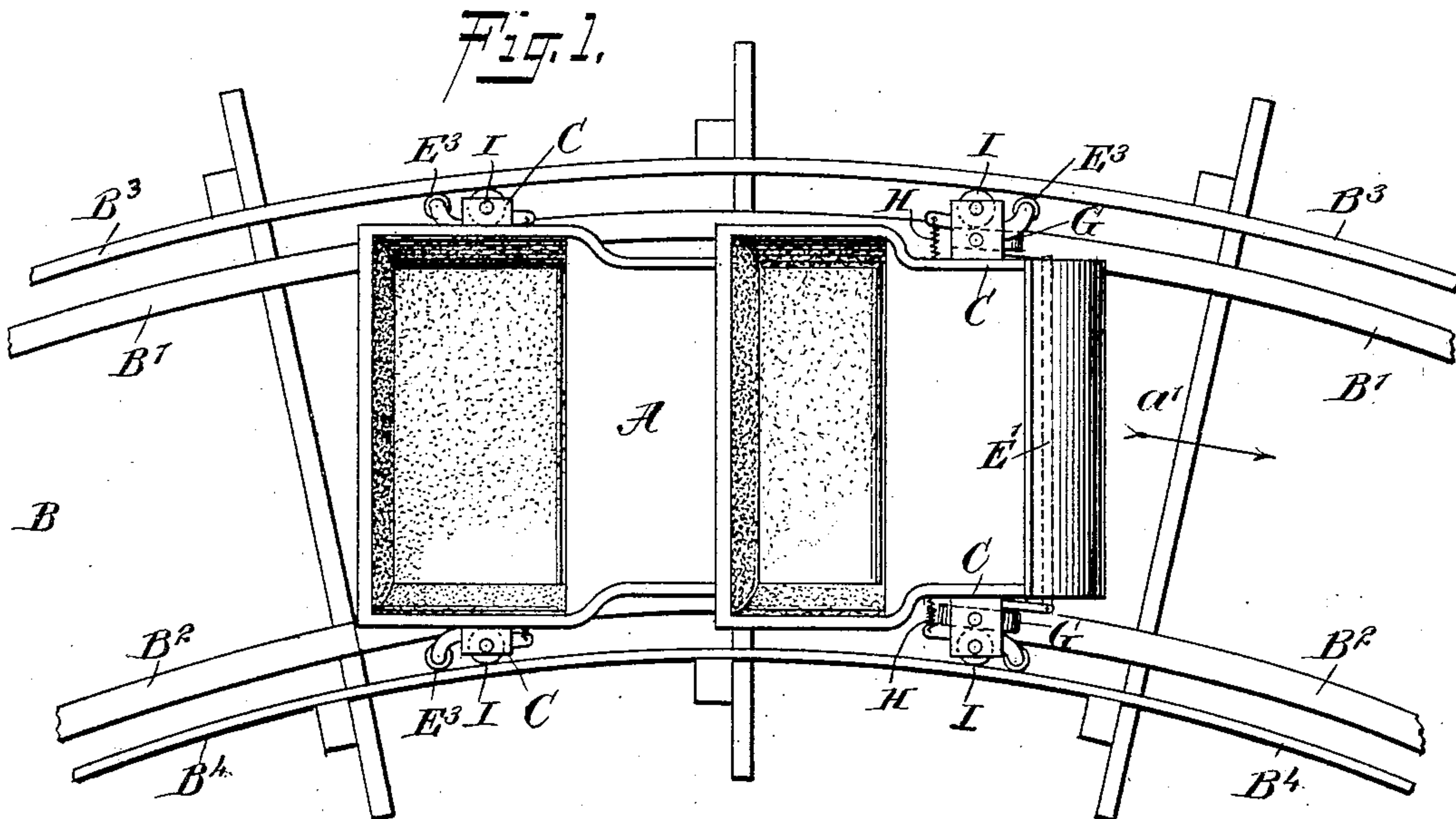


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APPLICATION FILED AUG. 3, 1903.

