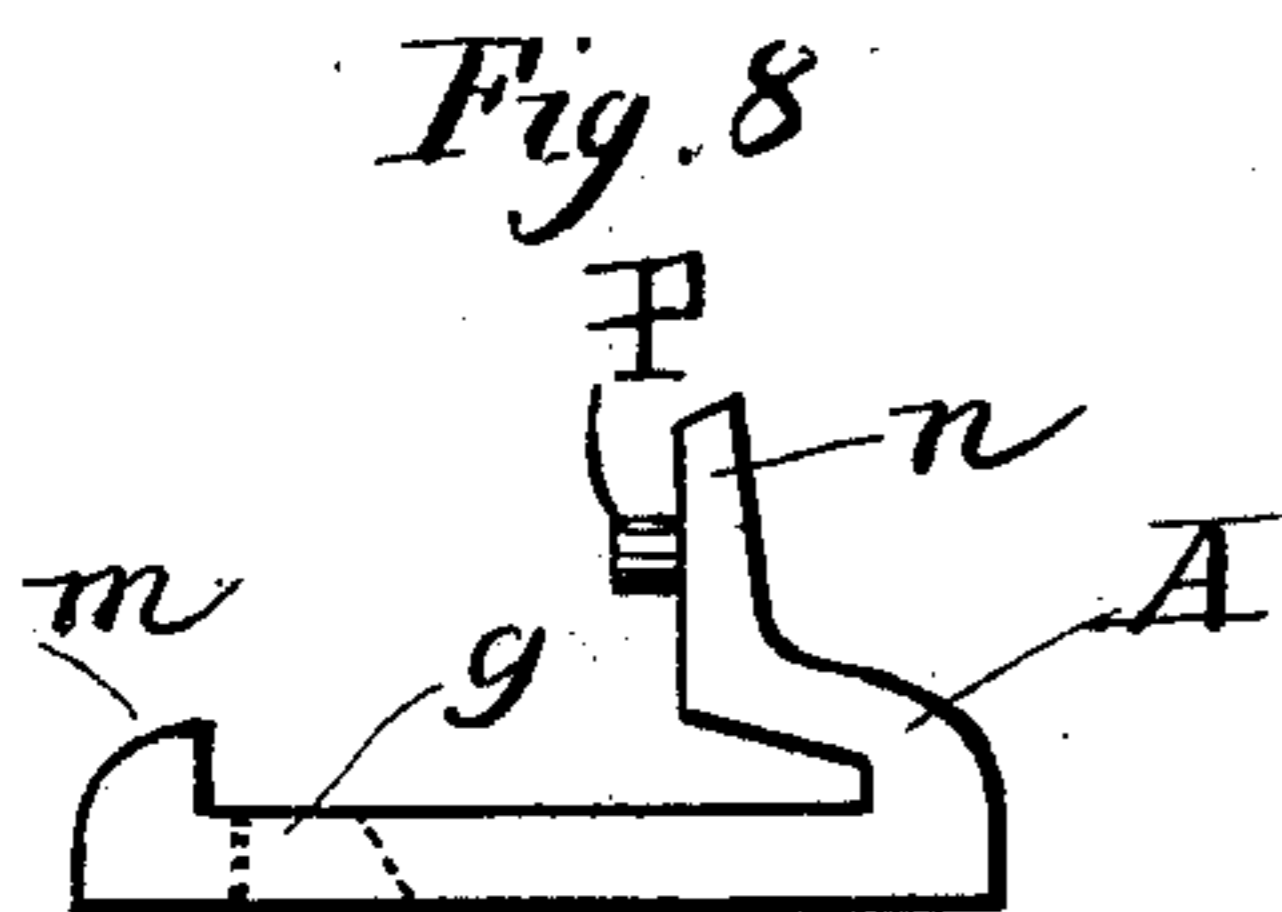
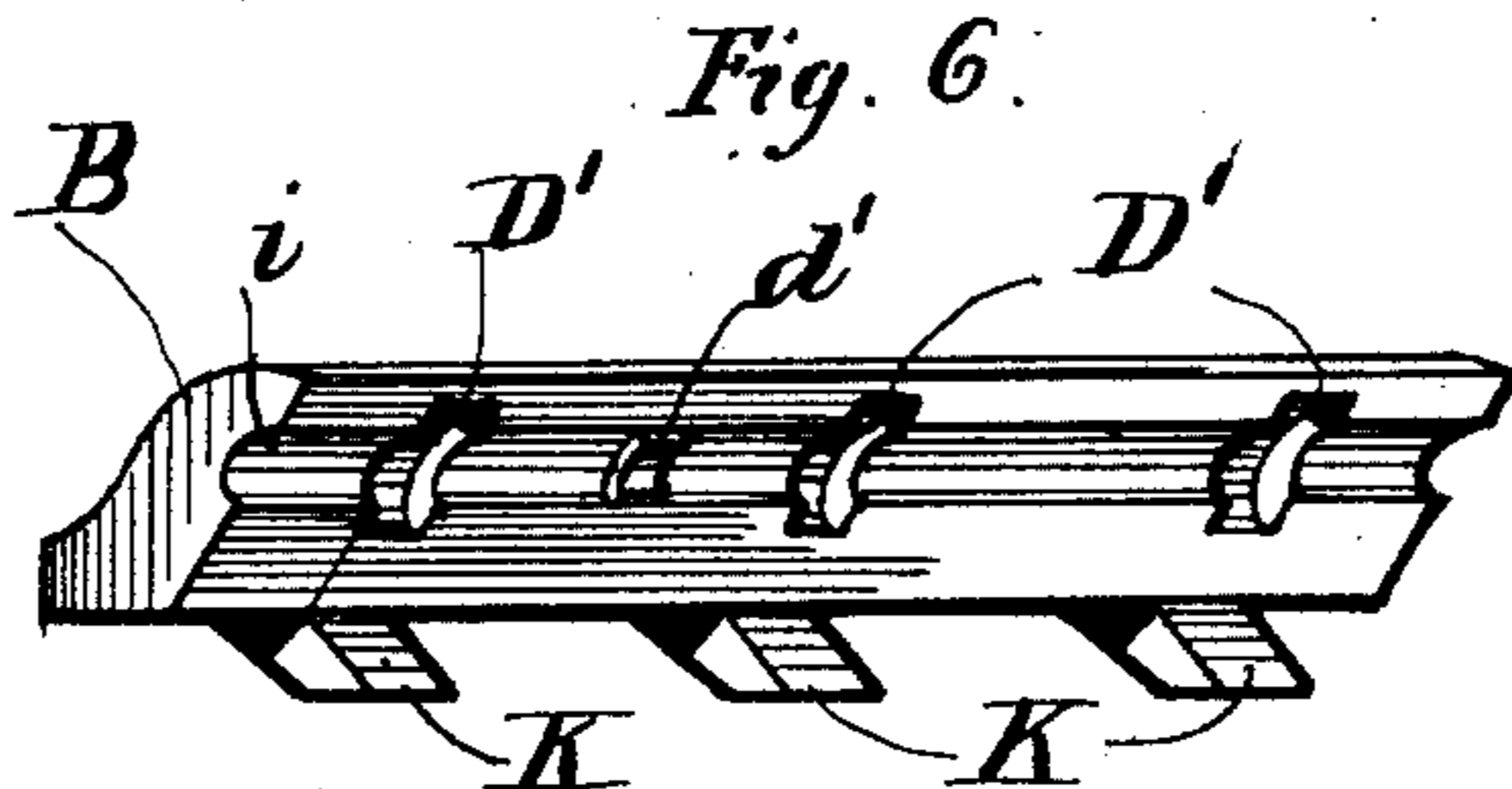
