

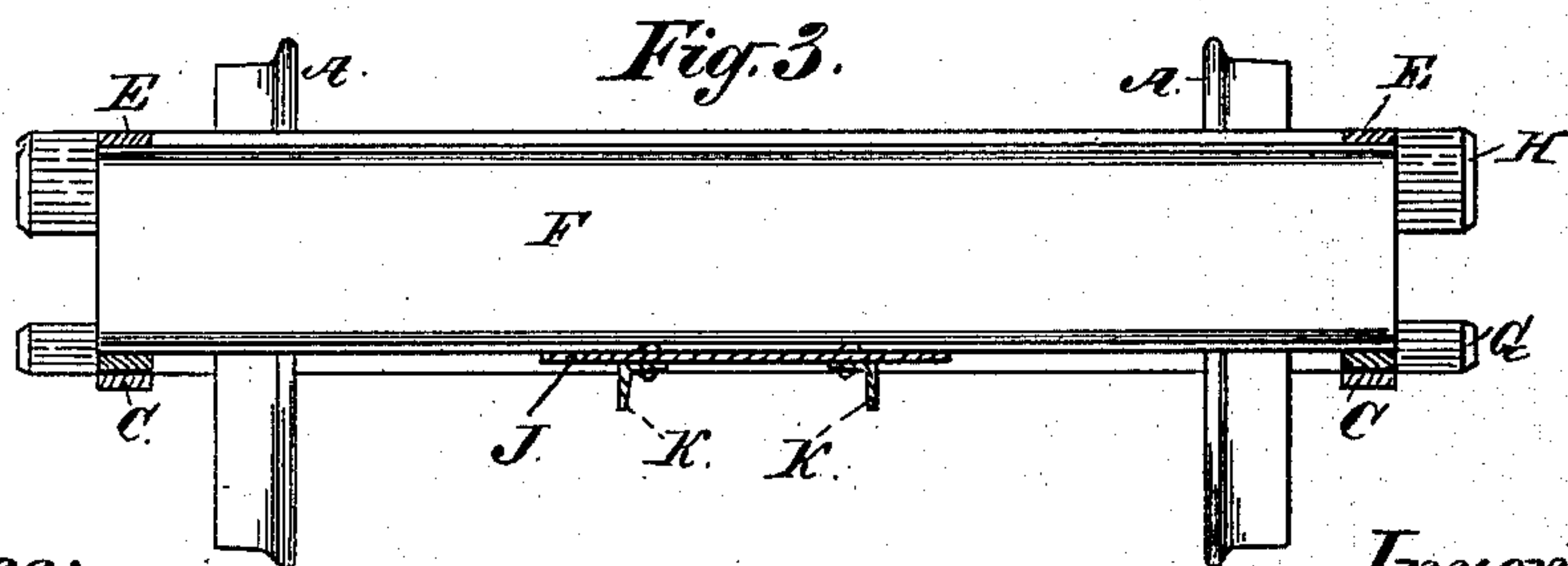
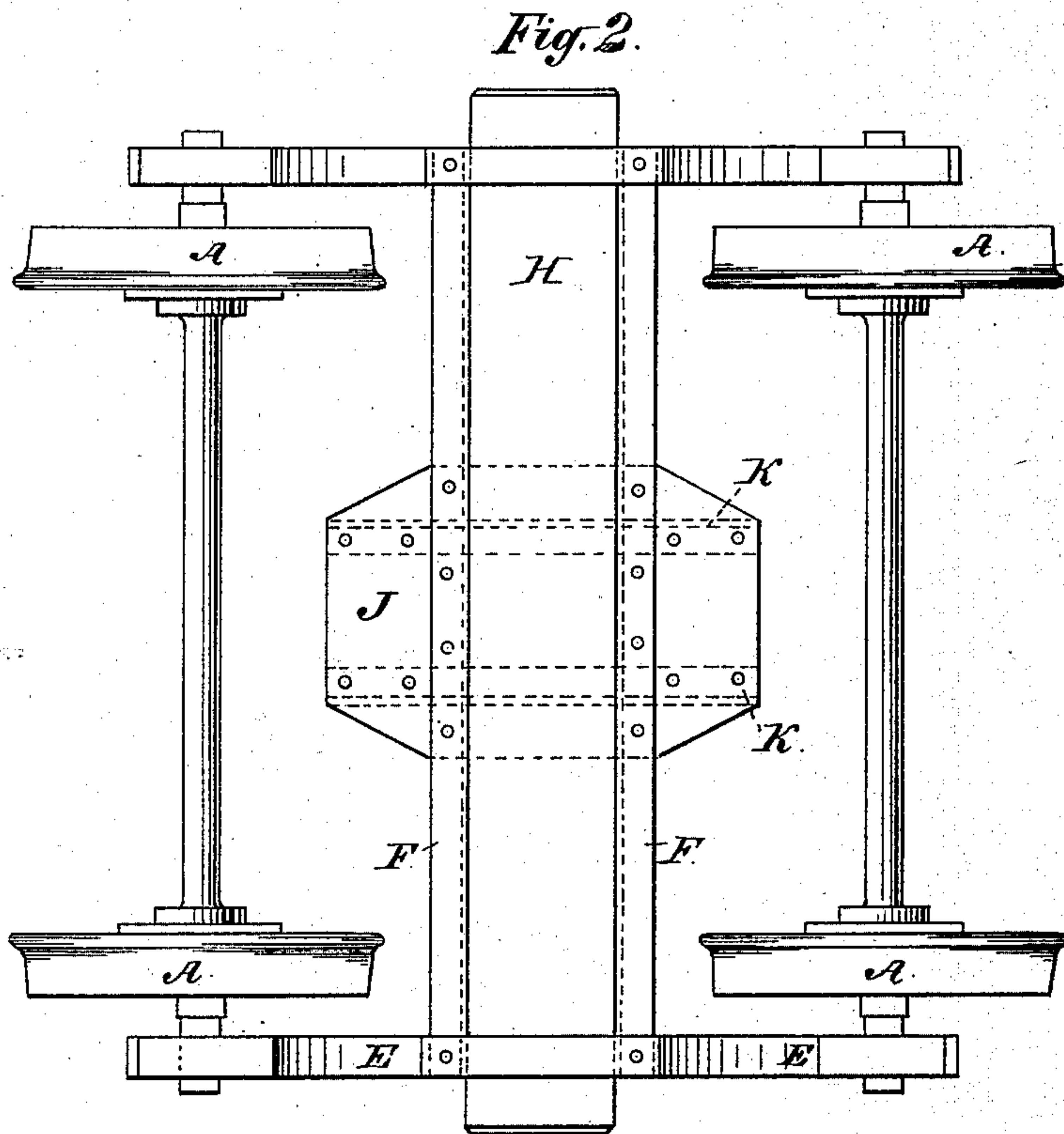
