

(No Model.)

J. G. & R. DICKSON & P. SNYDER.  
TROLLEY FOR ELECTRIC RAILWAYS.

No. 409,603.

Patented Aug. 20, 1889.

Fig. 1.

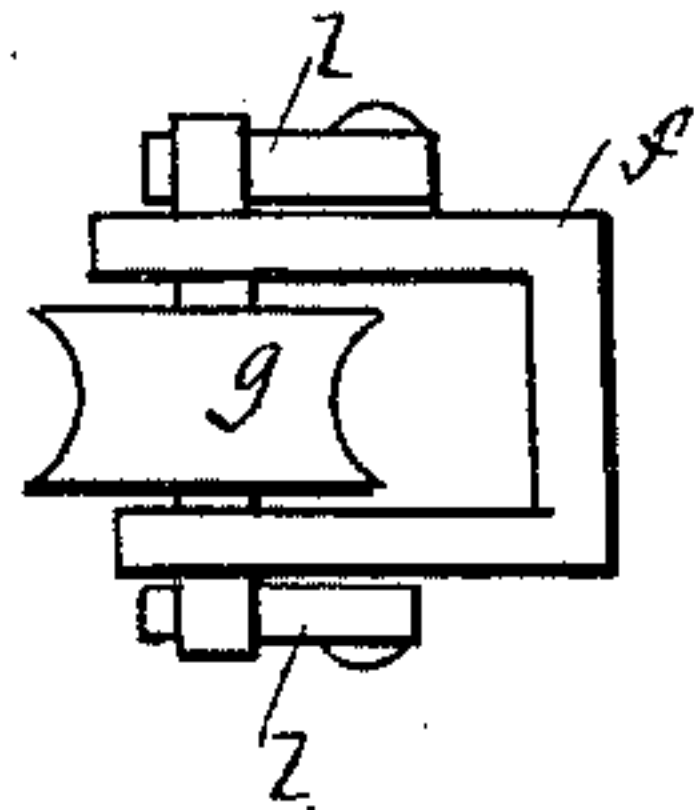
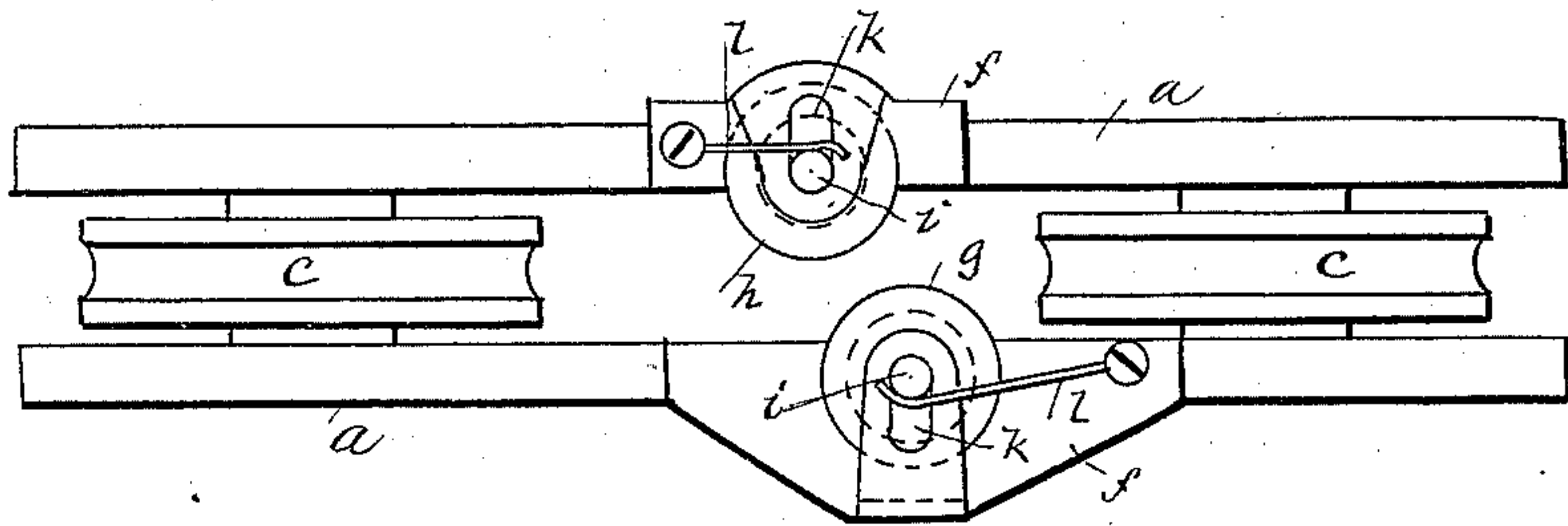


Fig. 3.

