No. 806,376. PATENTED DEC. 5, 1905.

H. H. SPONENBURG.

RAILWAY RAIL STAY.

APPLICATION FILED SEPT. 16, 1905.

3 SHEETS—SHEET 1.

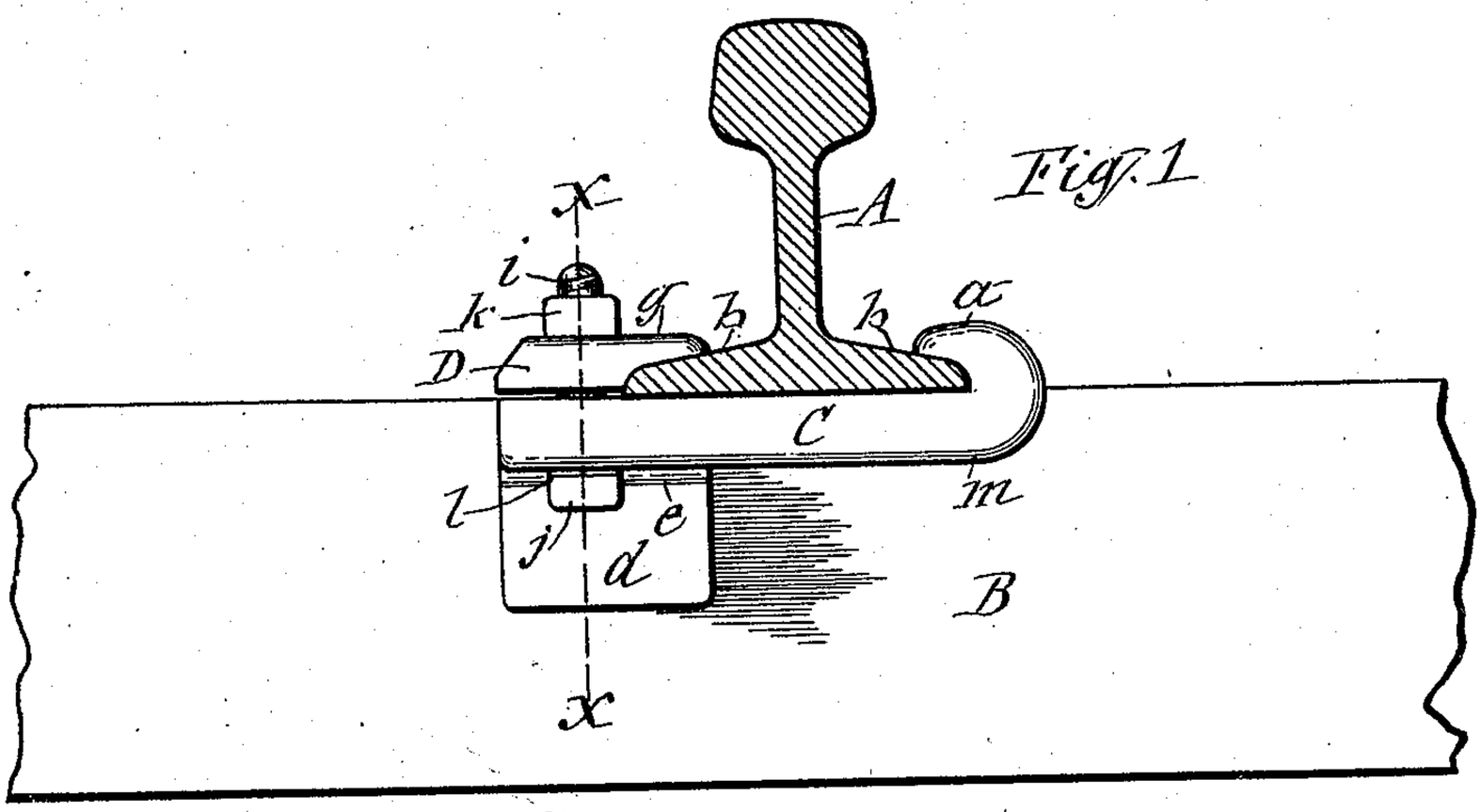

Fig. 1

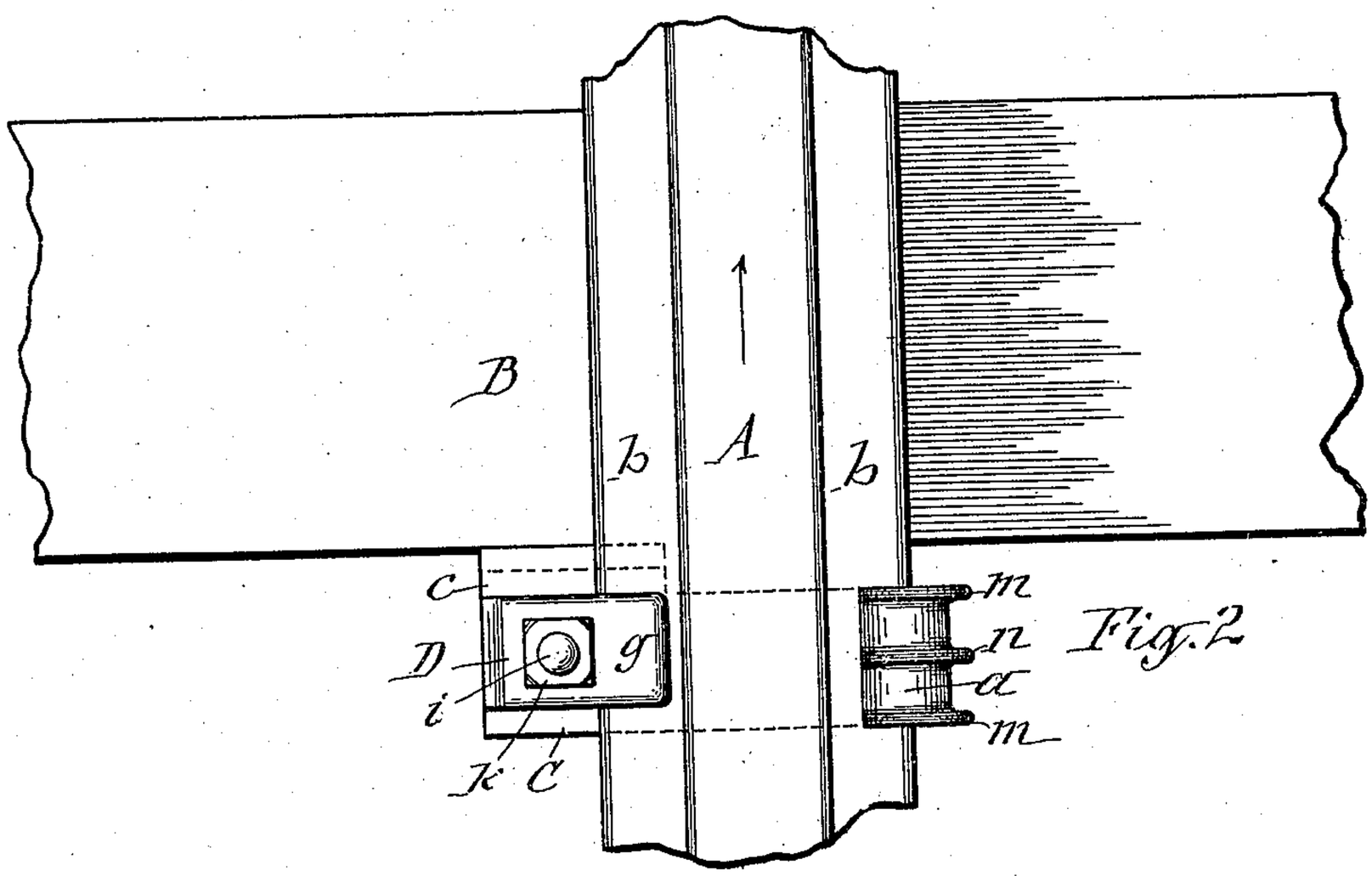

Fig. 2

