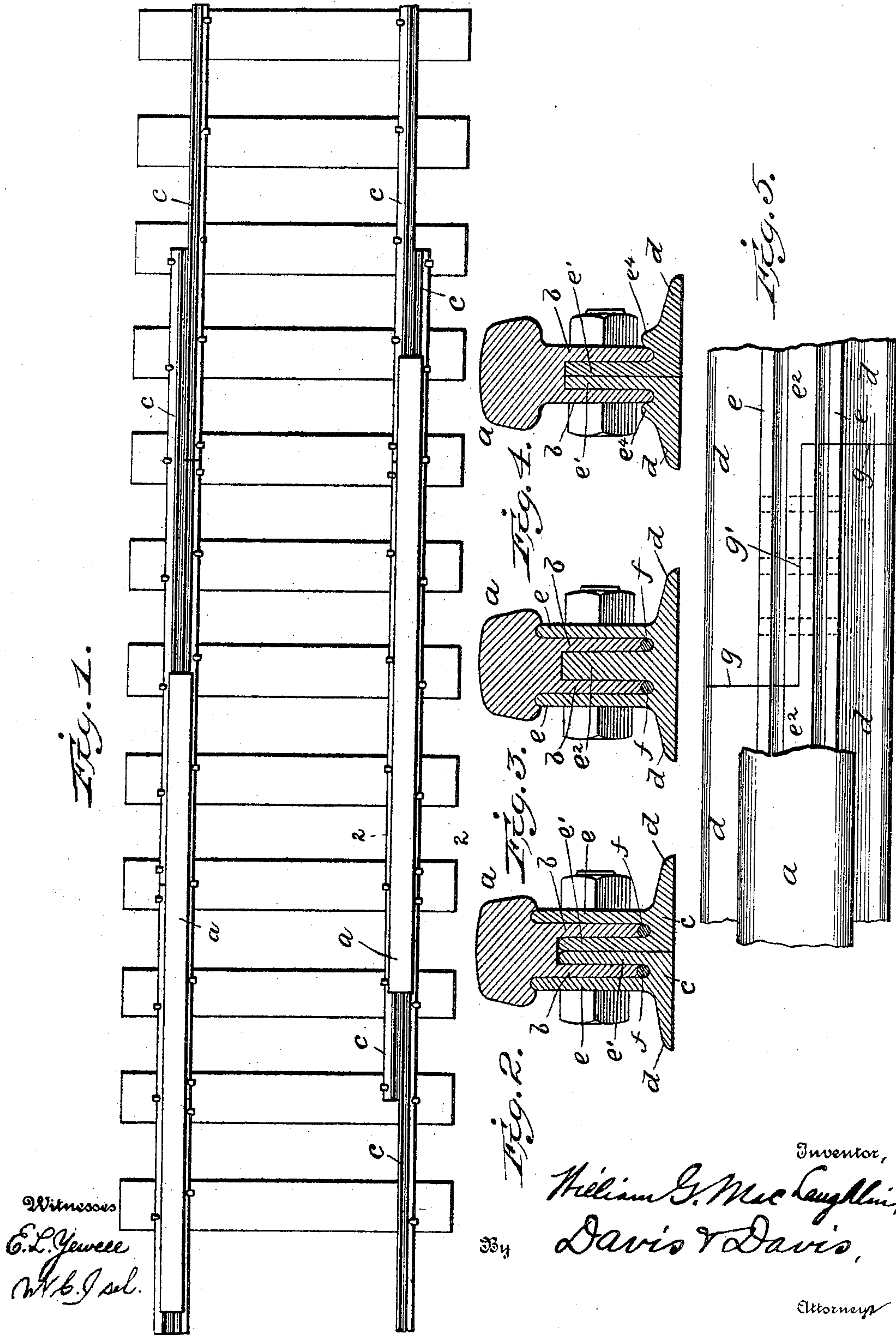


No. 798,358.

PATENTED AUG. 29, 1905.

W. G. MacLAUGHLIN.
COMPOUND RAILROAD RAIL.
APPLICATION FILED DEC. 31, 1904.



UNITED STATES PATENT OFFICE.

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COMPOUND RAILROAD-RAIL.

No. 798,358.

Specification of Letters Patent.

Patented Aug. 29, 1905.

Application filed December 31, 1904. Serial No. 239,112.

To all whom it may concern:

Be it known that I, WILLIAM G. MACLAUGHLIN, a citizen of the United States of America, and a resident of Walkerville, in the county of Essex and Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Compound Railroad-Rails, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a road-bed with the rails slightly enlarged to better show the manner of breaking the joints of the sections. Fig. 2 is a transverse section on the line 2 2 of Fig. 1. Figs. 3 and 4 are similar views of modified forms, and Fig. 5 is a plan view showing the manner in which the joint between the abutting ends of the chair-sections is made when the rail is constructed as shown in Fig. 3.

