

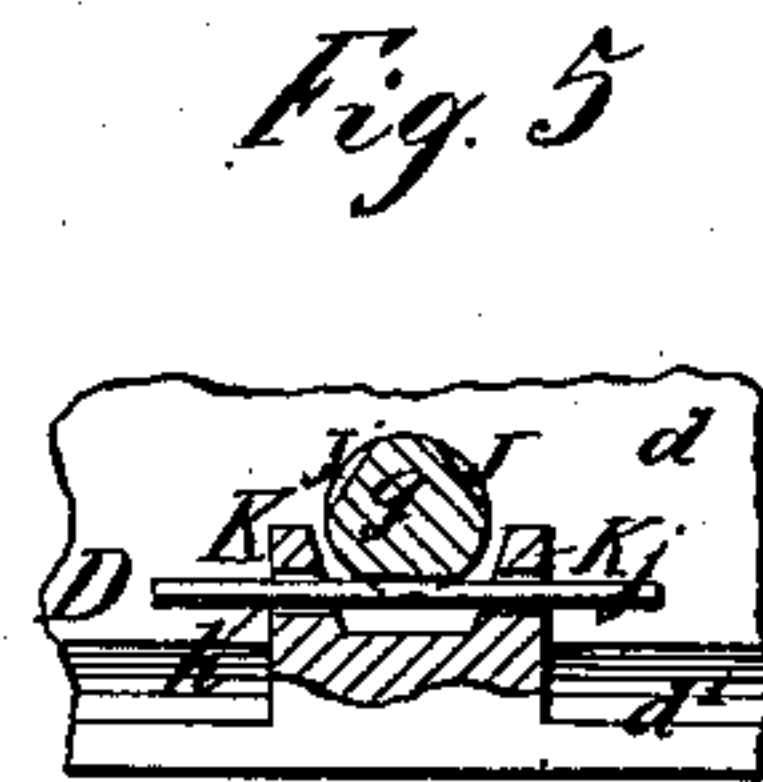
