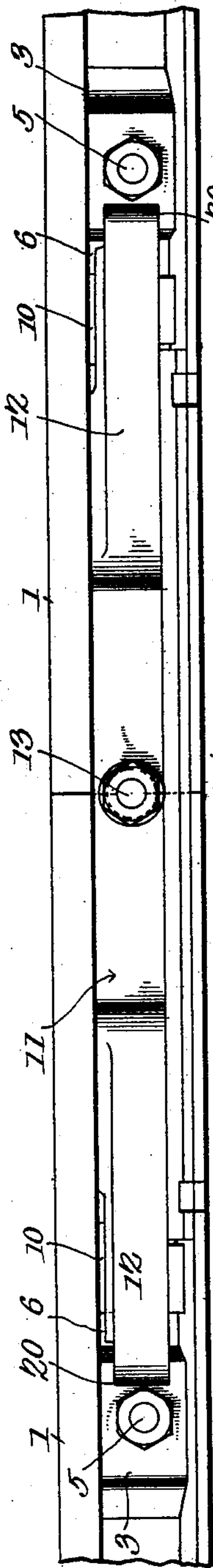


No. 755,764.

PATENTED MAR. 29, 1904.

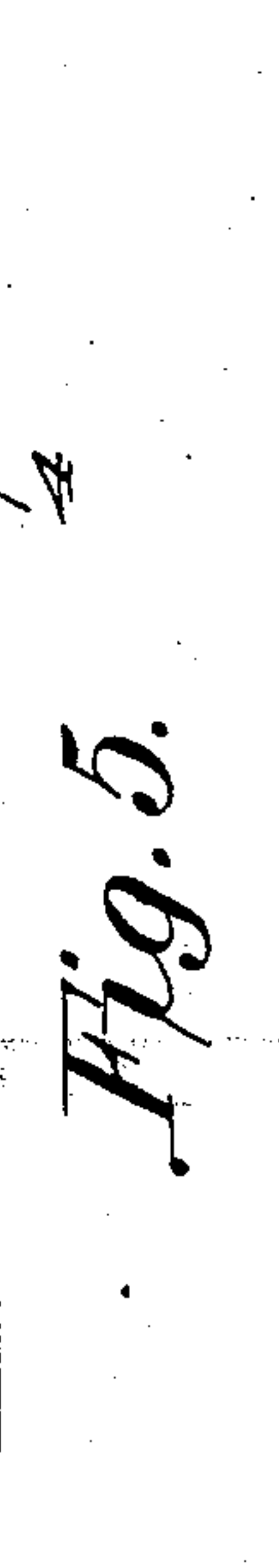
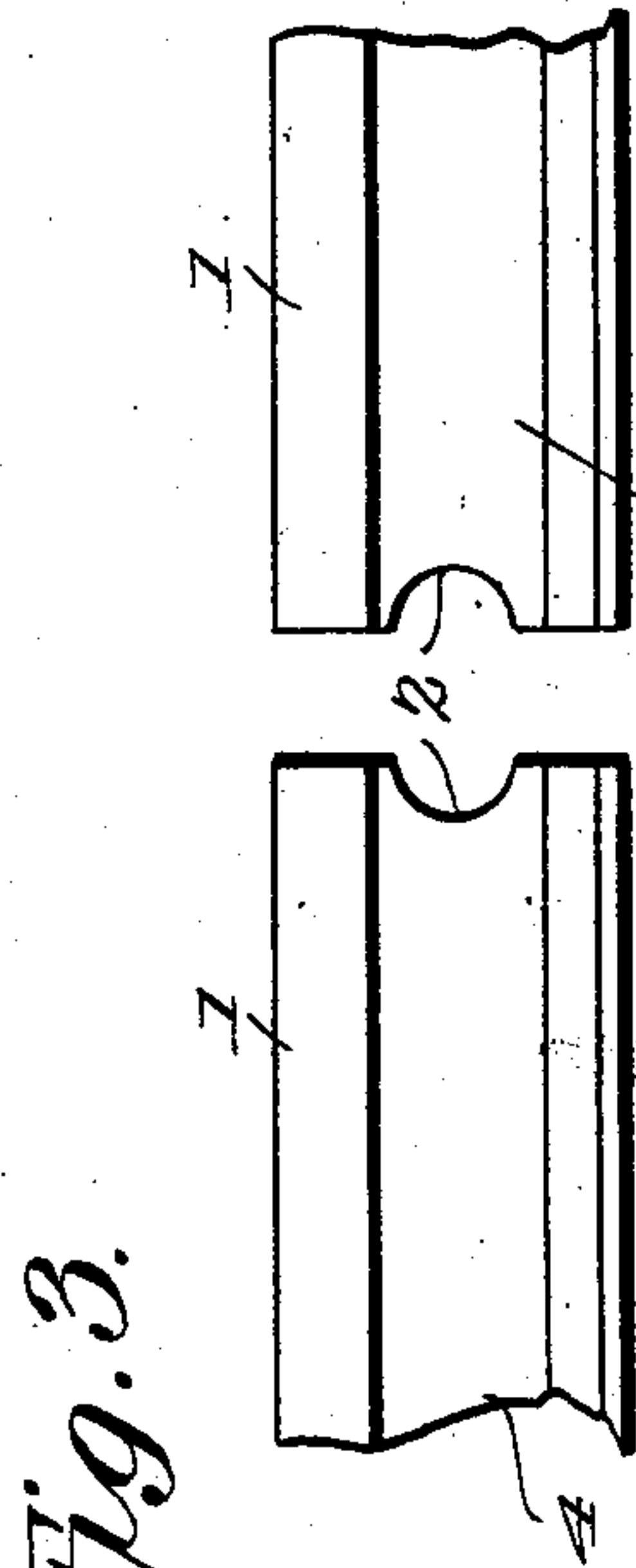
