

No. 675,167

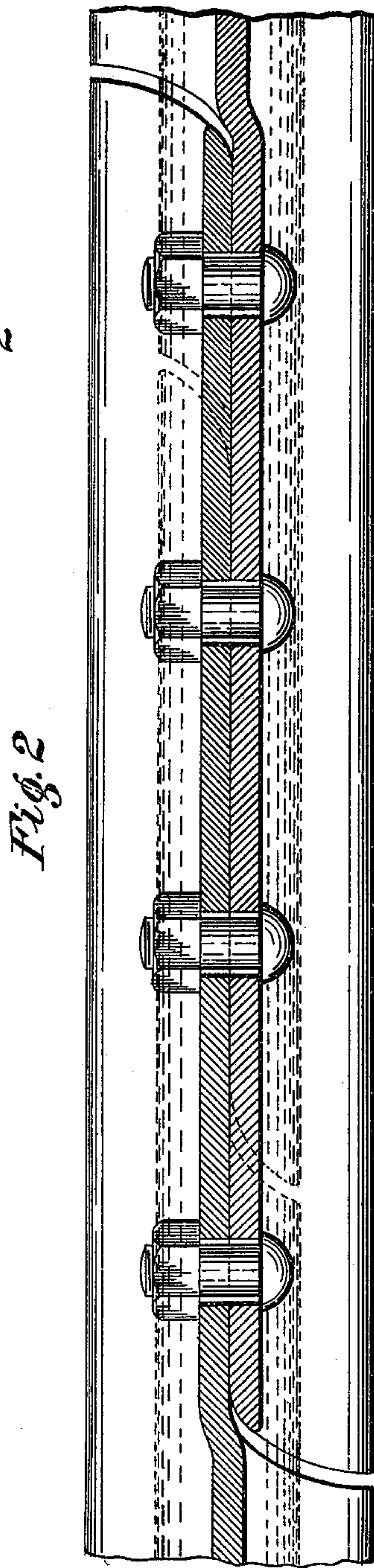
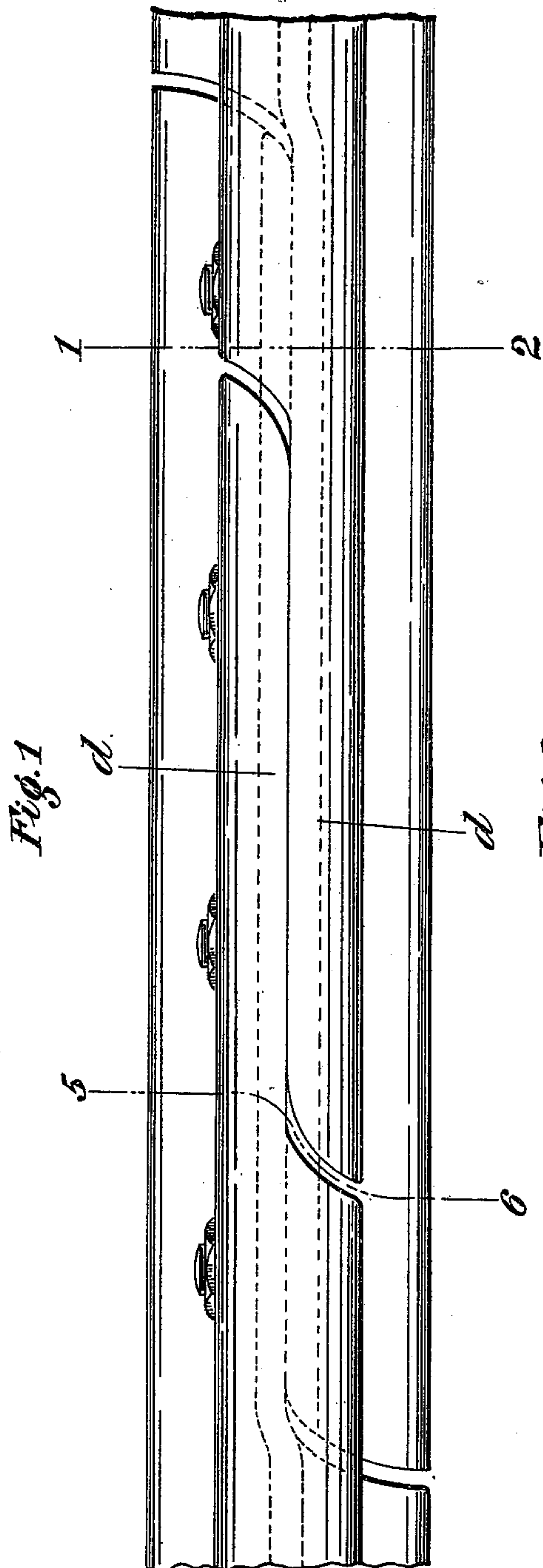
Patented May 28, 1901.

