

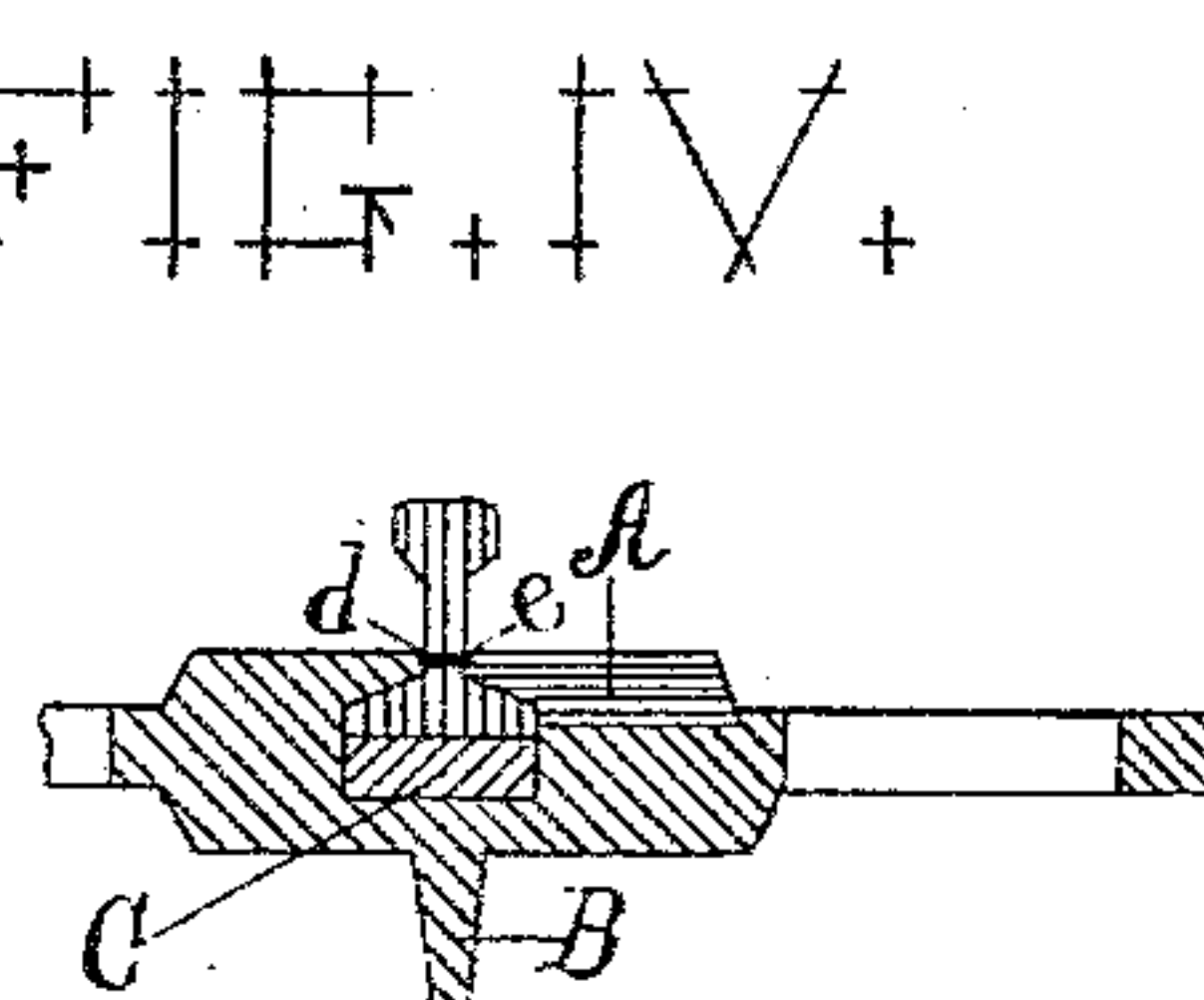
