

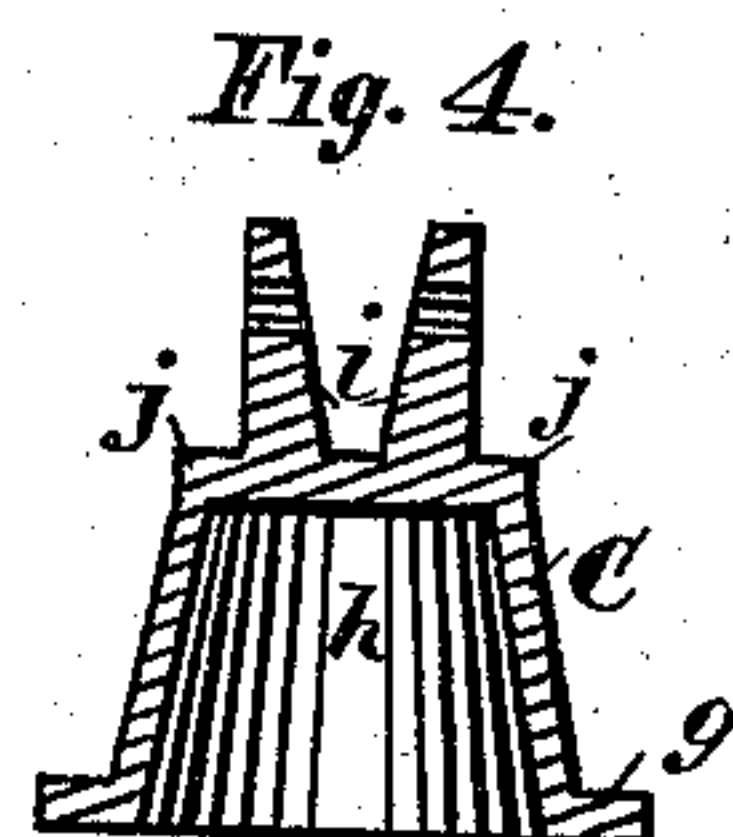
