J. NOLL.

COMPOUND RAIL.

APPLICATION FILED FEB. 7, 1912.

**1,068,815.**

Patented July 29, 1913.

Fig. 1.

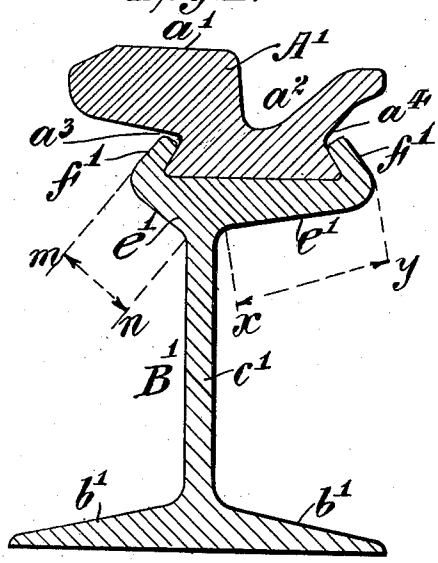
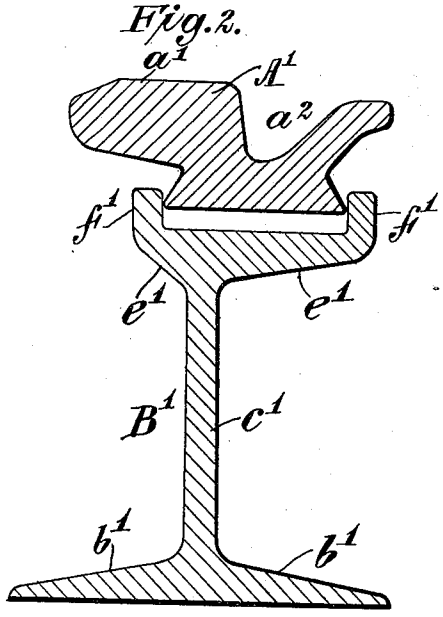



Fig. 2.



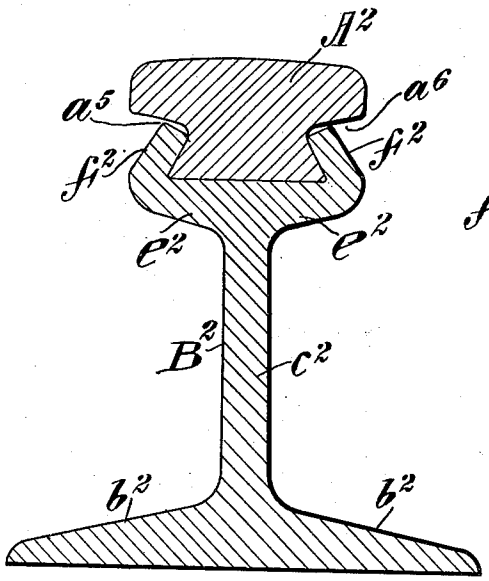




Fig. 3.

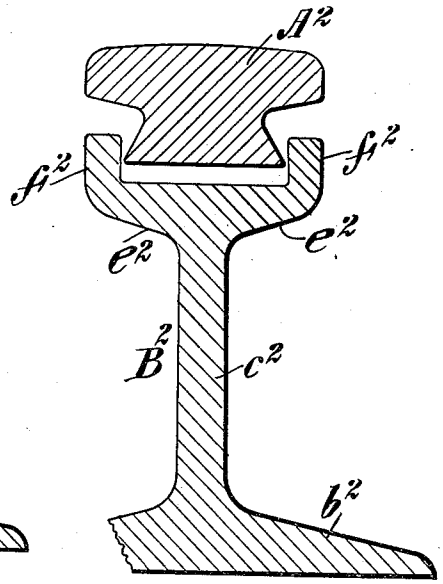



Fig. 4.

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# UNITED STATES PATENT OFFICE.

JOHN NOLL, OF NEW YORK, N. Y., ASSIGNOR TO CONTINUOUS RAIL COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

## COMPOUND RAIL.

1,068,815. Specification of Letters Patent. **Patented July 29, 1913.**

Application filed February 7, 1912. Serial No. 676,133.

*To all whom it may concern:*

Be it known that I, JOHN NOLL, a citizen of the United States, and a resident of the borough of Brooklyn of the city of New York, in the county of Queens and State of New York, have invented certain new and useful Improvements in Compound Rails, of which the following is a specification.

The invention relates to a compound rail in which the top or wearing section is held in place on the base or girder section by means of upwardly extending holding lips on the latter section which engage the former section.

The invention also relates to a construction in which the top section of a compound rail is provided with undercut portions at the sides of the lower portion thereof to receive upwardly extending holding lips on the base section.

The invention furthermore relates to a compound rail in which the top section is provided with a tread portion and a grooved portion to receive a car wheel flange and in which the tread portion is located directly over a vertically extending web of the base section.

Another feature of the invention relates to a compound rail having a flanged base section and a top section comprising a tread portion and a grooved wheel receiving portion which top section is held in place on the base section by flanges of unequal width and which flanges are provided at their edges with upwardly extending holding lips.