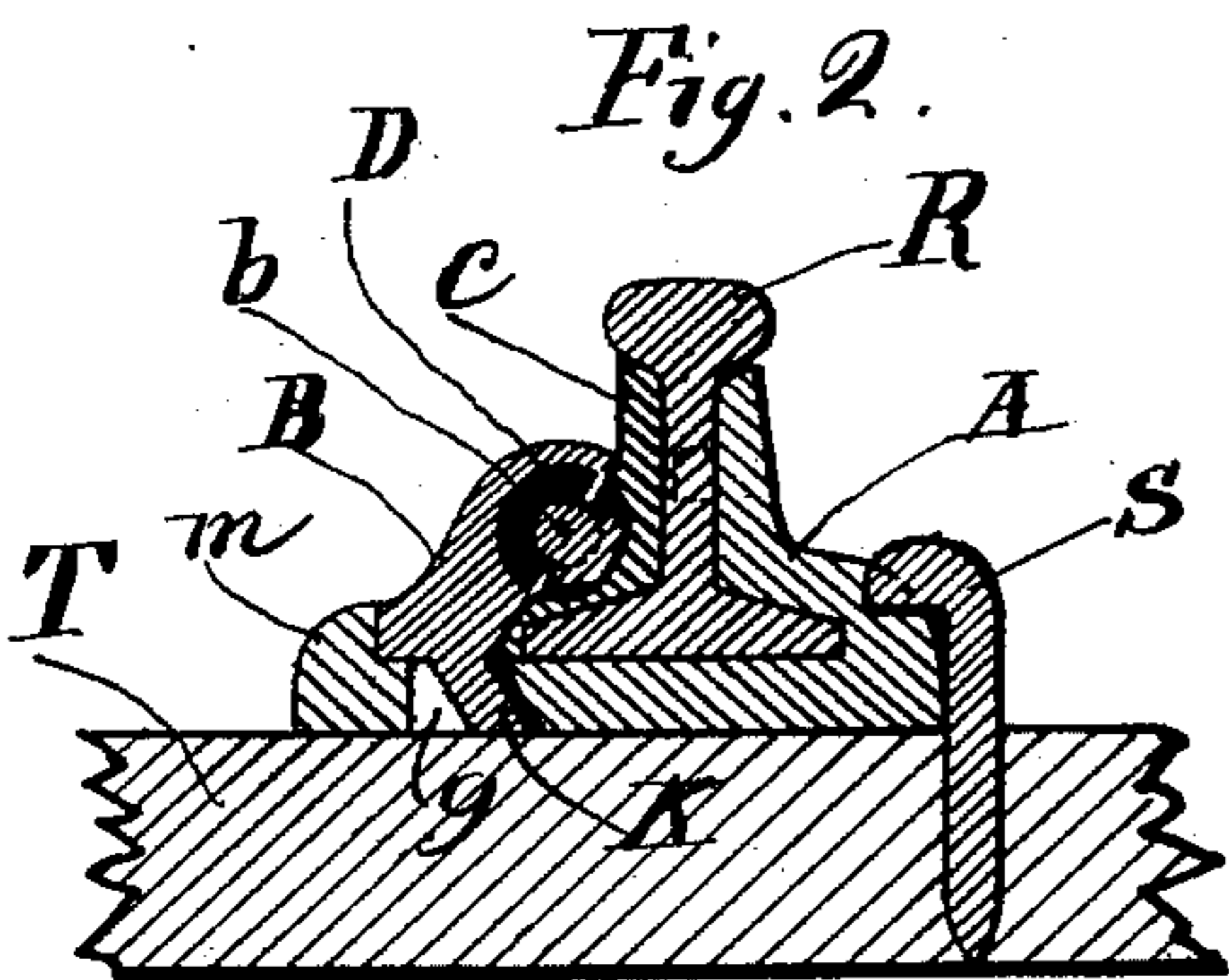
