

No. 717,088.

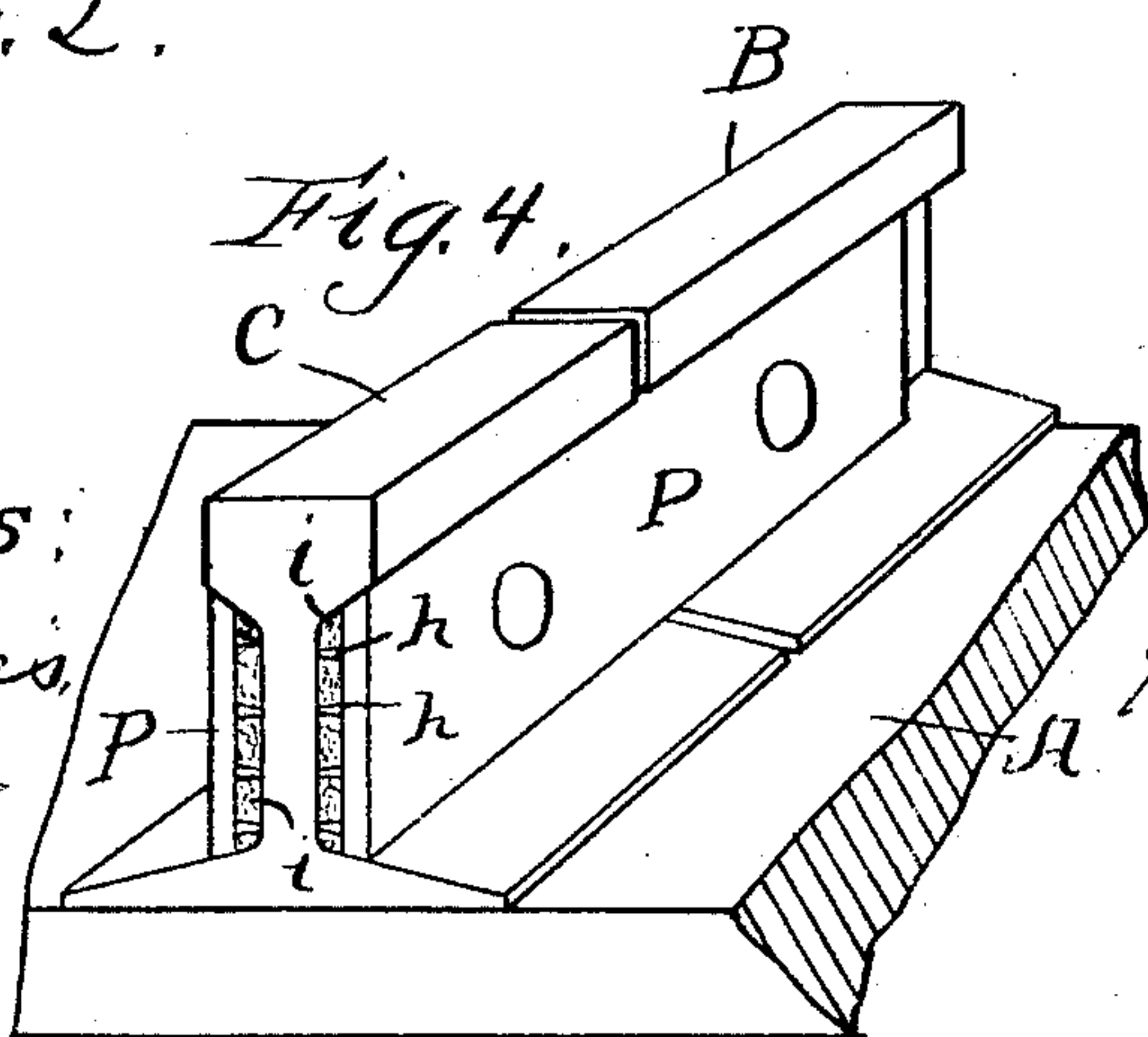