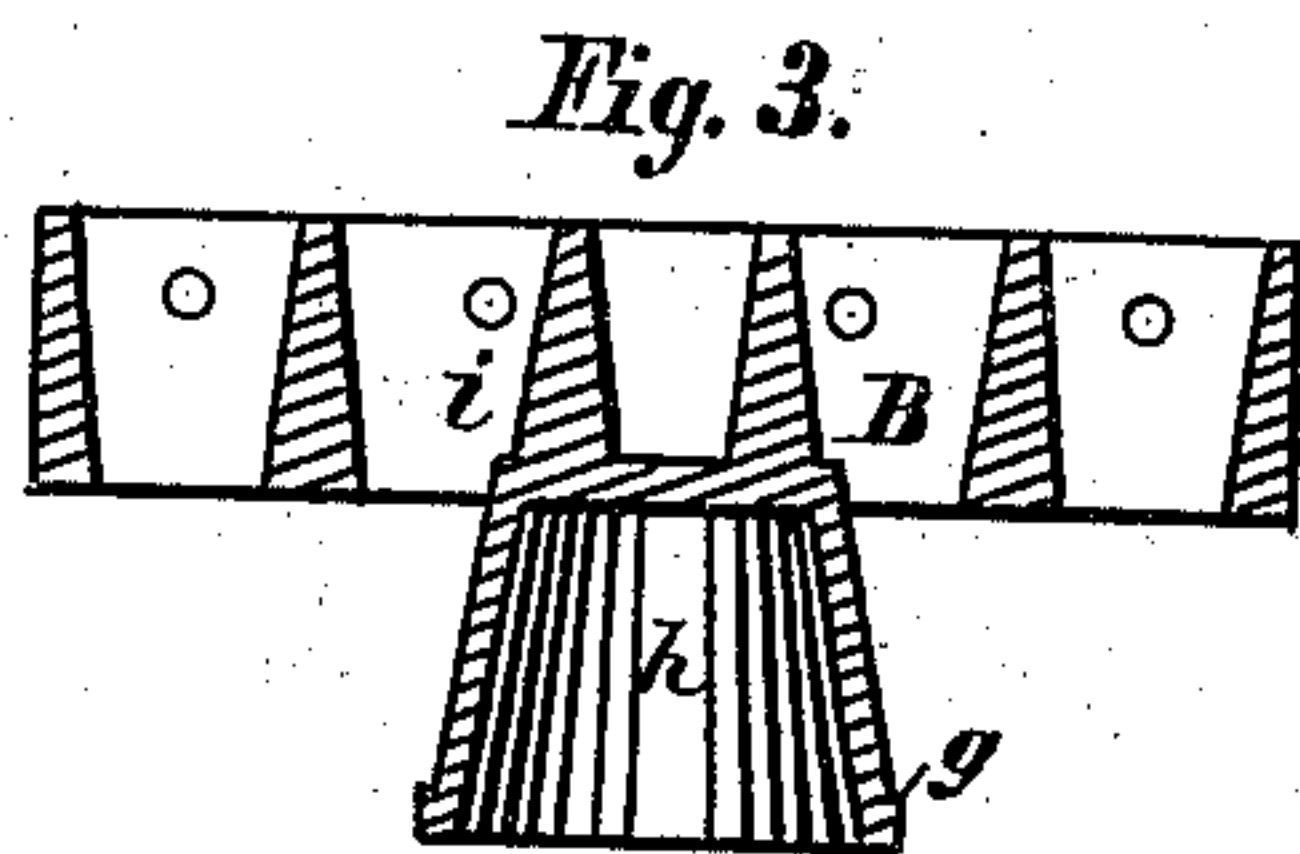
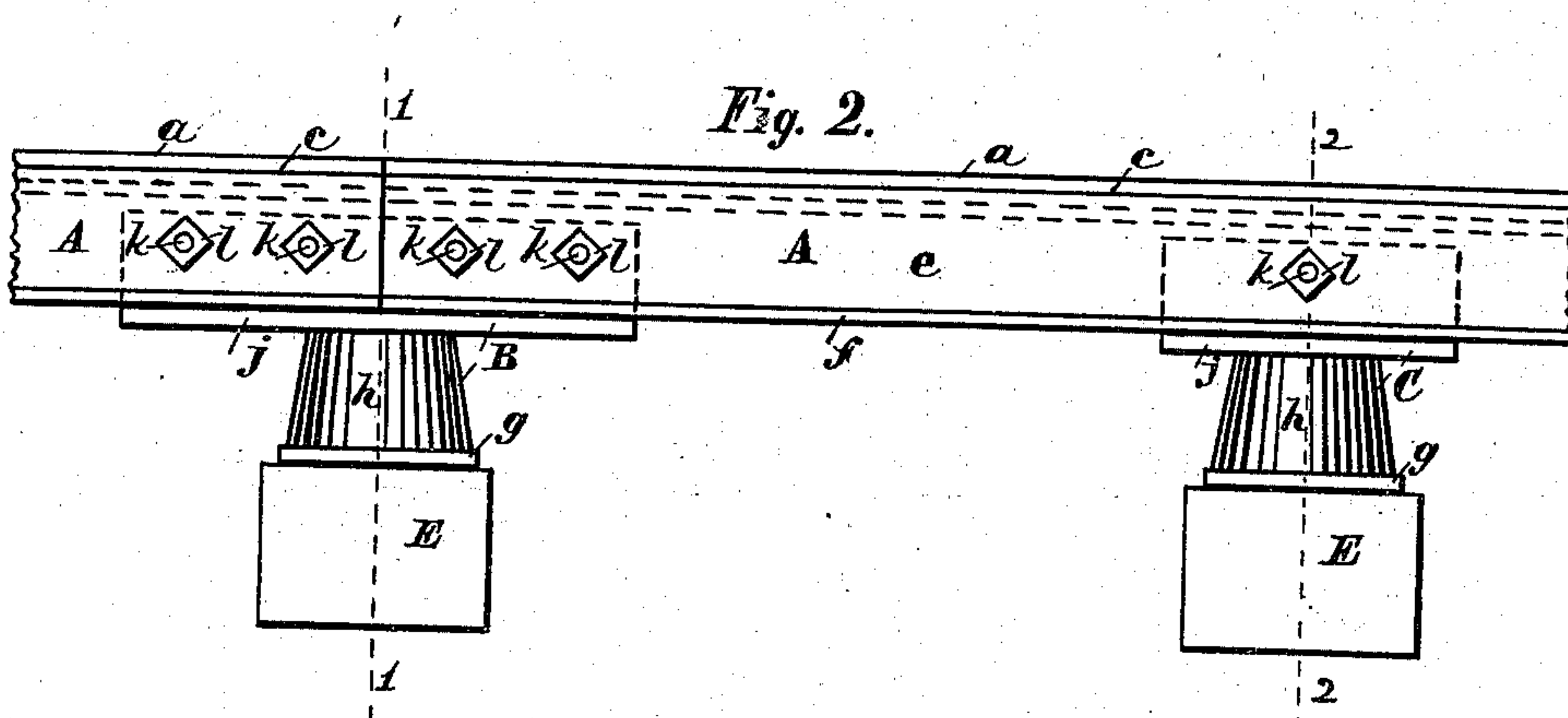