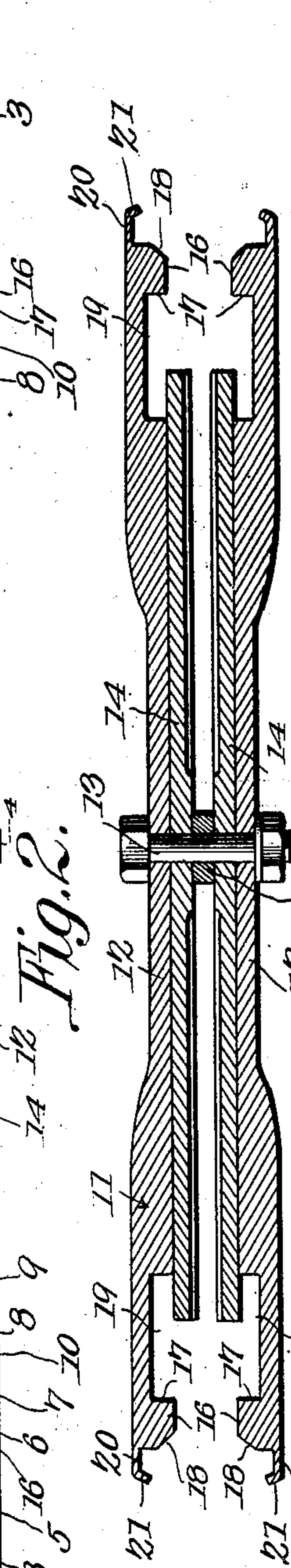
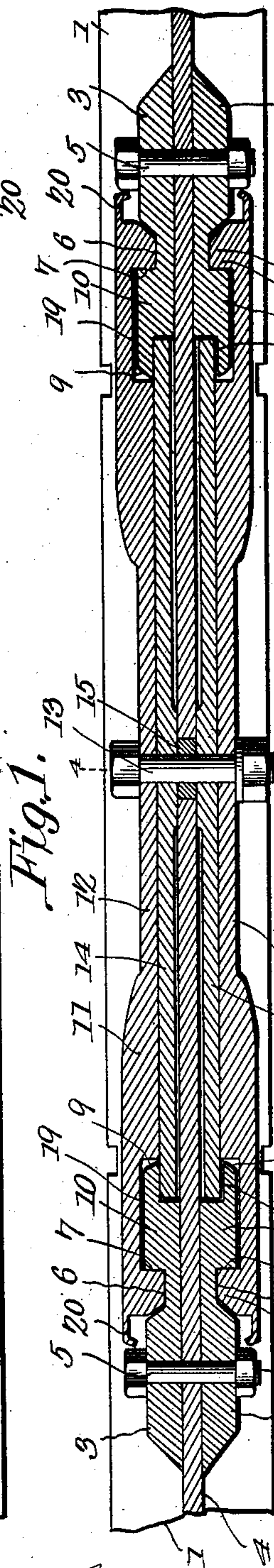
J. W. HAFFER.
RAIL JOINT COUPLING.
APPLICATION FILED JAN. 9, 1904.

