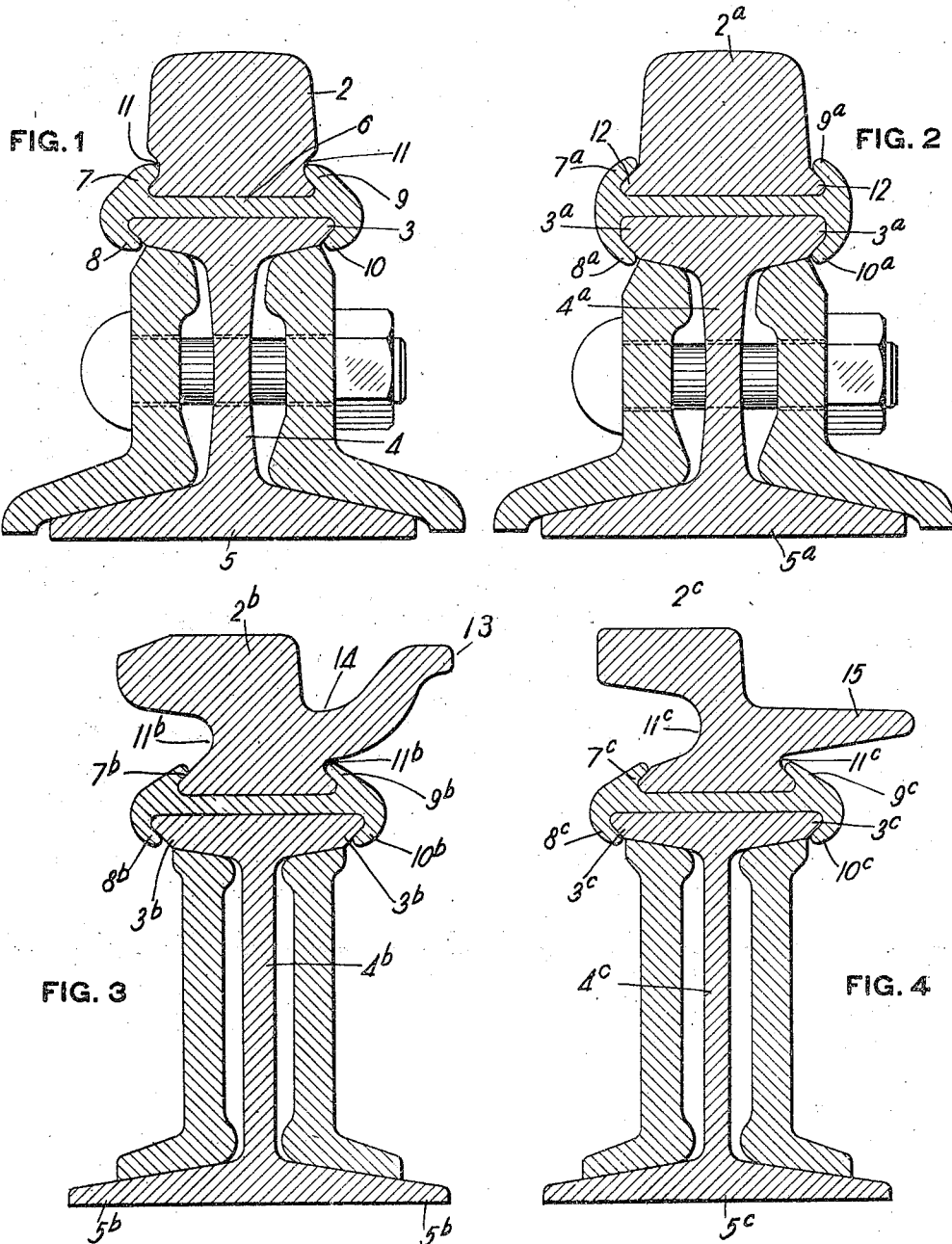


E. E. SLICK.
COMPOSITE RAIL.
APPLICATION FILED MAR. 9, 1912.

1,060,371.