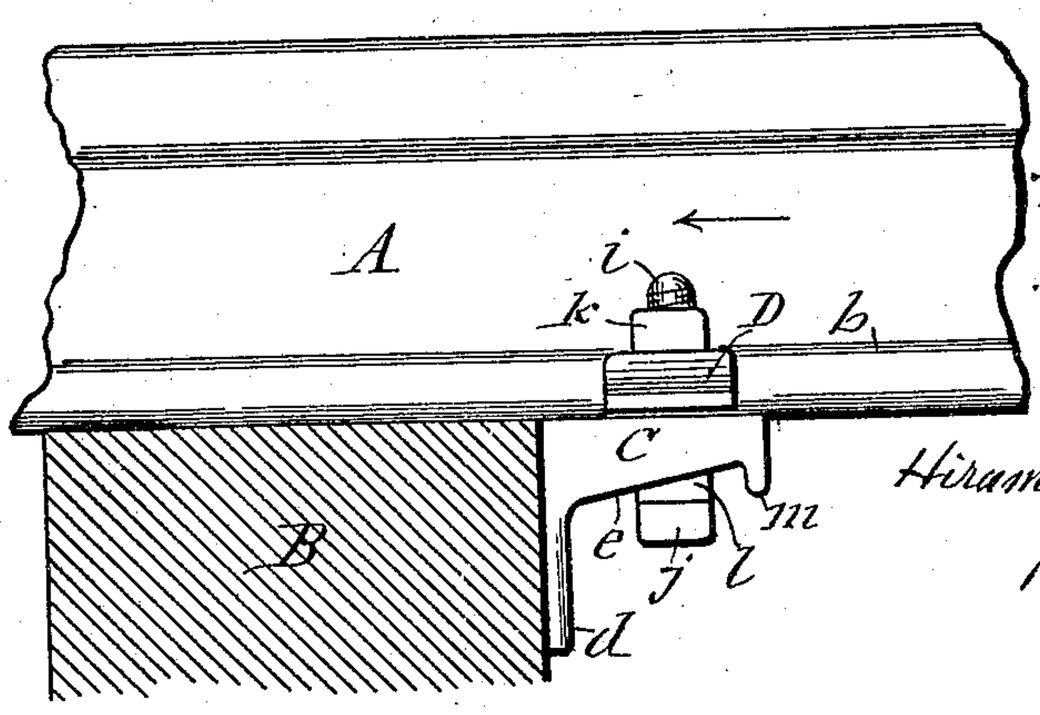

Fig. 3

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J. J. Laass

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By E. Laass

his ATTORNEY.

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3 SHEETS—SHEET 2.

