

(No Model.)

W. W. LE GRANDE.

ELECTRICAL CONNECTION FOR RAILWAY RAILS.

No. 285,494.

Patented Sept. 25, 1883.

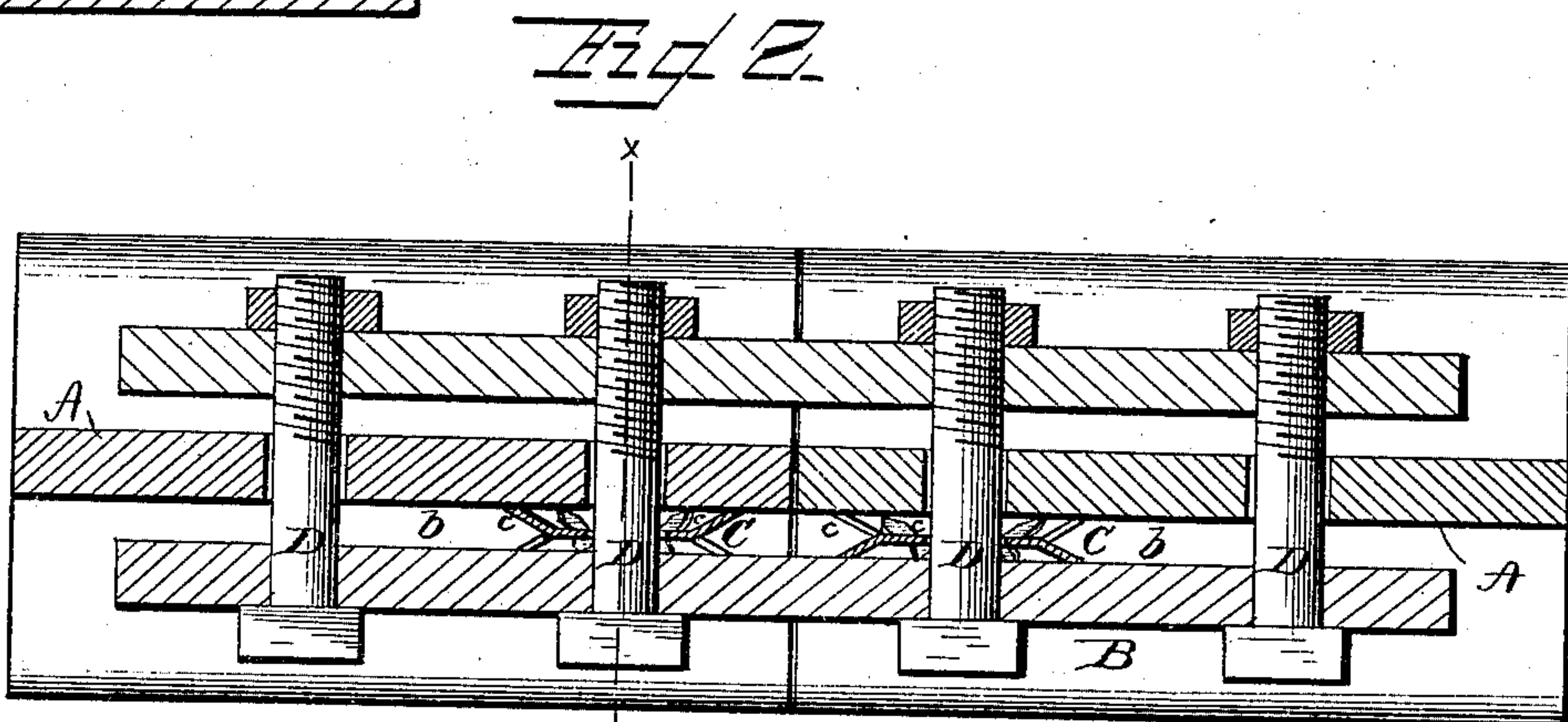