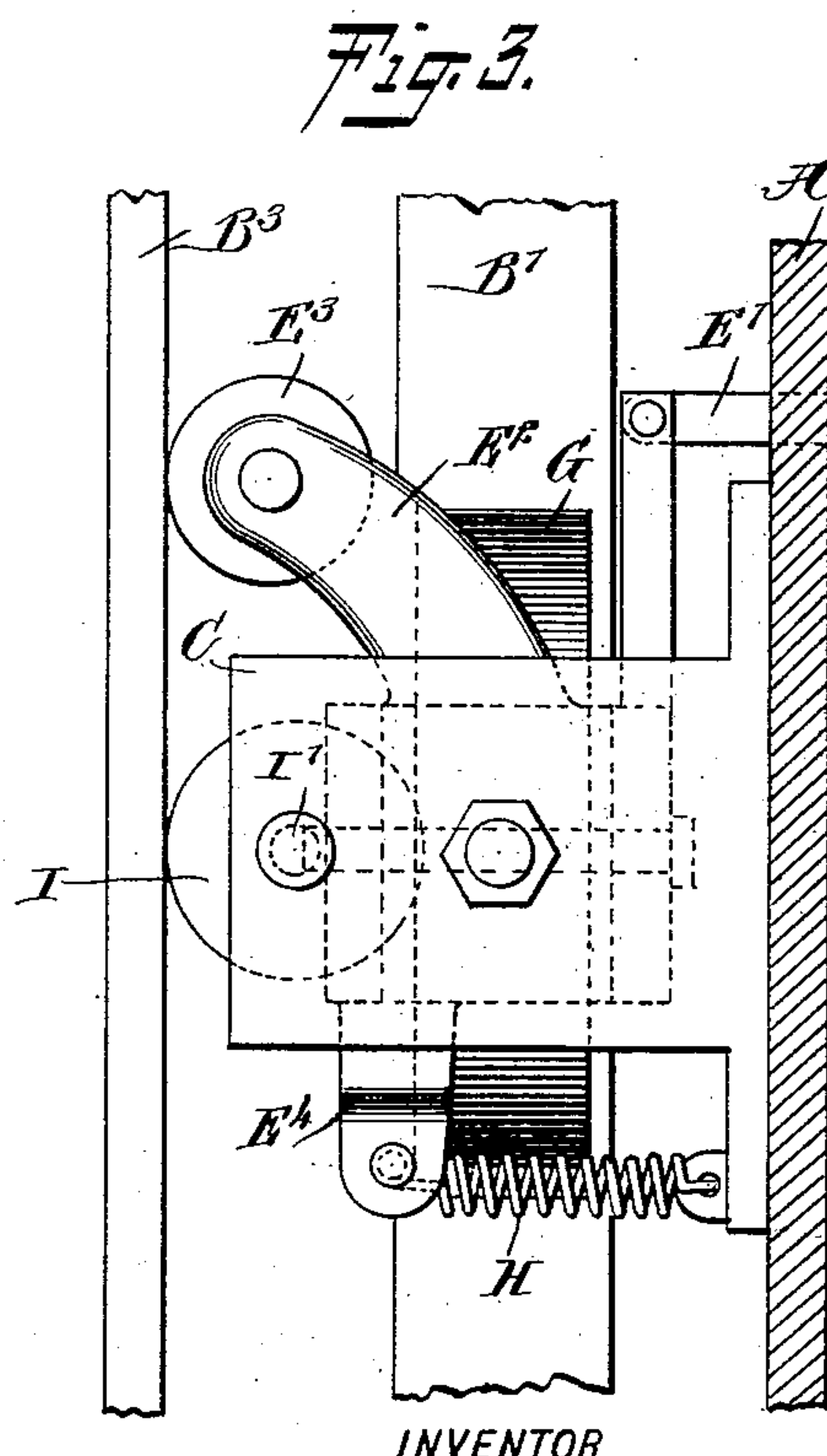
NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

William P. Goebel.  
Geo. H. Hester.