L. G. READ.
RAIL JOINT.

(Application filed Dec. 24, 1900.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses
John J. Hanagan
Frederick B. Moore

Inventor
L. G. Read
By his Attorneys
Raymond Raymond & Horn

No. 675,167.

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Fig. 3

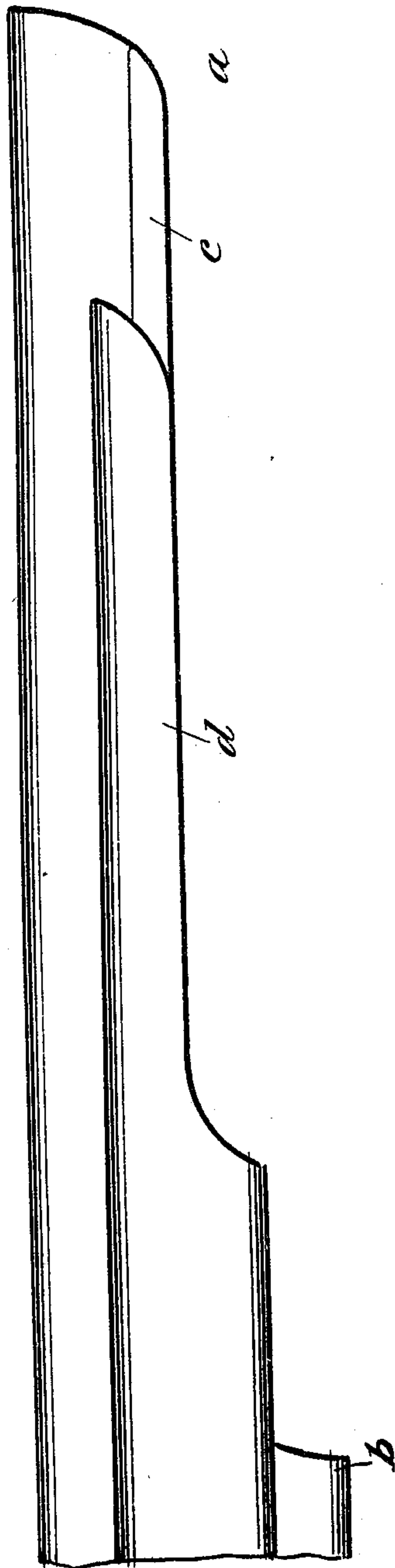
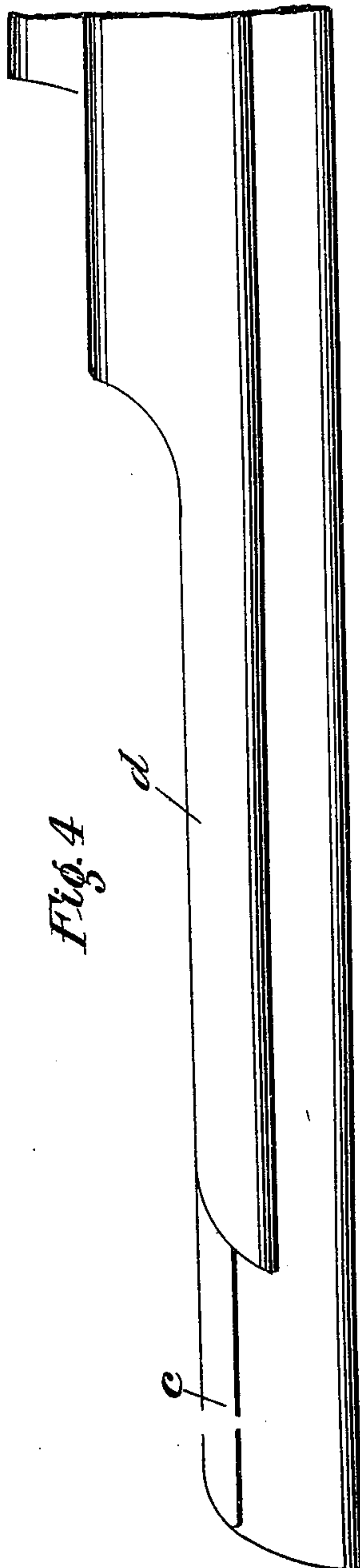


Fig. 4



Witnesses

John Hanagan
Frederick B. Mearns

Inventor

Louis G. Read

By his Attorneys

Raymond L. Loomis & Son

No. 675,167.

