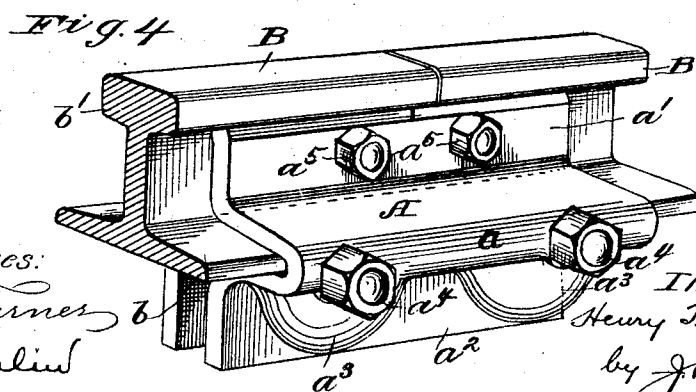
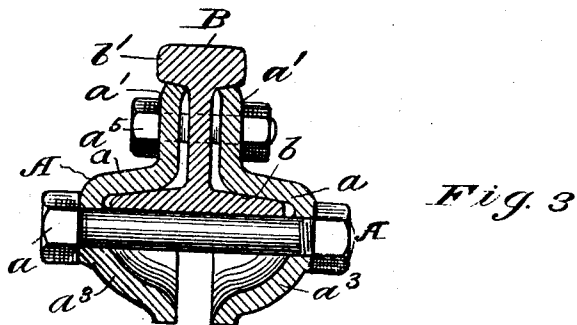
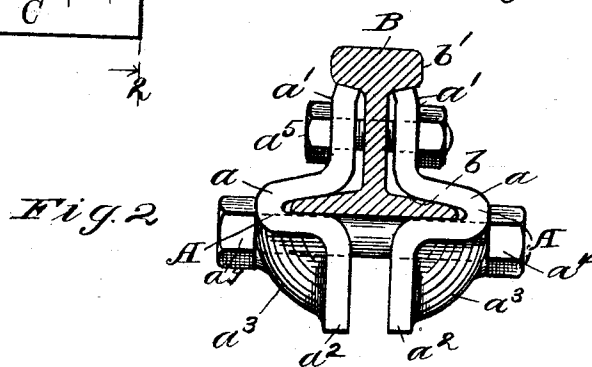
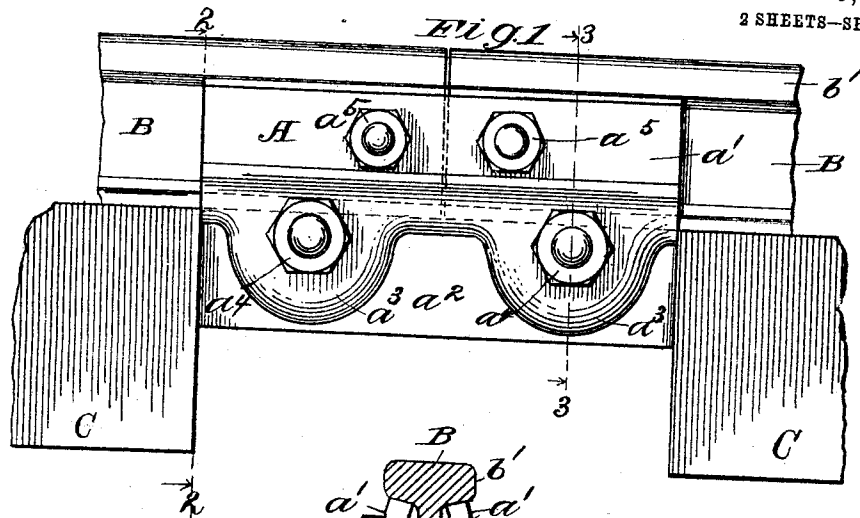


939,239.

H. T. FISKE.
RAILWAY RAIL JOINT.
APPLICATION FILED SEPT. 28, 1908.

Patented Nov. 9, 1909.
2 SHEETS—SHEET 1.



