(No Model.)

A. PHILIPSBORN & W. REICHEL.

ELECTRIC RAILWAY WIRE SUSPENSION.

No. 472,810. Patented Apr. 12, 1892.

Fig. 1.

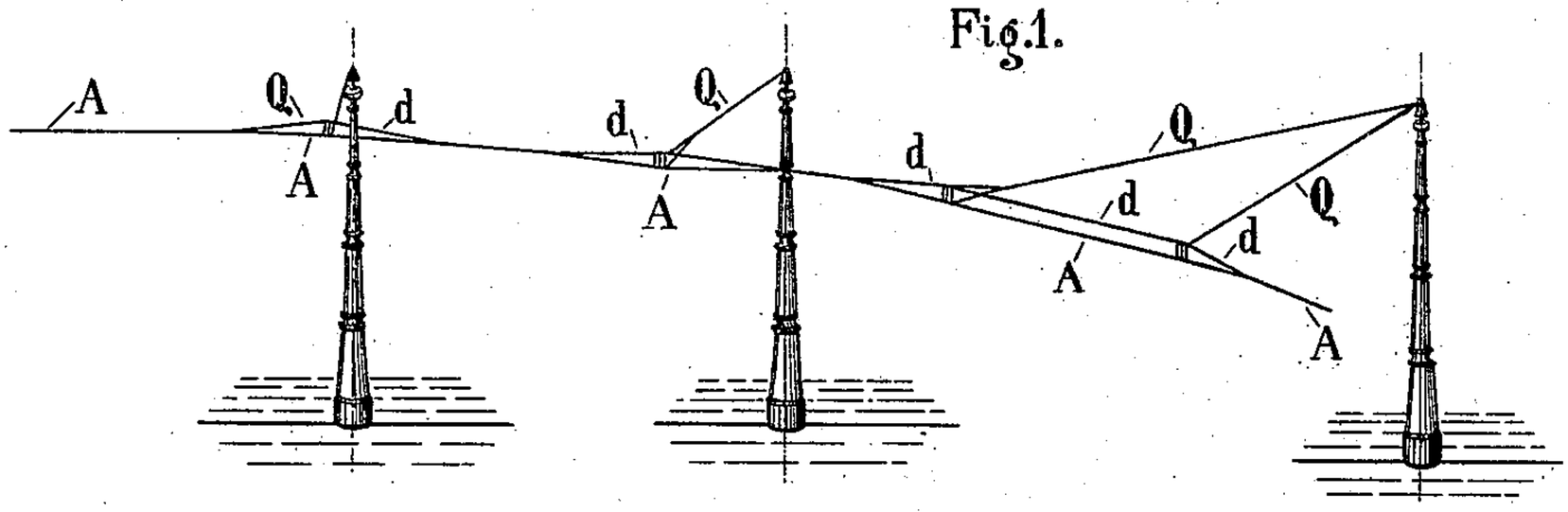


Fig. 2.