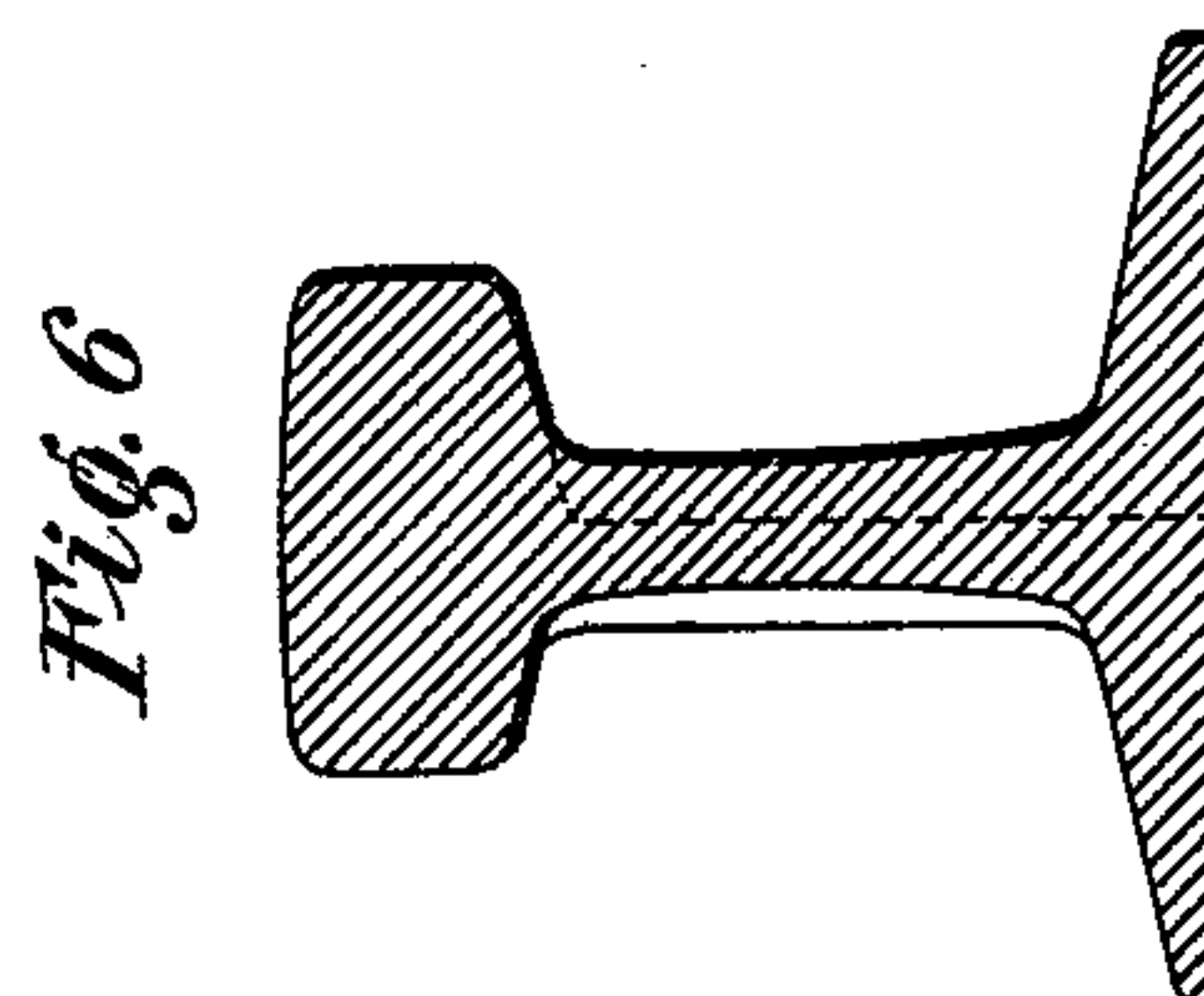
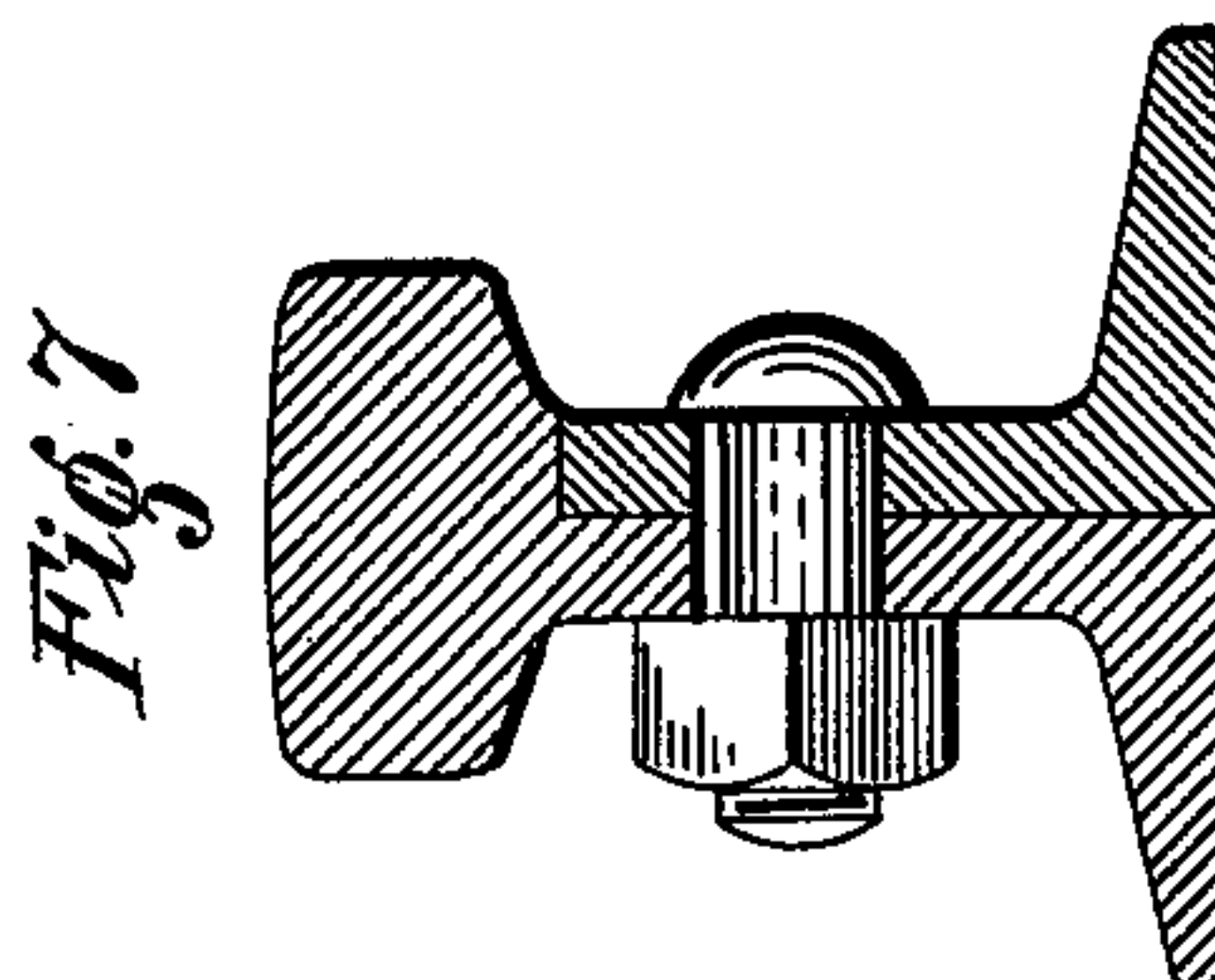