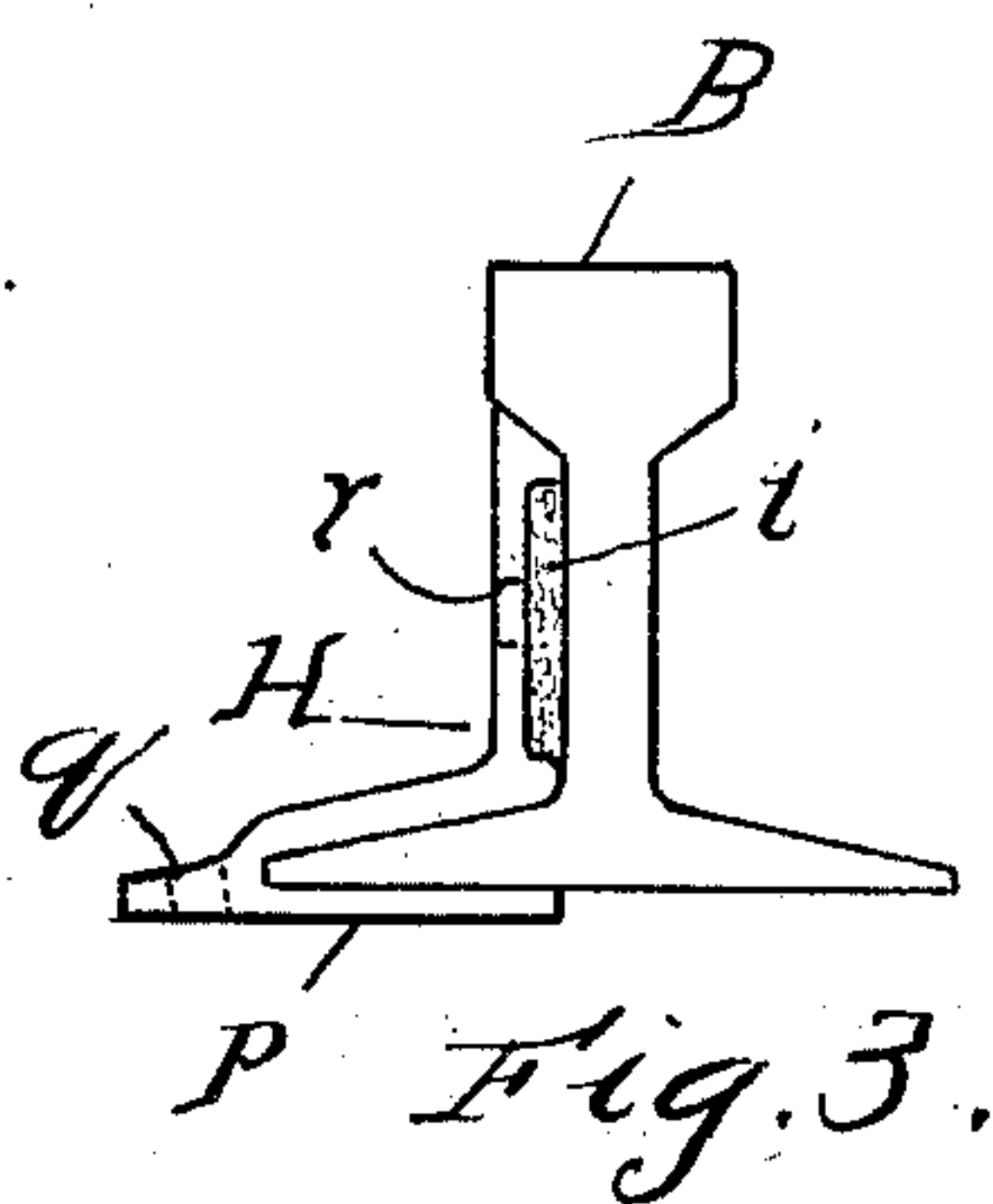
