

(No Model.)

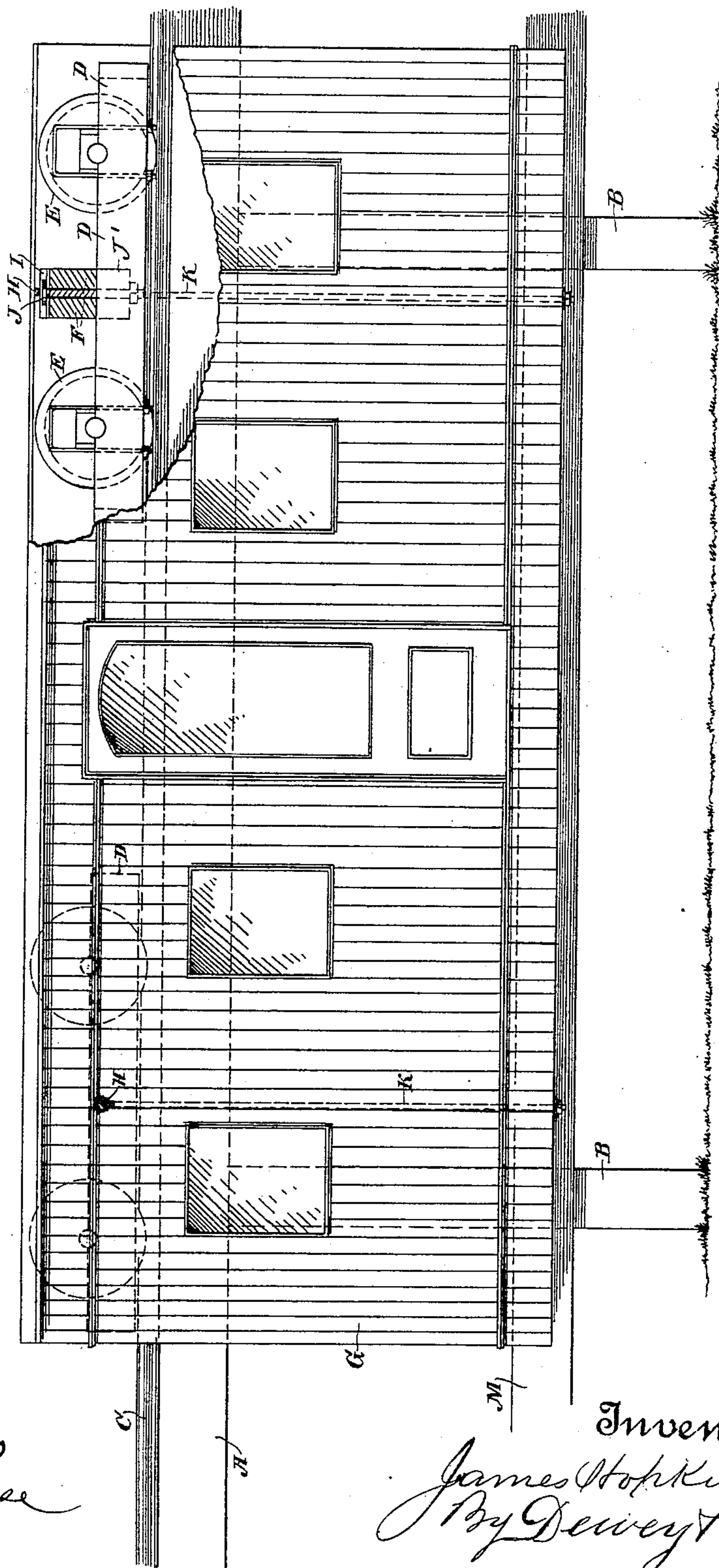
2 Sheets—Sheet 1.

J. HOPKIRK.  
SINGLE TRACK RAILWAY AND CARS.

No. 602,601.

Patented Apr. 19, 1898.

Fig. 1.



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(No Model.)

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Fig. 2.