INVENTOR

Stephen E. Jackman

BY *Munn & Co.*

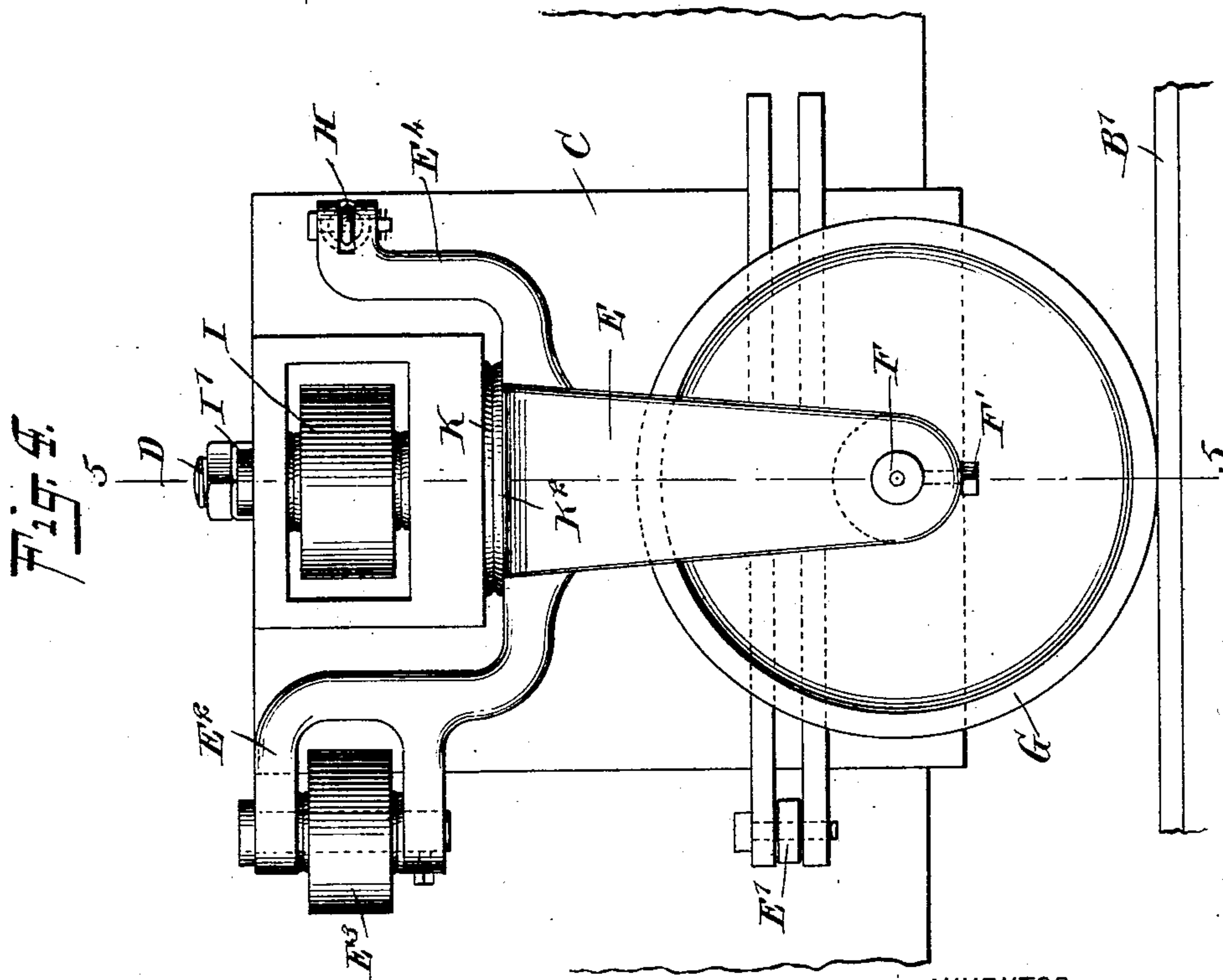
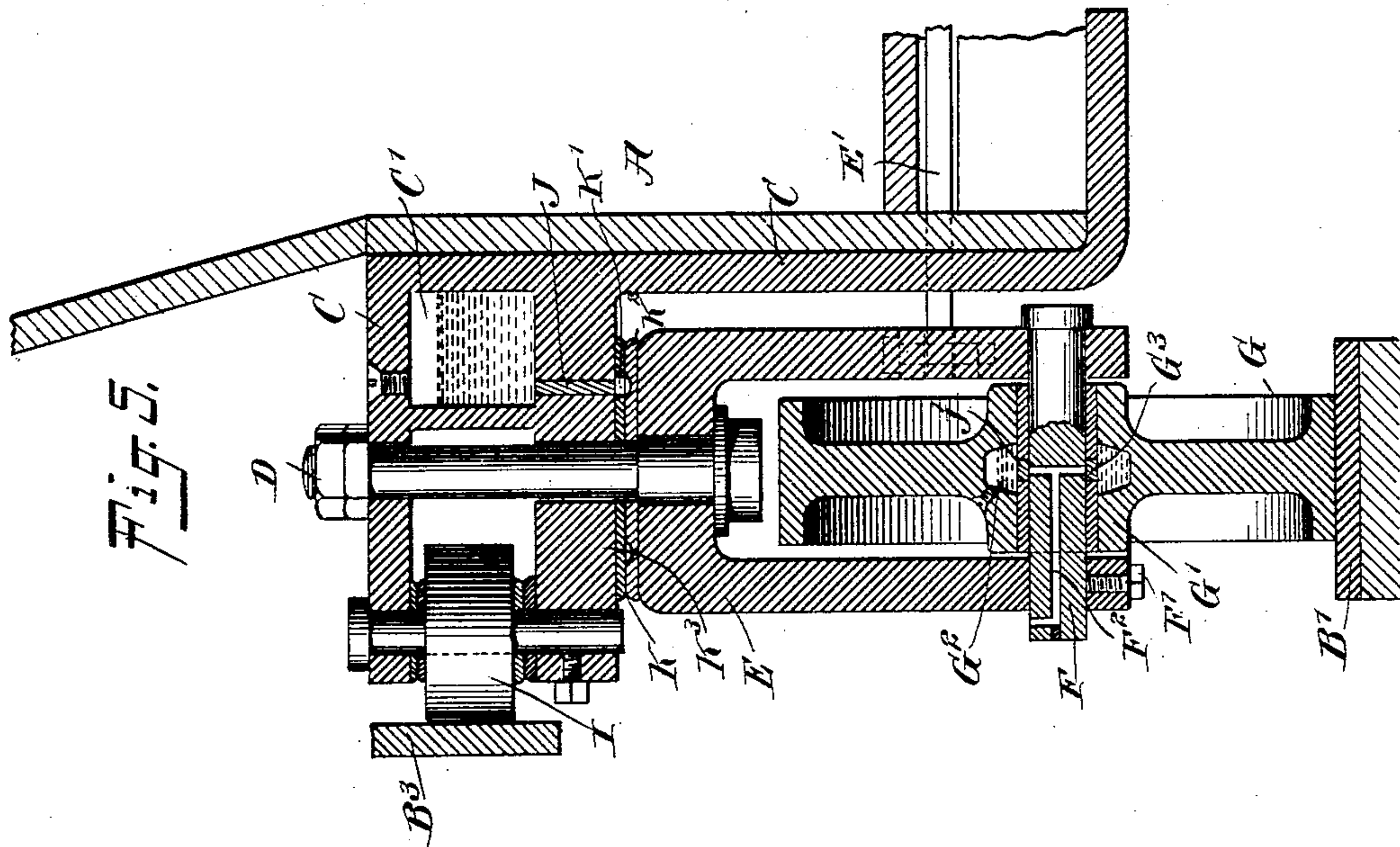
ATTORNEYS