Patented Apr. 29, 1913.



WITNESSES

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UNITED STATES PATENT OFFICE.

EDWIN E. SLICK, OF PITTSBURGH, PENNSYLVANIA.

COMPOSITE RAIL.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWIN E. SLICK, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Composite Rails, of which the following is a specification.

My invention relates to the construction of rails for railway tracks and more particularly relates to the construction of rails in which the rail head is removably secured to the rail base.

It has heretofore been proposed to construct a built up rail having a removable head provided with integral flanges arranged to engage with the rail base in securing the head to the base. In another construction the rail base has been provided with integral flanges which are bent into interlocking engagement with the rail head in securing the rail head to the rail base.

In the first mentioned construction the necessity of bending the flanges on the rail head into engagement with the base restricts the composition of the head to one which is sufficiently soft to permit bending of the flanges thereon into locking engagement with the rail head. In the last described construction, straightening of the bent flanges of the rail base to release the rail head in replacing or removing the head, seriously weakens and lessens the strength of the flanges and often requires the renewal of the rail base, an operation requiring the removal of the base from the track in which it is permanently secured in place.

One object of my invention is to provide a composite rail having improved means whereby the removable rail head is secured to the base or girder forming the base of the rail.

Another object of the invention is to provide a composite rail having novel means whereby the rail head may be made of any desired composition and the necessity of limiting the degree of hardness of the rail head is avoided and overcome.

A still further object of this invention is to provide a composite rail having novel means whereby the rail head is secured to the rail base in such manner as to permit the removal and renewal of the rail head

without damage or liability of weakening or injuring the rail base or necessitating the removal of the rail base, and whereby the rail base remains permanently fixed in place in the roadbed of the track after once being laid.

Further objects of my invention will appear hereinafter as my improved track rail is more fully disclosed in the specification and claims.

Referring to the drawings forming part of this specification, Figure 1 is an end elevation showing one form of a composite track rail constructed and arranged in accordance with my invention. Fig. 2 is a similar end elevation showing a modified form of rail head and having head securing means constructed in accordance with this invention. Fig. 3 is an end elevation of a composite guard rail for street railway tracks constructed and arranged in accordance with my invention. Fig. 4 is a similar end elevation showing a modified form of head as constructed for use on a girder rail for street railway tracks in accordance with this invention.

In the drawings, referring to Fig. 1, the numeral 2 designates the head of a composite track rail constructed and arranged in accordance with this invention, and 3 is the top flange joined integrally by the vertical web 4 to the base flange 5 in forming the rail base. An interlocking member comprising a connecting web portion 6 with integral oppositely extending flanges 7, 8 and 9, 10 on the marginal side edges thereof is interposed between the rail head 2 and the top flange 3 of the rail base in securing the head and base together. The rail head 2 shown in Fig. 1 has longitudinally extending grooves or recesses 11 located in the opposite side edges thereof into which the flanges 7 and 9 are bent into interlocking engagement in securing the rail head 2 to the top flanges 7 and 9 of the interlocking member. The flanges 8 and 10 on the opposite side of the web 6 of this interlocking member are bent downwardly and inwardly into interlocking engagement with the marginal edges of the top flange 3 on the rail base in securing the interlocking member to the rail base.

In the modified construction shown in Fig. 2 the head 2^a of the rail is provided

with outwardly extending flanges 12, 12 on the lower edge of the marginal side surfaces, which project outwardly beyond the faces of the sides of the rail head 2^a. In this construction the flanges 7^a, 9^a, of the interlocking member are bent upwardly and inwardly into engagement with the flanges 12, 12 in securing the rail head 2^a to the interlocking member. The other flanges 8^a, 10^a on the interlocking member are bent downwardly and inwardly into engagement with the top flanges 3^a, 3^a of the rail base and the top flanges 3^a, 3^a are connected to the base flange 5^a by an integral web 4^a in the same manner as in Fig. 1.