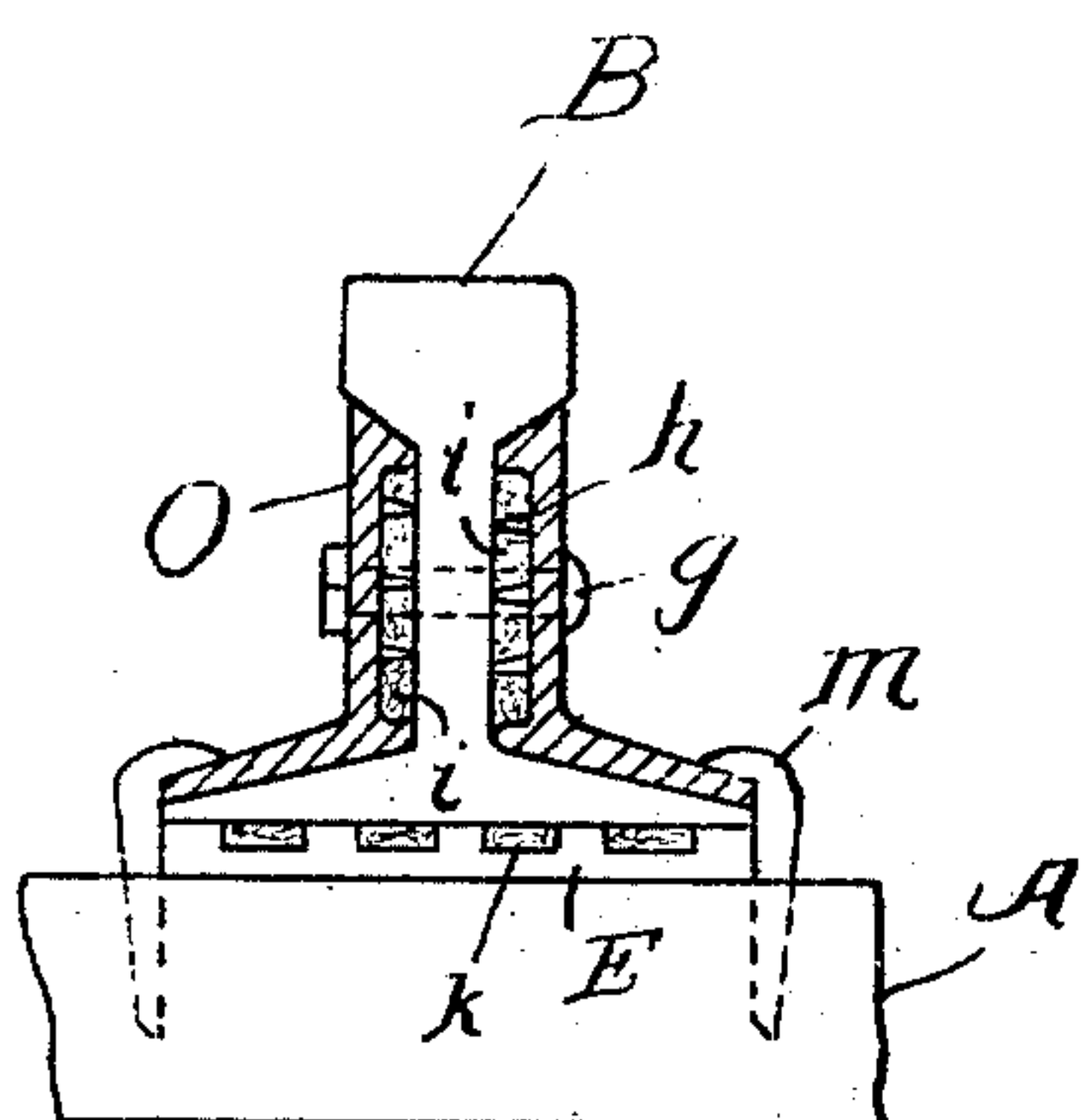
