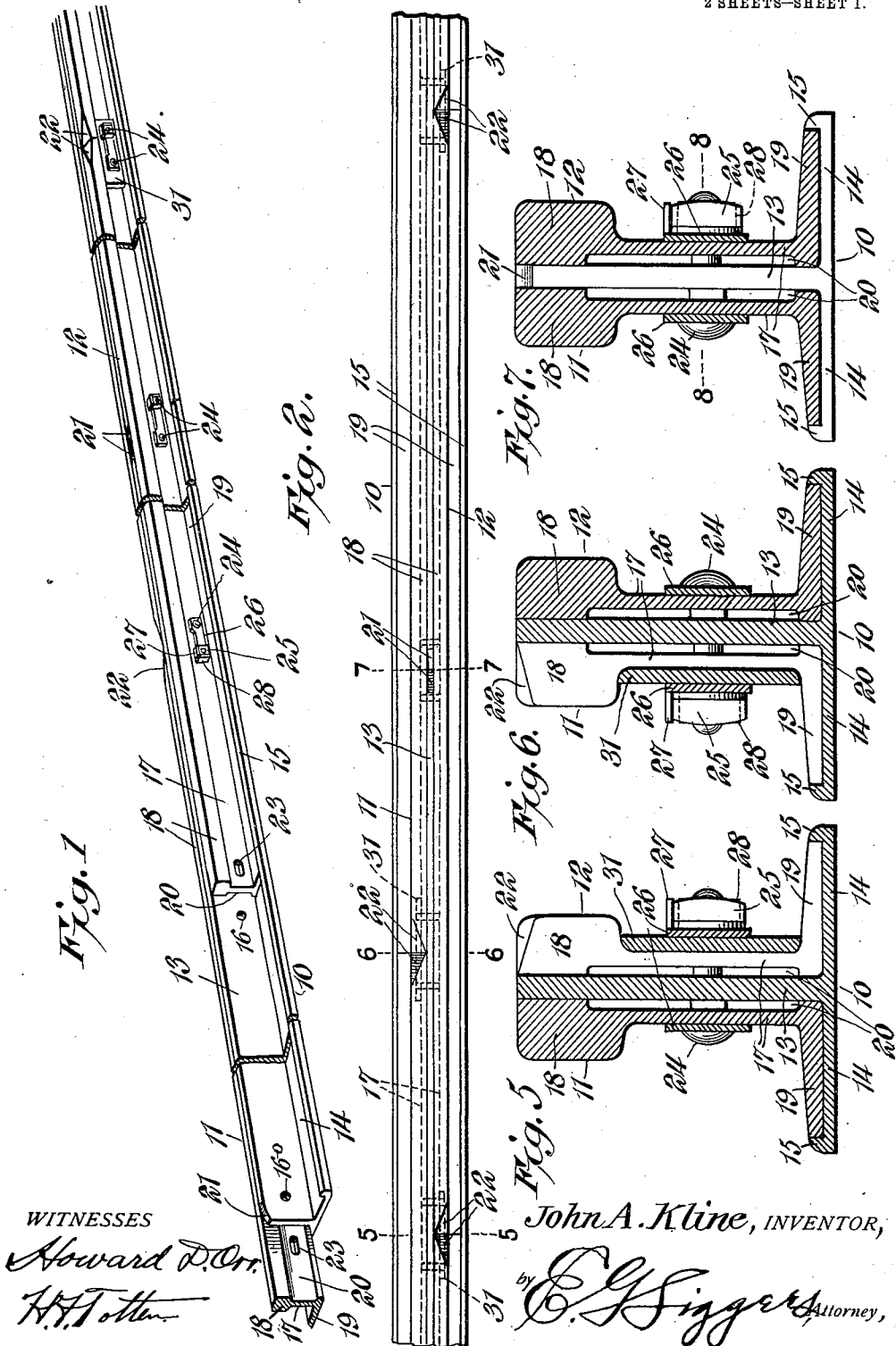


1,011,811.

Patented Dec. 12, 1911.