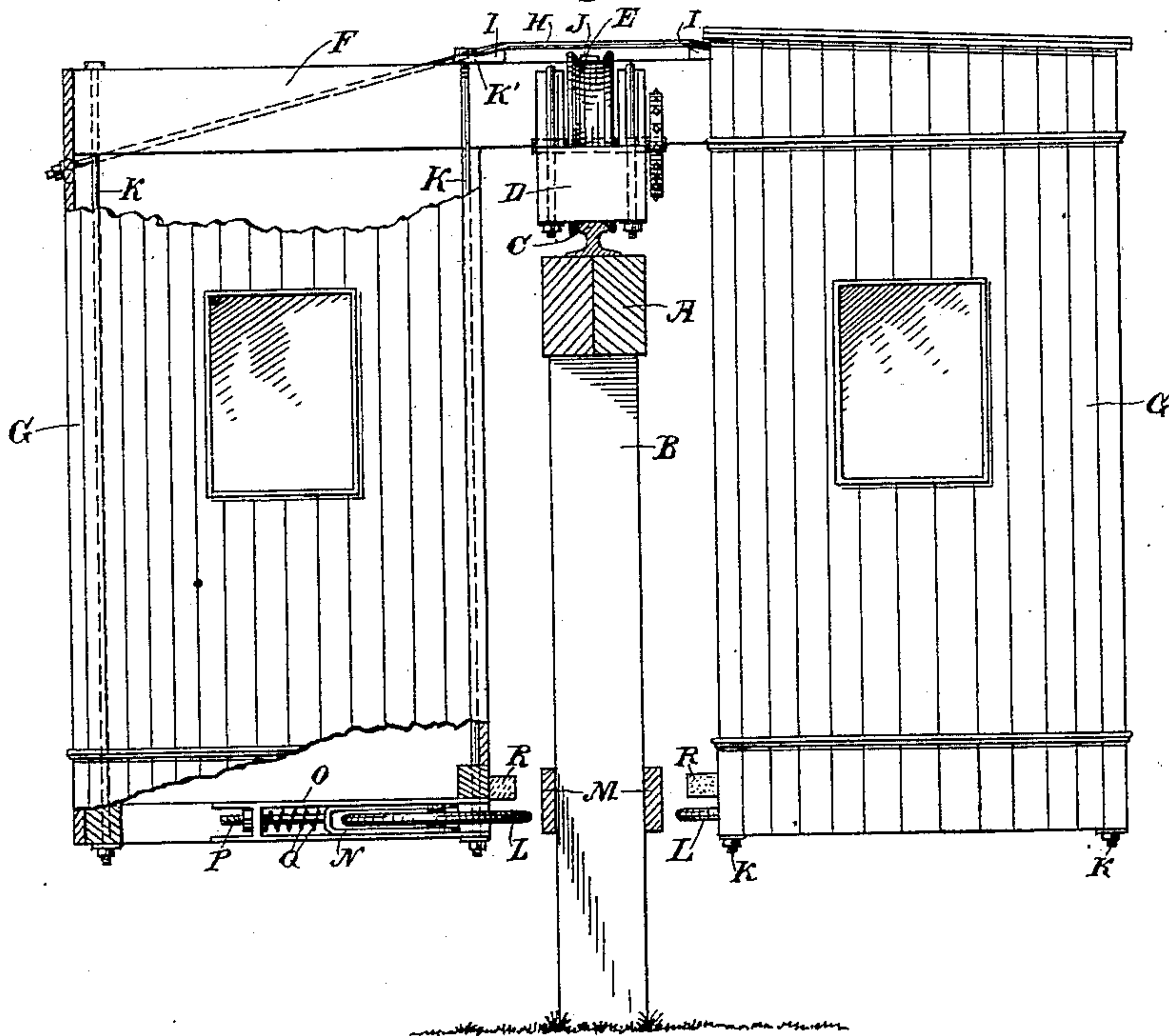


Fig. 3.