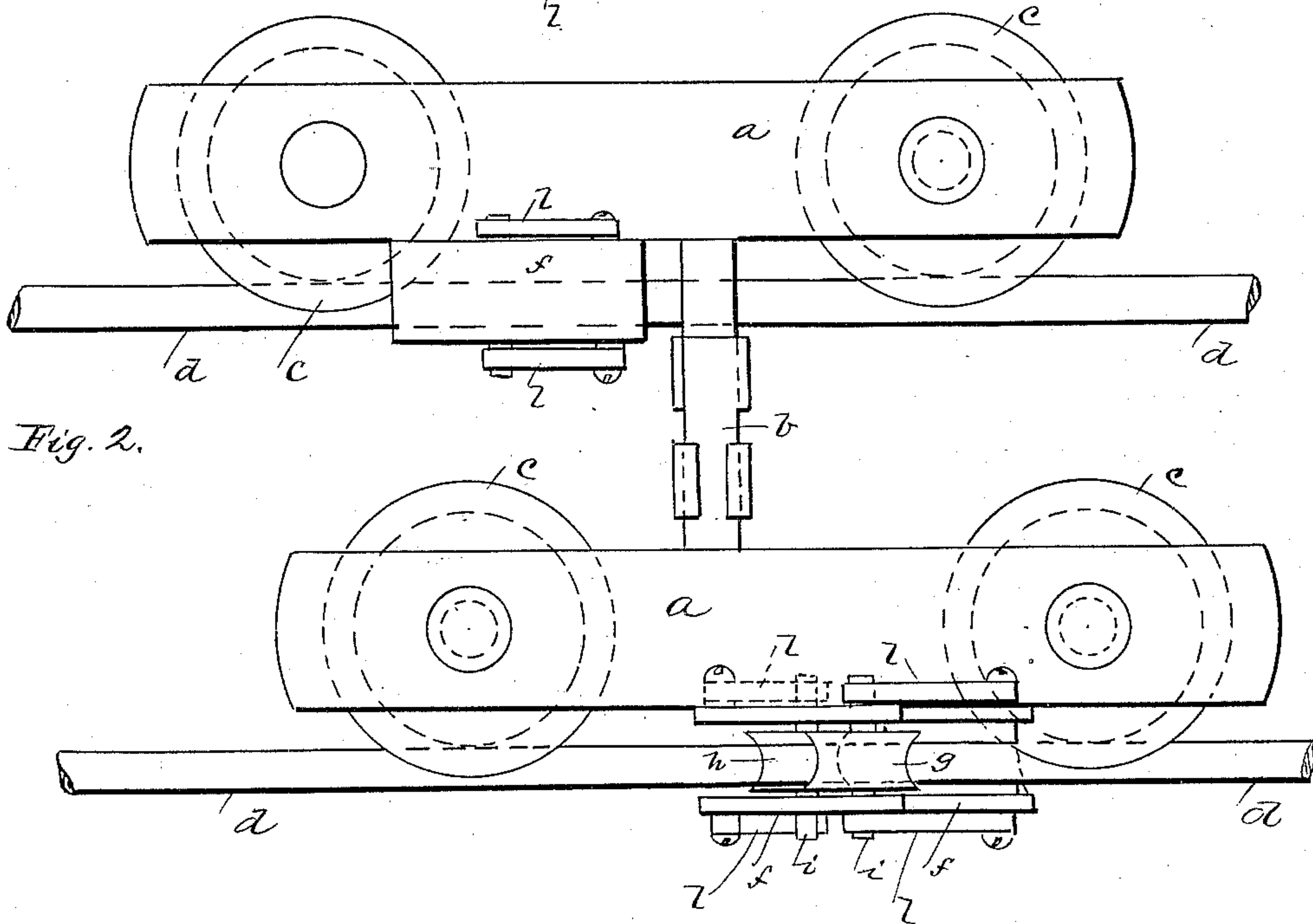


Fig. 2.

Witnesses:

M. E. Harrison.  
J. A. Herrow.

Inventor.

John G. Dickson  
Robert Dickson  
Peter Snyder  
O. D. Lewis

Per.

Att'y.

# UNITED STATES PATENT OFFICE.

JOHN G. DICKSON, ROBERT DICKSON, AND PETER SNYDER, OF PITTSBURG,  
PENNSYLVANIA.

## TROLLEY FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 409,603, dated August 20, 1889.

Application filed March 23, 1889. Serial No. 304,533. (No model.)

*To all whom it may concern*

Be it known that we, JOHN G. DICKSON, ROBERT DICKSON, and PETER SNYDER, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Trolleys for Electrical-Railway Cars; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to an improved trolley for electrical-railway cars; and it consists in two series of rollers arranged in a manner that will effectually prevent the trolley from becoming detached from the overhead conductors, together with certain other details of construction and combination of parts, as will be fully set forth hereinafter.

In the accompanying drawings, Figure 1 is a plan view of our improved trolley constructed in accordance with our invention. Fig. 2 is a side elevation of the same. Fig. 3 is a sectional detail of one of the small movable pulleys.

To put our invention into practice we provide two frames *a*, and connect the same together by a sliding brace *b*. Each of these frames *a* is provided with two large grooved rollers *c*, which are adapted to travel along two parallel wires *d*, arranged in the same vertical plane. Attached to the under side of each of the two frames *a*, and on either side of the grooved pulleys *c*, are two smaller frames *f*, in each of which are mounted small sheaves *g h*, arranged in a horizontal position,

and each capable of a short horizontal movement toward or away from the wires *d*. This movement of the small rollers *g h* is obtained by the bearings *i*, operating in slots *k* in the frames *f*, and the rollers *g h* held against the conductors *d* by springs *l* at the top and base of the bearings *i*.

By means of this trolley the brackets which support the conductors may be passed without disengaging or throwing the same off. The small pulleys *g h* keep the wire in the center of the frame at all times, and will move away from the brackets as they are met, and catch the wires as soon as passed.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

The herein-described trolley, consisting of the two frames *a*, loosely connected together by the sliding brace *b*, the grooved sheaves *c*, mounted on the said frames *a*, and each frame *a* provided with two small rollers *g h*, operating on each side of the wire, each roller *g h* capable of a limited movement toward or away from the conductors *d*, and a spring *l*, operating on each of the bearings *i* of the said rollers *g h* to keep the same in contact with the conductors, substantially as and for the purpose described.

In testimony that we claim the foregoing we hereunto affix our signatures this 20th day of February, A. D. 1889.

JOHN G. DICKSON.  
ROBERT DICKSON.  
PETER SNYDER.

In presence of—

C. C. LEE,  
M. E. HARRISON.