NO MODEL.



Witnesses

E. J. Stewart
G. S. Elmore



John W. Hafer,
Inventor.
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

JOHN W. HAFFER, OF BELLEFONTE, PENNSYLVANIA.

RAIL-JOINT COUPLING.

SPECIFICATION forming part of Letters Patent No. 755,764, dated March 29, 1904.

Application filed January 9, 1904. Serial No. 188,348. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HAFFER, a citizen of the United States, residing at Bellefonte, in the county of Center and State of Pennsylvania, have invented a new and useful Rail-Joint Coupling, of which the following is a specification.

My invention relates to rail-joint couplings designed for connecting the meeting ends of rail-sections to maintain the latter firmly and securely in parallel longitudinal continuance, and has for its objects to produce a comparatively simple inexpensive device of this character whereby the rail-sections may be readily and effectually assembled and one by which the employment of bolts passing through the webs of the rails, with consequent weakening of the latter, is obviated.

To these ends the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation of the meeting ends of a pair of rail-sections, showing the same coupled in accordance with my invention. Fig. 2 is a horizontal section longitudinally through the same and looking downward. Fig. 3 is a similar view through my improved coupling mechanism. Fig. 4 is a vertical transverse section on the line 4 4 of Fig. 2. Fig. 5 is a detail elevation of the meeting ends of the rail-sections.

Referring to the drawings, 1 1 designate the rail-sections, which are of the usual construction, except that the webs of the rails are provided at the meeting ends of the latter with registering semicircular recesses 2, the function of which will later appear. Carried by each rail and at a point suitably remote from the end thereof is a pair of male coupling blocks or members 3, arranged in juxtaposition on opposite sides of the web 4 between the tread and base of the rail, each pair of said members being secured to the rail and held in place, preferably, by a single bolt 5, as herein shown. These bolts 5 extend through suitable longitudinally-disposed slots 5', provided in the web of the rail to compensate, as usual, for contraction and expansion of the parts. It is here to be understood that the coupling members 3 are situated at a uniform distance from

the ends of all of the rail-sections and that while it is obviously desirable to have them detachably secured to the rail by means of bolts, as herein shown, they may of course be formed integral with or be otherwise secured in place. Each coupling member or block 3 has an outwardly-opening lateral recess 6, having an abrupt front wall or shoulder 7 and a forwardly-opening longitudinal socket or recess 8, the outer wall of which has its end forwardly and inwardly beveled, as at 9, there being produced on the members between the recesses 6 and forward beveled terminals 9 coupling-heads 10.

Coöperating with the male members 3 for coupling the rail-section I provide female coupling members 11, composed of a pair of heavy spring-metal clamping or locking plates 12, arranged in normal parallel relation and connected together by a single transverse bolt 13, disposed at their longitudinal center. These plates or members, which are maintained in transverse spaced relation, receive between them a pair of parallel longitudinally-disposed fish-plates 14, adapted to lie, as usual, upon opposite sides of the rail-web 4 between the tread and base of the rail, these plates being maintained in spaced relation by a spacing member or washer 15. This spacing member, which is of a thickness coincident with the thickness of the web 4, serves to space the fish-plates just sufficiently for the reception of the web between them and is in turn adapted to seat within the recesses 2 in order that the ends of the rail-sections may when assembled move into meeting contact. The plates 12 are provided at their ends and upon their inner faces with oppositely-disposed inwardly-projecting lugs or jaws 16, adapted in practice to seat in coupled engagement within the recesses 6, said lugs or jaws having inner abrupt shoulders 17, adapted to register with the shoulders 7, and forwardly and outwardly inclined beveled faces 18, the purpose of which will be presently explained, while in rear of the jaws 17 the inner faces of the plates are oppositely recessed, as at 19, into which recesses the ends of the fish-plates project. In practice when the members are moved into coupled engagement the recesses 19 receive