Fig. 4

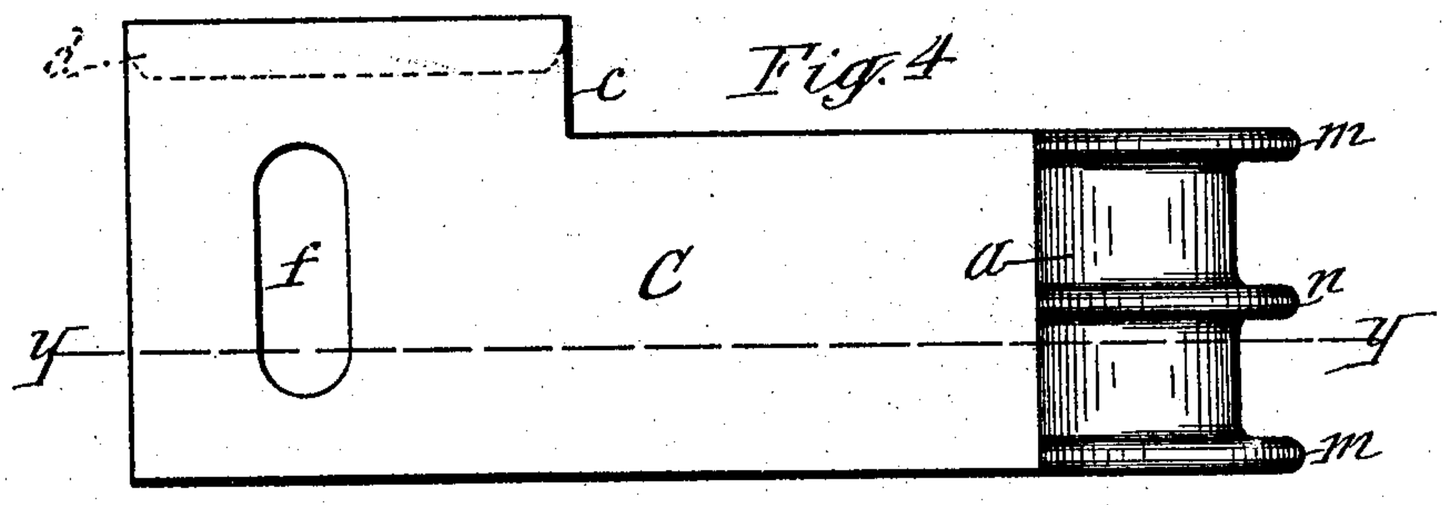


Fig. 5

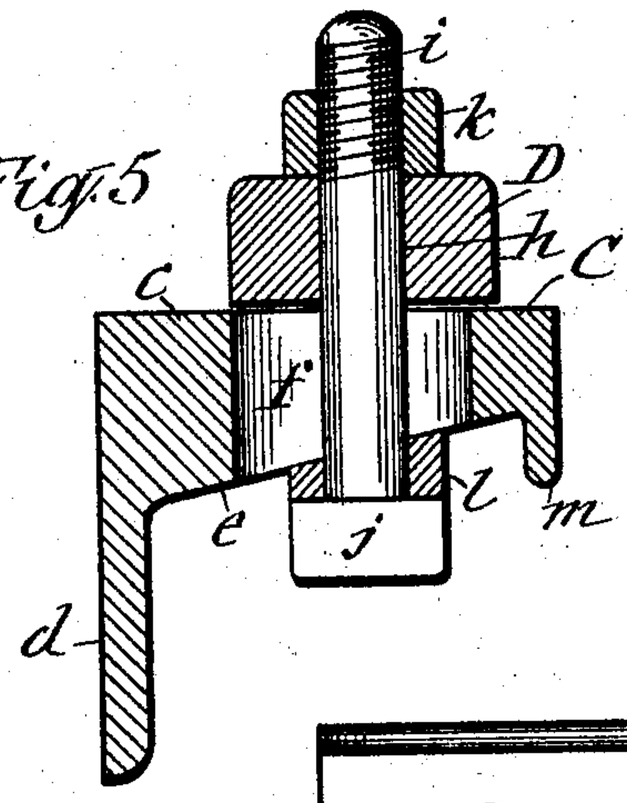


Fig. 6