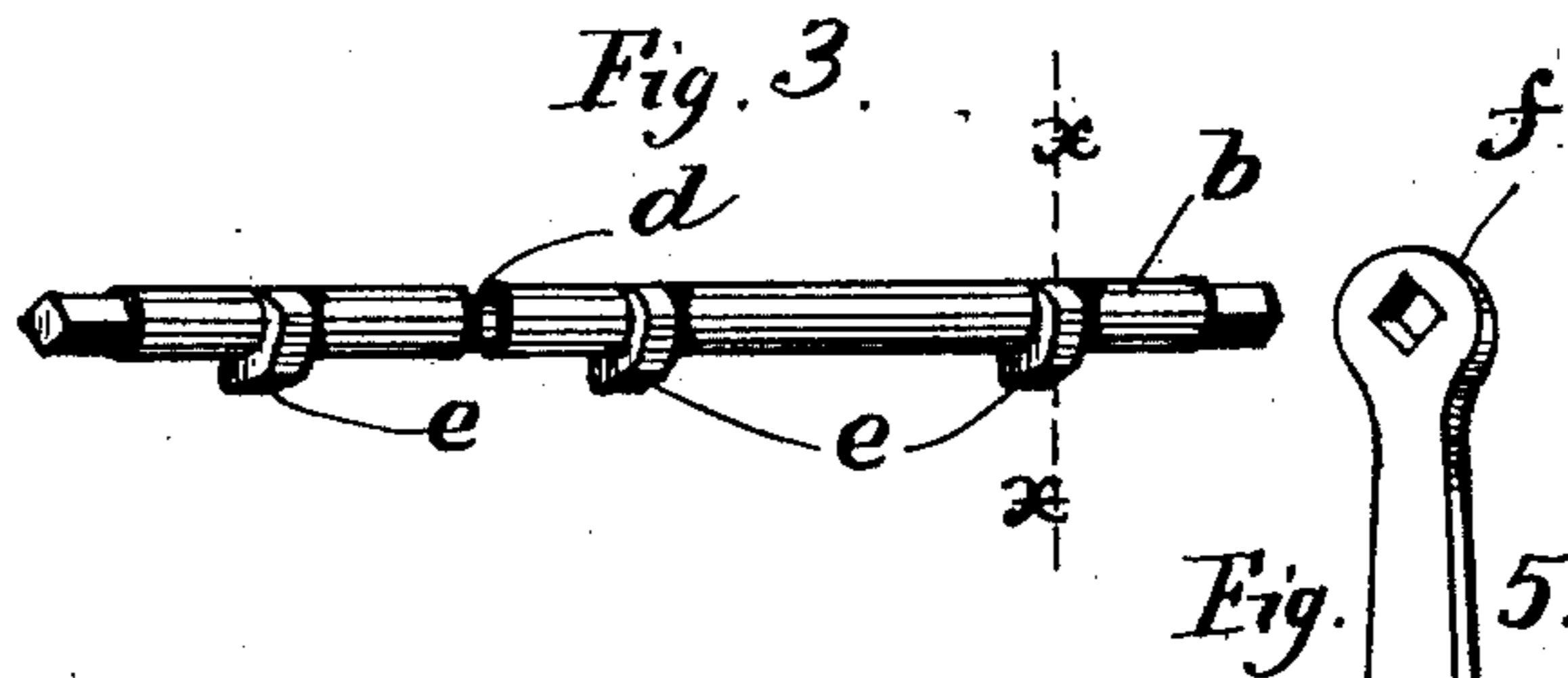
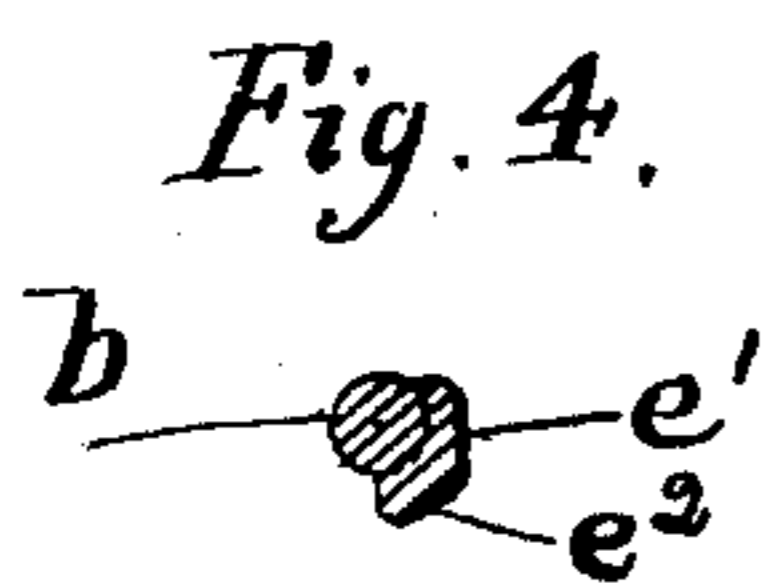