Witnesses:
J. C. Turner
Jno. F. Oberlin

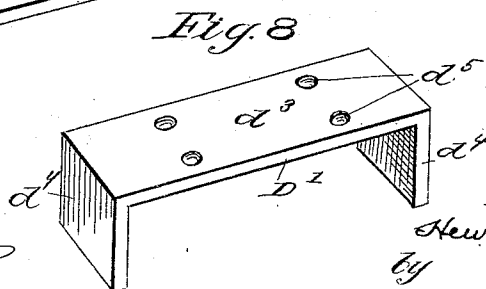
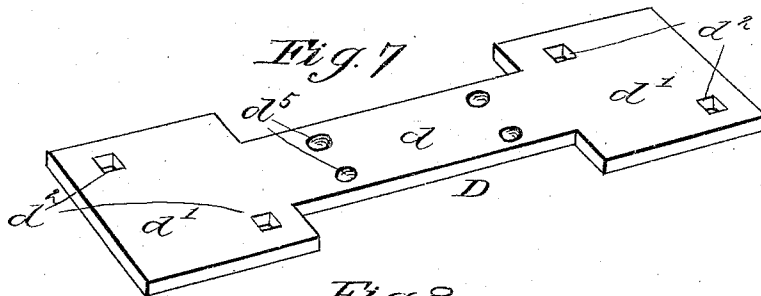
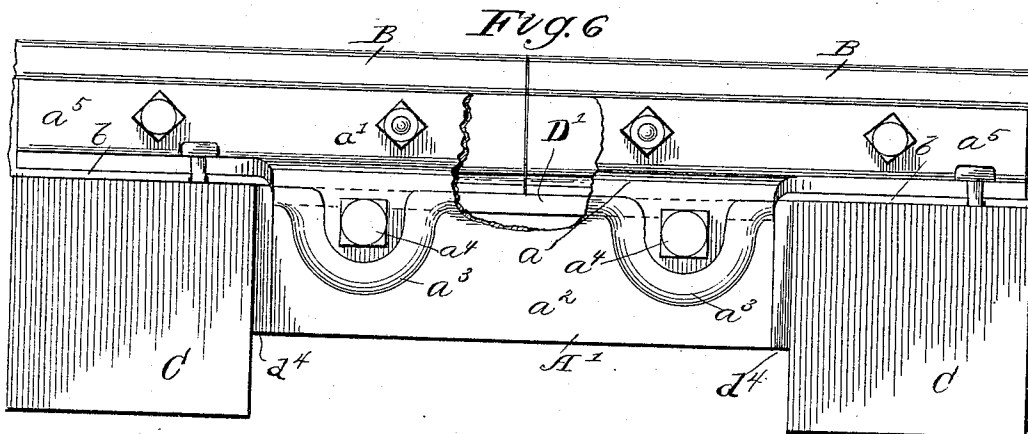
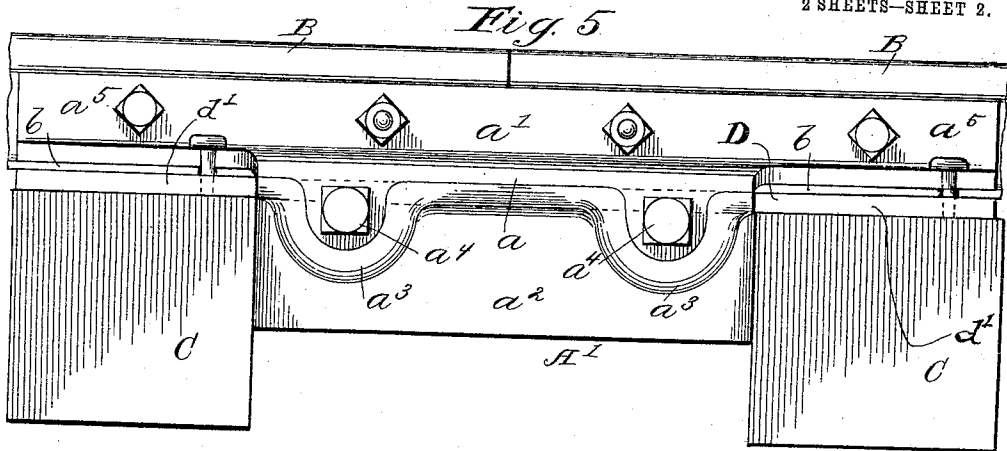
Inventor:
Henry J. Fiske
by J. B. Fay
Attorney.