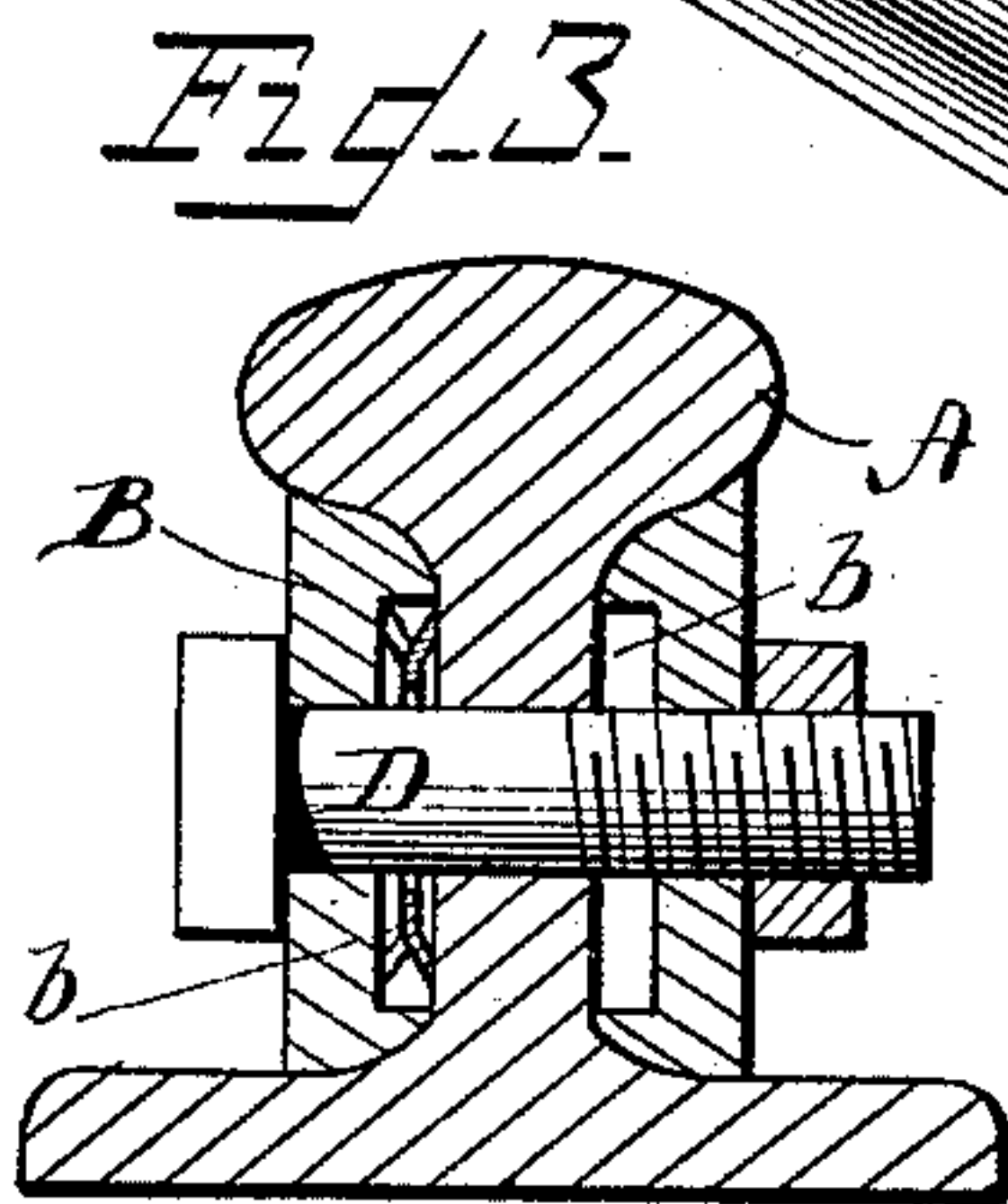
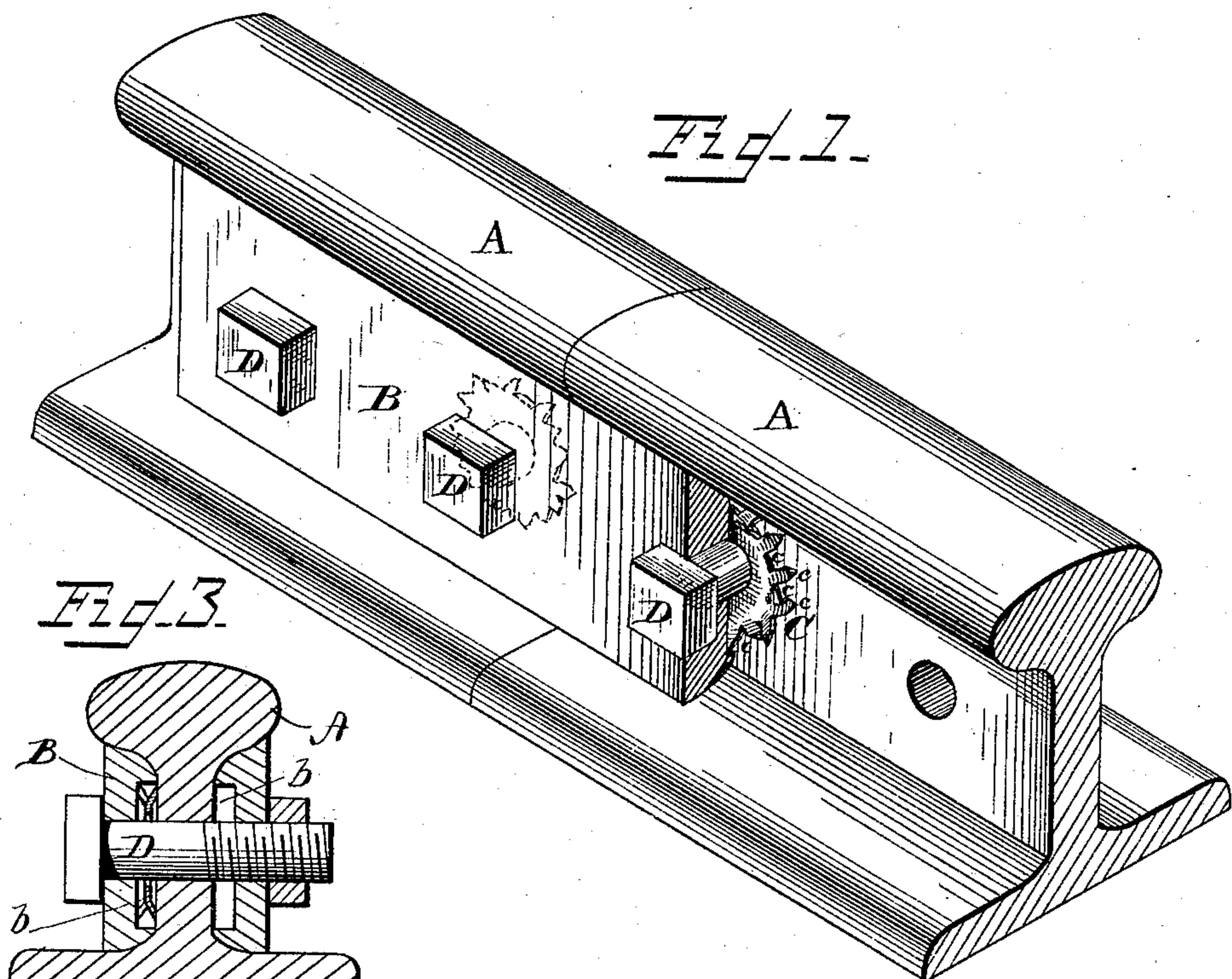


