

(No Model.)

R. VIOL.

JOINT OR OTHER FASTENING FOR TRAMWAY RAILS.

No. 449,093.

Patented Mar. 24, 1891.

Fig.1.

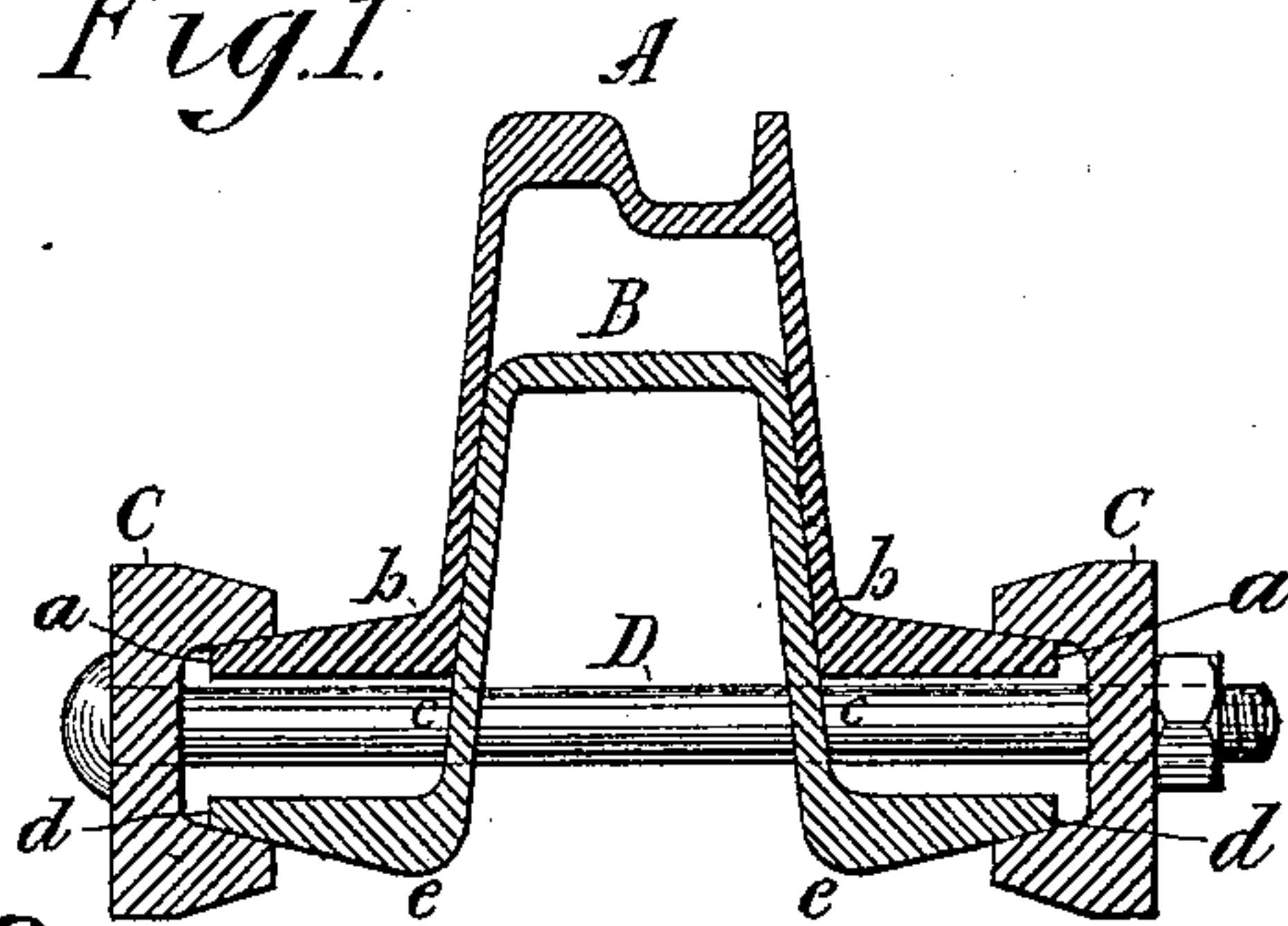


Fig.2.

