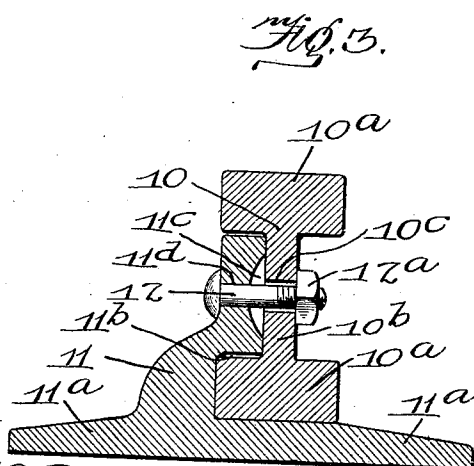
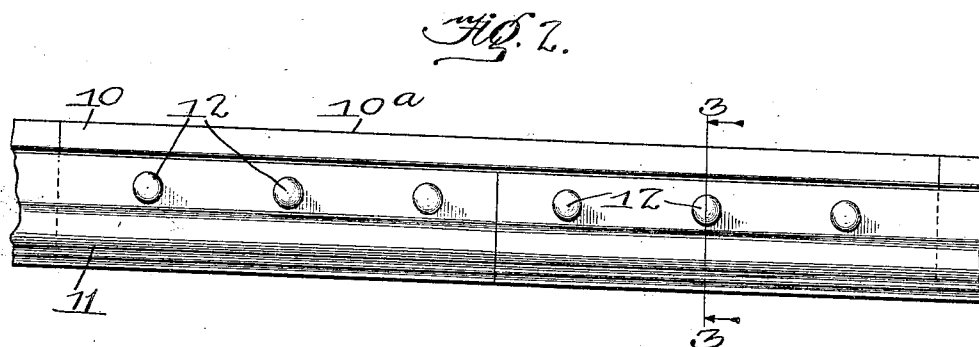
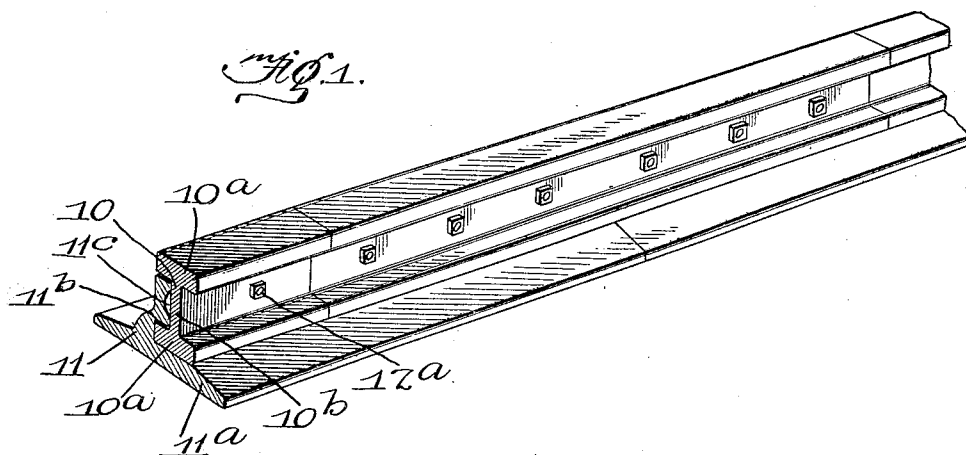


J. C. FLYNN.
RAILWAY RAIL.
APPLICATION FILED SEPT. 30, 1907.

921,533.

Patented May 11, 1909.



Witnesses:
Robert A. Evers
W. L. Sprinkle

Inventor:
John C. Flynn
Brown & Hopkins, Attys.

UNITED STATES PATENT OFFICE.

JOHN C. FLYNN, OF JOLIET, ILLINOIS.

RAILWAY-RAIL.

No. 921,533.

Specification of Letters Patent.

Patented May 11, 1909.

Application filed September 30, 1907. Serial No. 395,104.

To all whom it may concern:

Be it known that I, JOHN C. FLYNN, a citizen of the United States, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Railway-Rails, of which the following is a full, clear, and exact specification.

The invention relates to rails adapted for use on steam railways, electric railways and the like and has for its primary object to provide an improved form of rail that is of convenient form for rolling and of such construction that the life of the rail is increased, while the liability of breakage and the consequent dangers resulting therefrom are reduced to a minimum.