2 SHEETS-SHEET 1.

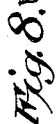


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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN ANDREW KLINE, OF READING, PENNSYLVANIA.

RAILROAD-RAIL.

1,011,811.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed July 14, 1911. Serial No. 638,549.

To all whom it may concern:

Be it known that I, JOHN A. KLINE, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented a new and useful Railroad-Rail, of which the following is a specification.

This invention relates to railway rails and particularly to that class, known as compound rails, wherein the rail is made up of several sections, which are caused to break joints with each other; and its principal object is to provide a continuous tread upon which the wheels travel, so as to reduce to a minimum the jars produced by the passage of the wheels over the transverse joints of the rails.

Another object is to provide a rail composed of three members, a central member and two side members, each constructed with a tread and a base flange, the base flanges of the two side members being supported on the base flange of the central member, the latter being provided with an upstanding rib, which with the web of the central member provides a seat for the flanges of the side members.

Another object is to provide the sections with peculiarly constructed bolt openings formed in pairs and at regular intervals to permit the members to creep or shift longitudinally and thus compensate for the lengthwise expansion and contraction of the metal.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Reference is to be had to the accompanying drawings forming a part of this specification, similar figures of reference being used to indicate corresponding parts throughout the several views, and in which—

Figure 1 is a perspective view of a rail section, constructed in accordance with this invention. Fig. 2 is a top plan view of a

part of a rail showing the location of the several sections or members forming the rail. Fig. 3 is a perspective view of one of the side members. Fig. 4 is a perspective view of the central member, showing the ribs at the outer edges of the base flange. Fig. 5 is a vertical sectional view taken on the line 5—5 of Fig. 2. Fig. 6 is a sectional view taken on the line 6—6 of Fig. 2. Fig. 7 is a sectional view taken on the line 7—7 of Fig. 2. Fig. 8 is a longitudinal sectional view taken on the line 8—8 of Fig. 7. Fig. 9 is a perspective view of the nut locking plate.

The improved compound rail comprises three members of substantially the same length and material, to-wit: central supporting member 10 and two lateral or side members 11 and 12, each of said members being constructed with a tread, a web and a base flange.

The central member 10 is provided with an upstanding web 13, the upper horizontal edge of which provides a tread portion for this member of the rail, and the lower edge merging into a base flange 14, extending at right angles at each side of the web, said base flange being provided along its outer edges with a longitudinal upstanding rib 15. This rib may either be continuous or it may be broken at intervals forming lugs. The web 13 is provided at suitable intervals with horizontally arranged circular bolt openings 16. The web rises from the base flange at the center thereof, so that the two halves of the base flange are equal in width.

The side members are duplicates, and hence a description of one will suffice for both. Each of the side members is nearly a half longitudinal section of the rail now universally in use. It comprises a web 17, provided at its inner edge with a head or tread portion 18, and at its lower edge with a reduced base flange 19 of a width equal to the distance between the web 13 of the central member and the rib 15 at the outer edge of the base flange 14. The head or tread portion and base flange of the side member both extend from the outer side of the web 17. The inner face of the web 17 of the side member is provided with a recess 20.

The ends of the tread portions of the rail members are beveled as shown in Figs. 3 and 4, the end of the tread of the central member being beveled downwardly as at 21,

and the treads of the side members at their ends being chamfered from their inner sides as at 22.

The webs 17 of the side members are provided with horizontally disposed oblong bolt openings 23, which are so positioned that when the members of the rail are assembled, the openings of the side members are in alinement with the openings 16 in the central members. In constructing a railway track composed of this type of rail, it is necessary to first lay the central member 10 on the ties to provide a seat for the side members; then place at each side of the central member a side member, with the recess 20 next to the web 13 of the central member, and seating the base flanges of the side members in the recesses provided by the upstanding ribs 15 and the web 13 of the central member. Thus it will be seen that each side member is supported by and upon the base flange of the central member. The side members are so positioned with relation to the central member as to dispose their ends at different points along the length of the central members, thereby breaking joints with each other, as shown in Figs. 1 and 2, and thus strengthening the rail at the joints. By positioning the members in the manner explained and shown there is at every joint, two unbroken sections of the rail. As soon as one section of the track is formed by assembling the rail members, it is only necessary to join other corresponding sections to the ends of the sections already assembled. It will be plainly seen that in actual operation the wheel always rests upon the three members of the rail.