The object of this invention is to provide a rail which shall be more durable, less expensive, and generally more efficient than the ordinary T-rail, as more fully hereinafter set forth.

To the accomplishment of this object and such others as may hereinafter appear, the invention consists of the parts and combination of parts hereinafter fully described, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, forming a part of this specification, in which the same reference characters designate like parts throughout the several views.

Referring to Figs. 1 and 2, *a* designates the tread-section of the rail, the upper or wheel-bearing part of which is constructed on the ordinary lines, but whose web portion consists of a pair of depending parallel flanges *b*, separated a suitable distance apart. The chair or base of the rail is composed of two similar sections *c*, whose inner faces abut throughout their length. Each of these sections is constructed of an outward-extending base-flange *d* and a pair of upward-extending separated flanges *e' e'*. The inner flanges *e'* abut closely together and nicely fit the space between the flanges *b b* of the tread-section and reach to the top of said recess. The outer flanges *e* abut closely against the outer surfaces of the flanges *b*, and their upper ends engage in grooves formed in the shoulders of the tread portion of the rail.

With a rail constructed as above described the sections may be so arranged relatively that all the joints are broken. As shown in Fig. 1, the sections *c* of the chair portion break joints with each other, and the tread portions are so arranged that all the joints in the chair-sections are completely spanned or broken. The chair-sections are spiked to the ties in the usual manner, and all the sections are bolted together in any suitable manner by the usual transverse bolts.

The form shown in Fig. 3 is the same as that shown in Fig. 2, except that the two chair-sections are made integral. When this form of rail is employed, the chair-sections are joined in the manner shown in Fig. 5—that is, their ends are vertically notched or shouldered so that they overlap, the transverse lines *g* of jointure extending inward from opposite sides at a suitable distance apart and being connected by the longitudinal central line *g'*. A section taken through this joint would appear the same as Fig. 2.

In the form shown in Fig. 4 the chair portion is formed into sections similar to Fig. 2; but the outer plates *e* are done away with, and instead thereof flanges *e'* are formed on the base-flanges to engage the lower edges of the plates or flanges *b*. Where it is desired to bond the rails, the bonding-wires *f* may be introduced at any point between the parts—as, for instance, at *f*. (Shown in Figs. 2 and 3.)

A rail constructed in the manner set forth possesses important advantages over the common solid rail, some of which are as follows: The tread-section may be reversed when it becomes cracked or slivered along one edge, thus contributing materially to the life of the rail. Should the tread-section become cracked it cannot be displaced from the interlocking flanges, thereby reducing the danger of accident to a minimum. The rail will be exceedingly strong, it being made up practically of a series of plates set on edge. Fish-plates at the joints are rendered unnecessary, thereby greatly reducing the cost of laying the rail and increasing its safety. Made up in the manner described the rail is much easier to bend, and the bending may therefore be done at the point where the rail is laid. Another feature lies in the fact that all the sections are closely interlocked and mutually strengthened, thereby making the rail practically continuous, doing away with the usual objectionable joints

and distributing the weight of the train long distances ahead and to the rear. As will be seen, a worn-out tread portion at any point along the track may be readily removed and
5 replaced by a new section without disturbing the chair and without stopping traffic. Costly bonding is done away with, as it is simply necessary to lay the bond-wires across the abutting joints of the chair-sections and in the
10 grooves therein.

It will be apparent to those skilled in the art that various mechanical embodiments of the invention are possible, and I therefore do not wish to be limited to the exact arrangement
15 and construction shown.

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

1. In a compound sectional continuous railroad-rail, the combination of a chair portion
20 consisting of two sections laid so as to break joints and each having a pair of upward-extending separated flanges whose inner faces abut throughout their length, and a tread-section having a pair of depending flanges fitting
25 between the respective flanges of the chair-sections, this tread-section breaking joints with the chair-sections, substantially as set forth.

2. A continuous compound sectional rail comprising a chair-section having an upward-extending central part and a pair of plates or
30 flanges outside thereof, and a tread-section having a depending pair of flanges or plates fitting between the central section and the outside flanges of the chair-section and having
35 grooves in its under side engaging the upper edges of said outside flanges, for the purpose set forth.

3. A compound rail consisting of a tread-section having a pair of depending separated
40 parallel plates or flanges and a chair portion consisting of two similar sections having their inner edges abutting throughout their length and extended upward to fit between the depending flanges of the tread-section, said
45 chair-sections being provided with flanges engaging the lower edges of the flanges on the tread-section.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 16th day of December, 1904.

WM. G. MacLAUGHLIN.

Witnesses:

S. J. LYONS,

Mrs. S. J. LYONS.