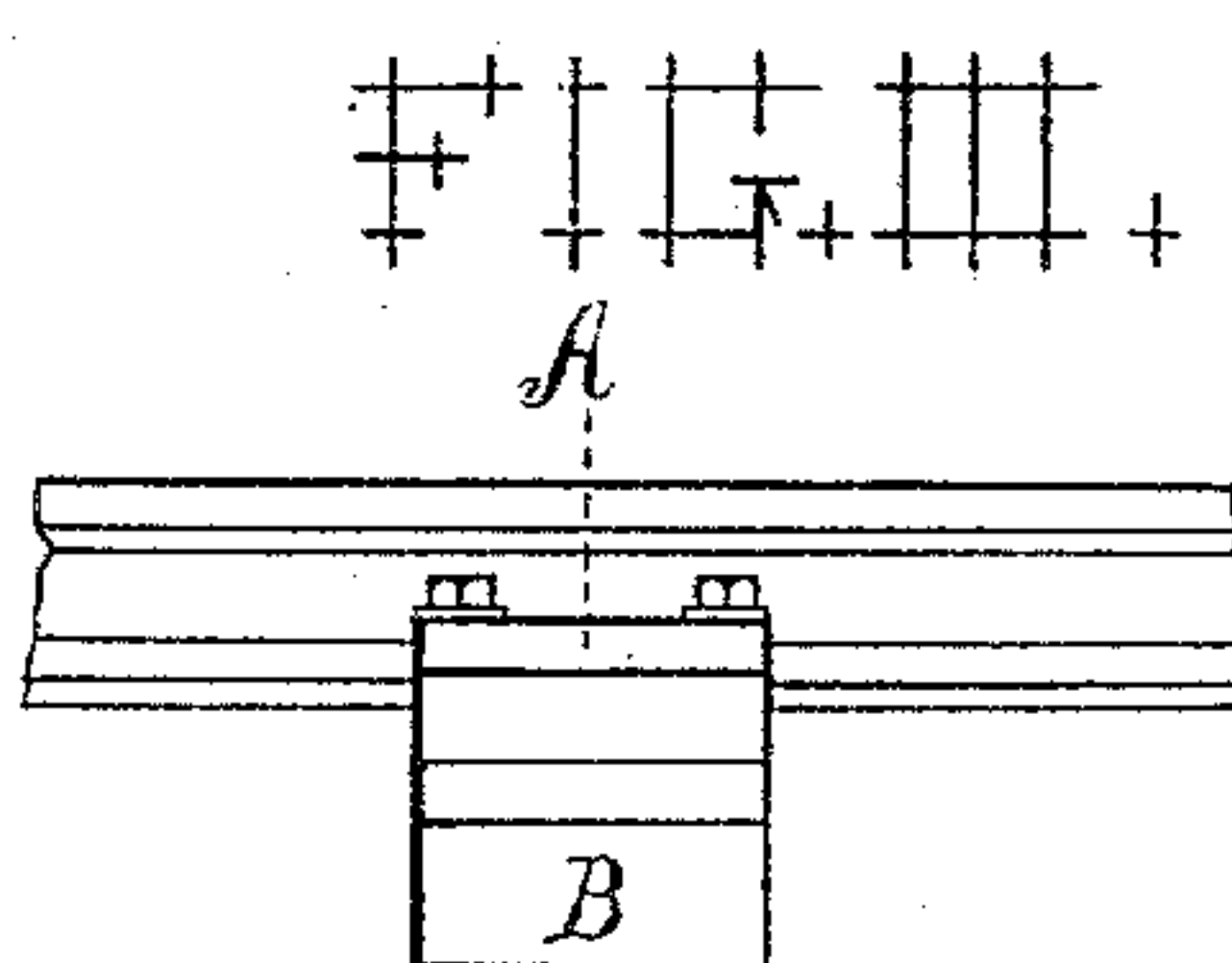
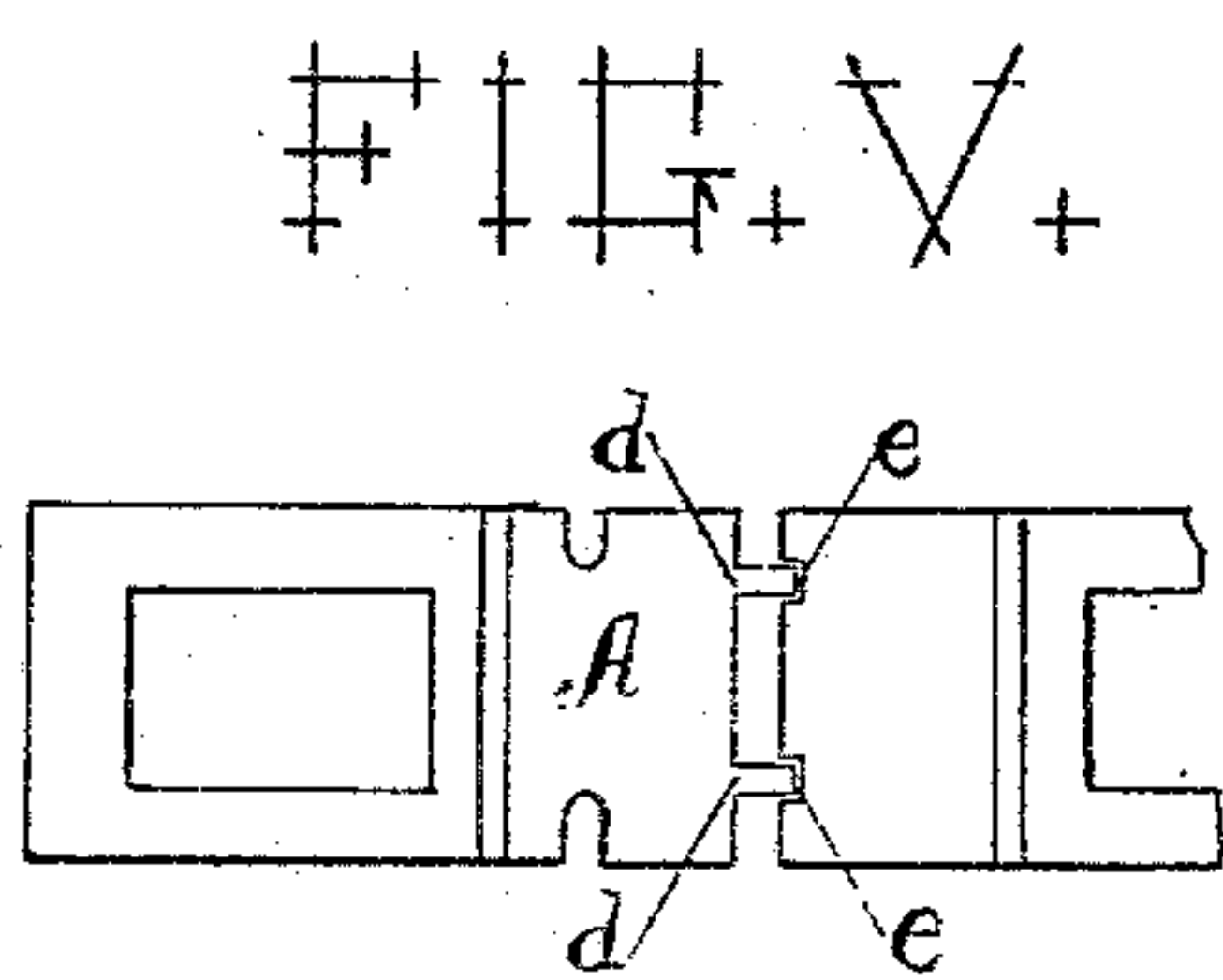