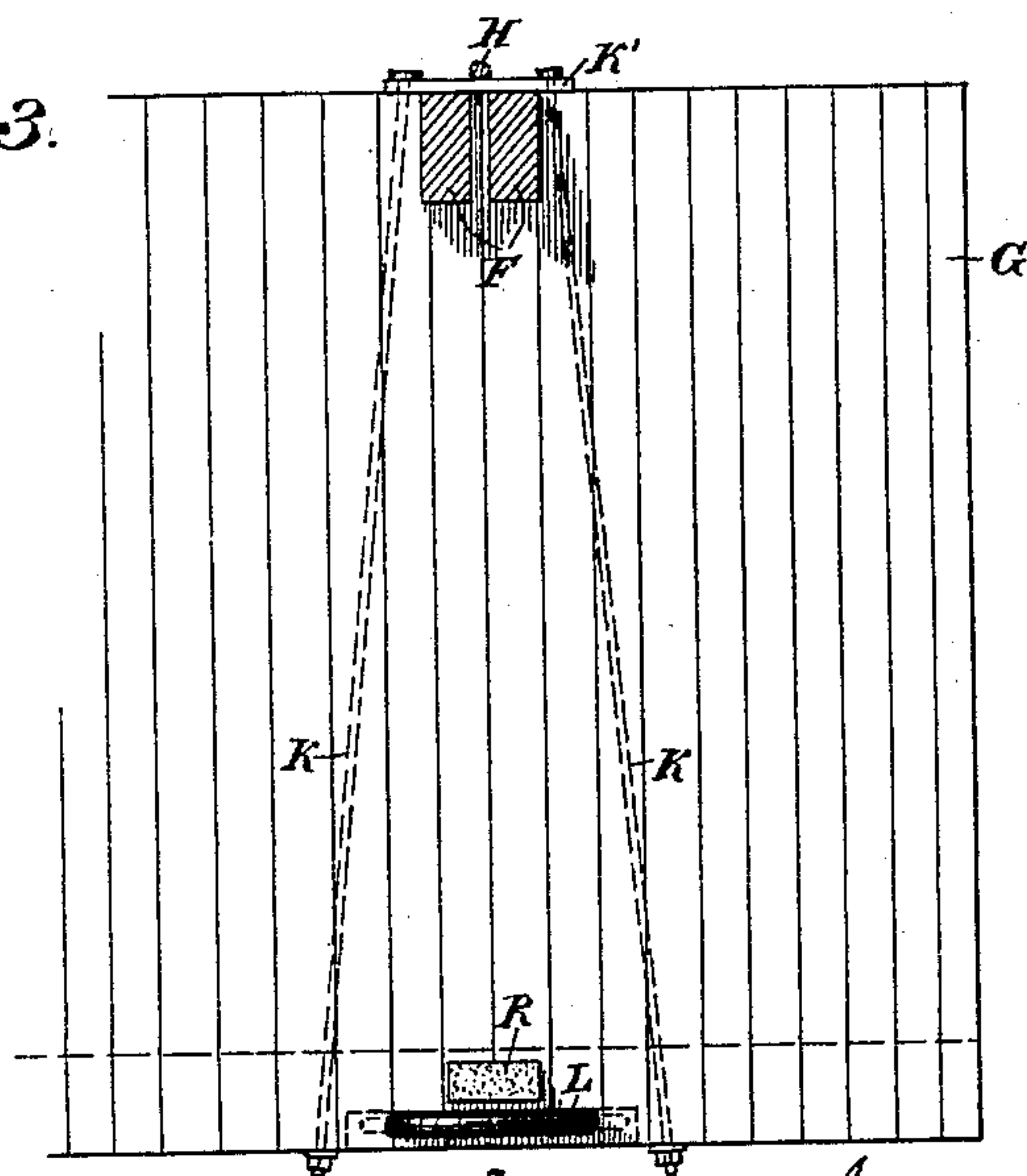
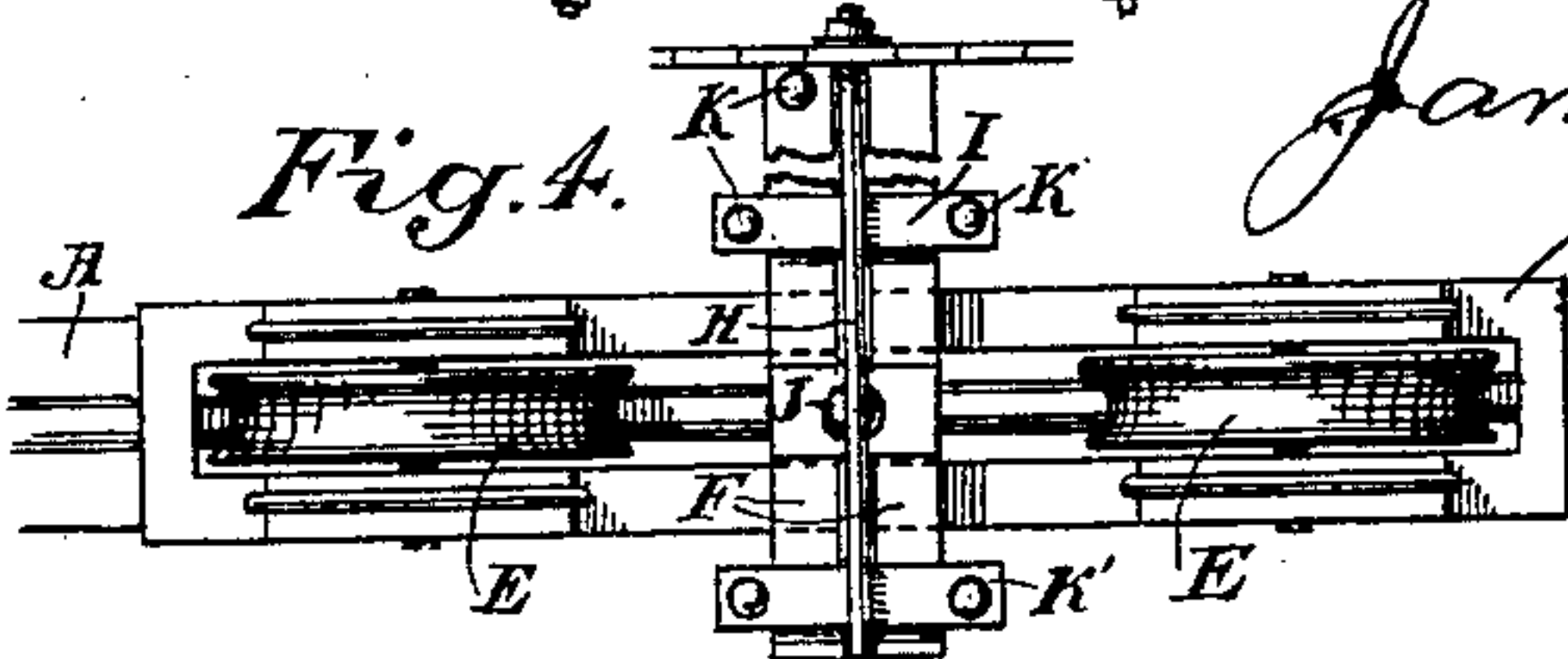