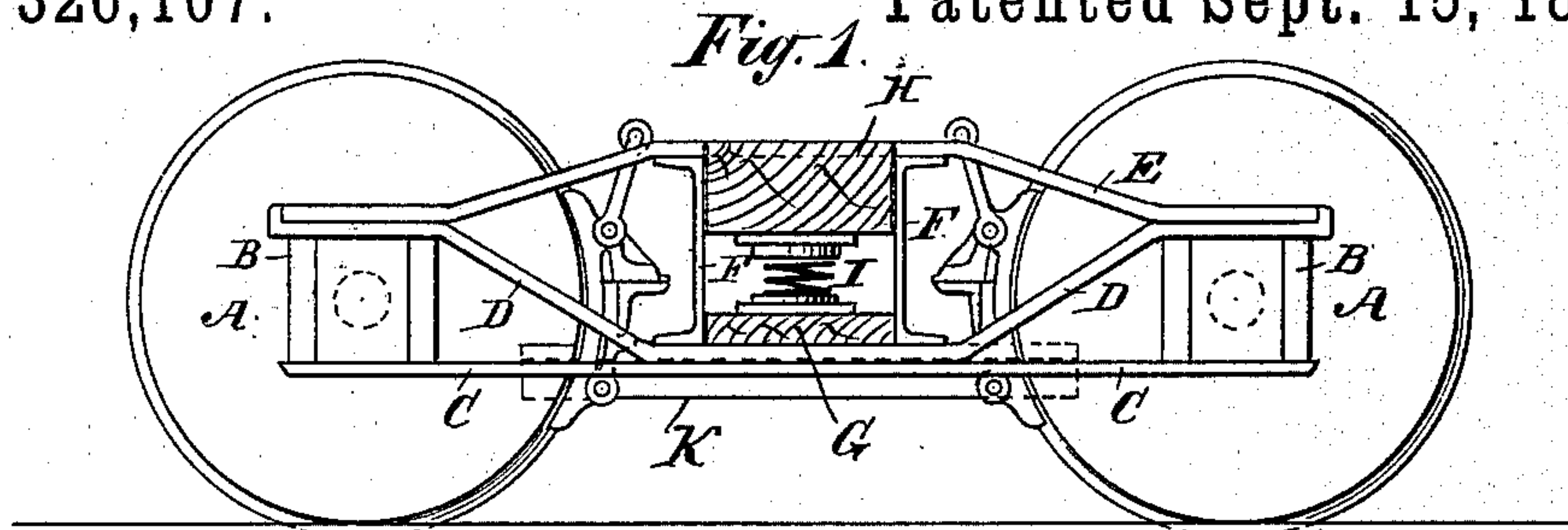
(No Model.)