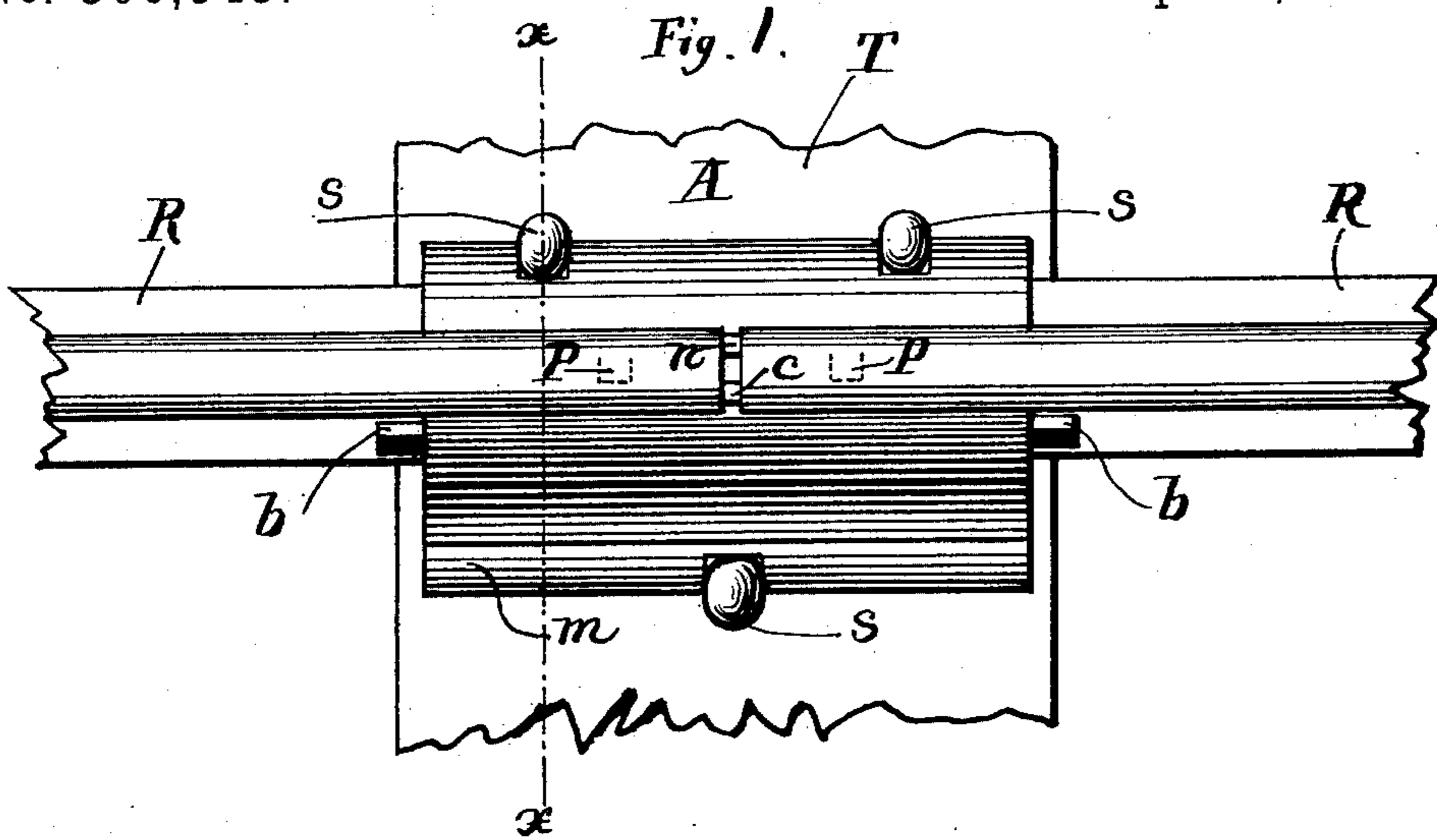


