

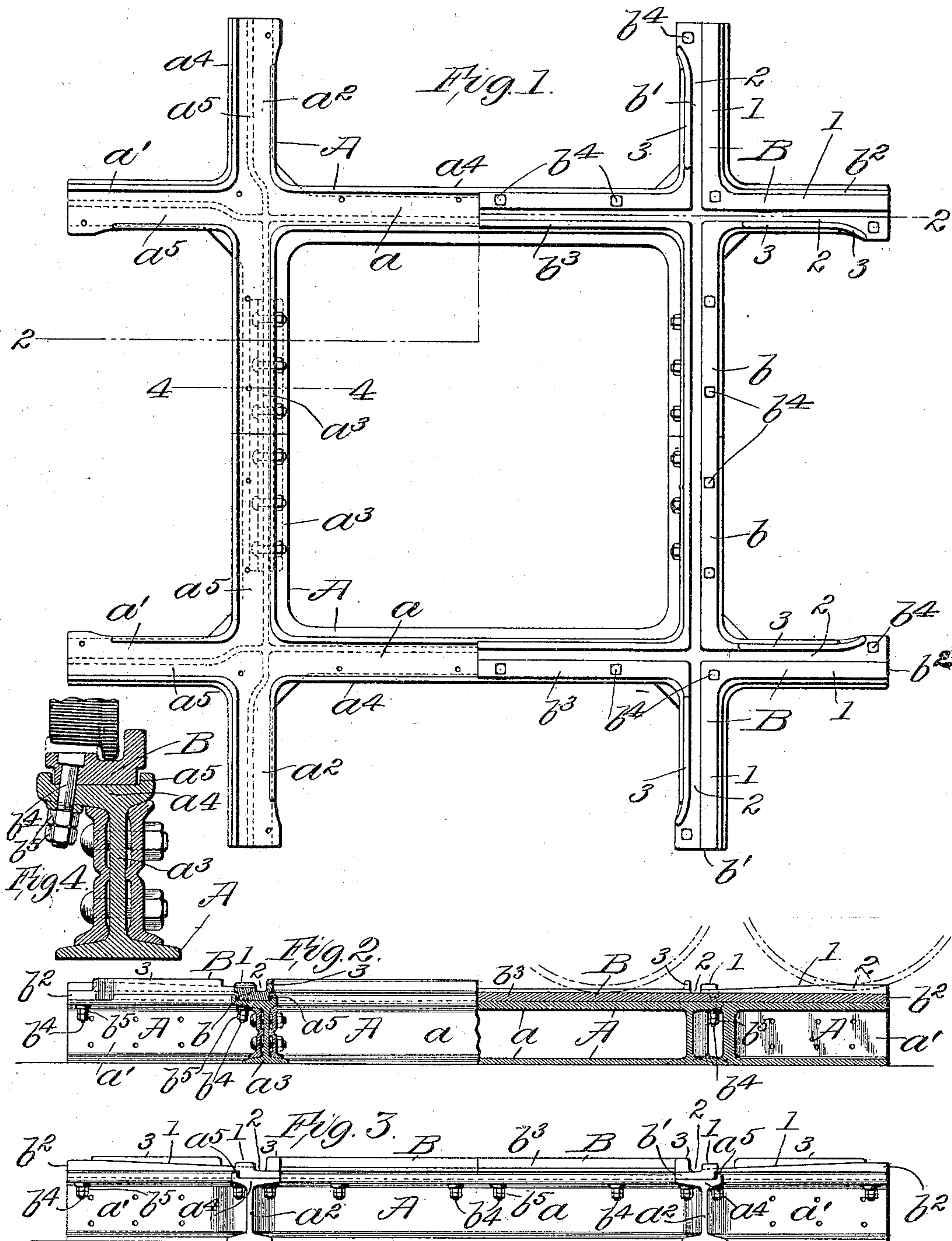
No. 696,376.

Patented Mar. 25, 1902.

W. R. MACKLIND.
RAILROAD CROSSING.

(Application filed Aug. 10, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM R. MACKLIND, OF ST. LOUIS, MISSOURI.

RAILROAD-CROSSING.

SPECIFICATION forming part of Letters Patent No. 696,376, dated March 25, 1902.