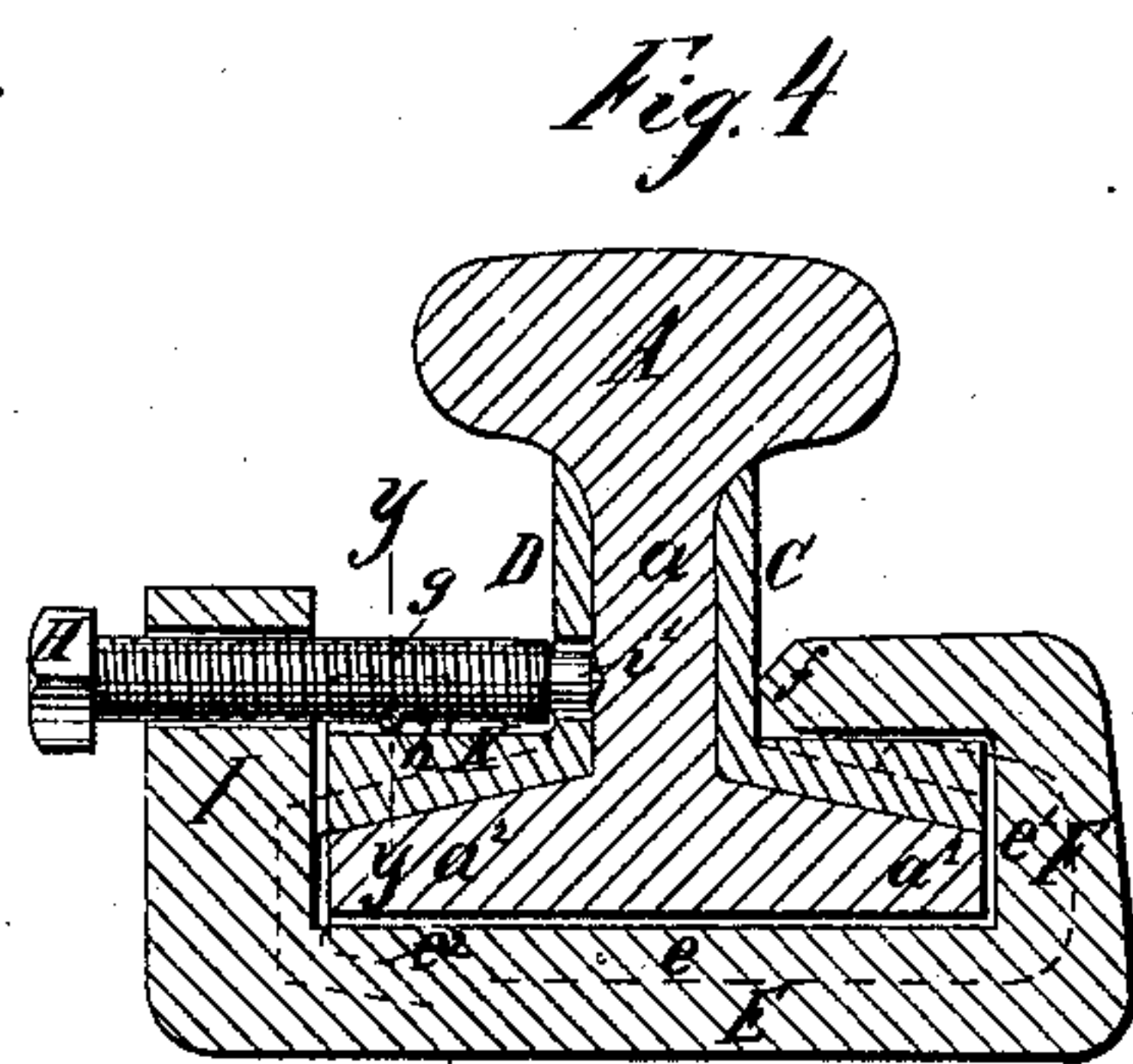
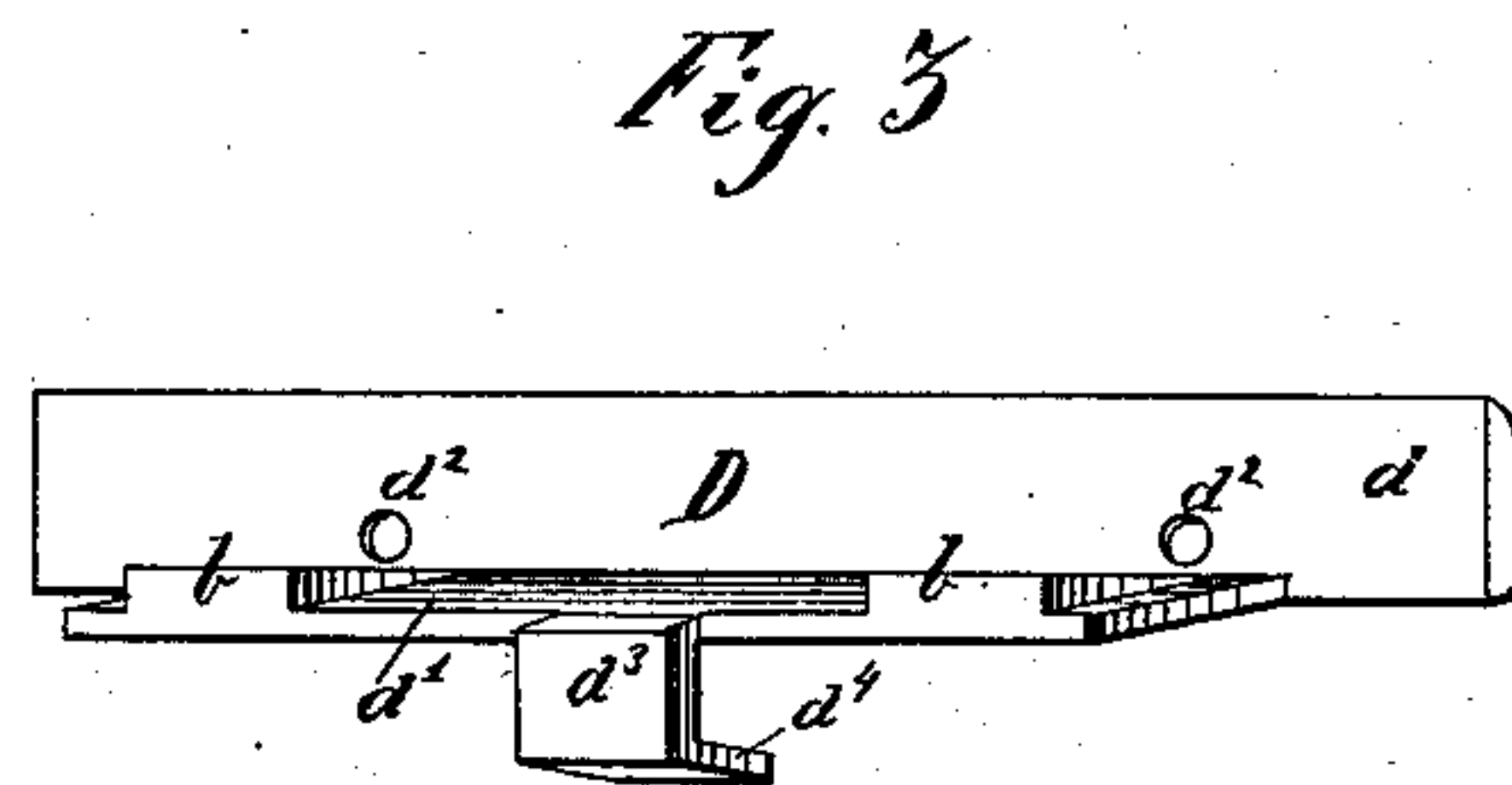