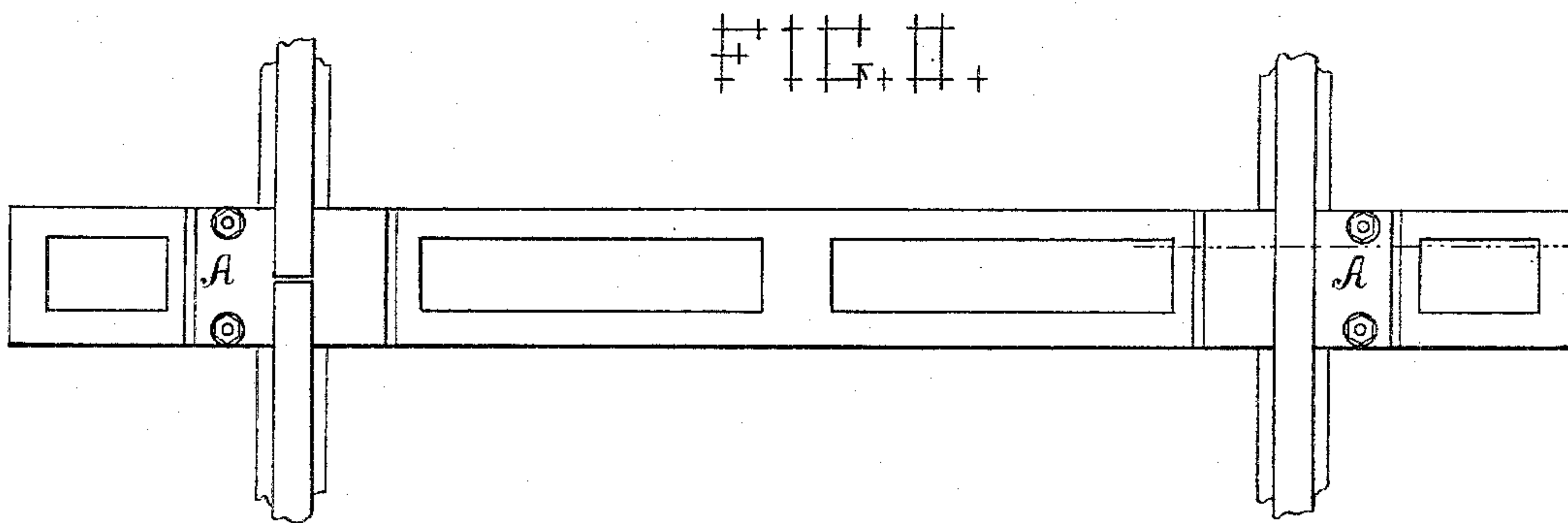