Application filed August 10, 1901. Serial No. 71,566. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. MACKLIND, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Railroad-Crossings, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view, one of the wearing-surface sections being removed. Fig. 2 is an elevation, chiefly in section, on the line 2 2 of Fig. 1, both wearing-surface sections being illustrated in position. Fig. 3 is an end elevation; and Fig. 4 is a sectional elevation on the line 4 4 of Fig. 1, the wearing-surface section being shown in position.

My invention relates to improvements in railroad-crossings, my objects being to provide a crossing so constructed that all jolting and jarring of the car are avoided, that there is presented a renewable wearing-surface securely held to the base, and that the members forming the crossing are securely held in position.

To these ends and also to improve generally upon constructions of the nature indicated my invention consists in the various matters hereinafter described and claimed.

Referring now more particularly to the drawings, A A represent the base crossing-sections, and B B the renewable wearing-surface sections, there being provided two of each of said sections and the members of each respective sections being interchangeable. Each base-section comprises a main rail-section a , extending between the lines of the usual track-rails and having longitudinal extensions a' at its ends, adapted to register with the usual track-rails, there being also provided angular extensions a^2 and a^3 , the former projecting away from and the latter projecting toward the central line of the crossing and said extensions a^3 being one-half the length of the space between the crossing rails. The heads a^4 of the base-sections are provided in their upper surfaces with grooves a^5 , in which the wearing-surfaces B are secured. Each wearing-surface section B has sections b , b' , b^2 , and b^3 , corresponding with the respective sec-

tions of the base-sections. The crossing is therefore composed of four sections, which are generally similar in plan, the two base-sections combining to form the complete base and the two wearing-surface sections combining to complete the corresponding wearing-surface for said base. I prefer, however, to so assemble the before-mentioned parts that the joints between the base-sections shall be upon the sides of the crossing other than those upon which the wearing-surface joints occur. Thus the joints between the base-sections occurring at diametrically opposite points upon one track the wearing-surface sections will be so placed that their joints occur at diametrically opposite points of the transverse track, and the said wearing-surface sections being secured in the grooves formed in the base-sections the entire crossing is thus by its own parts securely locked together and held against spreading or twisting.

Manifestly the wearing-surfaces can be fastened upon the base in many ways; but I prefer for this purpose to employ headed bolts b^4 , extending from top to bottom through the assembled wearing-surface and projecting base-head, nuts b^5 being applied to the portions of said bolts below the said base-head. This construction results in firmly clamping the wearing-plates in position in such manner that the passage of cars does not tend to jar the bolt loose, an evil which must follow in those constructions in which the bolt extends horizontally through the webs of the base and wearing-plate and must, therefore, initially have some slight play in the bolt-holes. Furthermore, as will be more fully hereinafter explained, the bolt-heads b^4 are placed in the portions of the wearing-surface which are not engaged by the car-wheels, and said heads are thus saved from wear.

Each wearing-surface has at its outer portion—i. e., its portion farthest removed from the center of the crossing—a tread 1, which corresponds generally with the tread of the track, while just inside of said tread is a groove 2, corresponding with the usual track-groove. A guard-rail 3 is formed upon the wearing-surface at the inner side of the groove for a well-known purpose. At the outer points of the crossing—i. e., the points adjacent the usual track ends—the treads 1 are

of the height of the treads of the track-rail; but at a point considerably removed—say about two feet—from the intersection of the crossing rails each tread 1 commences to incline gradually downward and toward the central line of the crossing. At a point in advance of the before-mentioned intersection the tread has decreased in height to merely the height of the wheel-flange; but said tread continues to decrease in height until it is of less height than said wheel-flange and only sufficiently high to preserve the groove 2, the upper face of the wearing-surface being substantially horizontal, but of less height than that of the wheel-flange, entirely across the space between the crossing rails. The crossing is thus grooved for its entire width; but between the crossing rails and for a distance at each side of a given set of said rails the tread is of less height than is the wheel-flange, whereby at a suitable point before reaching the intersecting tracks the wheel-flanges, which have previously been held out of contact with the bottoms of the track-grooves by reason of the wheel-treads bearing upon the track-treads, are gradually lowered until they ride upon the bottoms of said grooves 2, the wheel-treads then moving entirely across the crossing above and out of contact with the treads of the wearing-surfaces, (which combine with the base-sections A to form, in effect, rails,) and when the wheels have reached the opposite side of the crossing the wheel-treads gradually ride upon the upwardly-inclining treads of the wearing-surfaces, and thus carry the wheel-flanges into normal position above and out of contact with the bottoms of the grooves 2. Furthermore, during the passage of a wheel across the crossing it is guided by the groove 2, so that all jarring or jolting heretofore due to sudden vertical inequalities in the tracks at the rail intersections or to lateral displacement of the wheels at such intersections are rendered impossible. The before-mentioned bolt-heads b^4 are placed in the portion of the wearing-surface tread which is not engaged by the wheel-tread—i. e., in the before-described lower wearing-surface tread portion—whereby said bolt-heads are saved from wear.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my invention can be made and substituted for those herein shown and described without in the least departing from the nature and principle of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a railroad-crossing or the like, base-sections, each having a main rail-section and an angular section extending toward the central line of the crossing, and a wearing-surface section having a main section extending across the said angular sections of said base-sections and angular sections in line with the