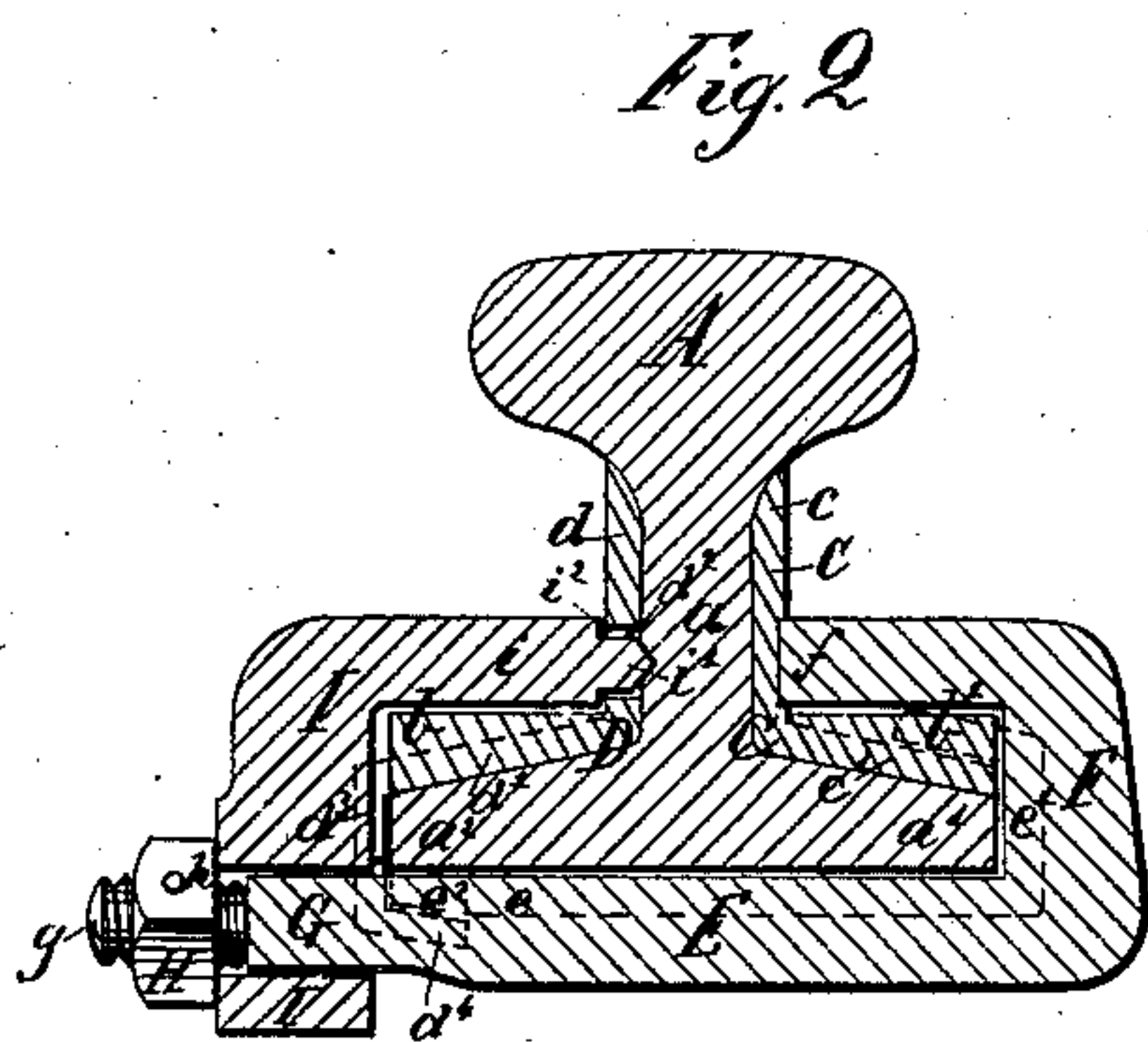