H. T. FISKE.
RAILWAY RAIL JOINT.
APPLICATION FILED SEPT. 28, 1908.

939,239.

Patented Nov. 9, 1909.

2 SHEETS—SHEET 2.



Witnesses:
J. C. Turner
Jno. F. Obelins

Inventor:
Henry T. Fiske
by *J. B. Fay*
Attorney.

UNITED STATES PATENT OFFICE.

HENRY T. FISKE, OF EAST CLEVELAND, OHIO.

RAILWAY-RAIL JOINT.

939,239.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed September 28, 1908. Serial No. 455,131.

To all whom it may concern:

Be it known that I, HENRY T. FISKE, citizen of the United States, resident of East Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Railway-Rail Joints, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My present invention relates, as stated, to railway-rail joints, such as are employed to clamp the adjacent ends of rails against vertical oscillation during the passage of trains thereover.

The object of my said invention is primarily the provision of a joint of this character that may be forged from the raw material instead of being cast or rolled, as have heretofore been generally the methods pursued. At the same time it is sought to produce a joint that, with a minimum amount of material, will nevertheless present superior sustaining and enduring qualities over constructions at present prevailing.

To the accomplishment of the above and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:—Figure 1 represents a side elevation of the abutting ends of two rails secured together by means of a railway-rail joint embodying my several improvements; Fig. 2 is a transverse cross-section of such joint taken on the line 2—2 of Fig. 1; Fig. 3 is a transverse cross-section of the same taken on the line 3—3 of Fig. 1; Fig. 4 is a perspective view showing my improved joint with the inclosed rail ends; Figs. 5 and 6 are side elevations similar to Fig. 1, but illustrating two different modifications, respectively, in the construction of the joint; and Figs. 7 and 8 are perspective views of structural details entering into such modifications, respectively.

The type of joint here shown as embodying my invention, such type being the one to which said invention is perhaps the more readily adaptable, is a suspended joint, that

is, one that is designed to be fitted between the ties instead of upon them, an advantage thus secured being the prevention of creeping of the rails. Such joint comprises two similar members A secured to opposite sides of the rail ends as usual, such members being hereinafter referred to individually as a rail joint for purposes of convenience. Directing attention first of all to the construction of such individual members or joint bars, the same may be best described by indicating their mode of manufacture. For this purpose an integral rectangular sheet or plate of metal of uniform thickness throughout is employed. Such sheet is then placed in a forging machine and struck up so as to form a V-shaped clamping member *a* adapted to engage the rail-flange *b* and two oppositely directed plates *a'* *a''* continuous with the corresponding sides of said clamping member and respectively constituting a fish-plate and a truss-plate for the joint. Simultaneously with the operation just described, or else after the completion of such first step, outwardly directed bosses, *a''* preferably two in number as shown, are struck in said integral plate along the line of conjunction of said clamping member *a* and truss-plate *a''*, the outer portion of the respective bosses being substantially flush with the outer edge of the clamping member. The fish-plate *a* of the joint, extending upwardly, as shown, from the clamping members, are preferably formed with a slight outward curvature and are adapted in their operative position to contact with their upper edges against the lower surface of the rail-head *b'*. Such particular construction, however, of the fish plate is not in itself set up here as a part of the present invention, being old in the art.