A further object of the invention is to provide an improved form of rail which for operative purposes is practically without joints, thus avoiding the pound and disagreeable effects which result from the passing of the wheels of the rolling stock over the joints in rails as ordinarily constructed.

A further object of the invention is to provide an improved form of rail of the described character in which the portions adapted to be worn by the travel of the rolling stock over the same are constructed independently from the portion adapted to be secured to the cross ties or sleepers.

A further object of the invention is to provide an improved rail of the described character in which the portion of the rail receiving the wear from the rolling stock is detachable from and reversible with respect to the remaining portion of the rail, thus permitting the inter-changing of the wearing portion and consequently lengthening the life of the rail.

A further object of the invention is to provide an improved form of rail of the described character in which a rail bond may be inserted and the bond at the same time protected by the manner in which the sections of the rail are put together.

To the attainment of these ends and the accomplishment of other new and useful objects, as will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings in which—

Figure 1 is a perspective view of a rail embodying the invention, Fig. 2 being a side

elevation of the same taken from the reverse side of the rail as it appears in Fig. 1, and Fig. 3 is a vertical section taken on line 3—3, Fig. 2.

In the construction of a rail embodying the invention, the ball or head portion provided with the tread is formed separately from the base or foot portion in the manner most clearly shown in the sectional views, Figs. 1 and 3, in which the first said portion of the rail is indicated by the reference character 10 and the base or foot portion by 11, 12 being a common form of headed bolt provided with nut 12^a for securing the two portions of the rail together. The portion 10 is preferably provided with a double head 10^a connected by web 10^b through which bolt 12 passes, the holes 10^c provided for this purpose preferably being of a somewhat larger size than the diameter of the bolts to allow for the relative movement between the parts due to the contraction and expansion of the metals.

The portion 11 consists of the usual widened base or foot member 11^a, the upper side of which is provided with an irregular member upwardly extending throughout its entire length, and designed to form an efficient means for the attachment and support of the portion 10. This upwardly extending portion 11 is provided adjacent the upper face of the base or foot member 11^a with an unobstructed groove or recess 11^b which opens through one side and extends longitudinally the entire length thereof so that the face of the base or foot member 11^a will form one of the walls of the groove or recess, and upon which wall the rail is adapted to rest and to be laterally adjusted to insert one side of one of the balls or heads thereof into the recess or groove, or to remove the same from the recess or groove. This groove or recess is of a height substantially equal to the upright diameter of the ball of the rail and is of a depth to permit the portion 11 above the recess or groove 11^b to contact with the web 10^b of the rail when the side of the ball projects into the recess or groove, and to substantially fill the space between the heads of the reversible rail, thereby forming a rigid brace and support for the rail in either of its positions. The corresponding bolt holes 11^d are formed through the thin section in the material adjacent this groove which said construction enables these holes to be formed more easily and consequently more cheaply. The face

of the portion 11 which contacts with the web of the rail is provided with another groove 11^c lying approximately opposite the bolt holes 10^c in the web, which extends throughout the length of the rail and is readily formed during the process of rolling. This groove may be conveniently utilized as a covering or protection for rail bonds when it is desired to use the rail as an electrical conductor.

In the illustrations the proportions of the preferred form of rail with respect to the length of the different sections have been distorted to prevent multiplicity of the drawings. It is preferred that the head and base sections be of equal length and the joints broken in the manner illustrated in Figs. 1 and 2. Any convenient length of rail may be adopted, as for example the common length of 32 feet. This will place the broken joints alternating in the head and base sections 16 feet apart. It is preferred that the bolts be used a uniform distance apart throughout. Any desired number of bolts may be used, as for example at uniform distances of 2 feet. In use it is preferred that the rail be laid so that the upwardly extending member on the base portion shall be on the outside of the track or on the side of the rail opposite the flange of the wheel.

The forms shown are adapted for convenient rolling and may be constructed of any suitable material, but it is preferred that steel be used in tread portion to withstand the wear, while wrought iron or some tough metal less liable to breakage than steel may be used to advantage in the base portion.

