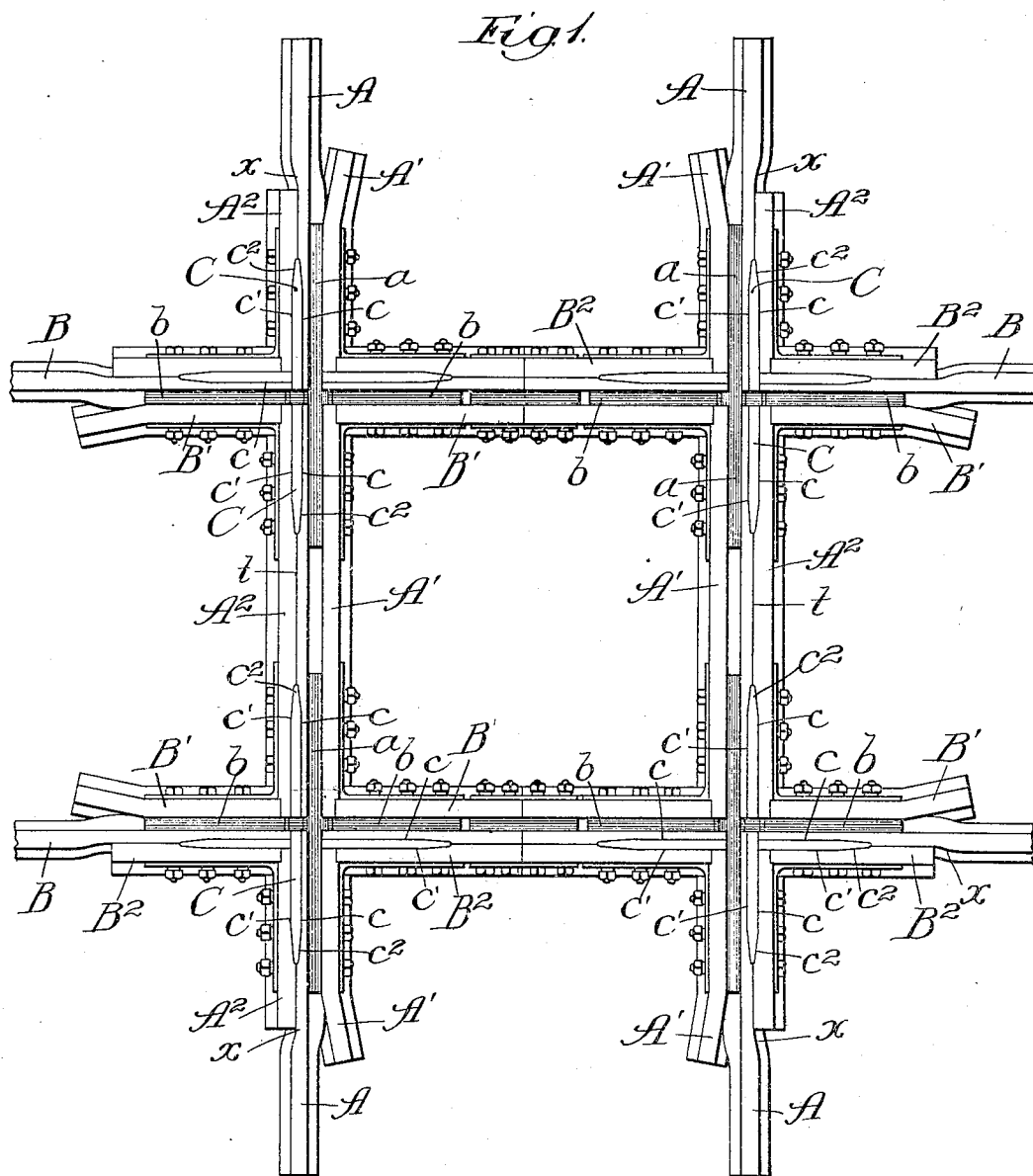


No. 792,365.