said main rail-sections of said base-sections, there being locking engagement between said main rail-sections of the base and said angular sections of said wearing-surface, whereby said wearing-surface section serves to lock said base-sections against displacement; substantially as described.

2. In a railroad-crossing or the like, wearing-surface sections each having a main section and an angular section extending toward the central line of the crossing, and a base-section having a main rail-section extending across the said angular sections of said wearing-surface sections and angular sections in line with the said main sections of said wearing-surface sections, there being locking engagement between said main sections of said wearing-surface and said angular sections of said base, whereby said base-section serves to lock said wearing-surface sections against displacement; substantially as described.

3. In a railroad-crossing or the like, complementary base-sections each having a main rail-section and angular sections extending toward the central line of the crossing, the joints between said base-sections being upon opposite sides of the crossing, and complementary wearing-surface sections fitting upon said base, each wearing-surface section having a main section and angular sections extending toward the central line of the crossing, the joints between said wearing-surface sections being upon sides of the crossing other than those upon which occur the joints between said base-sections, there being locking engagement between the said wearing-surface sections and base-sections upon all four sides of the crossing, whereby said several sections serve to lock each other against displacement; substantially as described.

4. In a railroad-crossing or the like, base-sections each having a main rail-section and an angular section extending toward the central line of the crossing, and a wearing-surface section having a main section extending across the said angular sections of said base-sections and angular sections in line with the said main rail-sections of said base-sections, there being groove connection between said main rail-sections of the base and said angular sections of said wearing-surface, and means for securing said main section of the wearing-surface against lateral displacement upon said angular sections of said base; substantially as described.

5. In a railroad-crossing or the like, complementary base-sections each having a main rail-section and angular sections extending toward the central line of the crossing, the joints between said base-sections being upon opposite sides of the crossing, and complementary wearing-surface sections fitting upon and having groove connection with said base, each wearing-surface section having a main section and angular sections extending toward the central line of the crossing, the joints between said wearing-surface sections being

upon sides of the crossing other than those upon which occur the joints between said base-sections; substantially as described.

5 6. The combination with a rail-base, of a separate wearing-surface upon said base, and a bolt extending from top to bottom through suitable portions of said base and wearing-surface and securing said parts together, the head of said bolt lying in the tread of said
10 wearing-surface and in a portion thereof not engaged by the wheels; substantially as described.

7. In a railroad-crossing or the like, a wearing-surface having a tread portion and a
15 wheel-guard, a groove for the wheel-flange being formed between said tread and wheel-guard, said tread extending entirely across the crossing but between points outside of the rail intersections being reduced to a height
20 less than that of the wheel-flange and said lower tread portion being connected to the normal tread portions by gradual inclines; substantially as described.

8. In a railroad-crossing or the like, a base, a separate wearing-surface upon said base, 25 said wearing-surface having grooves extending across the rail intersections, the wearing-surface tread between points outside of said intersections being of less height than the flange of the wheel designed to run upon said 30 tracks and said lower tread portions being connected to the normal tread portions by gradual inclines, and bolts connecting said base and wearing-surface and extending from top to bottom through the same, the bolt- 35 heads lying in the before-mentioned lower tread portion, whereby they are not engaged by passing wheels; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, 40 this 8th day of August, 1901.

WILLIAM R. MACKLIND.

Witnesses:

GEORGE BAKEWELL,
GALES P. MOORE.