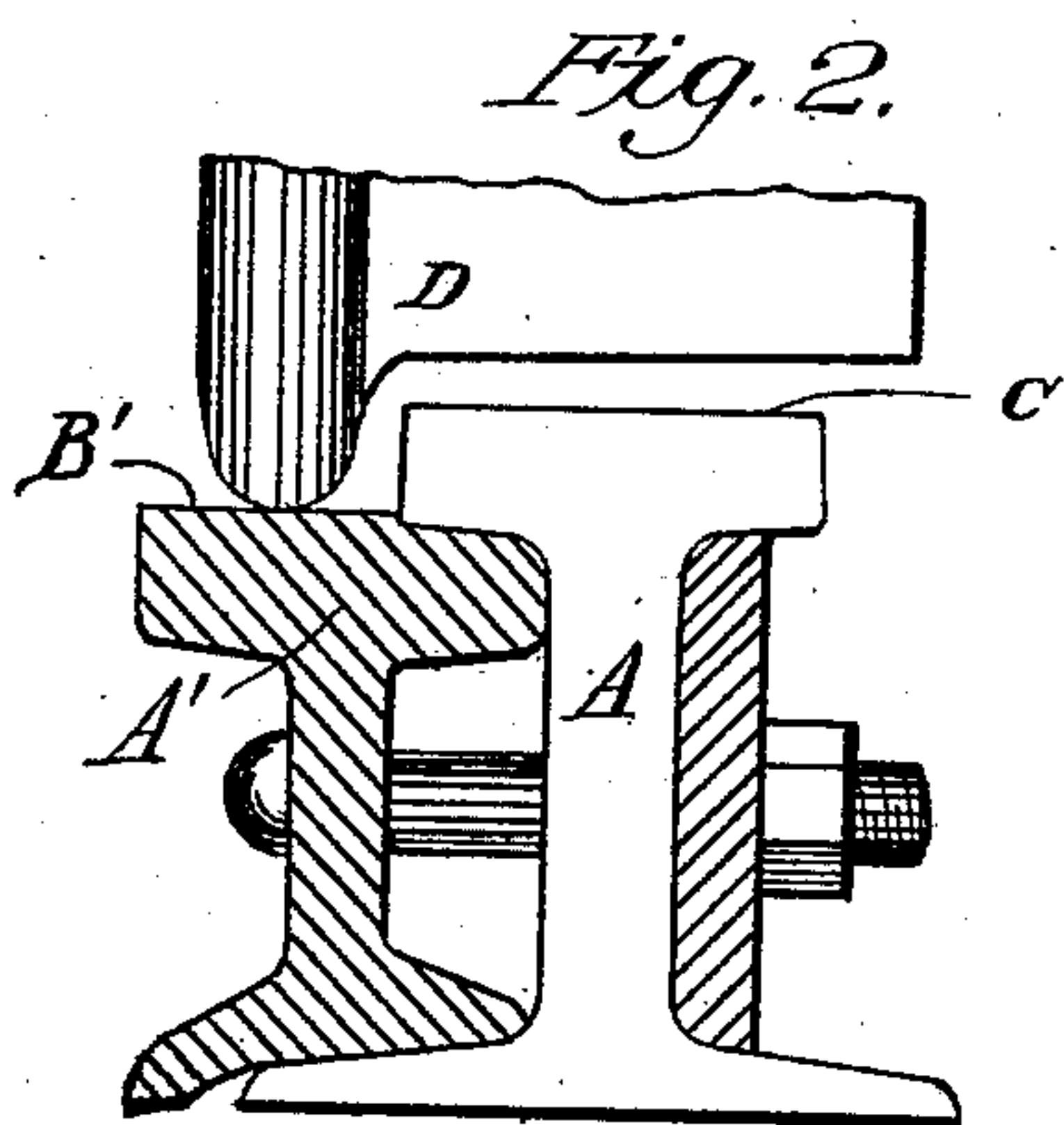
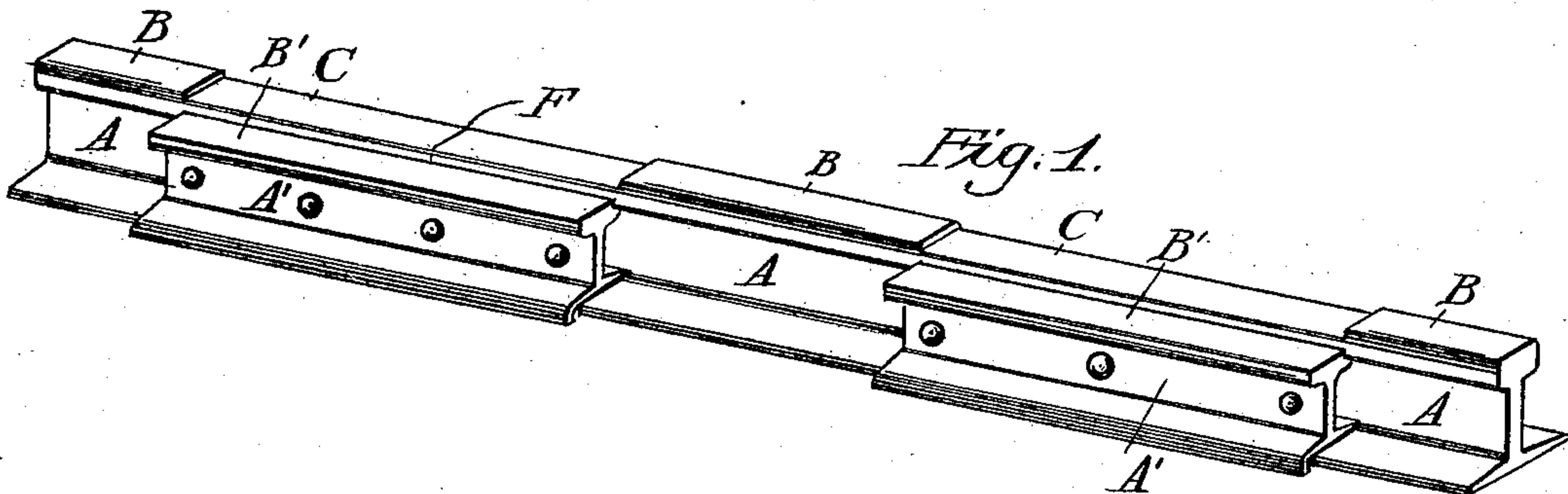