PATENTED JUNE 13, 1905.

A. A. STROM.
RAILWAY CROSSING.
APPLICATION FILED APR. 13, 1905.

2 SHEETS—SHEET 1.



Witnesses:
Edw. Payford.
John Enders.

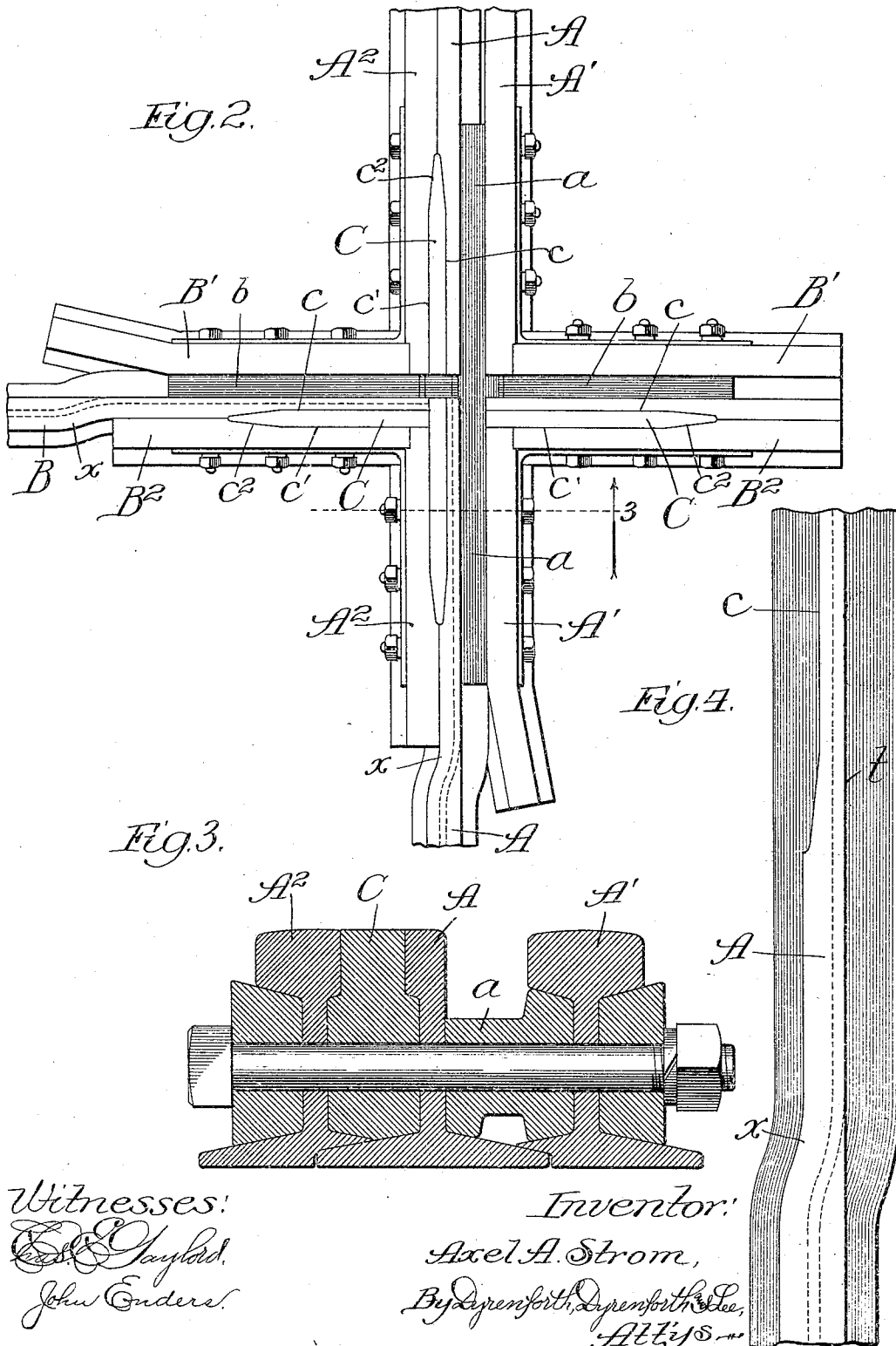
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

AXEL A. STROM, OF CHICAGO, ILLINOIS, ASSIGNOR TO PETTIBONE, MULLIKEN & CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

RAILWAY-CROSSING.