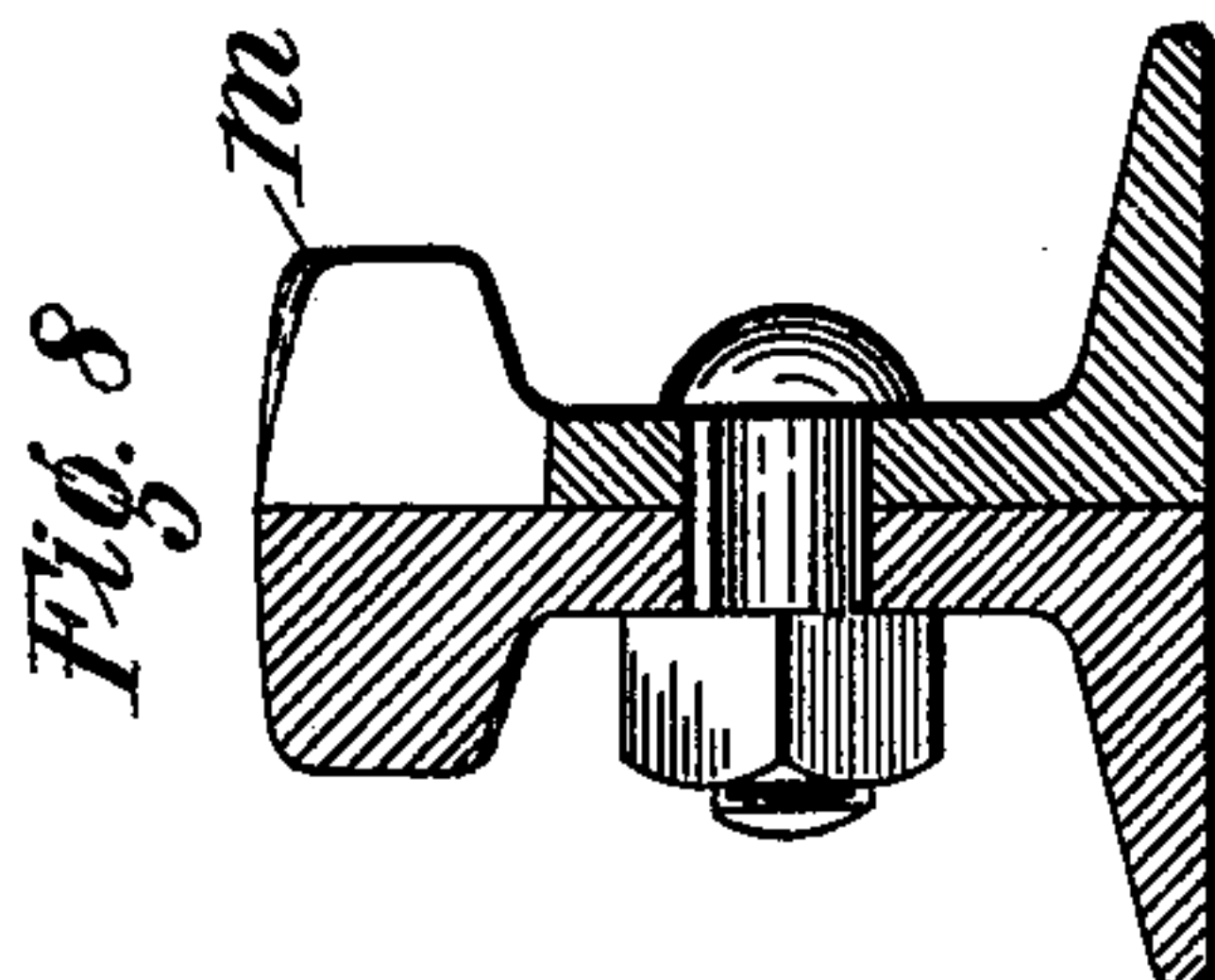
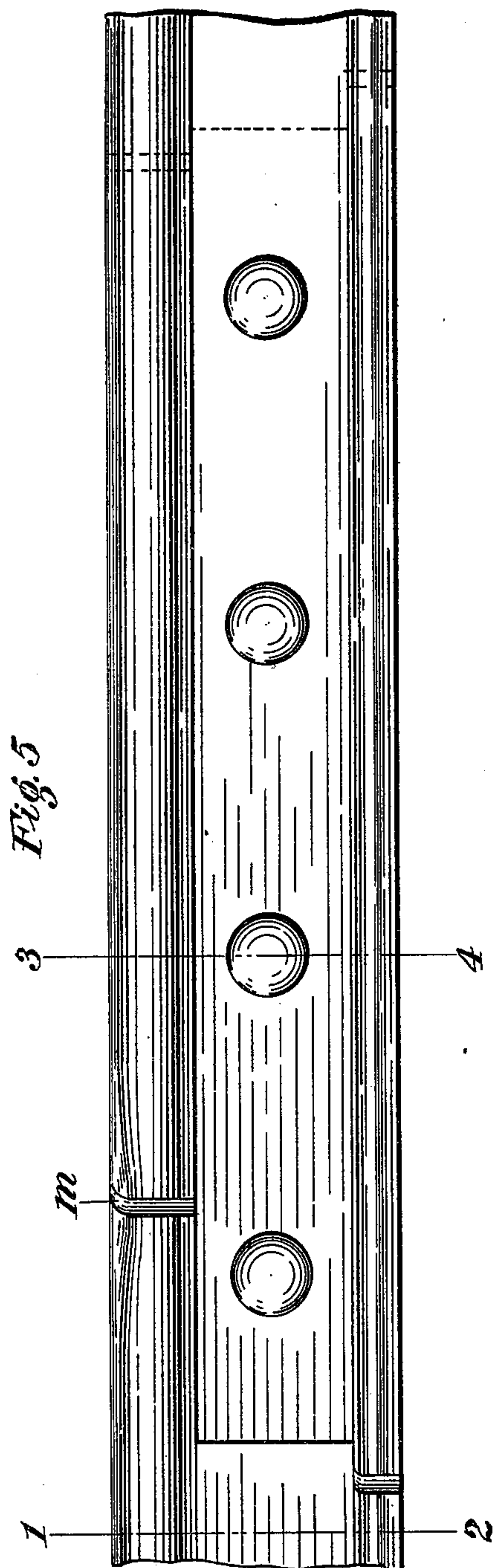
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4 Sheets—Sheet 3.