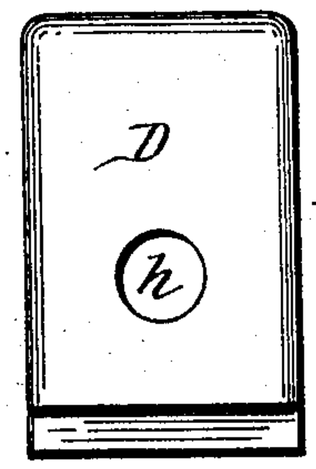


Fig. 7

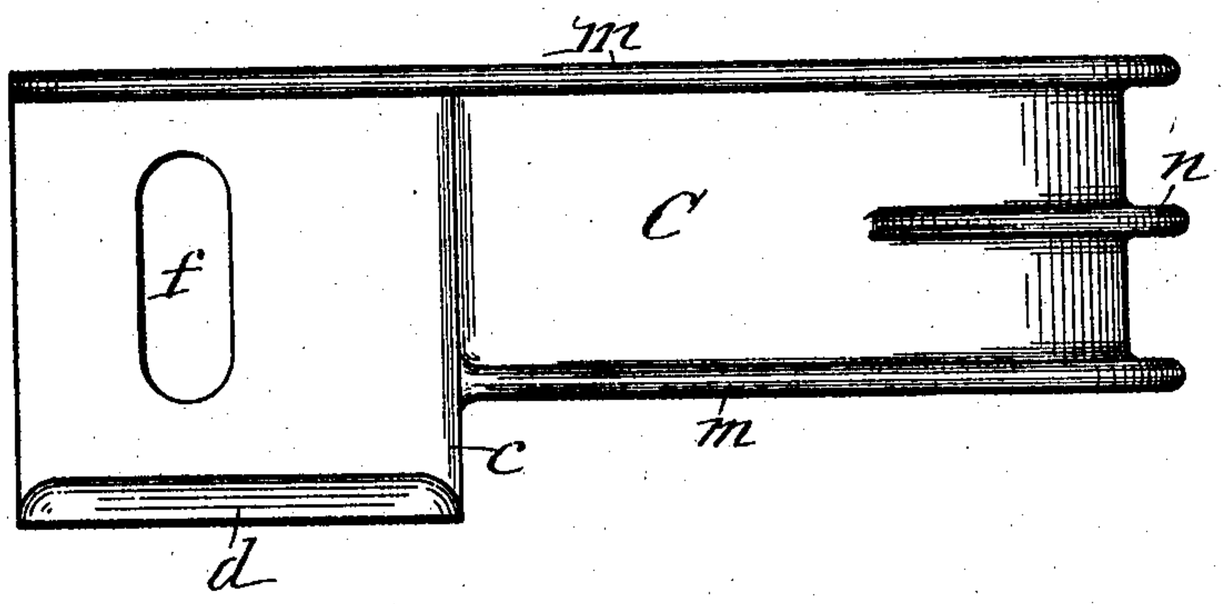
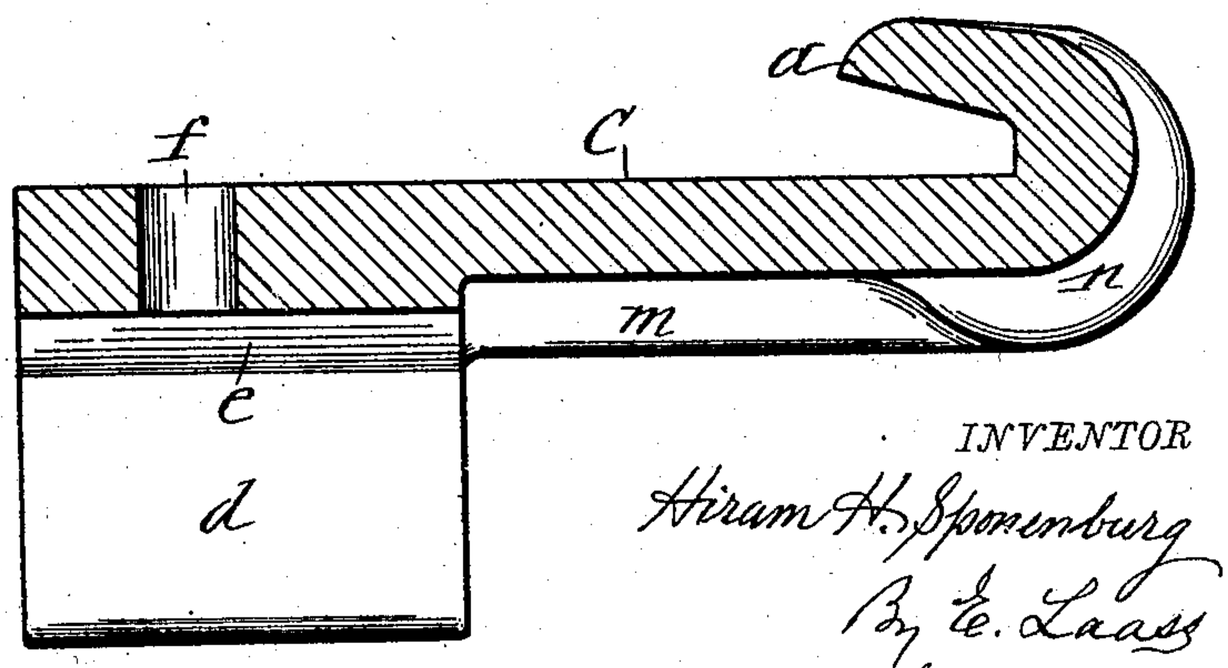


