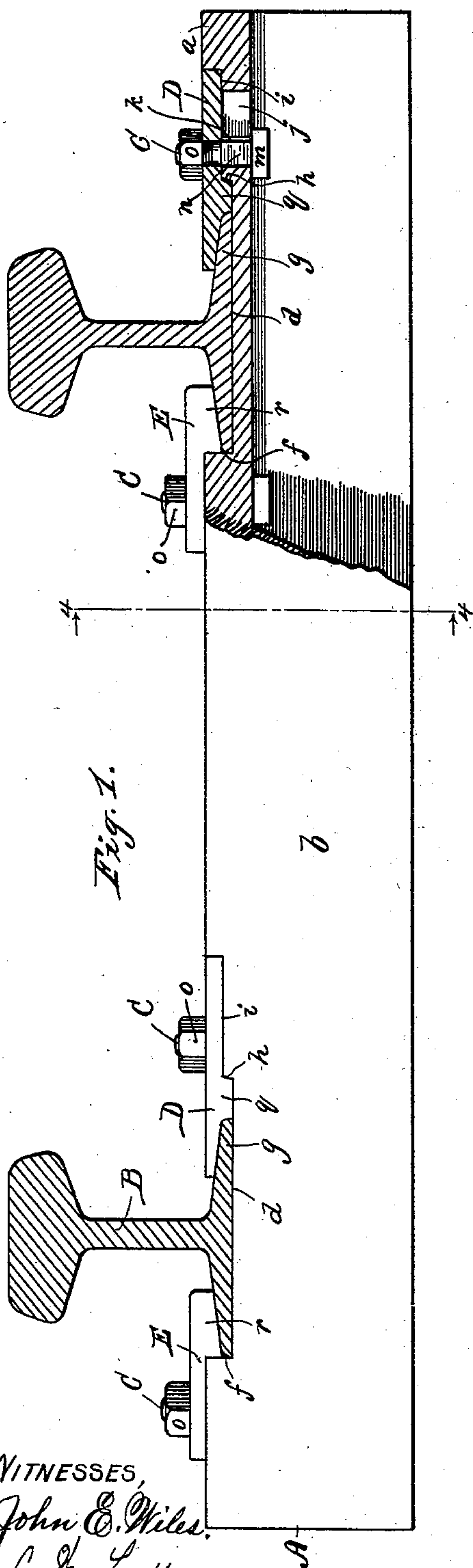


(No Model.)