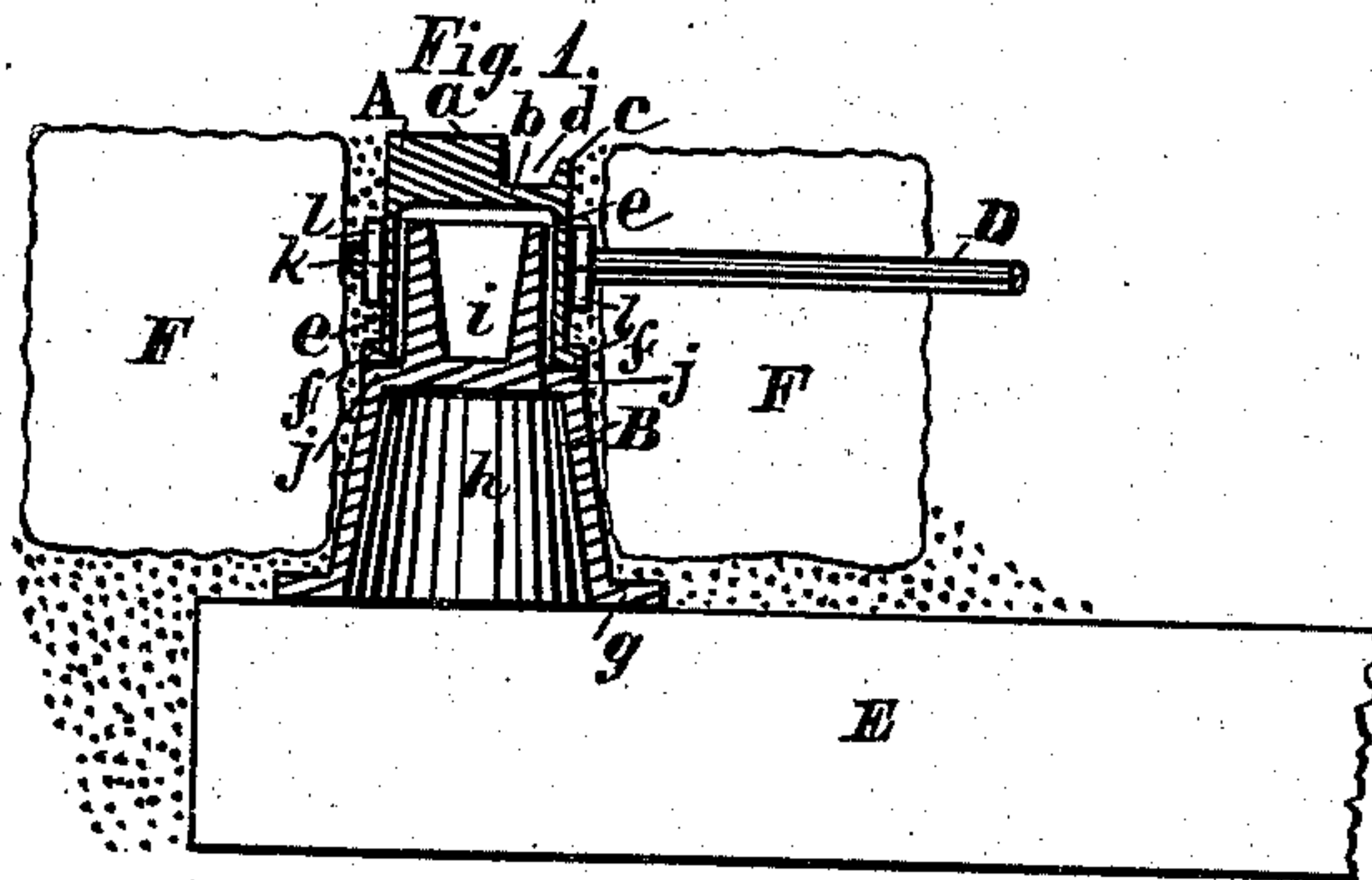
(No Model.)