Fig. 8



WITNESSES:

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No. 806,376. PATENTED DEC. 5, 1905.

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RAILWAY RAIL STAY.

APPLICATION FILED SEPT. 16, 1905.

3 SHEETS—SHEET 3.

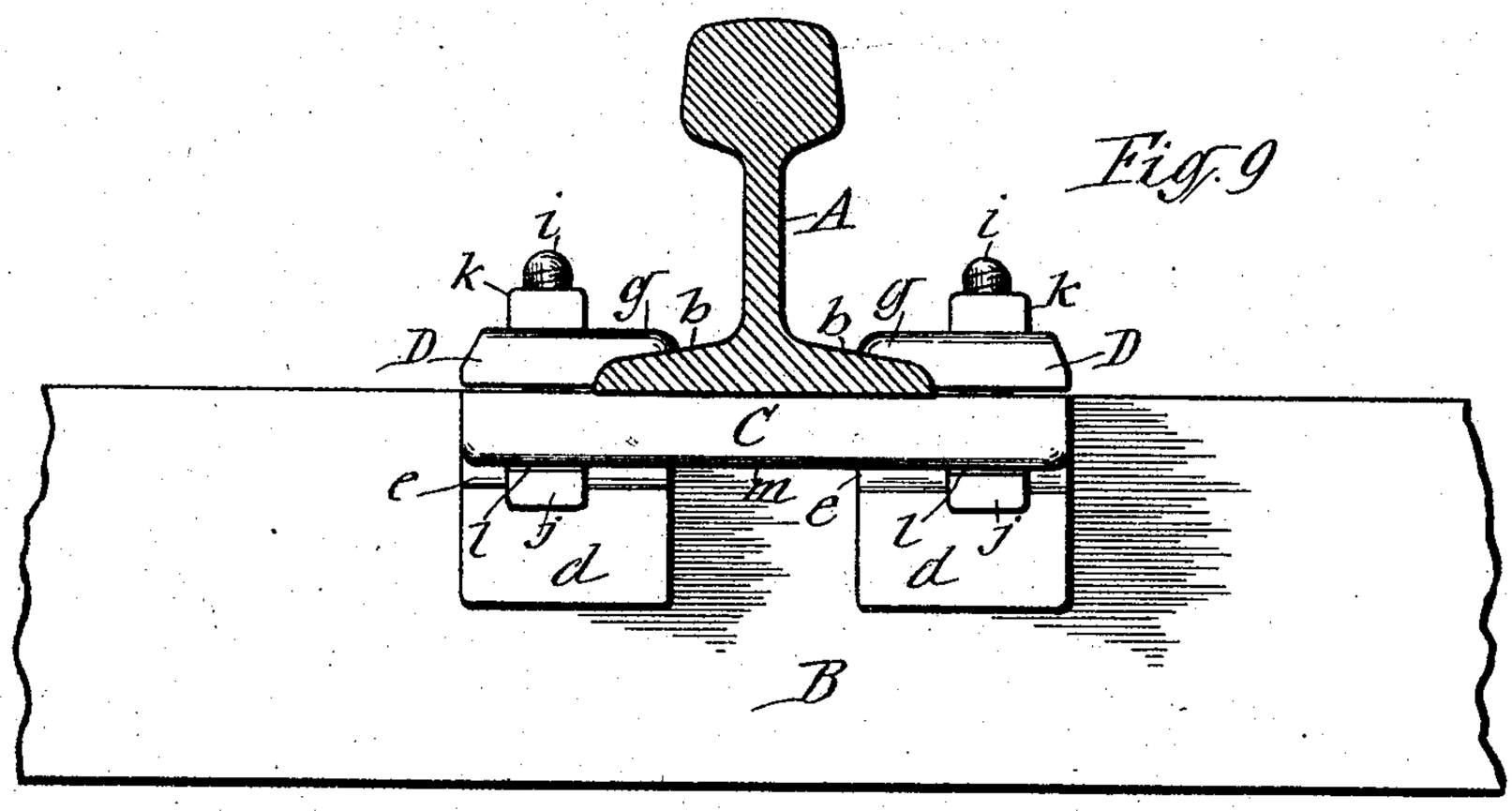

Fig. 9

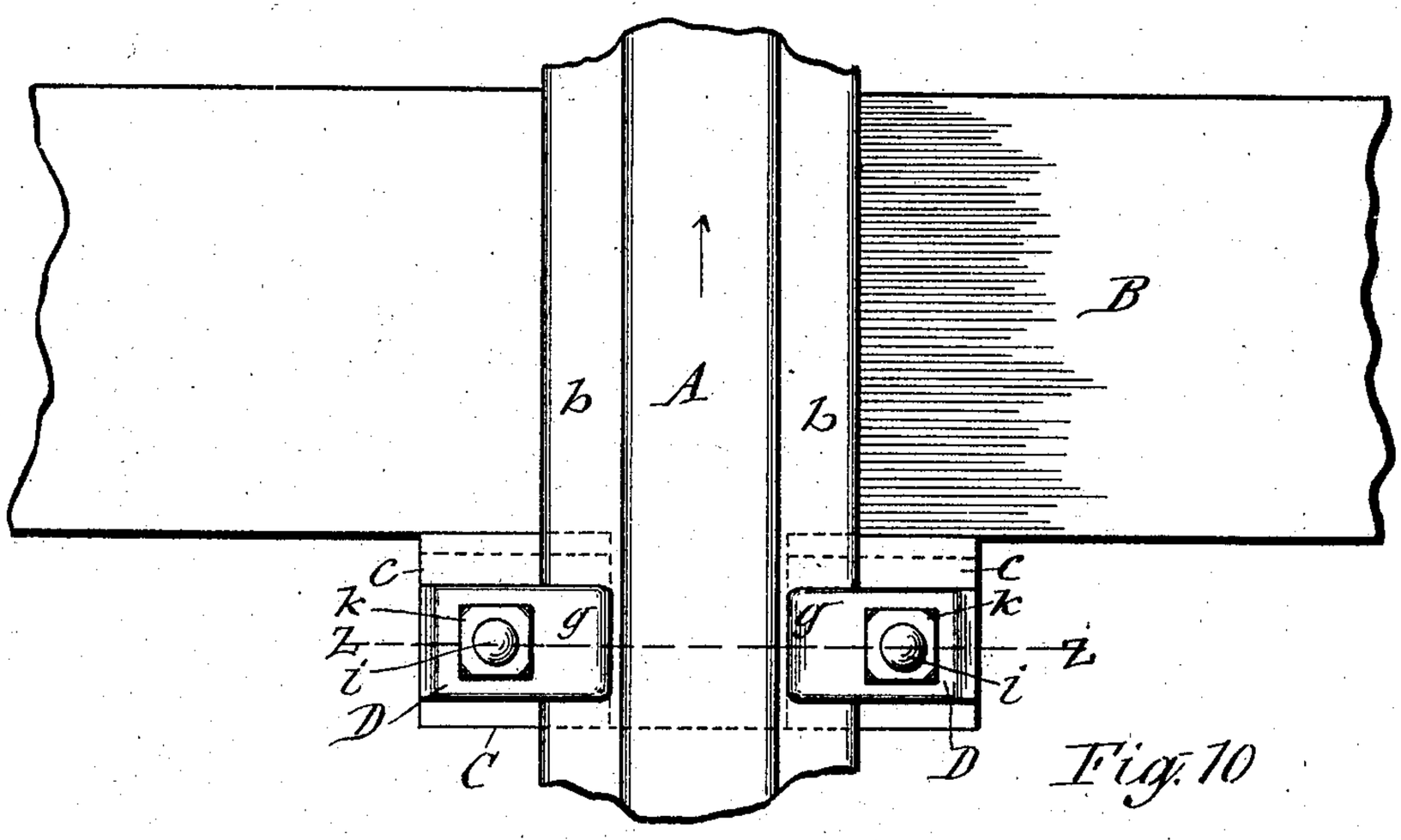

Fig. 10

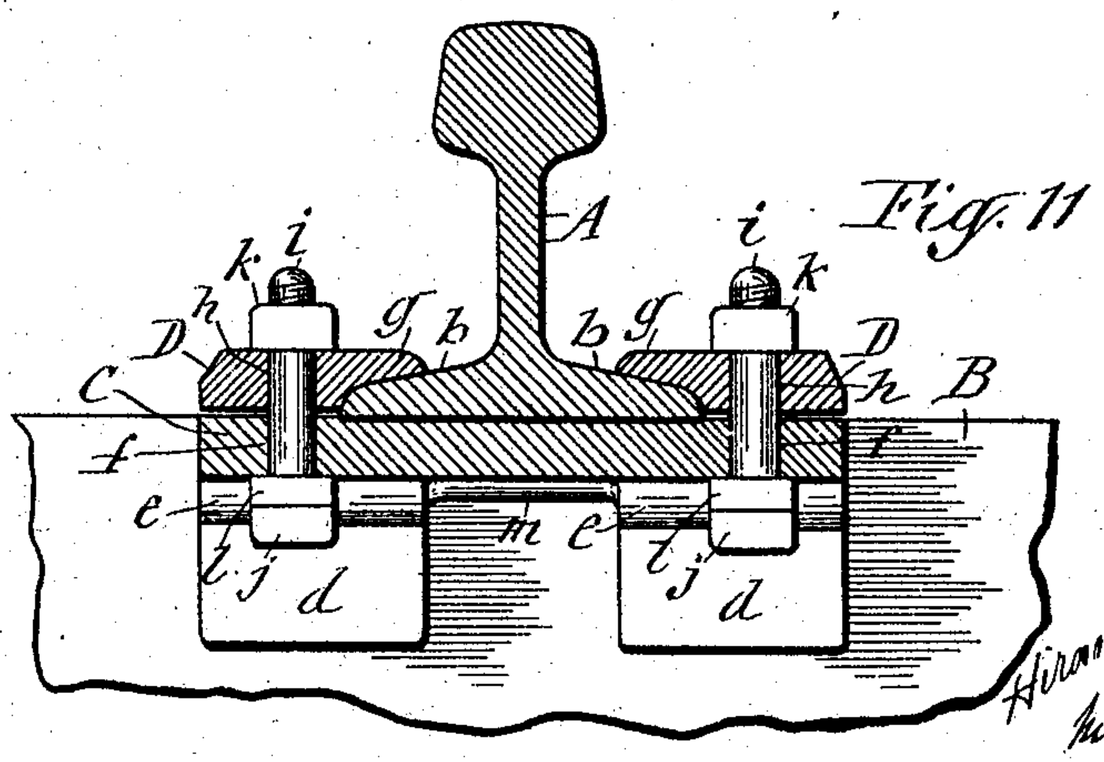

Fig. 11

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UNITED STATES PATENT OFFICE.

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RAILWAY-RAIL STAY.

No. 806,376. Specification of Letters Patent. Patented Dec. 5, 1905.

Application filed September 16, 1905. Serial No. 278,697.

To all whom it may concern:

Be it known that I, HIRAM H. SPONENBURG, of Wadsworth, in the county of Lake, in the State of Illinois, have invented new and useful Improvements in Railway-Rail Stays, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention pertains to railway appliances which are employed for