2 Sheets—Sheet 1.

J. J. ENDRES.  
TRUCK FOR CABLE CARS.

No. 326,107.

Patented Sept. 15, 1885.



*Witnesses:*  
*Henry E. L. King*  
*Daniel H. Erickson*

*Inventor*  
*John J. Endres*

(No Model.)

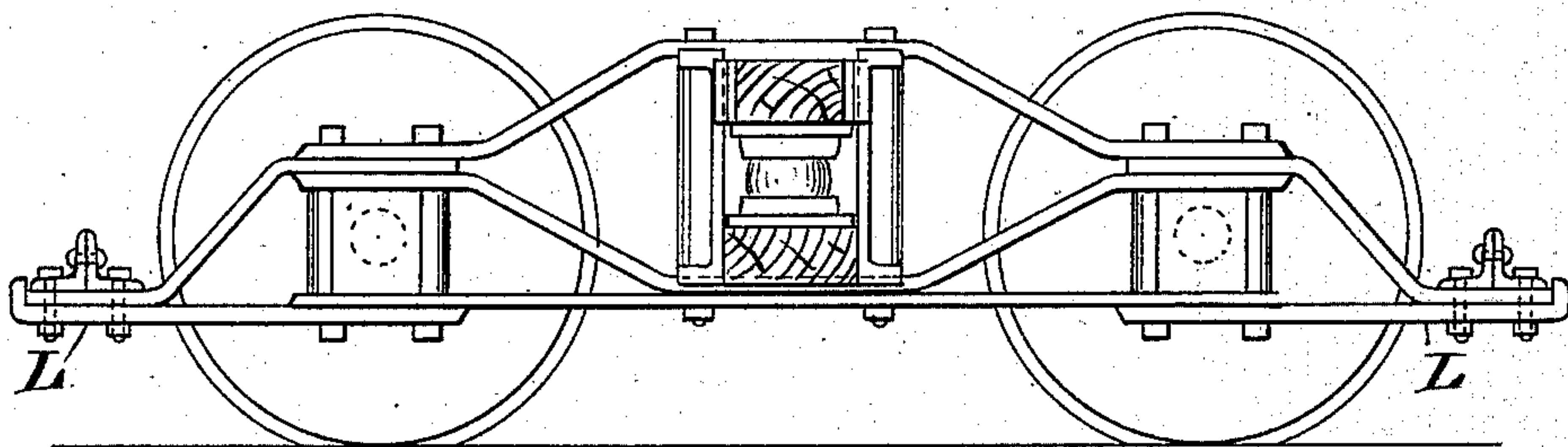
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J. J. ENDRES.  
TRUCK FOR CABLE CARS.