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NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

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Theo. G. Hostet.

INVENTOR

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# UNITED STATES PATENT OFFICE.

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

## TRACK AND CAR.

SPECIFICATION forming part of Letters Patent No. 745,855, dated December 1, 1903.

Application filed August 3, 1903. Serial No. 168,018. (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 Track and Car, of which the following is a full, clear, and exact description.

10 The invention relates to railways, such as switchback or inclined railways, used in pleasure resorts, exhibitions, and the like.

The object of the invention is to provide a new and improved track and car arranged 15 to insure an easy running of the car, permitting the use of non-flanged car-wheels, to reduce the friction to a minimum, especially when the car travels around curves in the track, and to prevent the car from leaving 20 the track-rails.

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.

25 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.

30 Figure 1 is a plan view of the improvement. Fig. 2 is an enlarged plan view of the same, showing the car on a curved portion of the track. Fig. 3 is a similar view of the same, showing the car on a straight portion of the 35 track. Fig. 4 is a side elevation of the improvement, and Fig. 5 is a transverse section of the same on the line 5 5 of Fig. 4.

The car A is adapted to travel on a track B, consisting, essentially, of track-rails B' and 40 B<sup>2</sup> and side guard-rails B<sup>3</sup> and B<sup>4</sup>, following the shape of the track-rails and located a distance above the track-rails and somewhat to the sides thereof, as plainly indicated in Fig. 5.

45 On the sides of the car A are secured brackets C, each carrying in its top portion a vertically-disposed pivot D, on the lower end of which is journaled a bearing E, preferably in the shape of a fork, supporting in its sides 50 an axle F, engaging the hub G' of a non-

flanged car-wheel G, mounted to travel on the top of the track-rail B' or B<sup>2</sup>, as plainly indicated in the drawings.