Fig. 4.



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# UNITED STATES PATENT OFFICE.

JAMES HOPKIRK, OF OAKLAND, CALIFORNIA.

## SINGLE-TRACK RAILWAY AND CARS.

SPECIFICATION forming part of Letters Patent No. 602,601, dated April 19, 1898.

Application filed August 17, 1897. Serial No. 648,509. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES HOPKIRK, a citizen of the United States, residing at Oakland, county of Alameda, State of California, have  
5 invented an Improvement in Single-Track Railways and Cars; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a single-track railway; and it consists of the parts and the constructions and combinations of parts hereinafter described and claimed.

Figure 1 is a side elevation, partly in section. Fig. 2 is an end view. Fig. 3 shows  
15 the side of a car adjacent to the rail. Fig. 4 is a plan view of the truck.

A is a supporting-line of timbers mounted upon posts B at suitable intervals, said posts being fixed and projecting upwardly from the  
20 surface of the ground, so as to maintain the timber A with suitable relation thereto, the grades and sinuosities of the ground and line being considered in the fixing of the track. Upon the top of the longitudinal timber A is  
25 a single rail C, from which the car is supported.

D D are trucks, one of which is adapted to support each end of the car. To each truck in any suitable manner are journaled the supporting and driving wheels E. Across the  
30 central portion of each truck is a framework of timbers F, extending transversely to each side of the timber A and forming a support for cars G, which are suspended in pairs from the timbers F upon each side of the rail and  
35 its support A, as shown plainly in transverse section. In order to properly strengthen these supporting-timbers F, I have shown a truss-frame consisting of a stout rod or rods H, the  
40 outer ends of which are screw-threaded and bolted through the lower parts of the timbers F, while the central portion rises in an arch and rests upon a supporting saddle bar or bars I, so as to give the necessary angle for  
45 the truss.

The cars G depend from the supporting-bars F upon each side of the rail, as before stated, and two or more wheels may be used to support the cars from the rails.

50 I have in the present case shown two trucks D, one of which supports each end of the car, and the transverse timbers F are mounted so

as to swivel upon king-bolts J, mounted in cross-timbers J' in the trucks and having securing-nuts, as shown in dotted lines in Fig. 55 1, thus allowing the trucks to turn and follow any curves or sinuosities of the supporting-rail.

The bearing-wheels E are made with any suitable form of periphery to fit the corresponding shape of the rails C. In the present case I have shown the wheels as being  
60 grooved, with flanges upon each side of sufficient depth to maintain them properly upon the rails.