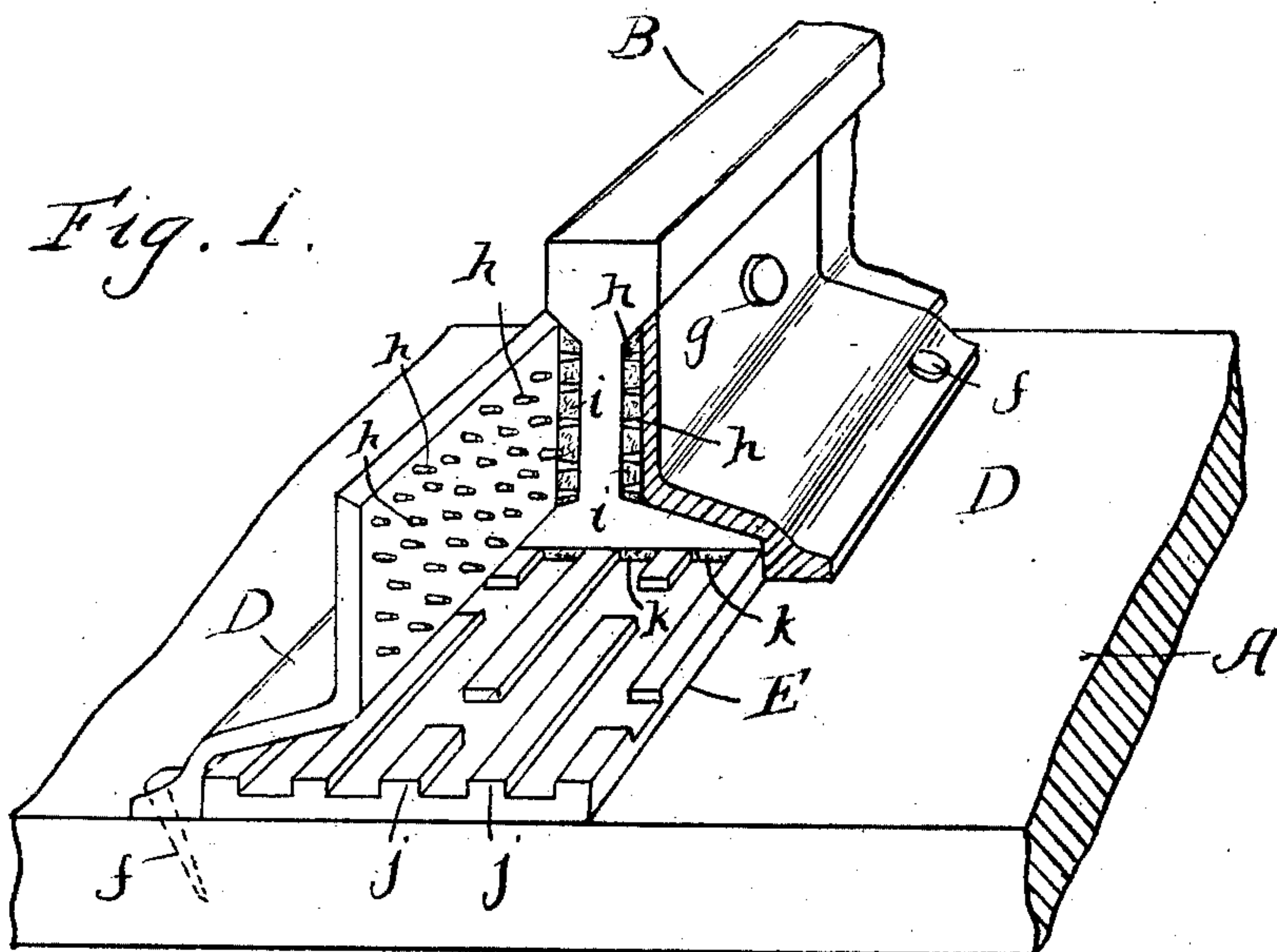
Patented Dec. 30, 1902.