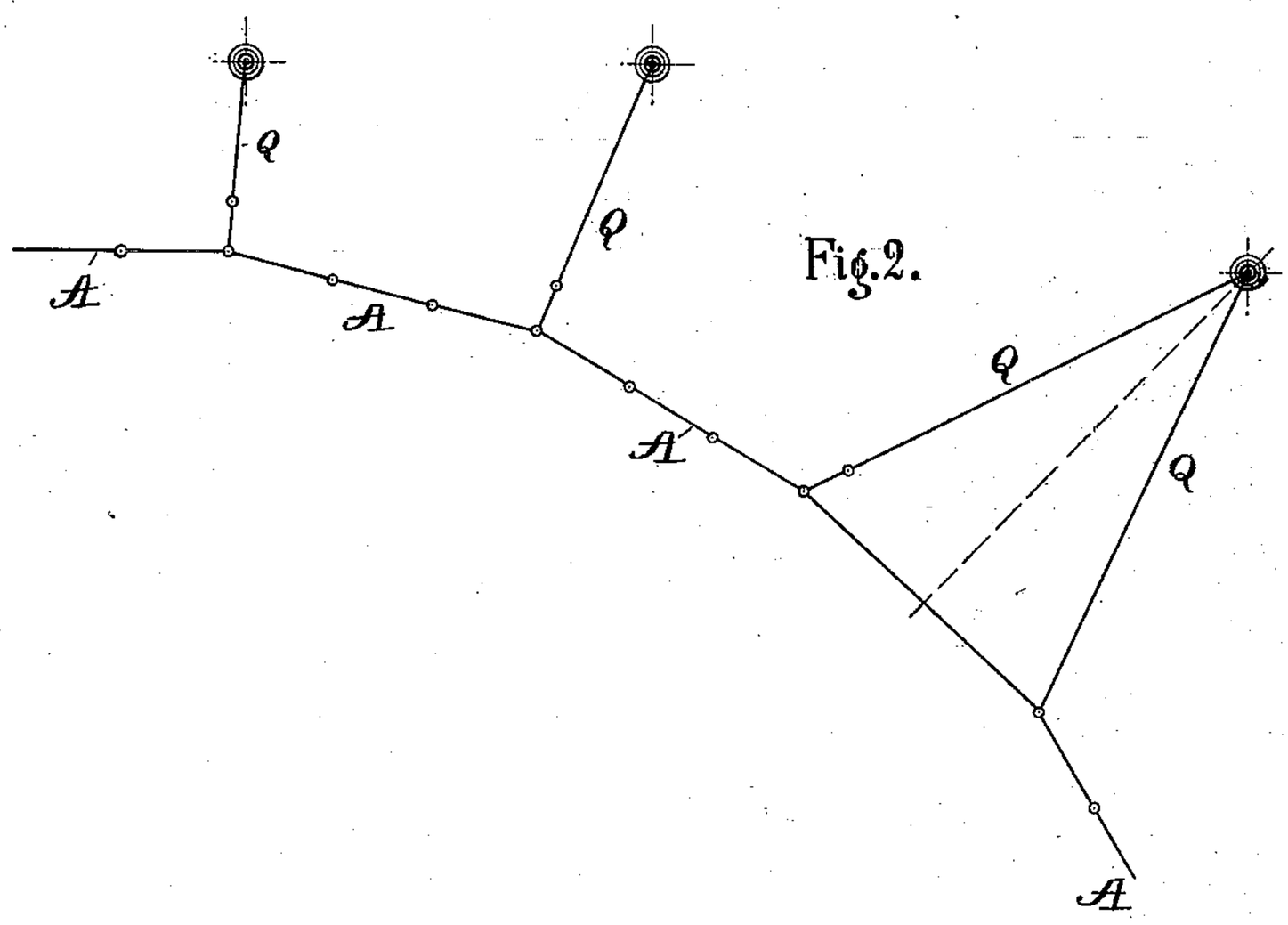


Fig. 4.

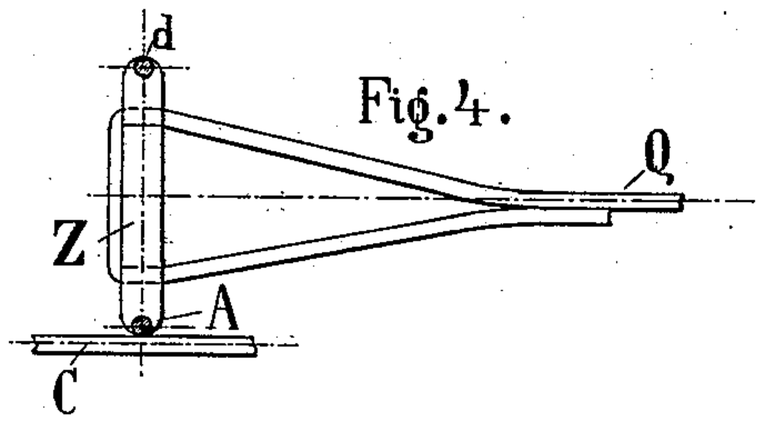


Fig. 4a.

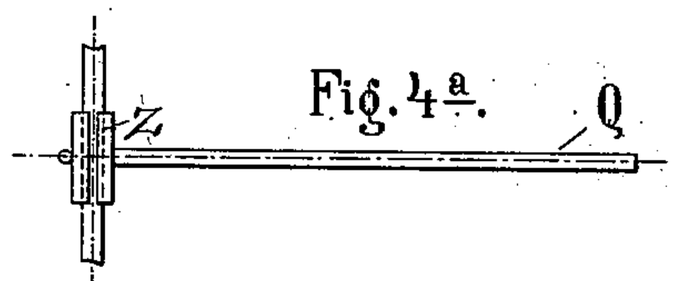


Fig. 3.