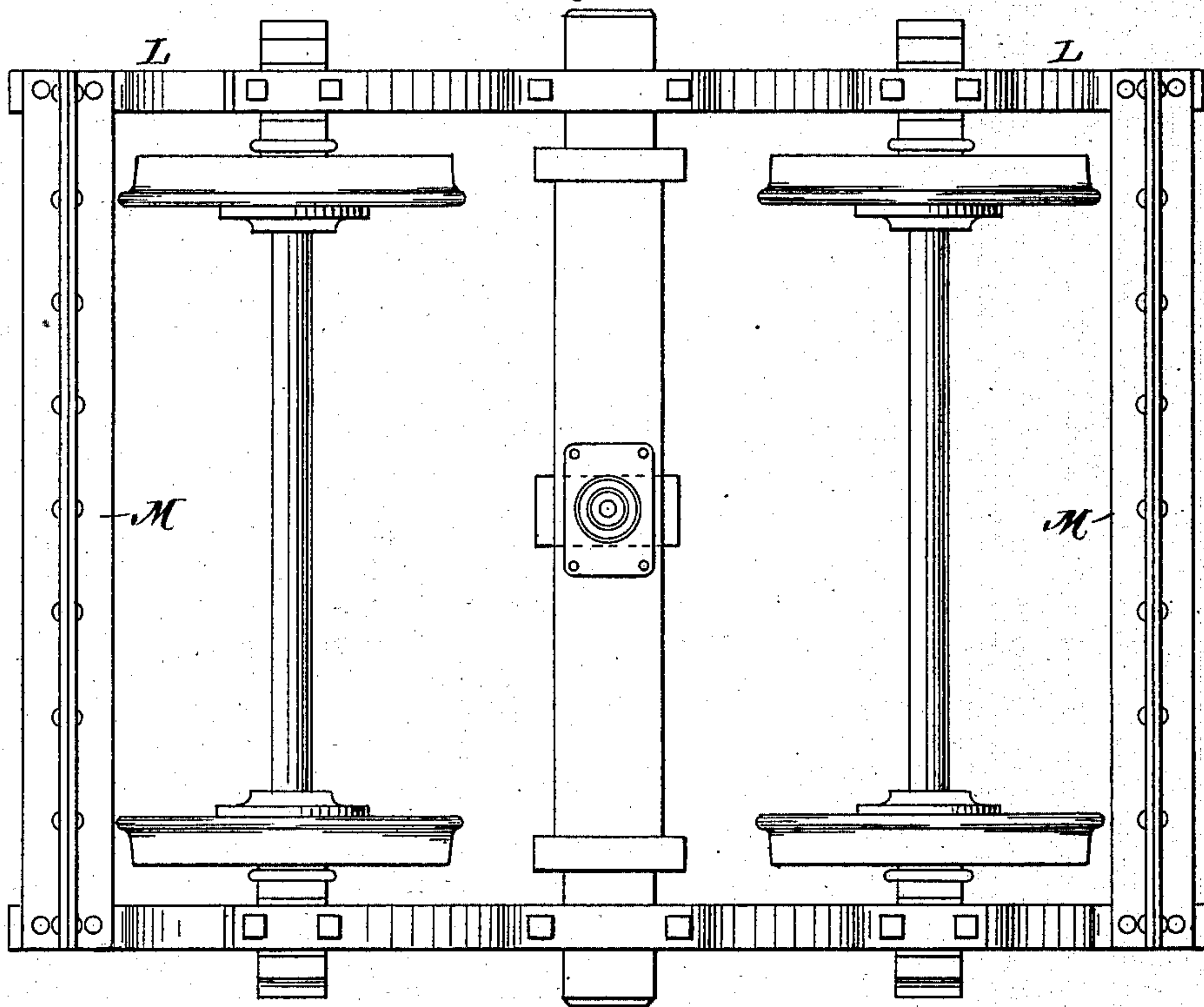
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Patented Sept. 15, 1885.

*Fig. 4*



*Fig. 5*



*Witnesses:*

*Henry C. Kling*  
*Daniel P. Herrick*

*Inventor*

*John J. Endres*



# UNITED STATES PATENT OFFICE.

JOHN J. ENDRES, OF HOBOKEN, NEW JERSEY.

## TRUCK FOR CABLE CARS.

SPECIFICATION forming part of Letters Patent No. 326,107, dated September 15, 1885.

Application filed December 29, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN J. ENDRES, of Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Trucks for Cable-Road Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to the trucks of cars used on cable roads, whether elevated or surface roads, and to a simplified and improved method of arranging upon the frame of the truck the supports of the cable-gripping mechanism.