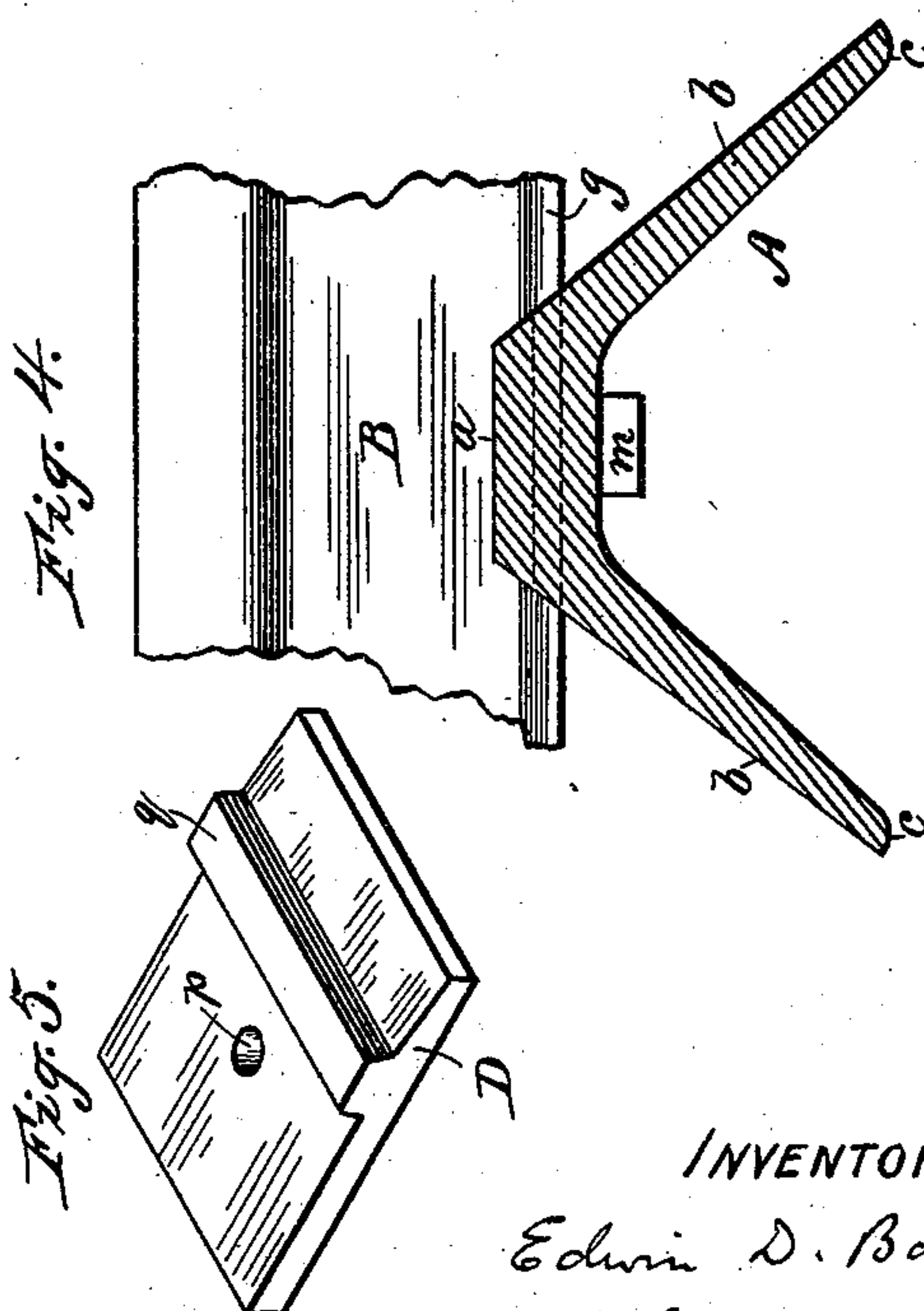
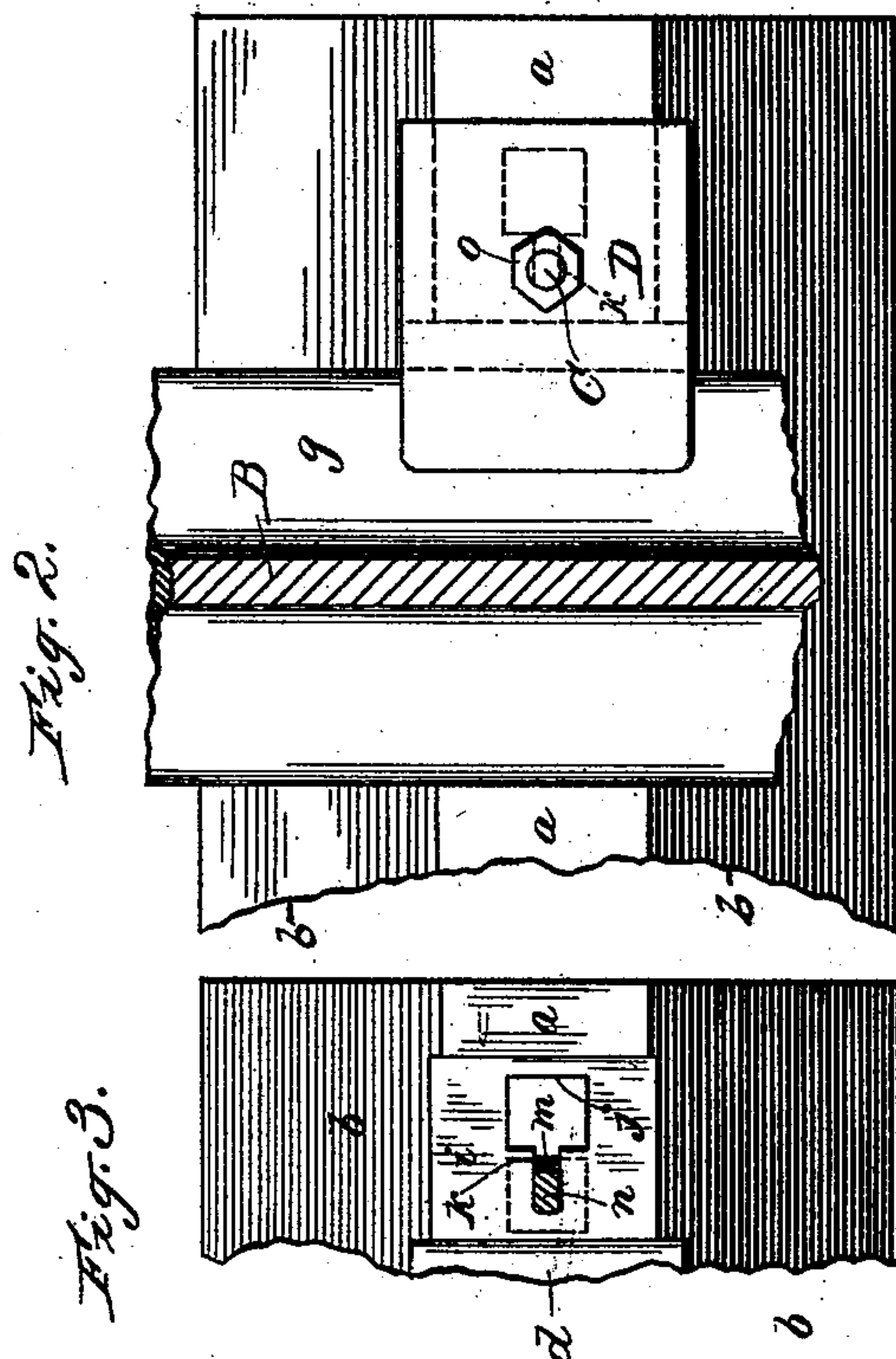
E. D. BANGS.  
METALLIC RAILWAY TIE.