Witnesses
John J. Kagan
Frederick B. Mearns

Inventor
L. G. Read
By his Attorneys
Raymond, Raymon & Harmon

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L. G. READ.
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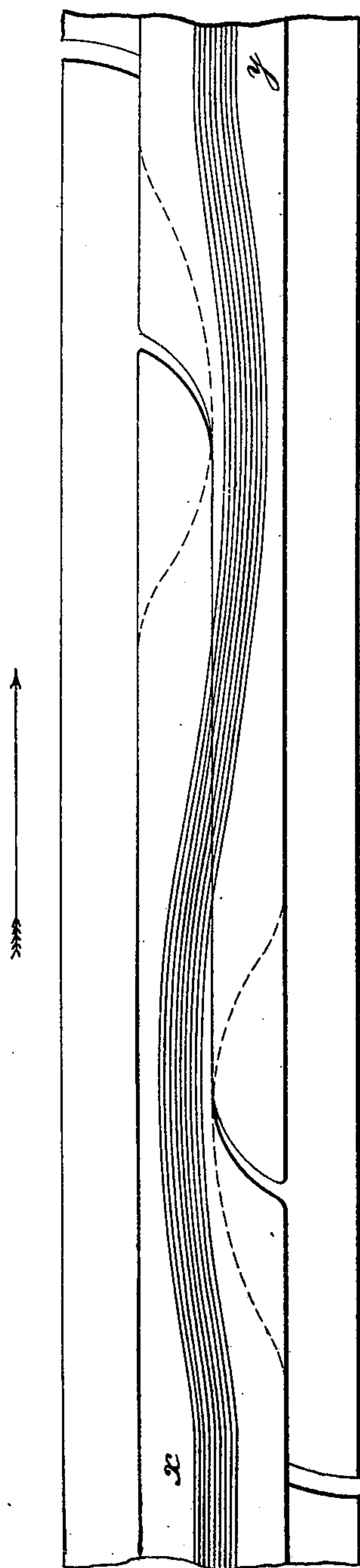


Fig. 9

Witnesses
John Hanagan
Fredrick B. Maerckle

Inventor
L. G. Read
By his Attorneys
Raymond L. Brown & Harmon

UNITED STATES PATENT OFFICE.

LINUS G. READ, OF NEW YORK, N. Y.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 675,167, dated May 28, 1901.

Application filed December 24, 1900. Serial No. 41,006. (No model.)

To all whom it may concern:

Be it known that I, LINUS G. READ, a citizen of the United States, and a resident of the city, county, and State of New York, have
5 invented an Improvement in Rail-Joints, of which the following is a specification.

The object of my invention is to produce a joint for rails which will be simple and strong, dispense with the use of fish-plates, avoid
10 pounding the ends of the rails, allow for contraction and expansion, permit the removal and substitution of rails one by one without disturbing the others, and meet the various exigencies arising in railway service.