In the form of rail shown and described a break may occur in the tread portion without endangering the safety of rolling stock passing over it for a considerable time. In the use of ordinary forms of rail when a break occurs as they usually do between cross ties or sleepers, there being no supports for the broken ends, the pounding of the wheels soon destroys the fastenings and the broken rail is torn from position. In the present construction no matter where the break in the upper portion, the base portion will furnish a support for the broken ends. By the present construction, it will also be seen that the base portion furnishes a support for the ends of the tread portions, thus rendering the tread practically continuous and eliminating the disagreeable pounding at joints on rails as ordinarily constructed. By constructing the tread portion with the double heads or balls which are reversible it will be seen that the life of the rail may be greatly prolonged. When the tread on the side of one head or ball becomes worn, the tread portion of the rail may be turned end for end, or when one head has become unfit for use, the heads may be reversed.

In order that the invention might be fully

understood, the details of an embodiment thereof have been thus specifically described, but

What I claim as new and desire to secure by Letters Patent is:—

1. In a railway rail, the combination with a double tread portion comprising two oppositely disposed heads or balls and a connecting web, of a base portion adapted to furnish a support for the rail, there being an upwardly extending rib or flange on the said base portion shaped to embrace only one edge of either of the heads and to engage the web between the heads, said rib or flange substantially filling the space between the heads of the rail, and fastening means passing through the web and the adjacent portion of the rib or flange for securing the parts together.

2. In a railway rail, the combination with a double tread portion comprising two heads or balls and a connecting web, of a base portion comprising a laterally extending member upon which the rail rests and an upwardly extending member adapted to furnish means for attaching the two said portions together, there being an open groove or recess in the said upwardly extending member adjacent the supporting surface of the base portion into which one edge of one of the heads or balls of the double tread portion is adapted to be laterally inserted, the portion of said upwardly extending member beyond the groove substantially filling the space between the heads of the rail, and fastening means passing through said portion and the web for securing the parts together.

3. In a railway rail, the combination with a double tread portion comprising two heads or balls and a connecting web, of a base portion comprising a laterally extending member upon which the rail rests and an upwardly extending member adapted to furnish means for attaching the two said portions together, there being an unobstructed open groove or recess in one face of the said upwardly extending member into which one edge of one of the heads or balls of the double tread portion is adapted to be laterally inserted, said upwardly extending member beyond the groove filling the space between the heads of the rail, there being spaced holes in said member registering with holes in the web of the said double tread portion and fastening devices passing through the registering holes.

4. In a railway rail the combination with a double tread portion comprising two heads or balls and a connecting web, of a base portion comprising a laterally extended member adapted to furnish a support for the rail, and an upwardly extending member adapted to furnish means for attaching the two said portions together, there being a groove or

recess in the said upwardly extending member adapted to receive one of the heads or balls of the double tread portion, a plurality of spaced holes registering with holes in the web of the said double tread portion and a groove extending longitudinally of the said upwardly extending member on the inside thereof adjacent the said holes.

5. In a railway rail, the combination of a reversible rail comprising spaced heads and a connecting web, and a laterally extended support for the rail, said support being provided with an upwardly projecting portion extending longitudinally thereof, said portion being provided with an unobstructed open recess in one face adjacent the face of the support whereby the latter said face will form one of the walls of the recess, said upright extending for some distance beyond the recess, the rail being adapted to be laterally adjusted upon the face of the support whereby one edge of one of the heads may be inserted into the recess to substantially fill the same, or to be withdrawn therefrom, and fastening means passing through said upright portion beyond the recess and also through the web of the rail.

6. In a railway rail, the combination of a reversible rail comprising spaced heads and a connecting web, and a laterally extended

support for the rail, said support being provided with an upwardly projecting portion extending longitudinally thereof, said portion being provided with an unobstructed open recess in one face adjacent the face of the support whereby the latter said face will form one of the walls of the recess, said upright extending for some distance beyond the recess, the rail being adapted to be laterally adjusted upon the face of the support whereby one edge of one of the heads may be inserted into the recess to substantially fill the same, or to be withdrawn therefrom, the portion of the upright beyond the groove engaging the web of the rail and substantially filling the space between the heads of the rail, and a fastening device passing through the portion of the said upright which engages the web of the rail and also through the said web for securing the parts together.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses, on this 28th day of September A. D. 1907.

JOHN C. FLYNN.

Witnesses:

M. W. CANTWELL,
A. L. SPRINKLE.