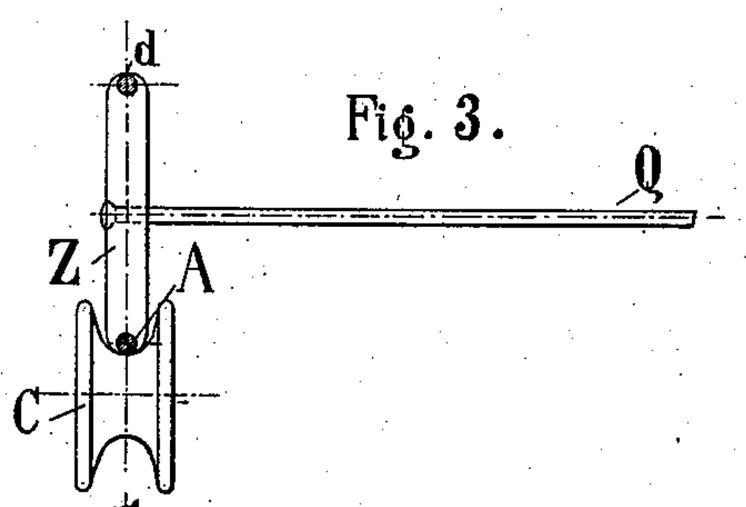
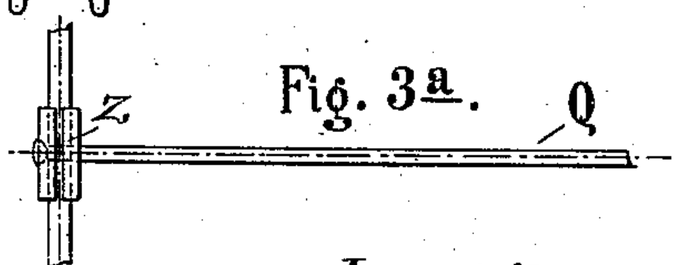


Fig. 3a.



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UNITED STATES PATENT OFFICE.

ALEXANDER PHILIPSBORN AND WALTER REICHEL, OF BERLIN, GERMANY, ASSIGNORS TO SIEMENS & HALSKE, OF SAME PLACE.

ELECTRIC-RAILWAY-WIRE SUSPENSION.

SPECIFICATION forming part of Letters Patent No. 472,810, dated April 12, 1892.

Application filed November 27, 1891. Serial No. 413,358. (No model.)

To all whom it may concern:

Be it known that we, ALEXANDER PHILIPSBORN and WALTER REICHEL, both subjects of the King of Prussia, residing at the city of Berlin, Prussia, Germany, have invented certain new and useful Improvements in Suspension of Curves for the Overground Conductors in Electrical Railways; 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 appertains to make and use the same.

In electrically-operated tramways with an overhead supply of electricity the conductor carrying the latter—the so-called "working wire"—must be suspended wherever the track curves from cross-wires by a polygonal arrangement. While now the tension on the working wire in straight tracks does not act upon the cross-wires and can be received only at the end points, it produces in the curves at every polygonal corner a resulting horizontal tension, which strains the cross-wires and tends to set the middle line of the working wire in the same plane with the middle line of the cross-wires, so that a contact-piece sliding along below the working wire may strike against the cross-wires. This our invention is intended to remedy; and for this purpose we provide double working wires at such curves and place between the two portions of these wires a rigid spreader or piece of stiff insulating material or metal, but preferably of insulating material. To some point of this spreader between the two wires the cross-wire is attached.

Reference is had to the accompanying drawings, wherein the same parts are indicated by the same letters.

Figure 1 represents a perspective view of a suspended conducting-wire passing around a curve. Fig. 2 represents a view of the same from beneath. Fig. 3 represents a vertical cross-section, and Fig. 3ª a plan view, of one method of attaching the cross-wires to the spreader. Fig. 4 represents a vertical cross-section, and Fig. 4ª represents a plan view, of another method of attaching the cross-wires to the spreader.

Wire pieces *d* of suitable length are joined to the working wires A in such curves, and both wires are kept apart by rigid intermediate pieces or spreaders Z. To these spreaders Z the cross-wires Q may be connected in a variety of ways. One way is shown in Fig. 3 and another way in Fig. 4. These spreaders may be made of insulating material, and would then act as insulators for the cross-wires. By having the cross-wires connected to these spreaders at or near their center the cross-wire will always be higher than the working wire, so that a trolley or other contact-piece C (see Figs. 3 and 4) rolling or sliding along beneath the working wire would never strike the cross-wires or the spreaders themselves. By this system of construction a material reduction in the number of posts or other supports is obtained.

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

1. In overhead conductors for electric railroads, the combination, with the working wire, of a second wire attached thereto and nearly parallel therewith, a rigid spreader between said wires, and a cross-wire connected to said spreader between said working and second wires, substantially as and for the purposes described.

2. In overhead conductors for electric railroads, the combination, with the working wire, of a second wire attached thereto and nearly parallel therewith, a rigid spreader of insulating material between said wires, and a cross-wire connected to said spreader between said working and second wires, substantially as and for the purposes described.

In testimony whereof we affix our signatures in presence of two witnesses.

ALEXANDER PHILIPSBORN.
WALTER REICHEL.

Witnesses:
GUSTAV FRENZEL,
MAX WAGNER,
Both of Berlin, S. W.