the coupling-heads 10, while the sockets 8 receive the ends of the fish-plates 14, as shown in Fig. 2.

Provided upon the terminals of the plates 12 are endwise extensions 20, having in turn flanges or shoulders 21. These extensions, which when the parts are assembled lie spaced from the sides of the members 3, are designed for engagement by a suitable tool, (not shown,) which is inserted in the spaces between the members 3 and extensions and operates upon the latter for spreading the clamping-plates 12 to withdraw the coupling-heads 10 in uncoupling the rail-sections.

In operation the rail-sections are brought into coupling engagement by a longitudinal movement relative to the plates 12, which action enters the webs of the sections between the fish-plates and causes the beveled faces 18 to ride upward and outward upon the bevels 9, thereby springing the ends of the plates apart sufficiently for the heads 10 to pass between the jaws 16 and into the recesses 19, when the jaws will automatically spring into their seats within the recesses 6 and in coupled relation with the heads, as before explained and as will be readily understood.

From the foregoing it is obvious that I produce a comparatively simple inexpensive device by which the rail-sections may be quickly and securely coupled in endwise relation. In attaining these ends I do not limit myself to the precise details herein set forth, inasmuch as various changes may be made therein without departing from the spirit of the invention.

Having thus described the invention, what is claimed is—

1. The combination with a rail-section, of coupling members disposed on opposite sides of the web thereof, a pair of spaced spring elements designed to receive the rails between them, and coupling members provided on the inner faces of said elements for coupling engagement with the members on the rail.

2. The combination with a rail-section, of coupling members disposed on opposite sides of the web thereof, a pair of spaced spring-plates designed to receive the rail between them, means for connecting the plates, and coupling members provided on the inner faces of the plates for coupling engagement with the members on the rail.

3. The combination with a rail-section, of coupling members disposed on opposite sides

of the web thereof, said members having outwardly-opening lateral recesses producing a coupling-head, and a pair of spaced spring-plates designed to receive the rail between them, said plates having their inner faces laterally recessed to receive the coupling-head and forming inwardly-extending jaws for engagement with the recesses in the members on the rail.

4. The combination with a rail-section, of coupling members disposed on opposite sides of the web thereof and having outwardly-opening lateral recesses producing a coupling-head, said head being provided with end sockets, a pair of spaced spring-plates designed to receive the rail between them, said plates having their inner faces laterally recessed to receive the coupling-head and forming inwardly-extending jaws for engagement with the recesses in the members on the rail, and fish-plates disposed between the spring-plates to lie upon the opposite sides of the web and having their ends seated in the sockets of the coupling members.

5. The combination with a rail-section, of coupling members disposed on opposite sides thereof and provided with coupling-heads, a pair of spaced spring elements designed to receive the rail between them, said elements having recesses for the reception of the head and jaws for engagement with the latter, and means for connecting the elements.

6. The combination with a rail-section, of a pair of spring elements designed to receive the rail between them, cooperating laterally-disposed coupling members carried by the rail and elements respectively, and means for connecting the elements.

7. The combination with a rail-section, of a pair of spring elements designed to receive the rails between them, fish-plates disposed between the elements to seat upon the opposite sides of the rail-web, cooperating laterally-disposed coupling members carried by the rail and elements respectively, the rail member being provided with sockets for the reception of the ends of the fish-plates, and means for connecting the elements.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN W. HAFFER.

Witnesses:

J. H. JOCHUM, Jr.,
J. ROSS COLLIOUN.