anchoring the rails to their supporting-ties, and thereby preventing the rails from shifting longitudinally and the resultant throwing of the same out of alinement and gage.

The invention relates more particularly to the class of so-called "rail-stays" which consist of a bar extending across the bottom of the rail and provided on its opposite ends with jaws gripping the rail-flanges and provided with means by which it abuts against the side of the cross-tie.

The main object of this invention is to provide a rail-stay of the aforesaid character which shall be adapted to increase its grip on the rail as the latter tends to creep, and thereby effectually resist such creeping, and, furthermore, produce a stay which shall be simple, strong, and durable and can be readily applied to the rail and at the same time shall be inexpensive to manufacture.

To that end the invention consists in the novel construction and arrangement of the component parts of the rail-stay, as hereinafter fully described, and set forth in the claims.

In the accompanying drawings, Figure 1 shows a transverse section of a railway-rail supported upon a cross-tie and provided with my improved rail-stay in its preferred form. Figs. 2 and 3 are plan and side views of the same, respectively. Fig. 4 is an enlarged detail plan view of the bar which extends across the bottom of the rail. Fig. 5 is an enlarged vertical section taken on the dotted line X X in Fig. 1. Fig. 6 is an enlarged detached plan view of the adjustable jaw. Fig. 7 is an enlarged inverted plan view of said bar. Fig. 8 is a longitudinal section of the bar, taken on the dotted line Y Y in Fig. 4. Fig. 9 is a transverse section of a rail, illustrating a modified form of the rail-stay. Fig. 10 is a plan of the latter form, and Fig. 11 is a horizontal section on line Z Z in Fig. 10.

Similar letters of reference indicate corresponding parts.

A denotes the railway-rail, which is supported upon the usual cross-tie B.