I. H. RANDALL.

RAIL FOR STREET RAILWAYS AND CHAIRS.

No. 382,385.

Patented May 8, 1888.



Attest;

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Inventor;

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per Edw. Summer, atty.



# UNITED STATES PATENT OFFICE.

ISAAC H. RANDALL, OF BOSTON, MASSACHUSETTS.

## RAIL FOR STREET-RAILWAYS AND CHAIRS.

SPECIFICATION forming part of Letters Patent No. 382,385, dated May 8, 1888.

Application filed August 2, 1886. Serial No. 209,826. (No model.)

*To all whom it may concern:*

Be it known that I, ISAAC H. RANDALL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Rails for Street-Railways and Chairs Therefor, of which the following is a specification, reference being had to the accompanying drawings.

My invention consists in rails for street-railways and in chairs therefor constructed and combined substantially as hereinafter described, and specifically pointed out in the claims.

In the drawings, Figure 1 shows a transverse section, taken on line 1 1 in Fig. 2, of a rail and chair embodying my invention. Fig. 2 is a side view of a portion of two rails and a side view of two chairs. Fig. 3 is a longitudinal section of the chair B; and Fig. 4, a transverse section, taken on line 2 2 in Fig. 2, of the chair C.

A transverse section of the rail A presents, in general, somewhat the form of the letter U inverted. It is provided with the tread *a*, horizontal flange *b*, and vertical lip or flange *c*, a groove, *d*, being formed by these parts, which parts constitute the upper portion of the rail. There are two vertical webs, *e e*, each having a broader base or outwardly-extending flange, *f*. The chair B is provided with a base, *g*, preferably rectangular, a standard, *h*, preferably round and tapering, and a long horizontal portion or seat, consisting of a vertical part or block, *i*, and a horizontal flange, *j*, on each side. The chair C is also provided with a similar base, *g*, a standard, *h*, a vertical part or block, *i*, and flanges *j*. The upper portion or seat of chair C may be shorter than that of chair B and cored out differently to be of less weight, as shown. A chair, B, supports the ends of two meeting rails. Chairs like chair C are to be placed at suitable intervals under each rail. The base or flanges *f* of a rail rest on the flanges *j* of the chairs. The block or vertical part *i* of each chair comes between the webs *e e* of the rail, making a suitable fit with the sides of the same. Bolts *k* extend transversely through the webs *e e* of the rail and the blocks *i* of the chairs, the rail being se-

cured firmly to the chairs by means of these bolts and nuts *l*. The long vertical part *i* of a chair, B, thus becomes a tie-block for the ends of meeting rails. As many of the bolts as are needed may be parts of transverse rods D, each of which forms a bolt at the other end to fasten a parallel rail to its chair, and thus becomes a tie-rod to assist in maintaining parallel rails in place with reference to each other. Each of the chairs is spiked directly onto a transverse stringer or sleeper, E. Blocks F of a pavement are shown in Fig. 1 to illustrate the position of the rails, chairs, and sleepers relative thereto.

The tread *a*, flange *b*, and lip *c* make the upper part of the rail of the best form for a grooved rail. The webs *e e*, in conjunction with the block *i* and flanges *j j* of a chair, provide means, together with the bolts and nuts, for holding the rail firmly and for tying meeting rails securely. The broad base *g* and standard *h* make the chair simple and of comparatively small cost, while being very strong and of a form to be readily and securely fastened directly on the sleeper. In general the form and compactness of the rail and chairs adapt them especially to pavements, since the blocks thereof may be placed closely thereto, leaving but little space to be filled by loose material.

Those parts of the railway which are technically called "switches" and "frogs" are of such form that they cannot be made of rolled iron, but must be cast. It will be readily seen that I can so shape these switches and frogs that each in transverse section will be similar to my rail—that is, it will have the vertical webs *e e* and the outwardly-extending flanges *f f*, so that it may be readily cast, will correspond in general form with the rails, and may be supported by my chairs, as shown and described. This is a desirable feature in my invention, and makes my rail superior to other deep rails, which are of such form that the frogs and switches cannot be conveniently cast to correspond to the rails, so as to be supported or held in place by devices like those employed for the rails.

I claim as my invention—

1. A chair for a railway-rail provided with

a base, *g*, standard *h*, and seat composed of vertical part or block *i* and horizontal flanges *j*, substantially as and for the purpose set forth.

5 2. In combination with two meeting rails, each provided with two vertical webs, *e e*, a chair, *B*, provided with a base, *g*, standard *h*,

and seat composed of a tie-block, *i*, and flanges *j*, substantially as set forth.

ISAAC H. RANDALL.

Witnesses:

W. E. WOODWARD,  
EDW. DUMMER.