Heretofore it has been common to attach the cable-grip to the body of the car; but this is objectionable, for the car being on springs and its load variable the grip carried by the car could have no positive relation to the position of the cable or the rails of the track, and this prevented the use of devices fixed on or near the track and used to automatically operate the cable-grip. The grip has also been attached to the extreme end or to the middle of the car, and the car in turning a curve would cause the grip to swerve from a line midway between the rails, and thereby drag the cable to one side and out of its proper course, and this tended to make the cable jump its carrying-pulleys, and put a lateral strain upon the car, which made its motion irregular and rough. Again, the grip has been attached to the axle or axles of the car-wheels by means of bearing-connections in which the axles turned; but applying the power to move the car to its axles not only tends to spring and break the axles, but also produces great friction and consequent loss of driving-power, as well as rapid wearing away of the bearing-parts.

The invention consists, therefore, in attaching the cable-grip supports to the center of the truck as regards the position of its four wheels, and also in extensions to the truck which adapt it to support gripping mechanisms of large size, or such as have parts necessarily supported at some distance from each other.

In the drawings, Figure 1 is a side view of a truck embodying my improvements. Fig. 2 is a plan view of the same. Fig. 3 is a section on  $xx$  of Fig. 2. Fig. 4 shows a modifi-

cation of the form of Fig. 1, and Fig. 5 is a plan of the same.

In these views, A A represent the truck-wheels; B B, the pedestals, between which the axle-boxes are held; C, a tie-bar connecting the axle-box pedestals at their lower ends; D, a lower side brace bolted to the top of the axle-box pedestals and bent down, as shown, so as to rest upon the tie-bar C. E is an upper side brace, also fastened to the axle-box pedestals, but bent upward, as shown. F F are trusses made of channel-iron and fastened at their ends between the side braces on both sides of the truck. G is a cross-beam lying between the trusses and upon the side braces; and H is a bolster resting upon springs I, being movable vertically between the trusses and designed to directly support one end of the car by the ordinary king-bolt or fifth-wheel connections. Attached to the under side of the trusses of this truck is a center plate, J, which is to support any suitable cable-gripping mechanism by means of cross-bars K, or otherwise.

It will be seen that the center plate which carries the cable-grip is centrally located relatively to the positions of the four wheels of the truck, and therefore that the point of attachment of the car to the cable is also central to the truck-wheels. By this arrangement and location of the supports of the gripping mechanism I am able to maintain the grip at a uniform height relatively to the rails of the track and midway between them, and hence always at the same distance immediately above the course of the cable, for the varying load of the car cannot influence such position of the grip nor the curves of the road cause it to have a course other than what corresponds with the proper course of the cable. So, too, the line of the draft of the car being low and uninfluenced by the vertical movements of the car, the load thrown on the cable is moved with the least practicable strain thereon, and without the rough grinding and wearing action incident to cars provided with the common forms of grip-attaching devices.

The fourth and fifth figures of drawings show the frame of the truck provided with extensions L L, reaching beyond both sets of wheels, and there crossing from side to side of



the frame, as seen at M M. This is to give additional means of support for such forms of gripping mechanisms as cannot readily be attached to a center plate on the trusses. Thus, 5 for a gripping device embodying long levers arranged horizontally, or one including a power-cylinder, the extensions shown can be used to support such parts as are necessarily located at some distance from the gripping- 10 jaws; but the jaws of course would be located at a point central to the wheels, as described. These extensions also serve to give greater rigidity and strength to the truck-frame.

What is claimed as new is—

- 15 1. In combination with the truck of a cable-road car consisting of the tie-bars C, braces

D and E, and trusses F, supports for a cable-gripping mechanism attached to the frame of the truck at a point central to the four truck-wheels, as and for the purpose set forth. 20

2. In a truck for cable-road cars, consisting of the tie-bars C, braces D and E, and trusses F, supports for cable-gripping mechanism arranged upon the truck-frame at a position central to the four truck-wheels, and extensions 25 M of the truck-frame, reaching beyond the truck-wheels, as and for the purpose set forth.

JOHN J. ENDRES.

Witnesses;

ROBERT JACKSON,  
D. PALMER HERRICK.