Fig. 4

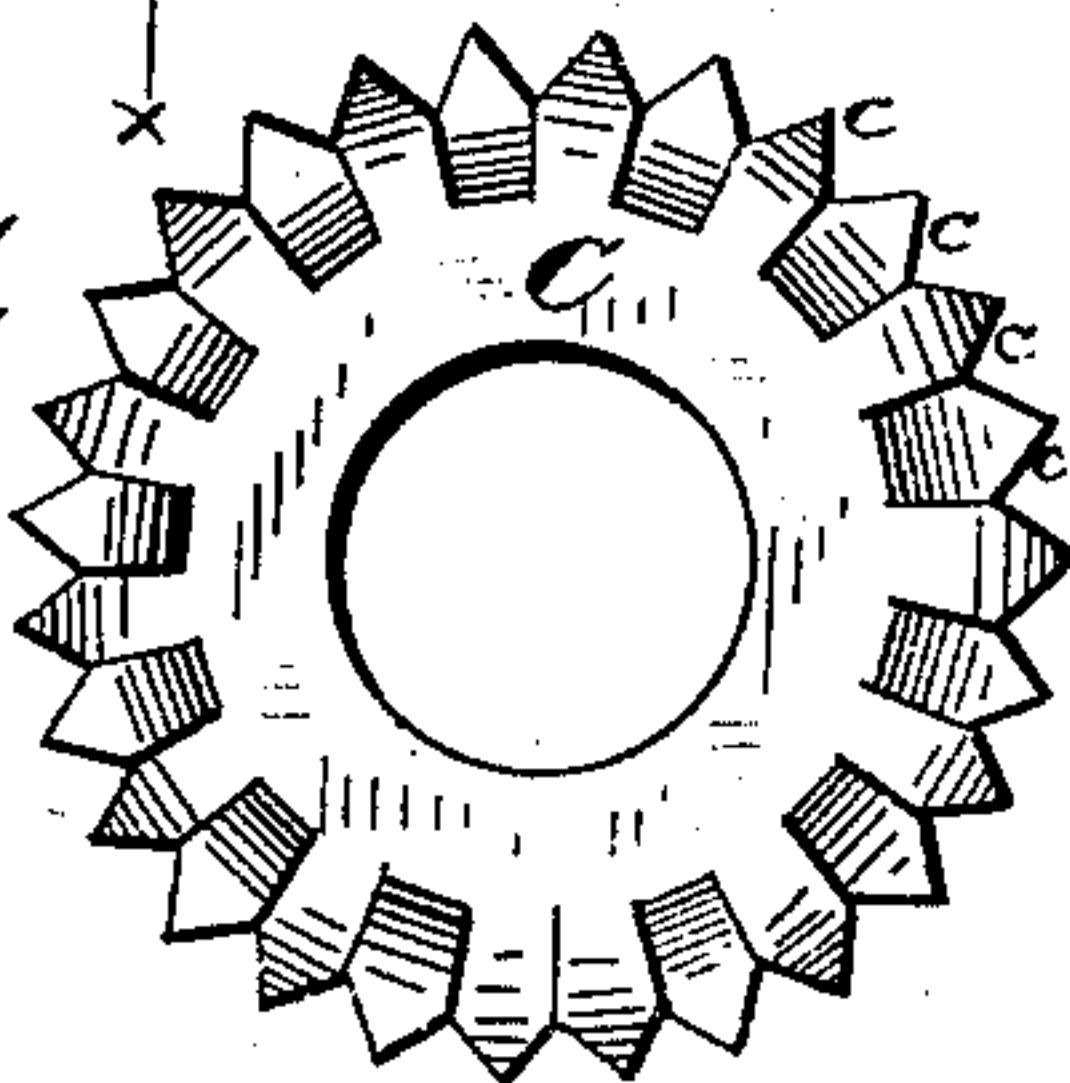


Fig. 5



WITNESSES
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UNITED STATES PATENT OFFICE.

WILLIAM W. LE GRANDE, OF LOUISVILLE, KENTUCKY, ASSIGNOR, BY
DIRECT AND MESNE ASSIGNMENTS, TO THE NATIONAL ELECTRIC
RAILWAY SIGNAL COMPANY, OF SAME PLACE.

ELECTRICAL CONNECTION FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 285,494, dated September 25, 1883.

Application filed February 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. LE GRANDE, a citizen of the United States of America, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Electrical Connections for Railway-Rails; and I 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.

This invention relates to means for forming metallic connection between the adjacent ends of rails in a line of railway-tracks, its object being to connect said rails for the purpose of forming a continuous line of conductors for conveying electrical currents for actuating railway-signals and for railway telegraphic purposes.

