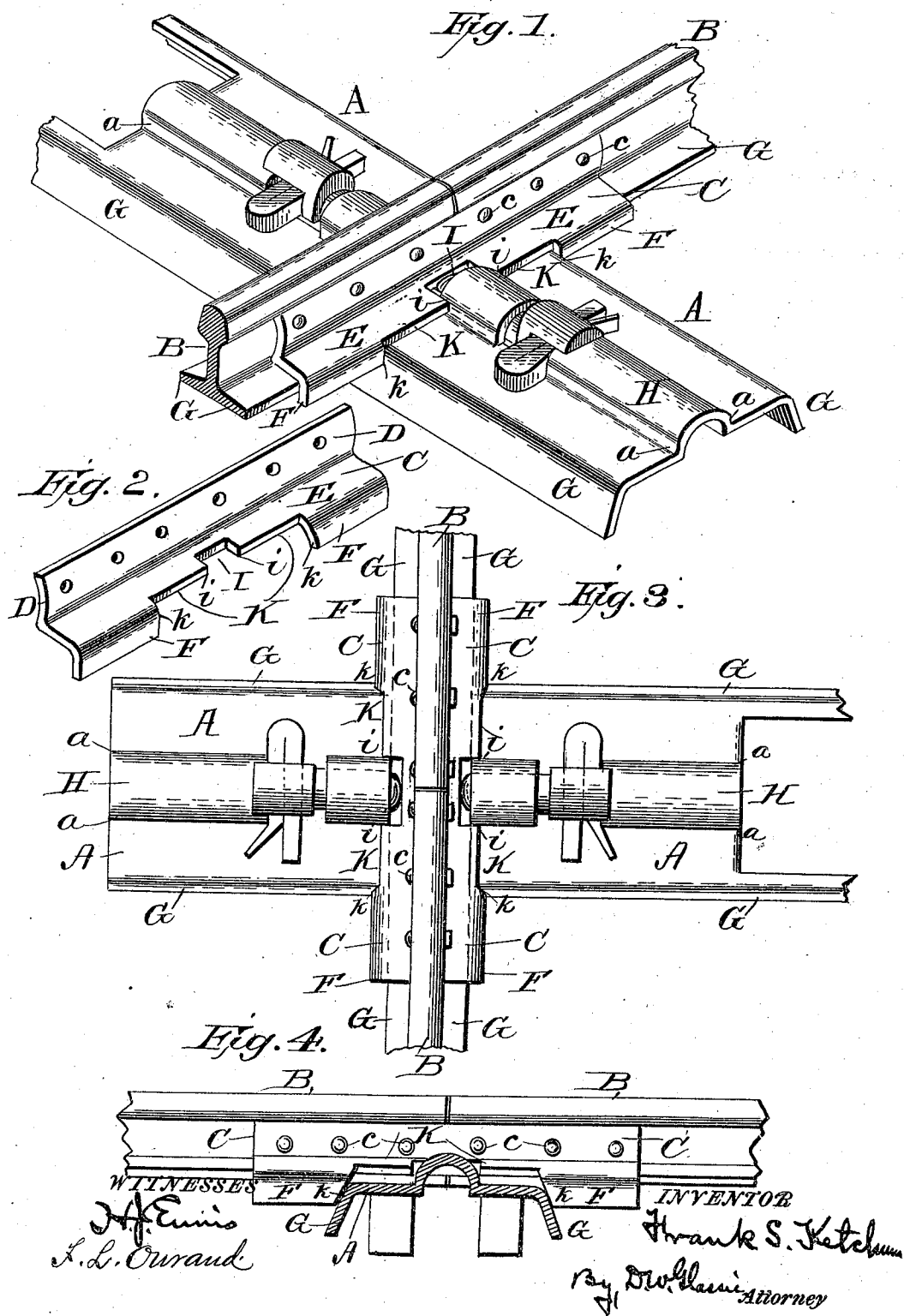


(No Model.)

F. S. KETCHUM.
ANGLE BAR FOR RAILROAD RAIL JOINTS.

No. 504,067.

Patented Aug. 29, 1893.



UNITED STATES PATENT OFFICE.

FRANK S. KETCHUM, OF NEW YORK, N. Y.

ANGLE-BAR FOR RAILROAD-RAIL JOINTS.

SPECIFICATION forming part of Letters Patent No. 504,067, dated August 29, 1893.

Application filed December 22, 1892, Serial No. 455,990. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. KETCHUM, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Angle-Bars for Railroad-Rail Joints; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to fish plates or angle bars for the joints of railroad rails, and the object of the invention is to construct an angle bar so that, while the bar joins the abutting ends of the rails, it also prevents the slipping of the rail on the tie, and to this end the novelty consists in the novel construction and combination of parts hereinafter described and claimed.

In the accompanying drawings the same letters of reference indicate the same parts of the invention.

Figure 1 is a view in perspective of a metallic tie, a rail joint and my improved angle bar applied thereto. Fig. 2 is a similar view of the angle bar detached from the rails. Fig. 3 is a top or plan view of the figure shown in Fig. 1, and Fig. 4 is a side elevation of the rails, angle bar and metallic tie.

A is the metallic cross-tie and may be of any approved construction, but I prefer that form shown and claimed in my application filed December 21, 1892, and of which this present tie is a counterpart, and B B are the ordinary rails of a railroad, the abutting ends of which are connected by the angle bar, C. This angle bar is of novel construction, and consists of the curved portion, D, which joins the web of the rails, the angular body, E, which corresponds to the bevel of the face of the flange, G, of the rail, B, and the depending flange, F, of the angle bar which overlaps said flange, G, of the rail, B.

The tie, A, is provided with a longitudinally raised central rib, H, the walls, *a a*, of which

are approximately vertical, while as above stated, the crown is curved, and the flange, G, is slightly flaring. The tie being placed in position, and the rails laid thereon and secured thereto by any suitable device, the one shown being preferred, the angle bar, C, adjusted in position, the ordinary bolts, *c*, are inserted and screwed up, and, when said bar is in position, the shoulders, *i i*, of the recess, I, in the body, E, encompass or span the angular walls, *a a*, of the rib, H, while the recess, K, in the depending flanges, F, overlap or encompass the flanges, G, of the tie, A, as shown, the shoulders, *k k*, fitting snugly on each side of the flaring flanges, G. It will thus be seen that after the rail is secured to the tie through any approved fastening device, the angle bar is placed in position, and as it is bolted to and secures the rails, its shoulders, *i i*, fit each side of the rib, and its flanges, F, engage either side of the flanges of the tie and consequently prevent absolutely any longitudinal displacement or "creeping" of the rails. Of course, the usual allowance for the expansion and contraction of the rail is made as at present, and, while the angle bars are intended to be placed at the joints of the rails, they may be placed at other intervals between said joints, should occasion be found necessary to do so.

Having thus described my invention, I claim—

1. The combination with the rails and tie as described, of the angle bar having a recess, the shoulders of which encompass the raised rib of the tie, and a secondary recess, the shoulders of which encompass the depending flanges of the tie proper, as and for the purpose set forth.

2. The combination with the rails, B, and tie, A, of the angle bar, C, secured to said rails and having the recess, I, the shoulders, *i i*, of which extend on each side of the central rib of said tie, as and for the purpose set forth.

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

FRANK S. KETCHUM.

Witnesses:

HENRY J. ENNIS,
GEO. D. WYCKOFF.