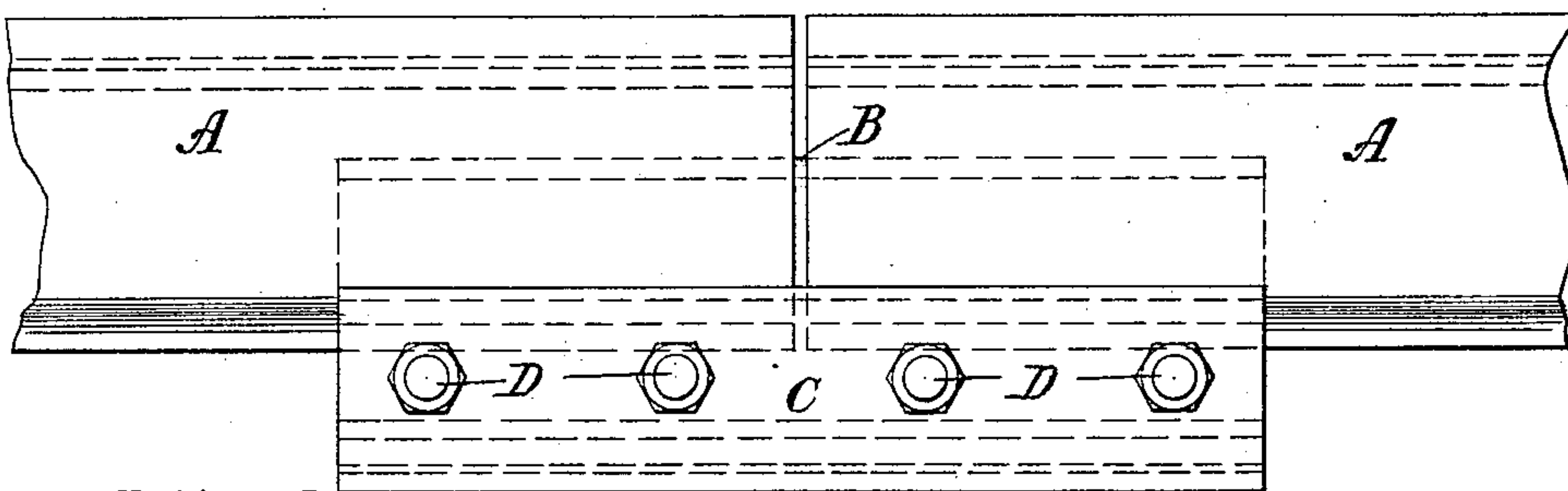


Fig.3.