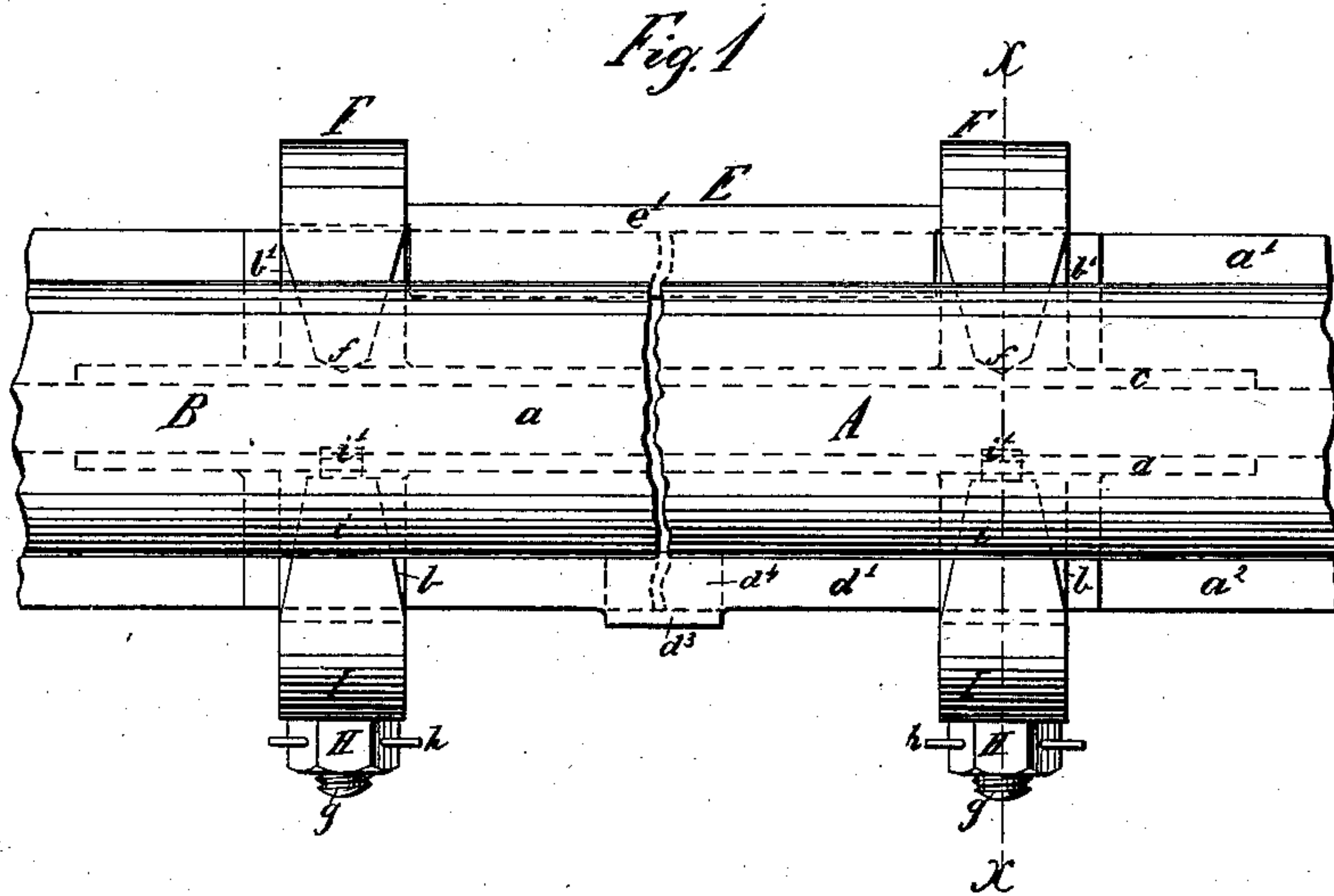
(No Model.)