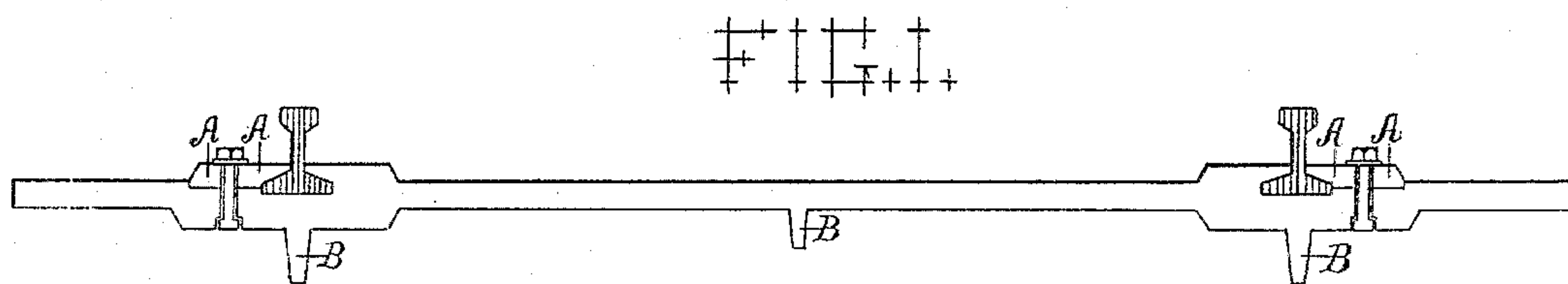
(No Model.)