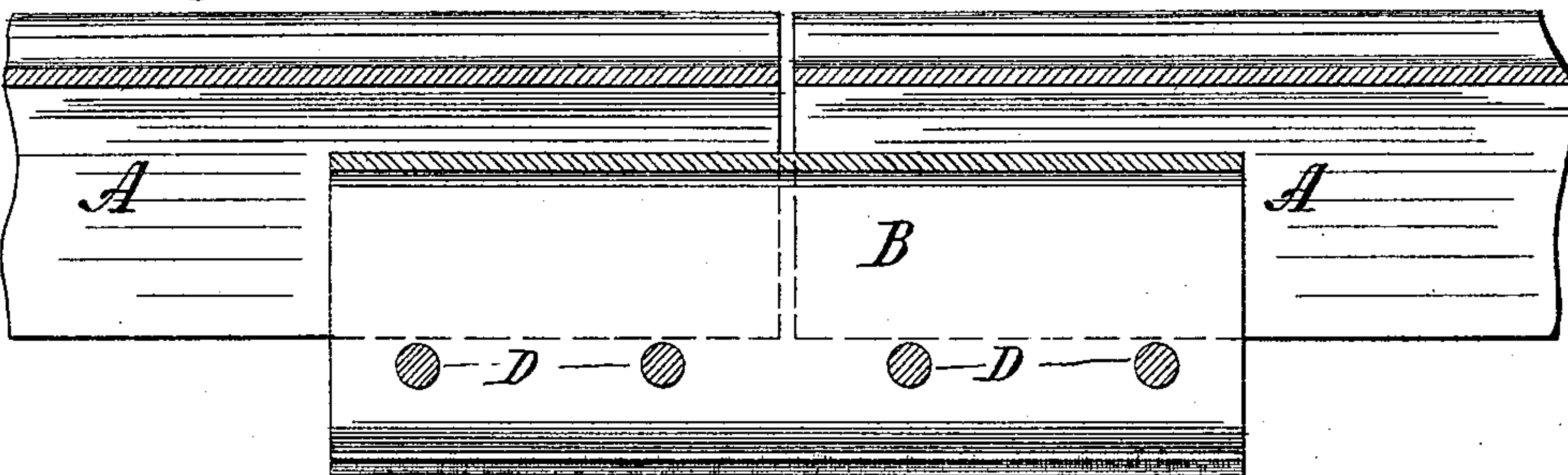
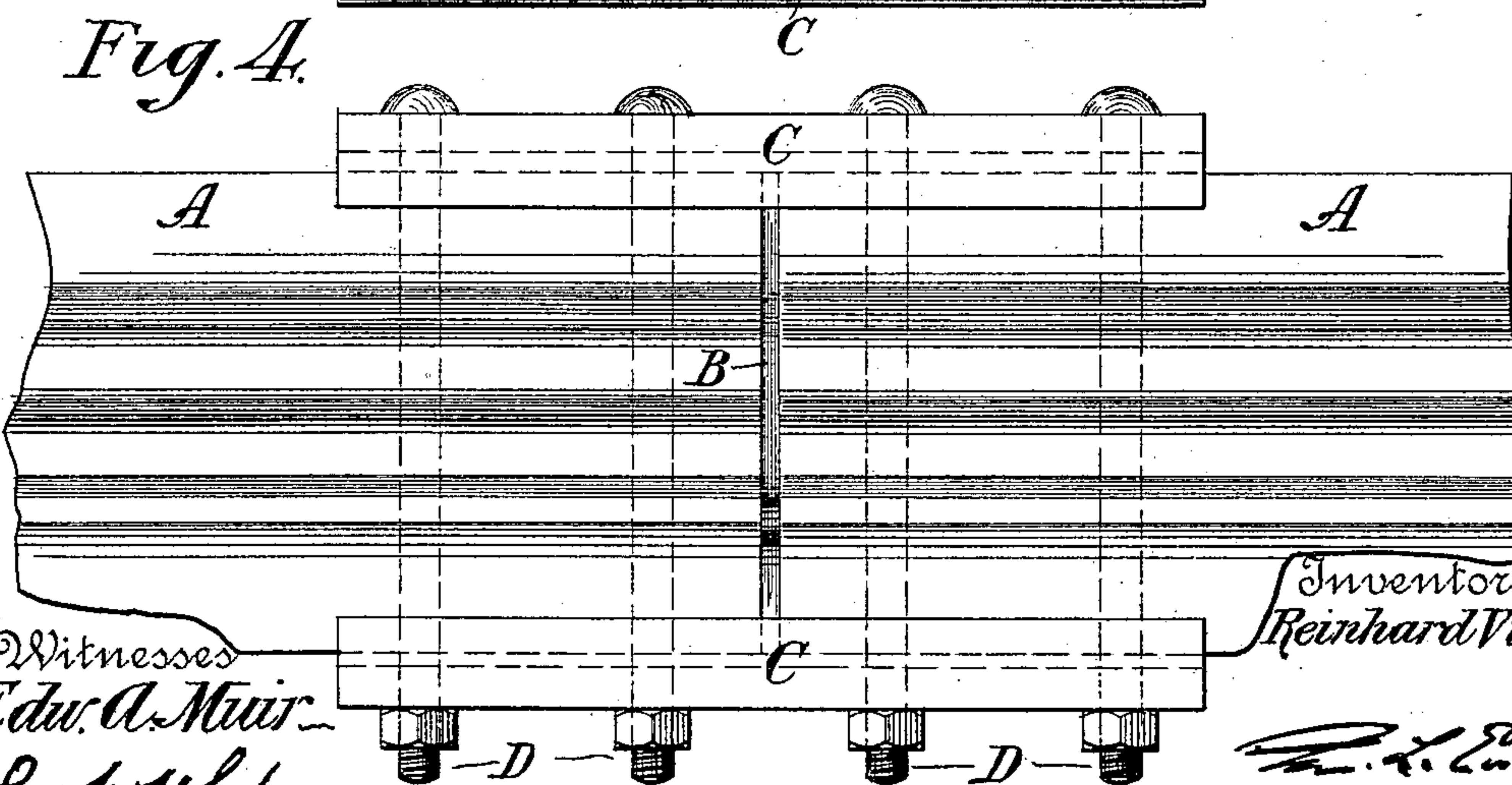


Fig.4.



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REINHARD VIOL, OF FRANKFORT-ON-THE-MAIN, GERMANY, ASSIGNOR, BY
MESNE ASSIGNMENTS, TO THE LEWIS & FOWLER GIRDER-RAIL COM-
PANY, OF BROOKLYN, NEW YORK.

JOINT OR OTHER FASTENING FOR TRAMWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 419,093, dated March 24, 1891.

Application filed January 26, 1891. Serial No. 379,122. (No model.) Patented in Germany July 8, 1886, No. 38,854.