When placed in position for use upon the rail two joint bars A, formed as above described, are adjusted to opposite sides of the meeting rail ends B, and between two properly placed ties C as shown in Fig. 1. Such joint bars being in all respects similar, it will be obvious that the bosses *a''* thereof will be respectively oppositely disposed. The plates or individual joints are then secured together to form the completed structure by passing bolts *a** through such oppositely disposed pairs of bosses, the holes drilled for this purpose in said bosses being so placed that said bolts are in substantial contact with the under surface of the flanges of the rails,

Figs. 2 and 3. Other bolts a^5 are passed through apertures in the fish plates constituting the upper portions of the respective joints and through alined apertures in the rail ends, whereby said plates may be drawn more or less closely against the web of the rail and their upper edges thus caused to bear against the under surface of the rail head and support the latter.

The form of joint provided by the above construction I have found to give admirable results so far as sustaining power is concerned, with the employment of a minimum amount of material. Such result I attribute in part to the form of joint itself and in part to the working of the material that I am enabled to secure by the method of manufacture, that of forging, here proposed, so far as I am aware, for the first time in connection with the article in hand.

The reason that the forging of rail joints has not heretofore been attempted is presumably attributable to the fact that the truss portion, in the prevailing forms of joint, has had to be of much greater thickness than the remainder of the joint in order to sustain the rail ends. By disposing the truss plate of my joint vertically, the material entering therein is, of course, more economically and efficiently distributed, while by providing the outwardly projecting bosses not only is the strength thus secured enhanced, but means are afforded for the insertion of the bolt, whereby the two members of the joint are drawn together in a highly advantageous fashion, since such bolts can be brought to bear directly against the under side of the rail flange and the wedging effect of the clamping members thereby increased by the direct application of the drawing force thus had.

In the modified forms of construction illustrated in Figs. 5 and 6, I employ joint plates A' that are in general similar to the previously described plates A in their several details, differing therefrom only in that their fish-plate portions a' are extended, as at a^5 , over the respective ties C between which the joint is located. The clamping member a , moreover, is adapted to receive, in addition to the rail-flanges, a flat supporting plate D or D' that is disposed against the under sides of the flanges. The only difference in the two structures shown in the figures of reference, consists in the form of these plates D ; in the first instance, such plate comprises an intermediate portion d of the same width as such rail-flanges and terminal-portions d' , that are wider than the flanges, (see Fig. 7); in the second instance the terminal portions d^4 of the plate D' are bent downwardly at right angles, see Fig. 8, so as to rest against the inner faces of the two ties C . The terminal portions d' of plate D are provided with holes d^2 that

they may be spiked down onto the ties along with the extensions a^5 of the joint-plates A' , while the truss portions a^2 of such plates are designed to fit between the downturned portions d^4 , when the second form of supporting plate, D' , is employed. With either construction, it will be evident, a considerably more rigid and unyielding structure is provided than where I employ simply the joint-plates alone; for the supporting plate, it will be seen, affords a perfectly smooth metallic bearing for the meeting rail ends; and one that is not liable to deterioration since it is practically inaccessible to the elements. Furthermore, the parts are so dovetailed together, or interlocked, as to render their accidental working loose almost impossible, thereby insuring permanence as well.

The apertures d^5 , that appear in the upper surfaces of the supporting plates, (see Figs. 7 and 8) are designed for the reception of mercury amalgam, or equivalent material, adapted to form part of a "plastic" conductor, or bond, for electrically joining the rail-ends when this is necessary. Such plastic bond, however, forms no part of the present application, being set up and claimed in my pending application filed July 18, 1906, Serial No. 326,677.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. As a new article of manufacture, a forged railway-rail joint comprising a clamping member adapted to engage the rail-flange, and a downwardly projecting truss-plate integral with said clamping member, said joint being struck outwardly at intervals along the line of junction of said clamping member and truss-plate to form bosses.

2. As a new article of manufacture, a forged railway-rail joint comprising an integral plate struck up to form a V-shaped clamping member adapted to engage the rail-flange, and a downwardly projecting truss-plate continuous with the corresponding side of said clamping member, outwardly directed bosses being struck in said joint along the line of junction of said clamping member and truss-plate.