Through the outer and inner side framework of the cars G extend vertical rods or hangers K, having nuts fitting the screw-threaded ends, by which they can be drawn  
70 up beneath the bottom timbers of the car, so as to properly sustain the latter.

Upon each of the cars in the essential plane of oscillation of the trucks D are journaled horizontal wheels or rollers L. These wheels or rollers are preferably fitted, as here shown, 75 into the bottom inner timbers of the cars G, these timbers being sufficiently cut away to receive the wheels L, and the peripheries of the wheels approach the central line of posts B, projecting slightly beyond the sides of the  
80 cars.

Upon the posts B are fixed the longitudinal stringers M at such an elevation that any swinging or tilting of the cars upon their support will bring these rollers into contact with  
85 the timbers M, and they will thus steady the cars and prevent undue side oscillation.

The wheels or rollers L are journaled in slidable boxes N, which move in guides O, fixed transversely upon the car. 90

The boxes N have rearwardly-extending stems or shanks P, also slidable through the rear ends of the guides, and springs Q, surrounding these stems, are so disposed with relation to the slidable boxes N that they will 95 be compressed when the cars swing so as to bring the rollers into contact with the stringers M and will yield so as to allow the wheels or rollers L to recede slightly, thus preventing any shock caused by the contact of these  
100 wheels with the stringers M.

Above or with suitable relation to the wheels buffers R are fixed to the sides of the cars, and in case of any abrupt shock which will



compress the springs Q beyond their normal degree of compression these bars will come in contact with the stringers M, and, sliding thereon temporarily, will prevent any further oscillation of the car in that direction.

The action of the springs Q will always tend to force the rollers outwardly, and thus return the car to its normal position of suspension with relation to the supporting-track and framework.

In order to properly support the inner lower longitudinal beam of the car-body where it is cut away to receive the wheels L, I have shown the suspending-rods K as diverging from the top suspending-beams F, the upper ends of the rods K passing through plates K', which rest upon these beams. The lower ends may pass through corresponding plates or washers and are there set up to any desired degree of tension by nuts fitting upon the lower ends. In this manner I am enabled to make a very rigid support for the car and to prevent its undue oscillation from side to side, at the same time providing against shock of oscillation by reason of the spring-compressed wheels or rollers contacting against the longitudinal stringers whenever the car swings to one side.

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

1. The combination with a single line of track and a framework upon which it is supported longitudinally above the surface of the ground, of cars mounted in pairs upon opposite sides of the track and framework, trucks having wheels journaled at opposite ends adapted to travel upon the rails, transverse timbers centrally swiveled upon the trucks extending through the opposite ends and upper part of each car, hangers supported from the transverse timbers extending downwardly upon the outer and inner sides of the cars respectively and nuts and washer-plates by which the weight of the cars is adjustably supported from said hangers.

2. The combination with a single line of

rails, a continuous framework by which the track is supported above the surface of the ground, of cars disposed in pairs upon each side of the track and framework, trucks having wheels journaled at opposite ends and adapted to travel upon the rails, transverse timbers pivoted centrally upon said trucks extending through opposite ends of the upper part of the cars whereby the latter may be suspended therefrom, hangers extending through bridge-plates upon the timbers and through the bottom timbers of the car, wheels journaled horizontally to the lower part of each car in the transverse plane of the swivel-pins of the suspending-timbers, rails or stringers fixed to the supporting-posts of the structure in line with the peripheries of the horizontal wheels whereby the latter may contact with and travel upon said stringers whenever the cars oscillate to one side or the other.

3. The combination with a single line of track and a supporting-framework, of cars suspended in pairs from transverse timbers which pass through opposite ends of the upper parts of the cars, trucks having wheels at each end adapted to travel upon the rail, central pivots by which the transverse timbers are swiveled to the trucks between the wheels, horizontally-disposed wheels or rollers yieldingly journaled to the lower parts of the cars in the transverse planes of the pivot-points of the suspending-timbers, hangers or rods, the upper ends of which are passed through plates fixed upon the transverse timbers and the lower ends through the bottom longitudinal timbers of the cars upon the inside and outside respectively, those upon the inner side being diverged so as to embrace the horizontal rollers between the diverging pairs of rods, substantially as described.

In witness whereof I have hereunto set my hand.

JAMES HOPKIRK.

Witnesses:

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JESSIE C. BRODIE.