As showing specific embodiments of the invention reference is made to the drawing forming a part of the specification and in which—

Figure 1 is a transverse sectional view of a compound rail comprising a base section, a top wearing section having a tread portion and a grooved portion for receiving a wheel flange. Fig. 2 is a transverse sectional view of the rail shown in Fig. 1 prior to the top section being placed on the base section and prior to the holding lips being bent to holding position. Fig. 3 is a transverse view of a compound rail comprising a base section and a top section which is symmetrical on opposite sides of a center plane passing through the base section. Fig. 4 is a transverse view of the rail shown in Fig. 3 prior to the top section being placed on the base section and prior to the holding lips being bent to holding position.

The base section shown in Figs. 1 and 2 is designated by the reference character B′ while that in Figs. 3 and 4 is designated by the reference character $B^2$. Both of these sections are flanged members comprising supporting flanges at the bottom thereof which extend equal distances on opposite sides of a web portion, a vertically extending web portion and flanges at the top of the web portion which flanges are provided with upwardly extending holding lips. In Figs. 1 and 3 the supporting flanges are designated respectively by the letters $b'$ $b'$, $b^2$ $b^2$, the vertically extending webs by $c'$, $c^2$, the flanges at the top of the webs by $e'$ $e'$, $e^2$ $e^2$ and the upwardly extending holding lips at the edges of said flanges by $f'$ $f'$, $f^2$ $f^2$.

The top or wearing section shown in Figs. 1 and 2 is indicated by the reference character A′ and is provided with a tread portion $a'$ and a grooved portion $a^2$ for receiving a car wheel flange. The top section $A^2$ of the rail shown in Figs. 3 and 4 it will be noted is not provided with a wheel flange receiving groove but comprises at the top thereof only the tread portion which is symmetrical on opposite sides of a center plane passing through the center of the web of the base section.

Both the top sections shown in Figs. 1 and 3 are undercut as at $a^3$, $a^4$, $a^5$ and $a^6$ to provide a space at the lower portion of the sides thereof to receive the ends of the upwardly extending holding lips $f'$ $f'$ or $f^2$ $f^2$ as the case may be. The lower side surfaces of the top wearing portions which are engaged by the holding lips are inclined upwardly and inwardly so that when the holding lips are bent firmly against the same, the top sections will be securely held in place.

The tread portion of the wearing section in both of the forms shown on the drawings is located directly over the vertical web of the base section. In Fig. 1 it will be noted that the grooved portion $a^2$ is entirely located at one side of the vertical plane passing through the center of the web of the base section. It will furthermore be observed that the flanges located at the tops of the web in Figs. 1 and 2 are of

different widths. In other words that the dimensions $xy$ of one of said flanges $e'$ is greater than the corresponding dimension $mn$ of the other flange $e'$. The wider flange extends under the grooved portion $a^2$ of the wearing portion.

In bending the lips from the position shown in Figs. 2 and 4 respectively to the position shown in Figs. 1 and 3, the metal is compressed at the edges thereof sufficiently to firmly force said lips against the top section and a sufficient amount to actually reduce the metal at the edge portions of the lips.

It is obvious that various forms and modifications may be made without departing from the spirit and scope of the invention.

I claim as my invention:

1. A compound rail comprising a top wearing section and a girder base section, the latter comprising upwardly extending lips between which is held the top wearing section.

2. A compound rail comprising a top section and a base section, the top section having undercut portions at the sides thereof and the base section having upwardly extending lips which are bent to holding position in said undercut portions.

3. A compound rail comprising top and base sections, the former having at the top a tread portion and at the lower side portions upwardly and inwardly inclined lip engaging portions, the base section having supporting flanges at the bottom, a web, and at the top of the web flanges provided at their edges with upwardly extending holding lips which engage the inclined portions of the top section when bent to holding position.

4. A compound rail comprising top and base sections, the former having at the top a tread portion and at the lower side portions upwardly and inwardly inclined lip engaging portions, the base section having bottom supporting flanges, a web, and at the top of the web flanges provided at their edges with upwardly extending holding lips which engage the inclined portions of the top section, at least one of said lips being located under the tread portion of the top section.

5. A compound rail comprising a top section and a base section, the former section having at the top thereof a tread portion and a grooved portion to receive a wheel flange, the base section having at the bottom horizontal supporting flanges, a vertical web, and flanges at the top of the web which last mentioned flanges are provided with upwardly extending lips which are bent to holding position, the tread portion being located vertically over the web.

6. A compound rail comprising a base section and a top section having a grooved portion to receive a car wheel flange, the base section comprising a vertical web having integral therewith at the top thereof laterally extending flanges provided with upwardly extending holding lips which engage the top section, the grooved portion of the top section being located wholly at one side of a vertical plane passing through the web in the base section and the width of the top flange passing under the grooved portion being greater than the width of the other top flange.

7. A rail section comprising lower supporting flanges, a vertical web and flanges at the top of the web, the lower supporting flanges being of equal length upon opposite sides of the web and the upper flanges being of unequal width on opposite sides of the web and provided at the edges thereof with upwardly extending lips.

8. A compound rail comprising a top wearing section and a base section, the top wearing section being provided with a tread portion and a groove portion for receiving a car wheel flange and having at the sides thereof undercut portions within which holding flanges on the base sections enter to retain the top section and base in place on the base section, the base section being provided with a web portion supporting flanges at the lower extremity and on opposite sides of the web portion, flanges of unequal width at the upper and on opposite sides of the web portion, the edges of said latter flanges being margined by the holding lips whose upper edges are bent inwardly to the holding position; the web portion being located directly beneath the tread portion.

This specification signed and witnessed this 5th day of February, A. D., 1912.

JOHN NOLL.

Signed in the presence of—
W. C. MARGESON,
G. MCGRANN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."