(No Model.)

W. C. FERGUSON  
RAILWAY RAIL.

No. 572,534.

Patented Dec. 8, 1896.



Witnesses

Ralph Arcey Glenn  
Mary L. Glenn

Inventor

William C. Ferguson  
By his Attorney  
Geo. P. Glenn



# UNITED STATES PATENT OFFICE.

WILLIAM C. FERGUSON, OF JACKSONVILLE, FLORIDA.

## RAILWAY-RAIL.

SPECIFICATION forming part of Letters Patent No. 572,534, dated December 8, 1896.

Application filed March 11, 1896. Serial No. 582,791. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. FERGUSON, a citizen of the United States, residing at Jacksonville, county of Duval, and State of Florida, have invented a new and useful Improvement in Railway-Rails, of which the following is a specification.

This invention has for its objects the preventing of friction on railway-curves between the rail and the flange of the wheel and the consequent cramping and straining of the truck; the avoiding of the necessity of greasing the rails at curves, which greasing destroys the efficiency of an emergency-brake and thereby endangers life and property; the obviating of jarring at railway-crossings; the switching of cars from the main line, &c., and it may obviously be used in the construction of either street or steam railway tracks and on either or both sides of the track, as the purposes may demand. I attain these and other objects by means of the peculiar composite railway-rail composed of a main-line tread-bearing portion and an auxiliary flange-bearing portion, as illustrated by the accompanying drawings, in which—

Figure 1 is a detailed perspective view of my invention, showing all parts. Fig. 2 is an enlarged transverse section of the composite rail at the point F, a joint in the main-line portion, also a portion of the wheel D, resting upon the flange-bearing portion of the rail, but free from the main-line non-tread-bearing surface.

Referring to the drawings as a part of this specification, A is the main-line portion, having upper wheel-bearing surfaces B, alternating with depressed non-wheel-bearing surfaces C.

A' is the auxiliary flange-bearing portion, arranged in sections, precisely opposite the non-wheel-bearing surfaces of the main-line portion and having an upper flange-bearing surface B', depressed below the wheel-bearing surfaces of the main-line portion as far as the circumference of the wheel's flange falls below the same. The head of this flange-bearing portion is so constructed as to fit snugly under the head of and against the web of the main-line portion, while the foot of the same is inclined to its web and so constructed otherwise as to sit firmly on top of the foot of

the main-line portion, to fit snugly against the web of the main-line portion, and to rest firmly also on the tie beyond the foot of the main-line portion. The flange-bearing portion thus formed is bound firmly to the main-line portion by bolts and takes the place of half the fish-tie wherever it laps a joint of the main-line portion, as at F in Fig. 1. The composite rail thus formed receives and transfers the bearing of the wheel to and from the flange and tread alternately and preserves a smooth single-plane motion horizontally without sudden lifting or dropping of the wheel.

The relative lengths of tread-bearing and flange-bearing surfaces are adjustable to the radius of curvature and to the angle of crossing, viz., the greater the radius the less the amount of flange-bearing surface and used only on the outer side of the track to increase the speed of the outer wheel over that of the inner, thereby keeping the axle perpendicular to the tangent of the curve at every point of curvature, and the greater the angle of crossing the less the amount of flange-bearing surface and used on both sides of the track, in equal and directly opposite sections, to prevent both jarring and friction.

I herein make counter-reference to my application, Serial No. 597,099, filed June 27, 1896, wherein the means for combining the tread-bearing portion with the flange-bearing portion are shown and claimed, whereas in this application they are only shown.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. In a composite railway-rail, a main-line tread-bearing portion provided with alternately raised and depressed upper surfaces of relatively variable lengths and secured to an auxiliary flange-bearing portion, substantially, as specified.

2. In a composite railway-rail, a sectional flange-bearing portion, provided with upper depressed flange-bearing surfaces of relatively variable lengths and secured to an auxiliary tread-bearing portion, substantially, as specified.

3. In a composite railway-rail, a main-line tread-bearing portion provided with alternately raised and depressed upper surfaces

of relatively variable lengths in combination  
with an auxiliary flange-bearing portion pro-  
vided with upper, depressed, flange-bearing  
surfaces of relatively variable lengths, sub-  
stantially, as specified.

4. A composite railway-rail having a main-  
line, tread-bearing portion provided with al-  
ternately raised and depressed upper surfaces  
of relatively variable lengths, and a sectional

flange-bearing portion provided with upper  
depressed, flange-bearing surfaces of rela-  
tively variable lengths, substantially, as  
specified.

WILLIAM C. FERGUSON.

Witnesses:

JNO. N. BONNELL,  
W. P. GIFFORD.