O. BENSON.

DEVICE FOR CONNECTING RAILS.

No. 260,446.

Patented July 4, 1882.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

OLIVER BENSON, OF DERRICK CITY, PENNSYLVANIA.

## DEVICE FOR CONNECTING RAILS.

SPECIFICATION forming part of Letters Patent No. 260,446, dated July 4, 1882.

Application filed April 19, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER BENSON, a citizen of the Kingdom of Sweden, and resident of Derrick City, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Device for Connecting Rails, of which the following is a specification.

The object of my invention is to provide a strong and convenient fastening device for readily securing together in line with each other the ends of two rails or pieces of rails when from the absence of bolt-holes through the stems of the rails the ordinary fish-plates cannot be used to connect them.

The device may be used as a permanent connection, but is more especially intended as a ready means of temporarily repairing broken rails, and thus avoiding impediment to the traffic, while ample time may be taken for cutting, punching, and preparing new and sound rails to replace them.

In the accompanying drawings, Figure 1 represents a plan view of my improved device in position to retain in line together the pieces of a broken rail. Fig. 2 is a cross-section of the same, taken on the line *xx* of Fig. 1, and seen in the direction of the arrow 1. Fig. 3 is a perspective exterior view of the outer connecting-plate. Fig. 4 is a section, on the line *xx* of Fig. 1, of a modification of the clamping device; and Fig. 5 is a detail section taken on the line *yy* of Fig. 4.

A and B are two rails or pieces of a rail; *a*, the rail-stem; *a'*, the inner and *a''* the outer flange of the base of the rail. C is the inner and D the outer connecting-plate. These are of angular shape, to fit the angles between stem and base of the rail, the plate C being formed of two flanges, *c* and *c'*, fitting respectively against the stem *a* and base-flange *a'*, which form the inner angle of the rail inside of the track, and the plate D being formed of two flanges, *d* and *d'*, fitting respectively against the stem *a* and flange *a''*, which form the outer angle of the rail. To secure a long grip on the stem of the rail the vertical flanges *c* *d* are longer than the flanges *c'* *d'*, the latter flanges being cut away at the ends, as shown in Figs. 3 and 5, in order that they may not interfere

with the spikes holding the base-flanges of the rail to the sleepers.

On the flanges *c'* *d'* are raised horizontal surfaces *b'* *b*, on which the horizontal under side of the clamping-jaws rest, as will be presently described. The outer plate, D, is provided on its flange *d* with slots or holes *d''*, opposite the raised portions *b*, and its lower flange, *d'*, is provided about midway between the said raised portions with a downward projection, *d<sup>3</sup>*, having an inwardly-bent lip, *d<sup>4</sup>*, at its lower edge, the use of which will presently appear.