(No Model.)

B. VAN WIE.
RAIL JOINT UNION.

No. 360,543.

Patented Apr. 5, 1887.



Witnesses:

N. Davenport
Wm. H. Hester, Jr.

Inventor.

Bryon Van Wie
by Geo. W. Mosher
att'y.

UNITED STATES PATENT OFFICE.

BYRON VAN WIE, OF TROY, NEW YORK, ASSIGNOR OF PART TO JOHN MCGOWAN, WILLIAM J. KANE, AND CHARLES H. TOLHURST, ALL OF SAME PLACE.

RAIL-JOINT UNION.

SPECIFICATION forming part of Letters Patent No. 360,543, dated April 5, 1887.

Application filed July 3, 1886. Serial No. 207,039. (No model.)

To all whom it may concern:

Be it known that I, BYRON VAN WIE, a resident of the city of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Rail-Joint Unions; and I do hereby declare that the following is a full, clear, and exact description of the invention, that 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.

Similar letters refer to similar parts in the several figures therein.

My invention relates to improvements in clamps or unions for railway-rail joints; and it consists of the novel construction and combination of parts, hereinafter described, and pointed out in the claims.

The objects of my invention are fully presented in connection with the description.

Figure 1 is a plan view of my improved device in position upon a rail-joint. Fig. 2 is a vertical cross-section taken upon the broken line *xx* in Fig. 1. Fig. 3 is a view in perspective of the locking-key. Fig. 4 is a cross-section of same, taken at the broken line *xx* in Fig. 3. Fig. 5 is a view in perspective of the key bow or wrench. Figs. 6 and 7 are views in perspective of the detachable locking-bars. Fig. 8 is an end view of the chair detached.