The sections are secured together by bolts 24 adapted to extend through the openings 16 and 23 and provided at their threaded ends with nuts 25. The bolts are arranged in pairs, as shown in Figs. 1, 2 and 8, and are inserted one from either side of the rail.

A nut lock 26 is provided for precluding the nuts 25 on the ends of the bolts 24 from working loose after the rail is assembled. The lock comprises a plate of sheet metal substantially oblong in shape and provided at one end with ears 27 and 28, extending from the top edge and end of said plate. The plate is also provided with two bolt openings 29 and 30, the opening 29 being circular in form and arranged immediately below the ear 27 and at one side of the ear 28, and the opening 30 being substantially square and arranged at the opposite end of the plate from opening 29. The bolt 24 is inserted through the opening 30, the squared collar of said bolt engaging the sides of the opening. By so arranging the locking plates and inserting the bolts, one from either side of the rail, a nut locking plate is provided between each bolt head and rail 65 and between each nut and rail. When the

nut 25 is properly adjusted, the ends 27 and 28 of the plate 26 are bent at right angles over the sides of the nut, as shown in Figs. 8 and 9, and thus prevent the nut from working loose. The circular bolt openings 16 in the central member and the oblong or elliptical bolt opening 23 in the side members permit the longitudinal adjustment of the several members of the rail, thus providing for the expansion and contraction of the members. At each joint of the side members I provide a fish plate 31 for strengthening the same.

It will be noted that the base flange of the central member is of a width to receive the base flanges of the side members, so that the base flange of the central members rests upon the tie, while the base flanges of the side members rest upon the base flange of the central member. So far as I am aware this arrangement is new.

My rail can be used with the ordinary rail and connected thereto at any point of the line of track by cutting off the sections or members even.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a rail of the class described, the combination of a central member comprising a web, a tread, and a base flange, side members arranged on each side of the web of said central member and comprising a tread, a web, and a base flange, the base flanges of the side members resting upon and supported by the base flange of the central member.

2. In a rail of the class described, the combination of a central member comprising a tread, a web, and a base flange, the latter having an upstanding rib at the outer edges of said base flange, with side members adapted to fit on each side of said central member, said side members each comprising a tread, a web, and a base flange, the base flanges of the side members being adapted to rest upon the base flange of said central member between the web and the upstanding rib.

3. A rail of the class described consisting of three sections of approximately the same length, a central member having a tread, a web, and a base flange, and duplicate side members each having a tread, a web, and a base flange, said side members being adapted to rest upon the base flange of the central member, the ends of the several members being positioned relatively to each other when connected so as to break joints throughout the length of the rail.

4. In a compound rail, the central member composed of a web of substantially the same diameter throughout, with a base flange formed integral with the web, the upper edge of the web constituting the central

tread surface of the rail, the side members, duplicate in construction so as to be interchangeable, each side member being composed of a tread, a web, and a base flange, the treads of the side members with the upper edge of the web of the central member completing the tread of the rail, and the base flanges of the side members resting upon the base flange of the central member.

5. A compound rail composed of three members, a central member and two duplicate said members arranged at opposite sides of the central member, said side members being interchangeable, and the tread of the rail being made up of a part of each of the three members, the three members breaking joints with each other throughout the length of the rail.

6. In combination with a central member having circular bolt holes in the web thereof, side members placed against the sides of

the central member and having elliptical bolt holes in the webs thereof, said elliptical bolt holes of the side members being in register with the circular bolt holes of the central member, the upper parts of the central and side members forming in conjunction the tread of the rail, and bolts having their intermediate portions fitted snugly within the circular bolt holes of the central member and their ends passed through the elliptical bolt holes of the side members, whereby all the members may have relative sliding movement on each other to compensate for contraction and expansion.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN ANDREW KLINE.

Witnesses:

D. V. R. LUDWIG,
HEBER S. KLINE.

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