

No. 699,173.

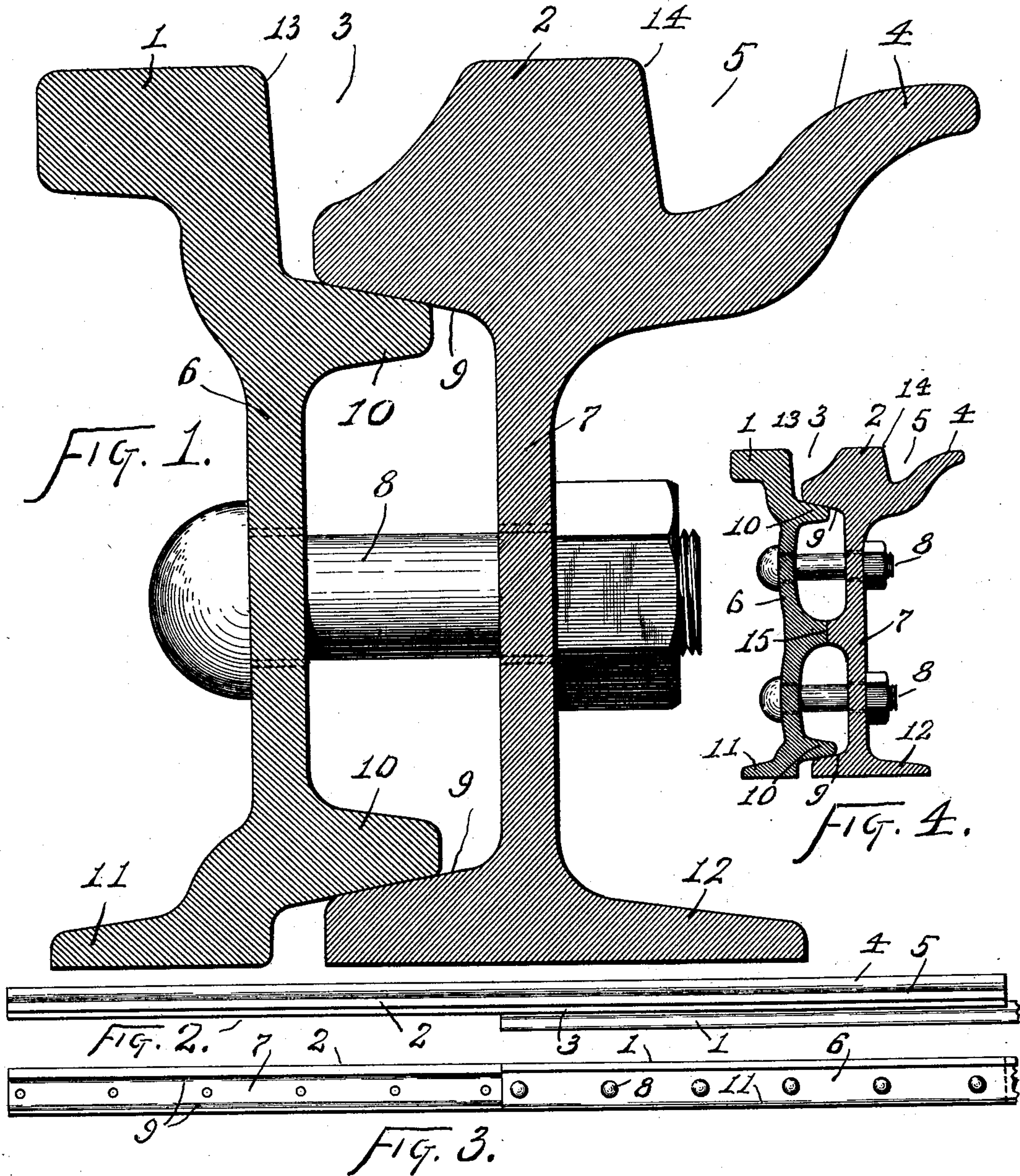
Patented May 6, 1902.

C. E. HOOVEN & J. W. SEE.

RAILWAY RAIL.

(Application filed Feb. 17, 1902.)

(No Model.)



Witnesses:
E. Shipley
M. S. Belden.

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UNITED STATES PATENT OFFICE.

CLINTON EARLE HOOVEN AND JAMES W. SEE, OF HAMILTON, OHIO.

RAILWAY-RAIL.

SPECIFICATION forming part of Letters Patent No. 699,173, dated May 6, 1902.

Application filed February 17, 1902. Serial No. 94,339. (No model.)

To all whom it may concern:

Be it known that we, CLINTON EARLE HOOVEN and JAMES W. SEE, citizens of the United States, and residents of Hamilton, Butler county, Ohio, (post-office address Hamilton, Ohio,) have invented certain new and useful Improvements in Railway-Rails, of which the following is a specification.