Referring to Sheets 1 and 2 of the drawings, illustrating my preferred form of stay, C represents a metallic bar which extends across the bottom of the rail A and is disposed adjacent to the cross-tie B and is formed at one end with a hook-shaped jaw *a*, gripping one of the rail-flanges *b*. This bar is formed at its opposite end with an offset *c*, projecting laterally from its inner edge and terminating with a vertical depending flange *d*, which abuts against the side of the cross-tie B. The tie-abutting face of this flange *d* is parallel with the bar and sustains the bar out of contact with the cross-tie, as more clearly shown in Fig. 2 of the drawings. The flanged end of the said bar C is formed on its bottom with a wedging surface which is inclined toward the flange, as indicated at *e*, and it is provided at said wedging surface with a transverse slot *f*. D represents an adjustable jaw which consists of a block mounted upon the bar C at the slotted end thereof and formed with an overhanging lip *g*, which is shaped to grip the other flange *b* of the rail. This jaw D is provided with a vertical aperture *h*, which coincides with the aforesaid slot *f* of the bar, and through said slot and aperture passes a bolt *i*, formed at its lower end with a head *j*, provided with a beveled bearing engaging the said wedging surface *e* of the bar, the opposite end of which bolt is provided with a nut *k*, engaging the top of the said jaw D. It is obvious that by tightening the said bolt *i* the two jaws *a* D will be firmly clamped to the rail-flanges, which clamping action, in conjunction with the abutting of the bar against the cross-tie, will prevent the rail from creeping longitudinally. To obviate the necessity of providing the clamping-bolt with a beveled head to conform to said wedging surface, and thus permit the use of a standard bolt, I employ a beveled washer *l*, which is interposed between this surface and bolt-head, as clearly shown in Fig. 5 of the drawings. It will be seen that by this engagement of the beveled washer *l* with the wedging surface *e* the aforesaid jaws *a* and D will increase their grips on the rail-flanges as the rail tends to creep in the direction indicated by the arrows in Figs. 2 and 3 of the

drawings, and thereby effectually resist such movement. In order to permit the use of a thin bar C, and thus rendering the rail-stay very light in weight and at the same time maintaining maximum strength, I form the bottom edges of said bar with longitudinal ribs *m m* and also provide an intermediate parallel rib *n*. These ribs extend around the hook-shaped jaw *a* and reinforce the same.

Referring to Sheet 3 of the drawings, containing Figs. 9, 10, and 11 and illustrating the modified form of my improved rail-stay, each end of the bar C is formed with an offset *c*, terminating with a depending flange *d*, abutting against the side of the cross-tie B, and the bottom is provided at each end with a wedging surface *e* and a transverse slot *f*, as hereinbefore described. In this instance I employ two of the adjustable jaws D D, which are provided with vertical apertures *h* and mounted upon the ends of the bar and clamped to the rail-flanges *b b* by means of bolts *i i*, passing through the slots of the bar and coinciding apertures of the jaws in the manner aforesaid.

What I claim is—

1. A railway-rail stay comprising a bar extending across the bottom of the rail and abutting against the cross-tie and provided at one end with means gripping one of the rail-flanges, a jaw mounted transversely adjustable on the opposite end of the bar and gripping the other rail-flange, and means for clamping the jaw in its adjusted position as set forth.

2. A railway-rail stay comprising a bar extending across the bottom of the rail and abutting against the side of the cross-tie and provided at one end with means gripping one of the rail-flanges, a jaw clamped transversely adjustable on the opposite end of the bar and gripping the other rail-flange, and wedging means engaged by the jaw-clamp as and for the purpose set forth.

3. A railway-rail stay comprising a bar extending across the bottom of the rail and abutting against the cross-tie and provided at one end with means gripping one of the rail-flanges, a jaw mounted transversely adjustable on the opposite end of the bar and gripping the other rail-flange, and a bolt passing through the bar and engaging the said jaw for clamping the latter in its adjusted position as set forth.

4. A railway-rail stay comprising a bar extending across the bottom of the rail and abutting against the side of the cross-tie and provided at one end with a fixed jaw gripping one of the rail-flanges, and provided at its opposite end with a transverse slot, a jaw mounted on the latter end of the bar and gripping the other rail-flange and provided with a vertical aperture coinciding with the aforesaid slot, and a bolt passing through said slot and aperture and clamping the jaw transversely adjustable to the bar as set forth.

5. A railway-rail stay comprising a bar extending across the bottom of the rail and formed at one end with a hook-shaped jaw gripping one of the rail-flanges and formed on the inner edge at its opposite end with a lateral offset terminating with a depending flange abutting against the side of the cross-tie, the latter end of said bar being provided with a wedging surface on its bottom inclined toward the abutting flange and provided with a transverse slot at said wedging surface, a jaw mounted transversely adjustable on the slotted end of the bar and provided with a vertical aperture coinciding with said slot, and a clamping-bolt passing upwardly through said slot and aperture and having its head provided with a beveled bearing engaging the aforesaid wedging surface, and a nut applied to the bolt and engaging said jaw as set forth and shown.

HIRAM H. SPONENBURG. [L. S.]

Witnesses:
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S. SPONENBURGH.