The bearings E of the front car are pivotally connected with each other by a cross- 55 bar E', and a similar cross-bar E' connects the bearings of the rear car-wheels with each other, as shown in Fig. 1.

By the arrangement described the several car-wheels G of the car A are free to revolve 60 on their shafts F, which are secured by set-screws F' in the bearings E, and the latter are free to turn on the vertical pivots D; but the bearings of the front wheels turn in unison with each other, owing to the pivotal connection 65 by the cross-bar E', and the bearings for the rear wheels turn in unison, owing to their connecting-bar E'.

Each of the bearings E is provided with arms E<sup>2</sup> and E<sup>4</sup>, extending in opposite directions, and in the free end of the arm E<sup>2</sup> is 70 journaled a horizontally-disposed friction-roller E<sup>3</sup>, adapted to travel on the inner face of the corresponding guard-rail B<sup>3</sup> or B<sup>4</sup>, (see Fig. 1,) and the free end of each arm E<sup>4</sup> is connected 75 with one end of a spring H, attached at its other end to the corresponding bracket C. Now by the arrangement described the spring H of each bearing has the tendency to hold the friction-wheel E<sup>3</sup> in contact with 80 the corresponding guard-rail B<sup>3</sup> or B<sup>4</sup> to hold the bearings E in such positions that their car-wheels G always travel in the middle portion of the track-rails B' and B<sup>2</sup>, and consequently a derailment of the car is rendered 85 impossible, and at the same time the car can readily pass around curves without creating undue friction, as the friction-rollers E<sup>3</sup> travel in contact with the guard-rails B<sup>3</sup> and B<sup>4</sup> and are mounted on the yielding bearings E to 90 allow the friction-rollers to readily follow the curvatures of the guard-rails B<sup>3</sup> and B<sup>4</sup>.

It is understood that the cross-bars E' cause the front bearings and the rear bearings to work in unison; but this is not absolutely 95 necessary, as the bars may be omitted to allow each bearing to turn on its pivot D, according to the curvature in the corresponding guard-rail B<sup>3</sup> or B<sup>4</sup>.

In the top of each bracket C, near the outer 100



end thereof, is arranged a horizontally-disposed friction-wheel I, mounted to rotate loosely on a suitable spindle I', fastened in the bracket C, and each friction-wheel I is adapted to travel on the corresponding side guard-rail B<sup>3</sup> or B<sup>4</sup>, so as to take up all sidewise motion of the car, especially when the latter is traveling around curves, it being understood that the spindle I' is arranged in transverse alinement with the pivot D, and hence the said spindle and pivot always bear the same relation to each other, while the axis of the friction-roller E<sup>3</sup> varies in its position relative to the said spindle and the said pivot D, according to the curvature in the track and the action of the spring H.

In the top of each bracket C is formed an oil-well C', containing oil or other suitable liquid lubricant, and the bottom of this oil-well C' is connected by a block J of porous material—such as ratan, porous oak, or the like—with an opening K' in a bearing-plate K, resting on a bearing-plate K<sup>2</sup>, having an annular groove K<sup>3</sup> in register with the opening K', the said bearing-plates K and K<sup>2</sup> being interposed between the top of the bearing E and the underside of the top portion of the bracket C, as plainly illustrated in Figs. 4 and 5, to allow of convenient turning of the bearing E on the pivot D. Now the lubricant percolating through the oil-block J and the opening K' passes into the annular groove K<sup>3</sup> and between the bearing-plates K and K<sup>2</sup>, so as to thoroughly and continually lubricate the same. An annular oil-well G<sup>2</sup> is formed in the web of each car-wheel G around the hub G', and a block G<sup>3</sup>, similar to the block J, is held in the hub G' to connect the oil-well G<sup>2</sup> with the axle F to lubricate the same. A channel F<sup>2</sup> is formed in the axle F and leads from one outer end of the same to the oiled portion thereof to allow lubricating the axle by the operator whenever it is deemed necessary to do so.

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

1. The combination with a car-track having track-rails and side guard-rails, of a car having non-flanged car-wheels traveling on the top of the said track-rails, a spring-pressed bearing for each wheel to turn in and capable of turning on a vertical axis, and a friction-wheel disposed horizontally and journaled on each bearing and pressed in contact with and traveling on the corresponding side guard-rail, as set forth.