G. MURRAY.

RAILROAD TIE.

No. 323,356.

Patented July 28, 1885.



SCALE 1 INCH = 1 FOOT.

Witnesses:  
*John D. Adams*  
*Geo. H. Abel*

Inventor.  
*Gordon Murray*

# UNITED STATES PATENT OFFICE.

GORDON MURRAY, OF NEGAUNEE, MICHIGAN.

## RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 323,356, dated July 28, 1885.

Application filed December 31, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, GORDON MURRAY, a citizen of the United States, residing at Negaunee, in the county of Marquette and State of Michigan, have invented and produced a new and original design for Railroad-Ties, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

Figure I is a side elevation of my railroad-tie; Fig. II, a plan of same; Fig. III, an end elevation; Fig. IV, a verticle section taken through the tie in such a manner as to show the pin *d e* and the cushion C upon which the rail rests. Fig. V is a detail view.

Generally heretofore railroad ties have been made of wood, but ties made according to my invention are to be made of steel or iron, either wrought or cast. When the ties are made of steel or wrought-iron, they can be made much lighter; but whether of steel, cast or wrought iron, the principle remains the same.

The entire tie, including the chairs, is made of the above metal. The chairs are cushioned with either blocks of wood or rubber, in order to give the rails a slight spring, so as to resist the shock of the passing train, and at the same time allow the cars to ride easily.

The parts at A A are movable, and are recessed on the edges so as to be held in position by nut-bolts, which slide into recesses from the side. The parts A A are removed, the rail is then slipped into place, the parts A A returned to place, the nut-bolts slipped in, the nuts screwed up, and everything becomes firm and solid. The cushion at C gives the necessary spring to the rail.

This style of chair, as is shown in Figs. 4 and 5, does away altogether with fish-plates.

The wrought-iron piece A A, when it is to be used as a fish-plate, is made with two pins, *d e d e*, as shown in Fig. 5. These pins will slip through the hole nearest the end of the rail as the rails are now made, and set in a socket on the opposite side of the chair, which gives the pins extra strength. The pins are three-quarters ( $\frac{3}{4}$ ) of an inch in diameter, and the hole in the rail is one inch. The quarter ( $\frac{1}{4}$ ) of

an inch is to allow for contraction and expansion. If more is required, the holes in the rails can be made elliptical. It is only necessary to make the plates A A with these pins where they are to be used in the place of fish-plates, for all intermediate ties the plates A A are made without these pins, but similar in all other respects, so that they are interchangeable.

There is no trouble in gaging the road, as the ties are made to the required gage, and when the rails are once laid they cannot possible shift.

It is very easy to pack the ballast around these ties, as they are all open-work, and therefore any part can be gotten at very readily.

The projections at B B B are to prevent the tie from moving after it is laid, which it would be very apt to do, especially on a curve, were it not for said projections.

After the road has been graded, the amount of rails laid per day can be very materially increased with this tie, for as soon as the tie is laid the road is gaged, and then all that has to be done is to slip in the rails and the plates A A and screw up the nuts.

This chair does away completely with spikes, none whatever being used.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a railroad-tie, a seat for the rail, consisting of a solid part upon one side adapted to support the rail against lateral strain in one direction and upward strain, and a movable plate adapted to support the opposite side of the said rail, the said movable plate being provided with projections *d d*, adapted to enter openings in the rail end and to hold the same securely in place, substantially as described.

2. A railroad-tie having seats for the rails upon opposite ends thereof, combined with central and end projections on the under surface thereof to prevent the said tie from moving from its position, all substantially as described.

GORDON MURRAY.

Witnesses:

JOHN Q. ADAMS,  
GEO. H. ABEEL.