3. As a new article of manufacture, a forged railway-rail joint comprising an integral plate struck up to form a V-shaped clamping member, adapted to engage the rail-flange, and oppositely directed plates continuous with the corresponding sides of said clamping member and respectively consti-

tuting a fish-plate and a truss-plate for the joint, outwardly directed bosses being struck in said joint along the line of junction of said clamping member and truss-plate.

5 4. A railway-rail joint comprising a pair of integral plates, each struck up to form a V-shaped clamping member adapted to engage the respective rail-flanges, and a downwardly projecting truss-plate extending
10 along the corresponding side of said clamping member, outwardly directed bosses being struck in said plate along the line of junction of said clamping member and truss-plate, and bolts adapted to draw said
15 plates together, said bolts extending through oppositely positioned bosses of the respective plates.

5 5. A railway-rail joint comprising a pair of integral plates, each struck up to form a V-shaped clamping member adapted to engage the respective rail-flanges, and oppositely directed plates continuous with the corresponding sides of said clamping member and respectively constituting a fish-plate
25 and a truss-plate for the joint, outwardly directed bosses being struck in said joint along the line of junction of said clamping member and truss-plate, and bolts adapted to draw said plates together, said bolts extending through oppositely positioned bosses
30 of the respective plates.

6. A railway-rail joint comprising a flat supporting plate disposed against the under side of the rail flanges and bridging the
35 joint, a pair of integral plates, each struck up to form a V-shaped clamping member adapted to engage the respective rail-flanges together with said supporting plate, and a downwardly projecting truss-plate extending along the corresponding side of said
40 clamping member, outwardly directed bosses being struck in each clamping plate along the line of junction of said clamping member and truss-plate, and bolts adapted to draw said plates together, said bolts extending through oppositely positioned bosses of
45 the respective plates.

7. A railway-rail joint comprising a flat supporting plate disposed against the under
50 side of the rail flanges and bridging the joint, a pair of integral plates, each struck up to form a V-shaped clamping member adapted to respectively engage the rail-flanges together with said supporting plate,
55 and oppositely directed plates continuous with the corresponding sides of said clamping member and respectively constituting a fish-plate and a truss-plate for the joint, outwardly directed bosses being struck in

each clamping plate along the line of junction of said clamping member and truss-plate, and bolts adapted to draw said plates together, said bolts extending through oppositely positioned bosses of the respective
60 plates.

8. A railway-rail joint comprising a flat supporting plate disposed against the under side of the rail flanges and bridging the joint, said plate comprising an intermediate portion of the same width as said flanges
65 and terminal portions wider than the same, a pair of integral plates, each struck up to form a V-shaped clamping member and a downwardly projecting truss-plate extending along the corresponding side of said
70 clamping member, said clamping member and truss plate fitting between the enlarged terminal portions of said supporting plate and the former thereof being adapted to engage the respective rail-flanges together
80 with the intermediate portion of said supporting plate, outwardly directed bosses being struck in each clamping plate along the line of junction of said clamping member and truss-plate, and bolts adapted to draw
85 said plates together, said bolts passing through oppositely positioned bosses of the respective plates.

9. A railway-rail joint comprising a flat supporting plate disposed against the under
90 side of the rail flanges and bridging the joint, said plate comprising an intermediate portion of the same width as said flanges and terminal portions wider than the same, a pair of integral plates, each struck up to form a V-shaped clamping member and oppositely directed plates continuous with the corresponding sides of said clamping member and respectively constituting a fish-plate
95 and a truss-plate for the joint, said clamping member and truss-plate fitting between the enlarged terminal portions of said supporting plate and the former thereof being adapted to engage the respective rail-flanges together with the intermediate portion of
100 said supporting plate, outwardly directed bosses being struck in each clamping plate along the line of junction of said clamping member and truss-plate, and bolts adapted to draw said plates together, said bolts passing
105 through oppositely positioned bosses of the respective plates.

Signed by me this 25th day of September, 1908.

HENRY T. FISKE.

Attested by—

CHRISTINE E. ARUS,
JNO. F. OBERLIN.