2. The combination with a car-track having track-rails and side guard-rails, of a car having non-flanged car-wheels traveling on the top of the said track-rails, a spring-pressed bearing for each wheel to turn in and capable of turning on a vertical axis, and a friction-wheel disposed horizontally and journaled on each bearing and pressed in contact with and traveling on the corresponding side

guard-rail, the pivot of the friction-roller being located in advance of the axis of the bearing, as set forth.

3. The combination with a car-track having track-rails and side guard-rails, of a car having non-flanged car-wheels traveling on the top of the said track-rails, a spring-pressed bearing for each wheel to turn in and capable of turning on a vertical axis, a friction-wheel disposed horizontally and journaled on each bearing and pressed in contact with and traveling on the corresponding side guard-rail, the pivot of the friction-roller being located in advance of the axis of the bearing, and a second friction-roller journaled on each bearing and adapted to travel on the corresponding side guard-rail, the second friction-roller having its axis in transverse alinement with the axis of the bearing, as set forth.

4. The combination with a car-track having track-rails and side guard-rails, of a car having non-flanged car-wheels traveling on the top of the said track-rails, a spring-pressed bearing for each wheel to turn in and capable of turning on a vertical axis, a friction-wheel disposed horizontally and journaled on each bearing and pressed in contact with and traveling on the corresponding side guard-rail, and a link for pivotally connecting the bearings for a pair of front or rear wheels with each other, as set forth.

5. A car provided with a non-flanged car-wheel, a bearing mounted to turn on a vertical axis and in which the car-wheel is journaled, and a spring-pressed controlling device for the said bearing, to cause the car-wheel to follow the rail, as set forth.

6. A car provided with a non-flanged car-wheel, a bearing mounted to turn on a vertical axis and in which the car-wheel is journaled, a spring-pressed controlling device for the said bearing, to cause the car-wheel to follow the rail, and means on the bearing for taking up sidewise motion of the car, as set forth.

7. A car provided with a non-flanged car-wheel, a bearing for the car-wheel, capable of turning on a vertical axis, a friction-roller journaled on the bearing at one end, and a spring pressing the bearing at the other end, as set forth.

8. A car provided with a pair of non-flanged car-wheels, connected bearings for the said car-wheels, each mounted to turn on a vertical axis, a spring pressing each bearing, and a friction-wheel on each bearing, as set forth.

9. A car provided with a bracket, a bearing journaled on a vertical pivot in the said bracket, a spring pressing one end of the bearing, a friction-wheel on the other end of the bearing, and a car-wheel journaled in the bearing, as set forth.

10. A car provided with a bracket, a bearing journaled on a vertical pivot in the said



5 bracket, a spring pressing one end of the bearing, a friction-wheel on the other end of the bearing, a car-wheel journaled in the bearing, and a second friction-wheel journaled in the said bracket, as set forth.

10 11. A car provided with a bracket, a bearing journaled on a vertical pivot in the said bracket, a spring pressing one end of the bearing, a friction-wheel on the other end of the bearing, a car-wheel journaled in the bearing, and a second friction-wheel journaled in the said bracket, between the said spring and the said first-named friction-wheel, as set forth.

15 12. A car having a car-wheel provided with an inserted hub and formed in its web with an oil-well around the hub, an axle for the hub, and a block of porous material in the hub, to establish communication between the  
20 oil-well and the said axle, as set forth.

13. A car having a car-wheel provided with an inserted hub and formed in its web with an oil-well around the hub, an axle for the hub, a block of porous material in the hub,  
25 to establish communication between the oil-well and the said axle, and a feed-channel leading from one end of the said axle to the

said hub, to allow of lubricating the axle from the outside, as set forth.

14. A car provided with a bracket having 30 an oil-well having an outlet, a bearing for the car-wheel, having a vertical pivot mounted to turn in the said bracket, and superimposed bearing-plates between the said bracket and the said bearing, the said outlet discharging 35 onto the uppermost bearing-plate, as set forth.

15. A car provided with a bracket having an oil-well having an outlet, a bearing for the car-wheel, having a vertical pivot mounted to turn in the said bracket, and superimposed 40 bearing-plates between the said bracket and the said bearing, the said outlet discharging onto the uppermost bearing-plate, the latter being provided with an aperture in register with the outlet and in register with an annu- 45 lar groove in the lowermost bearing-plate, 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,  
JNO. M. RITTER.