A is the chair, adapted to receive one end of railway-rails R between the short flange *m* on one side and the longer flange, *n*, on the other side. The flange *n* is of sufficient height to afford a partial support for the ball of the rail, and is provided with the pins P—one for each end of the united rails—the pins being inserted in elongated holes in the rails, as shown by dotted lines in Figs. 1 and 2.

The bottom of the chair A is preferably flat, to rest upon a tie or sleeper, T, and afford a chair for the rail, and is provided with slots or sockets *g* in or through the bottom, adapted to receive the projecting lugs or spurs K on the bar B, (shown in Fig. 6,) and is adapted to be secured to the tie by spikes S. After the ends of the rails have been inserted within

the chair to the position shown in Figs. 1 and 2, the bar B is inserted between flange *m* and the rails in about the position shown in Fig. 2, the lugs *k* projecting down into the slots *g*—one for each lug. The key, consisting of stem *b*, provided with groove *d*, and bits *e*, is then inserted between the bar B and the rail in such a position that the groove *d* coincides with the lug *d'* in the semicircular groove *i*, extending longitudinally of the bar B, and adapted to receive the stem of the key, and such that the bits *e* will rest within the depressions or sockets D'—one for each bit-section. The bar C is then slid in between the bar B and the rail, and the key rotated by means of its bow or a wrench, *f*, adapted to fit upon the angular end of the key-stem until the bits enter the depressions or sockets D in the bar C and securely lock the parts in the position shown in Fig. 2.

It will be seen that the bits *e* have two plane exterior surfaces, one nearer the center of the stem than the other, and marked in Fig. 4, respectively, *e'* and *e''*. These bits assume the nature of cams, and are made of the proper length to tightly force and hold the bar C against the rail, the bar B being held in place by the flange *m* and the slots *g*. If the parts work loose or are not tightly locked by the faces *e'* of the cams, another partial turn of the key will bring the faces *e''* in contact with bar C and lock the parts more tightly together.

To unlock the parts and remove the rails, it is only necessary to rotate the key backward until the bits pass from their sockets in bar C into those in bar B, when bar C can be easily slid out from between the other bar and the rail, after which the key and bar B can be easily removed and the rails taken out, and others substituted in their places, without removing the clamp from the tie or disturbing its position.

The bar C extends from the ball of the rail to the rail-surface of the chair and affords a support to the rail. There are no bolts and nuts to work loose or drop out.

It is not necessary to weaken the rail by bolt-holes, only a single small aperture being required in each rail at the end to be joined, for the reception of small pin P.

It is obvious that the groove *d* on the stem of the key is adapted to receive the corresponding collar *d'* in the groove *i* of bar B, their object being to prevent the key and bar C from sliding longitudinally when the parts are locked.

My improved device can be employed to strengthen and support a rail in any part of its length which has become worn or has developed a weakening flaw.

When applied to the joints, my device, by clamping the rails firmly and over the whole space between the ball and flange of the rail, not only securely holds the ends of the rails coincident, but enables the rails at the joint to sustain as much weight without depression as any part of the rails.

The pins P may be dispensed with, when desired, thus obviating the necessity of any holes in the rails.

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

1. Locking-bar B, provided with chair-engaging lugs K and key-bearings *i*, and locking-bar C, provided with key-bit sockets D, in combination with inclosing rail-chair A and key *b*, provided with bits *e*, substantially as described, and for the purposes set forth.

2. The combination, with a rail-chair and rail-locking bars, of a key provided with a plane-faced cam-bit for the purpose of adjustably forcing one of said bars against the rails and preventing the key from working loose, substantially as described.

3. The combination, with a rail-chair having elevated flange *n*, of a rail-supporting bar, C, and means, substantially as described, for clamping the rail between said flange and bar for the purpose of giving support to the ball of the rail, substantially as described.

4. The combination, in a rail-joint connection, of chair A, provided with rail and bar inclosing flanges *m n*, lug-sockets *g*, and rail-engaging pins P, locking-bar B, provided with key-bit sockets D', collar or lug *d'*, and chair-engaging lugs K, locking-bar C, provided with key-bit sockets D, and key *b*, provided with collar-groove *d* and two-faced bits *e*, and means, substantially as described, for rotating said key, as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 2d day of July, 1886.

BYRON VAN WIE.

Witnesses:

GEO. A. MOSHER,
CHAS. L. ALDEN.