No. 494,314.

Patented Mar. 28, 1893.



WITNESSES,  
John E. Miles.  
C. H. Scott



INVENTOR,  
Edwin D. Bangs.  
BY H. G. Underwood  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

EDWIN D. BANGS, OF MILWAUKEE, WISCONSIN.

## METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 494,314, dated March 28, 1893.

Application filed March 14, 1890. Serial No. 343,853. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN D. BANGS, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Metallic Railway-Ties; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to metallic ties for surface railways, and my invention consists in certain peculiar and novel features of construction and arrangement as hereinafter described and pointed out in the appended claim.

In the drawings—Figure 1 is a view partly in side elevation and partly in section, of my improved railway tie. Fig. 2 is an upper side plan view of one end of the tie showing the locking mechanism for the rail; the latter being shown partly in cross-section. Fig. 3 is an inverted plan view of the structure shown in Fig. 2. Fig. 4 is a transverse vertical section of the tie on the line 4—4 of Fig. 1. Fig. 5 is a detached perspective view of one of the locking plates employed to retain the rail in position upon the tie.

The objects of my invention are to produce a railway tie which shall firmly embed itself in the road-bed and which shall be of such form as to facilitate the operation of tamping the earth under and around the tie so as to insure a firm support for the same; also to provide a stable connection for the base of the rails which shall resist all tendency toward lateral movement of the rails while the train is traveling over them. These objects I attain by virtue of the construction which I will now proceed to describe.

Referring to the drawings, A designates my improved metallic rail-way tie. This tie is approximately of V-form in cross-section and is formed with a flat top *a*. The extremities *c, c*, of the arms *b* of the tie are rounded slightly. The purpose of this construction is to permit the arms *b* to embed themselves easily in the road bed while the earth of the road-bed becomes compacted between the arms *b* and beneath the flat top *a*. Thus when these ties are in position on the road-bed all possibility of "creeeping" of the rails is avoided.

These ties are made of any suitable material, such as steel, malleable iron, or the like, rolled, cast, pressed, or otherwise formed into the desired shape, and the rounded construction of the bottom-edges of the arms *b b* enables dirt, gravel, and the like to be readily tamped thereunder, from the sides, the said ties being open at each end, and tamped therefrom, also.

The upper surface, *a*, of the said tie is transversely rolled or cut away, for about two-thirds of its thickness, adjacent to each end, to form a depression, as shown at *d*, the bottom of each depression *d* being somewhat wider (in longitudinal line with the tie) than the transverse width of the base *g* of the rail B designed to rest thereon, one edge of said rail-base fitting against the adjacent shoulder, or wall *f* of said depression *d*, and beneath the reinforced and shouldered flange *r* of a locking-plate E, secured to the tie-top *a* by suitable rivets or bolts, such, for example, as the bolt C (hereinafter more specifically described, with reference to the plate D), and at a point beyond the other edge of the rail-base *g*, the depression *d* becomes shallower, having a wall or shoulder *h* rising considerably above the plane of the base of the main portion of said depression which latter is then continued a certain distance at this higher plane, as shown at *i*, and the tie-top *a* is cut through, vertically, at this point, as shown at *j*, forming a square slot with a narrower extension *k*, the portion *j* enabling the head *m* of a bolt C to pass therethrough, and the portion *k* being of just the proper width to receive the reduced and squared portion *n* of the shank of said bolt, above which part *n* the bolt is of full size and screw-threaded to receive a nut *o*, after said bolt has passed through a perforation *p* in the locking plate D, which latter, on its under side, is provided with a transverse flange *q*, of a size and shape to just fill the space between the described wall or shoulder *h* and the adjacent edge of the rail-base *g*, while the rest of said plate fills up the said shallower portion *i* of the depression *d* and rests on the rail-base *g*, as shown in Fig. 1, thereby holding said rail-base safely and rigidly to the tie A. Both rails are held to the ties in substantially the same manner, with

the said locking-plates D on the same side of each rail, and hence to separate tie and rails, it is only necessary to loosen the nuts *o* and lift up the plates D, when the tie can be  
5 moved endwise till the farther edge of the bases of both rails are free from the overhanging flanges *r* of the plates E, and hence new ties, or new rails, as the case may be, can be quickly and easily substituted for broken  
10 or old ones, without disturbance of the rest of the road-bed, and without driving or drawing a single spike.

Having thus fully described my invention, what I claim as new, and desire to secure by  
15 Letters Patent, is—

The combination of a V-shaped railway tie

with arms with rounded edges, and having a depression provided with shoulders *f*, *h*, in its upper face to engage with the plate flanges; with the plate D, having the rib *q*; the plate 20 E, with its flange *r*, to secure the rail; the bolts and nuts C, *o*, *m*; and the said rail, all substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in 25 the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

EDWIN D. BANGS.

Witnesses:

H. G. UNDERWOOD,  
WM. KLUG.