In the construction shown in Fig. 3, the head 2^b of the guard rail shown in this figure is provided on one side with a flange 13 which is curved or bent to form a groove 14 in one side thereof adapted to receive the flange of the track wheels. The opposite side surfaces of the head 2^b are provided with longitudinally extending recesses or grooves 11^b into which the flanges 7^b, 9^b, of the interlocking member are bent in securing the rail head to the interlocking member of the rail. The bottom flanges 8^b, 10^b, of the interlocking member are bent downwardly and inwardly about the side edges of the top flanges 3^b, 3^b of the rail base in the same manner as in the preceding figures, and the rail base in this construction is likewise formed of top flanges 3^b, 3^b and base flanges 5^b, 5^b connected to the marginal side edges of an integral web 4^b.

In the construction shown in Fig. 4 the rail head 2^c is provided with a horizontally extending flange portion 15 projecting side-wise from one side thereof, and the head 2^c in this construction has lengthwise extending grooves 11^c into which the upper flanges 7^c and 9^c of the interlocking member are bent in securing the head 2^c thereto. The bottom flanges 8^c, 10^c, of the interlocking member are bent downwardly and inwardly around the side edges of the top flanges 3^c, 3^c of the base member in the same manner as in the preceding figures, and the base member of this rail is formed of top flanges 3^c, 3^c and base flanges 5^c connected by an integral web portion 4^c in the same manner as has been before described.

The advantages of my invention will be apparent to those skilled in the art. In my improved composite rail the rail head is secured to the rail base by separate and independent interlocking members.

By making the interlocking member separate and independent of the head and base of the rail, the rail head may be made as hard as is desired, as there are no portions thereof which must be soft and ductile enough to permit bending in securing the head in place. The rail base can be made of any desired composition which may differ

greatly from that of the rail head. The interlocking member may be made of metal which will permit of its being readily bent to secure the flanges thereof in interlocking engagement with the head and base of the rail. By making the interlocking member separate from the base of the rail the rail base may remain in the track when once laid and the necessity of removing the rail base from the track in renewing the heads of the rails is avoided and overcome.

I believe myself the first to discover the utility and advantages of employing a separate interlocking member in securing the head to the base of a composite rail and I intend to claim such construction broadly.

Modifications in the construction of the interlocking member and the engaging portions of the head and base members of my improved rail construction may be made without departing from my invention, as defined in the claims.

I claim:—

1. A composite rail comprising a head and a base and a separate interlocking member bent into interlocking engagement with opposite sides of said head and said base to secure the rail head to the rail base.
2. A composite rail comprising head and base portions formed of steel of dissimilar compositions, and a separate interlocking member extending between and having flange portions bent into interlocking engagement with the head and base, whereby the head is fastened to the rail base.
3. A composite rail comprising head and base portions with an integrally formed interlocking member extending between the head and base portions by which the head and the base portions are fastened together, said rail head having a composition other than that of the rail base.
4. A composite rail comprising a separable head and base portions with an interlocking member to which the head and the base portions are secured, said rail head having lengthwise extending grooves in opposite side edges thereof in which the head engaging portions of said interlocking member are positioned when bent into interlocking engagement therewith.
5. A composite rail comprising in combination base and head portions and an interlocking member extending between the head and base portions and bent into holding engagement with the head and the base to fasten the rail head to the rail base.
6. A composite rail comprising a head and base and an interlocking member to secure the head on said base, said interlocking member having oppositely extending flanges on the marginal edges of an integral web, said flanges being bent into interlocking engagement with the head and base to secure the head to the base.

7. A composite rail comprising a head and
a base of varying chemical composition and
an interlocking member having a web joined
integrally to oppositely extending flanges on
5 the marginal side edges thereof, means on
the head and base engaged by the flanges of
said interlocking members, said flanges being
bent into interlocking engagement with said

means on the head and base in securing the
rail head to the rail base.

In testimony whereof, I have hereunto set
my hand.

EDWIN E. SLICK.

Witnesses:

G. W. NEILL,
R. D. LITTLE.

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