It is evident that if the plates C and D are placed in the angles of the rail covering the joint between the ends of the rail or pieces of rail, as in Figs. 1 and 2, and then securely clamped from opposite sides against the rail, they will retain the rail ends in line with each other. For this purpose I have constructed a clamping device, E, in the following manner: Upon either end of a plate, *e*, having a small flange, *e'*, along its inner edge, is formed a stationary jaw, F, passing up and around the inner flanges, *a'* and *c'*, of the rail A and plate C, and resting with the under side of its horizontal portion *f* upon the raised portion *b'* on the flange *c'*, the gripping end of the jaw consisting of a vertical wedge-edge, which, when the jaw is tightened, impinges upon the vertical flange *c* of the plate C, pressing the latter against the stem of the rail and preventing it from lateral displacement. The plate *e*, which has the same width between its flange *e'* (which overlaps the flange *c'* of the plate C) and the outer edge of the rail-base, is thinner and slightly tapered at the said outer edge, as shown at *e''*, and the aforesaid downward projection *d<sup>3</sup>* of the flange *d'* of the plate D passes down around the forward edge of the rail-base of the plate *e*, embracing the latter at *e''* with its inwardly-bent lip *d<sup>4</sup>*. In the same vertical plane with the jaws F the ends of the plate *e* have an enlargement continuous with the jaw and ending with a square projection, G. Extending a distance beyond the outside of the rail-base, and continuous with the said square projection G, is a round and threaded bolt-projection, *g*, provided with a strong threaded nut, H.

Upon the square projection G is fitted an or-



dinary sliding jaw, I, similar to that of a common parallel vise, whose inward gripping end, *i*, is exactly similar and in juxtaposition to the gripping end *f* of the jaw F; but, instead of ending with a vertical wedge-edge like the latter, it is provided with a horizontal wedge-edge, *i'*, which enters through the hole *d''* in the vertical flange *d* of the plate D, and impinges upon and indents the outer surface of the stem *a* of the rail, while at the same time the shoulder *i''* at the gripping end of the jaw I presses upon the outside of the vertical flange *d* of the plate D, pressing the latter against the rail-stem. The under side of the gripping end *i* rests upon the horizontal raised portion *d* on the flange *d'*, as in the case of the opposite jaw F.

In connecting the device the nut H and movable jaw I are removed, the plates C and D are placed in position, and the casting E slid in under the rail, as in Fig. 2, bringing the jaw F in gripping position. The sliding jaws I are then applied and tightened up by the nuts H. To prevent the nut from accidentally turning upon the screw *g*, the latter is indented with horizontal file-marks, as indicated at J in Fig. 5. The nut H is bored through near the edge of the thread, as shown at *h*, so that a small wire, *j*, may be inserted through the hole *h* and the filed indentation, thus retaining the nut in position upon the screw until the said wire is withdrawn.

Instead of making the jaw I movable, it may be cast in one piece with the plate *e*, leaving out the gripping-projection *i*, as shown in Fig. 4, in which case the nut H and the screw *g* may be formed together in one piece and threaded through the upper end of the said stationary piece I, so that the screw *g* itself will form the gripping end of the jaw. In this case, however, the indenting-point *i'* must be round or conical to allow the turning of the screw. When this modification is used the wedge-edge of the gripping end *f* of the jaw F should run horizontal instead of vertical, and to prevent the screw *g* from unturning, the hole *h* may be formed in

two lugs, K, upon the flange *d'* of the plate D, and the wire *j* inserted, as shown in Fig. 5.

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

1. In combination with the rails A B and with the angular plates C D, the latter plate, D, being provided with the perforations *d''*, the clamping device E, consisting of the plate *e*, having stationary jaws F, with indenting gripping-projections *f* on one side of the rail, and jaws I, having movable gripping-projections and indenting-points *i'* passing through said perforations *d''* on the opposite side of the latter, substantially as hereinbefore set forth.

2. The clamping device E, consisting of the plate *e* and end jaws, F I, constructed substantially as described, in combination with the rails A B, the angular plate C, and the angular plate D, the latter being provided with a downward projection, *d<sup>3</sup>*, having an inwardly-turned lip, *d<sup>4</sup>*, to embrace the outer edge of the plate *e*, substantially as set forth.

3. In combination with the rails A B, plates C D, and clamping device E, having stationary gripping-jaws on one side and movable gripping-points on the other side, the fastening device J, *h*, and *j* for preventing an accidental slackening of the movable grip, substantially as set forth.

4. The combination of the rails A B, the plates C D, constructed substantially as described, the plate *e*, having stationary jaws F on one side, and provided with square projections G, having other threaded projections, *g*, the movable jaws I, provided with indentation-points *i'*, and the tightening-nuts H, all constructed and operated substantially as and for the purpose hereinbefore set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 17th day of April, 1882.

OLIVER BENSON.

Witnesses:

B. S. CLARK,

A. W. ALMQVIST.