To all whom it may concern:

Be it known that I, REINHARD VIOL, a sub-
ject of the Emperor of Germany, and a resi-
dent of Frankfort-on-the-Main, in the German
Empire, have invented a new and useful Im-
provement in Joints or other Fastenings for
Tramway-Rails, (patented to me in Germany
by Letters Patent No. 38,854, dated July 8,
1886,) of which the following is specification.
This invention relates primarily to means
for effecting strong, secure, and sufficiently
level joints between tramway-rails of U shape
in cross-section, sometimes termed "box gir-
der-rails." It is also applicable to fastening
down such rails and in part to connecting and
fastening down other rails having laterally-
projecting flanges or feet.

The invention consists in certain novel
combinations of parts, as hereinafter set forth
and claimed.

The objects of the invention are to se-
curely and rigidly connect or fasten down
such rails by means which obviate perforat-
ing or notching the rail, and to provide for
drawing together the rail and an underlying
part by a uniformly-distributed wedging ac-
tion of great power and efficiency.

A sheet of drawings accompanies this speci-
fication as part thereof.

Figure 1 of these drawings represents a ver-
tical cross-section through a box girder-rail
and its fastenings illustrating the present in-
vention. Fig. 2 is a side elevation of a rail-
joint so formed. Fig. 3 represents a vertical
longitudinal section through such joint, and
Fig. 4 is a plan view of the same.

Like letters of reference indicate corre-
sponding parts in the several figures.

The rails A are rolled in one piece and
formed so as to adapt themselves to the re-
quired conditions. They are preferably of
the U-shaped or box form represented in the
drawings, but this is not considered essential
to the present invention, which relates ex-
clusively to the joints and other fastenings
of tramway-rails. An essential characteristic
of the rails is their provision with lateral
flanges or feet *a*, having bevels *b* on top, and
horizontal or substantially horizontal soles *c*.

An underlying part B, which may consti-

tute a fish-plate and is primarily designed to
perform the function of a fish-plate at the
rail-joints, is constructed with lateral flanges
or projections *d*, projecting beneath said lat-
eral flanges *a* and extending outward to the
same or substantially the same vertical planes
and having bevels *e* at bottom matching the
top bevels *b* of said lateral flanges *a*. In the
case of U-shaped or box rails a portion of this
underlying part B is preferably adapted to
project upward, and is fitted to the interior of
the rails, as shown in Fig. 1, so that when the
fastenings are tightened the webs of the rails
abut against the sides of such projection of
the underlying part.

A pair of hook-plates or clamps C, having
internally-beveled wedging-flanges adapted
to embrace said lateral flanges on the rails A
and underlying part B, are applied thereto at
the respective sides of the rail, and screw-
bolts D are passed through bolt-holes in said
clamps and in such projection of the under-
lying part to provide for drawing the clamps
toward each other.

When the screw-nuts of the bolts D are ap-
plied and tightened, it follows that the clamps
C are drawn uniformly toward each other and
the underlying part B and rails A are drawn
vertically toward each other by a powerful
wedging action developed by the coacting in-
clines at *b* and *e*.

Wedging-keys may obviously be substi-
tuted for the screw-nuts of the bolts D. The
said inclines at *b* and *e* may be wholly on the
said lateral flanges or wholly on the wedging-
flanges of the hook plates or clamps C, and
other like modifications will suggest them-
selves to those skilled in the art.

Having thus described the said improve-
ment, I claim as my invention and desire to
patent under this specification—

1. The combination of a rail or rails A and
an underlying part B, having lateral flanges
a d, a pair of hook-plates or clamps C, having
wedging-flanges matching said lateral flanges
and coacting therewith, and fastening-bolts D,
passing through said clamps below the bot-
tom of the rail or rails, substantially as here-
inbefore specified.

2. The combination, with the adjoining ends

of two rails having lateral flanges beveled on top, of an underlying part in the form of a fish-plate having lateral flanges beveled at bottom projecting beneath and outward to
5 the same or substantially the same vertical planes as the rail-flanges, a pair of hook-plates or clamps extending across the joint and having internally-beveled wedging-flanges that engage with said lateral flanges at the re-
10 spective sides of the rails, and bolts passing through said clamps below the bottom of the rails, substantially as hereinbefore specified.

3. The combination of a rail or rails of U shape in cross-section having lateral flanges
15 or feet at bottom, an underlying part having

opposing flanges or projections, which extend outward to the same or substantially the same vertical planes and having a projection which extends upward between the rail-webs, a pair of hook-plates or clamps having wedging- 20 flanges which coact with said lateral flanges, and a bolt or bolts passing through said clamps and through the upward projection of said underlying part, substantially as shown and described.

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Witnesses:

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