15 In the drawings forming part of this specification, Figure 1 is a plan view of my joint, parts being shown by dotted lines. Fig. 2 is a horizontal section taken through the line of bolts. Figs. 3 and 4 are plan views of the
20 ends of the rails, showing how the parts come together. Fig. 5 is a side elevation of the completed joint. Fig. 6 is a cross-section taken on the line 1 2 of Fig. 5. Fig. 7 is a section taken on the line 3 4 of Fig. 5. Fig.
25 8 is a section taken on the line 5 6 of Fig. 1. Fig. 9 shows the path of travel over the joint.

The rail ends are formed by having the flange of the base removed for a given distance from *a* to *b*. (See Fig. 3.) A short distance from the end of the rail the tread is
30 entirely removed, leaving the web as shown at *c*, Figs. 3 and 4. For a certain further distance approximately one-half of the tread is removed, as shown at *d*, and for the remainder
35 of the length the full tread is left, as clearly indicated in the drawings.

Where the ends of the tread portion of the rail come together and where the portions of the flange come together may be either curved,
40 as shown in the drawings, or straight, as desired.

The web is offset from the point where the flange portion is removed to the end of the rail, as clearly shown in full lines in Fig. 2
45 and dotted lines in Fig. 1.

The web is pierced with holes for the bolts by which the rails are secured together, these holes being so made as to allow for expansion and contraction in the usual way.

50 When the two ends of the rails are placed together, the joint is formed as shown in Fig. 1.

It will be noted that that portion of the web from which the tread is entirely removed projects under the tread of the other rail, and
55 thus the tread of a rail at the joint is supported by the full strength of the webs of both rails. The two parts of the tread and the two parts of the flange joined together form a complete rail of substantially the ordinary shape. It will also be noted that the
60 tread is continuous—that is, that the weight is not suddenly transferred from one rail to the other.

To prevent pounding of the ends of the
65 rail where they come together, the tread is reduced or beveled off at the meeting-points of the rails, as shown in Fig. 5 and indicated also by the small letter *m* in Fig. 8.

In Fig. 9 is shown diagrammatically the
70 path of travel of the wheel along the rail. The shaded surface indicates such path of travel and the dotted lines the portions of the rail which are beveled off or reduced in size. If the wheel is moving in the direction
75 of the arrow, Fig. 9, on reaching the beveled-off portion it will travel entirely on the rail *X* until it has passed the meeting-point of the rails, when it will move on both rails until it reaches the next beveled surface, and then
80 the weight will be entirely carried by the rail marked *Y*.

The parts are so arranged, as clearly indicated in Figs. 1 and 2, as to allow for the necessary contraction and expansion.
85

I thus provide a joint which is as strong as the body of the rail, dispensing entirely with fish-plates or similar constructions, while at the same time provision is made for expansion and contraction.
90

The wheel does not pound the meeting ends of the tread, but passes over without touching them, its weight being borne by the solid part of the rail. A track laid with these rails would be stronger at the joints than in the
95 other portions of the rails.

I have also provided a rail by which track can be very rapidly laid and maintained at a less expense than is now necessary.

The laying of curves is more easily and accurately effected by rails of this type than by
100 the others, and the lateral strength of the joint is so great as to materially increase the strength of the track on curves.

The rail ends may be formed in any way that is desirable.

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

5 1. A rail formed for a certain distance from the end with the base on one side only, a portion of this length from the end being formed without a tread, a certain other portion being formed with a part only of the tread, and the
10 remainder with a full-size tread, substantially as described.

2. A rail formed for a certain distance from the end with the base on one side only, the web being offset for such distance, a portion
15 of this length from the end being formed without a tread, a certain other distance being formed with a part only of the tread, and the remainder with a full-size tread, substantially as described.

20 3. A scarf-joint for rails having the meeting ends of the tread beveled, the angle of the bevel gradually increasing from the cen-

ter to the edge and the bevel gradually decreasing in width from the end until it merges into the rail, whereby such meeting ends will 25 not be subject to the blow of the wheel, and the form of the rail will not depart materially from the general contour, substantially as described.

4. A rail having its end formed to unite 30 with the end of another rail to form a complete rail of practically the ordinary type, and having means to secure the ends together, a portion of the web and base-flange of each rail at the meeting-points extending 35 under and supporting the tread of the other rail, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

L. G. READ.

Witnesses:

HENRY C. KELLEY,
F. W. P. BRÜNIC.