The invention consists in a metallic splice-plate adapted to lap the joints between the ends of two rails, in combination with one or more metallic plates having laterally-projecting spring-spurs arranged upon the inner side of said splice-plate, and suitable bolts passing through said splice-plate and spurred plate or plates, so that when said splice-plate is used to join two rails together the metallic plate having the spring-spurs will be clamped between the splice-plate and the web of the rail or rails, the laterally-projecting spurs, owing to the movement of the rails by the action of the cars, scrape the metallic surfaces against which they are pressed and prevent the accumulation of rust thereon, and thus insure effective electrical connection.

In the accompanying drawings, Figure 1 is a perspective view of the ends of two railway-rails connected as when in a line of track. Fig. 2 is a longitudinal section through the webs of the rails, splice-plates, and spur-plates. Fig. 3 is a cross-section of a rail, splice-plate, and the spur-plate on the line *x x*, Fig. 2. Fig. 4 is a side view of one of the spur-plates detached, and Fig. 5 is an edge view of the same.

The letters A A indicate two railway-rails

with their ends adjacent, as when in a line of track.

B is the splice-plate, chambered, as shown at *b*, on its inner surface, so that while the margins of said inner surface may be in contact with the webs of the rails an intermediate space is left open.

C C are the spur-plates, in the present instance being metallic disks, having bolt-holes through their centers and spurs *c c* projecting from their peripheries, these spurs being bent obliquely alternately in opposite directions. The splice-plates are provided with bolt-holes in the usual manner, and are secured to the rails by means of the bolts D. The shape of the spur-plates is not material, as they may be oblong, square, or of any other geometrical figure, and may have the spurs arranged to project from their surfaces or peripheries in any desired order instead of regular alternating series, and, in fact, any metallic spring having laterally-projecting spurs may be used. The spur-plates C C are arranged between one of the splice-plates and the adjacent webs of the two rails, respectively, said spur-plates being located in the chamber formed by the recessing of the splice-plates, and each of said spur-plates has one of the fastening-bolts passed through its center for holding it in position.

It will now be observed that when the parts are in position, as indicated in Figs. 1, 2, and 3 of the drawings, and the bolts properly tightened up, the spurs *c* will be pressed in contact with the webs of the rails and with the inner surface of the splice-plates. It will be understood that the spurs *c* of the spur-plates are spread or bent laterally to such an extent normally that when they are clamped between the rail-webs and splice-plate they will be compressed and put under a considerable tension, so that they constantly bear with a spring-pressure upon the adjacent surfaces of said webs and splice-plates, and, even though the splice-plate should become somewhat loosened, the spurs, owing to their resilience, will spread to maintain metallic contact therewith and with the rail-web; and owing

to the almost continual motion of the rails under the travel of the cars the spurs *c* are caused to perform a scratching or scraping action, which removes and prevents the accumulation of rust or extraneous matter upon the surfaces with which they are in contact, and which would impair the electrical connection between them and such surfaces.

I am aware that metallic springs have been arranged between splice-plates and rail-webs, and that bowed-spring splice-plates have been used in railway-joints, and I lay no claim to such joints, broadly.

What I claim is—

1. An electrical connection for railway-rails, consisting of a metallic splice-plate having arranged upon its inner surface a metallic plate provided with a series of laterally-projecting pointed spring-spurs, arranged to bear against the rails, substantially as described.

2. The combination, with a metallic splice-plate and one or more bolts passing through the same, of one or more metallic spur-plates arranged upon the inner side of said splice-plate, and having the bolt or bolts thereof

passed through them, substantially as described.

3. The combination, with a metallic splice-plate chambered or recessed on its inner surface, of one or more metallic spur-plates arranged in the chamber or recess of said splice-plate, substantially as described.

4. The combination, with two railway-rails having their ends adjacent, as in a track, of a metallic splice-plate and one or more interposed metallic plates having laterally-projecting pointed spring-spurs, two or more of which bear against each rail, substantially as described, and for the purpose set forth.

5. The combination, with the rails *A A*, chambered or recessed splice-plate *B*, and bolts *D*, of the metallic spur-plates *C*, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM W. LE GRANDE.

Witnesses:

WILLIAM AYRES,
JNO. K. GOODLOE.