This invention, pertaining to improvements in railway-rails, will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a vertical transverse section of a railway-rail exemplifying our invention; Fig. 2, a plan of the same; Fig. 3, a side elevation of the same, and Fig. 4 a vertical transverse section of the rail of Fig. 1 modified in view of extraordinary depth of rail.

In modern electric railway developments a serious problem has arisen owing to diversity of gages interfering with interchange of cars on urban and suburban tracks, the result being that a transfer of passengers often becomes necessary where a suburban line meets a city line. The difference between gages is in many and most cases too slight to permit of the narrow-gage track being laid between the rails of the broad-gage track, and the use of a single added inner rail for the narrow-gage track is very objectionable, as it throws the cars for one of the gages out of center with the track of the other gage, thus interfering with proper side clearance for cars, motormen being very liable under such circumstances to overlook the one-sided condition of affairs when passing obstructions at the side of the track. In our construction we provide each rail with a double tread, thus providing a track with four treads for two different gages, the system well lending itself to all ordinary differences in gages.

In the drawings, ignoring Fig. 4 entirely for the present, 1 indicates that portion of the head of the rail constituting the tread for the broader gage; 2, that portion of the head of the rail constituting the tread for the narrow gage; 3, the groove between the two treads to accommodate the flanges of the wheels of the broad-gage cars; 4, that portion of the head of the rail constituting a guard or curb for the narrow-gage tread; 5, the groove between

this guard and the narrow-gage tread to accommodate the flanges of the narrow-gage wheels; 6, the outer web of the rail, the same being disposed below the broad-gage tread; 7, the inner web of the rail, the same being disposed below the narrow-gage tread; 8, bolts through the two webs and holding them toward each other; 9, outer flanges on web 7, one at the foot of the web and one at its upper portion below the narrow-gage tread, these flanges having an outward flare; 10, inner flanges projecting from the outer web, these flanges engaging and fitting between flanges 9; 11, the outer foot-flange of the rail, the same being formed on web 6; 12, the inner foot-flange of the rail, the same being formed on web 7; 13, the gaging-point for the broad-gage tread of the rail, and 14 the gaging-point for the narrow-gage tread.

Flanges 9 and 10 have edge clearance, so as to provide for proper draft as bolts 8 draw the two webs toward each other, flanges 10 wedging firmly in between flanges 9, whereby the two members of the rail become rigidly unified, reinforcing each other and giving great stiffness to the general structure both vertically and horizontally.

Where it is desired to employ a rail of extraordinary depth without the necessity for increasing the thickness of the webs in order to resist the strain of the bolts, two lines of bolts may be employed in connection with intermediate strut-ribs 15, as indicated in Fig. 4.

In laying the rail the two members of a length may be bolted or riveted together with their ends even, abutting length being joined up by splice-bars, as usual; but the nature of the structure is such as to avoid the necessity for special splice-bars, and at the same time a practically continuous rail may be secured. Thus, as seen in Figs. 2 and 3, the two members of the rail may be lapped half the length of the members, the members thus breaking joint with each other and forming a practically continuous rail. This lapping of the members instead of being half the length of the members may be less or more, and the lap may be made so great that one member projects beyond its fellow—say two or three feet—thus providing offsets at each end of the rail for making the joints and securing in

great degree the merits of a continuous rail along with extraordinary stiffness and uniformity of stiffness.

The box-like structure of the rail also well
5 lends itself to the inclosure of the electric
bonds which may be employed at the joints,
thus rendering impossible the pilfering of
rail-bonds, which is a common annoyance
on suburban tracks where the bonds are ex-
10 posed.

We claim as our invention—

1. A duplex railway-rail comprising an
outer tread portion, an inner tread portion
separated from the outer tread portion by a
15 groove, and an inner guard portion separated
from the inner tread portion by a groove.

2. A duplex railway-rail comprising an
outer tread portion having a web and foot and
inwardly-projecting flanges, an inner tread
20 having a web and inner foot and outwardly-
projecting flared flanges engaging the first-
mentioned flanges, and bolts through the two
webs.

3. A duplex railway-rail comprising an
25 outer tread portion having a web and outer
foot and beveled inner flanges, an inner tread

portion having a web and inner foot and in-
ner guard and inner flanges fitting the first-
mentioned flanges, and bolts through the two
webs.

4. In a railway-rail, the combination, sub-
stantially as set forth, of a web having a tread
portion and foot-flange at one side and a pair
of projecting flanges at the other side, a sec-
ond web having a pair of side flanges adapted 35
to engage the first-mentioned flanges, and
bolts through the two webs.

5. In a railway-rail the combination, sub-
stantially as set forth, of a length of web hav-
ing a tread portion and a foot-flange project- 40
ing from one of its sides and a pair of flanges
projecting from its other side, a length of
web disposed alongside the first-mentioned
web and breaking joint therewith and having
a foot-flange at one side and a pair of flanges 45
at the other side engaging the first-mentioned
flange, and bolts through the two webs.

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