H. G. FARR.

FISH PLATE AND NOISE REDUCING DEVICE FOR RAILWAYS.

(Application filed Apr. 3, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

HIRAM G. FARR, OF WINCHESTER, MASSACHUSETTS.

FISH-PLATE AND NOISE-REDUCING DEVICE FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 717,088, dated December 30, 1902.

Application filed April 3, 1902. Serial No. 101,223. (No model.)

To all whom it may concern:

Be it known that I, HIRAM G. FARR, of Winchester, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Fish-Plates and Noise-Reducing Devices for Railways, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of a rail-joint and tie, showing my improved fish-plate, packing, and chair-plate; Fig. 2, a transverse section showing a modified form of plate; Fig. 3, an end view of a rail, showing still another form of plate with packing contained; Fig. 4, a perspective showing the ordinary fish-plate provided with my improvement.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to devices for counteracting the vibration set up in railway-rails through the impact of the car-wheels, whereby the noise resultant may be materially lessened. In carrying out this I make use of a peculiar form of fish-plate and chair, which of itself will check to a large extent such vibrations, but in addition will hold a substantially non-vibratory packing firmly against the rail, and thus kill such vibrations and the noise or sound-waves set up.

In the drawings, A represents the tie, and B C the rails, of ordinary construction.

D represents a form of fish-plate well known in the art in its general configuration and held in the usual manner by spikes *f* to the tie and by bolts *g* through the rail-webs. The face of this form of plate that ordinarily meets the rail-web flush I, however, provide with a series of prongs *h*, for which flanges or other form of projection may be substituted. I find that by clamping such plates against the rails at the ends the vibration therein is materially checked in much the same manner as when a point is held rigidly against a piano-string. A continuous flat surface in contact will not accomplish this in a rail, but a point or series of points will. To make this noise

reduction more effective, however, I incorporate a sheet of non-vibratory material *i* between the fish-plate and rail. For this I preferably employ a thick sheet of lead, but rubber or other equivalent material may be used. When the fish-plates are set up by the bolts *g*, the prongs *h* penetrate the sheet of lead *i* and themselves contact with the rail-web, while also said lead is forced into rigid contact with said web, with the effect that all vibration is crossed or broken and reduced to a minimum. Under the rail, as a further precaution, I may dispose a species of chair E. This is provided on its upper face with a series of flanges *j* or other suitably-formed projections, which will engage the base of the rail and which will penetrate a sheet of lead *k*.

The form shown in Fig. 2 is substantially identical with that in Fig. 1, excepting that the fish-plate does not overlap the rail-flange and is held down by ordinary spikes *m*.

In Fig. 3 another well-known form of fish-plate is shown provided with a flange *p*, underlying the rail to form a chair, and with openings *q r* for the spike and bolt, respectively. The lead *i* is in this form pressed firmly against the rail, and no prongs are employed.

Fig. 4 shows the most common form of fish-plate *p*, secured to the rails in the ordinary manner. This also I provide with projections *h* on its inner face and penetrating the lead sheet *i*.

I do not claim any particular form of fish-plate in the main, as any of the well-known shapes provided with proper projections may be employed, nor to forming such projections on the fish-plates alone.

The rigid contact of the lead at the rail end and the driving of points or projections against the rail, whereby noise from vibration is lessened, constitute the salient feature of my invention.

Having thus described my invention, what I claim is—

1. A fish-plate provided with projections for contacting with the rail in combination with a mass of non-vibratory material interposed between said plate and rail.

2. A fish-plate provided with projections in combination with a railway-rail; a mass of non-vibratory material interposed between

said plate and rail; and devices for securing the plate to the rail whereby said projections are caused to penetrate said non-vibratory material and are held with it in rigid contact
5 with the rail.

3. A railway-rail in combination with a mass of lead or similar substantially non-vibratory material: a solid plate provided with a series of independent projections adapted to

contact with the under face of said rail and 10 whereby said material may be held in rigid contact with such face and prevented from being compressed and thereby displaced when load is applied to said rail.

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