SPECIFICATION forming part of Letters Patent No. 792,365, dated June 13, 1905.

Application filed April 13, 1905. Serial No. 255,332.

To all whom it may concern:

Be it known that I, AXEL A. STROM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Railway-Crossings, of which the following is a specification.

The primary object of my invention is to provide railway-crossings with the same species of reinforcement in the form of inserts of relatively hard metal where the wear is great as it is the practice to provide in railway-frogs in the wing-rails adjacent to the frog-point to increase the durability of the structure by causing the thrusts of the wheels in clearing the point to be received on the surface of the insert.

Owing to the breaks provided in the junctions of crossing-rails at the points of their intersection to accommodate the wheel-flanges of rolling-stock passing over them, much pounding of the wheels against the rails ensues at these breaks, with the effect of rapidly wearing away the rail-heads at these points, and as the wear progresses the pounding necessarily increases to the detriment of the crossing and also of the wheels passing over it. To enable these hard-metal inserts to be provided to the best advantage in a railway-crossing, they should be applied to the crossing-rails adjacent to their intersections in a particular manner embodying my invention hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a railway-crossing provided with my improvement; Fig. 2, a similar broken view illustrating one corner portion of the crossing drawn to a larger scale; Fig. 3, a section taken at the line 3 on Fig. 2 viewed in the direction of the arrow and enlarged; and Fig. 4 a plan view of one of the main rails of the crossing, showing its preferred construction.

The general construction of the crossing is that commonly provided, involving the parallel rails A A, intersected by the parallel rails B B. Along the inner side of each rail A extends a guard-rail A', with an interposed filling *a*, and along its outer side a reinforcing-

rail A², and a similar guard-rail B' extends along the inner side of each rail B, with an interposed filling *b*, and along its outer side a reinforcing-rail B². The rails and filling forming each side of the crossing are securely fastened together by bolts passed transversely through them, as represented.

The rails A and B on either side of the crossing subjected to the greatest amount of travel, or on both sides thereof, as shown, are each provided adjacent to their point of intersection with a bar C, of manganese steel or other suitable relatively hard metal in position to receive the impact of wheels passing over the crossing. I apply this reinforcement by providing in the outer side of the head of each rail A and in that of each rail B a longitudinal recess *c*, extending to any desired length along the rail-head from the point of intersection and preferably of straight form between its ends, which are beveled, as represented at *c*². In the head of each reinforcing-rail A² and B² a similar recess *c'* is formed to register with the respective recess *c* and form between the rails species of pockets, in each of which is confined a bar C, which may be bodily introduced therein in its bar form in constructing the crossing or formed in the pocket by pouring into the latter the metal, while in a molten condition, of which the insert is composed, preferably manganese steel. With an insert C thus confined it fills the space between the rails, forming its confining-pocket, as represented in Fig. 3.

It is not desirable to provide the hard-metal insert in the positions of the fillers *a b* along the inner sides of the rails A B, since to do so would require that the fillers be entirely composed of that metal, which is very expensive compared with the cheap metal composing the ordinary filler and would render the construction of the crossing unduly expensive, while by providing the insert at the outer side of the rail-head comparatively little of the expensive metal is required to be used. Moreover, the hard metal composing the insert is more or less brittle and liable to fracture under the blows of the wheels to which it is subjected, and if provided in the

position of the filler the broken section would work out and become dislodged, thereby producing liability of accidents to trains passing over the crossing. By providing the insert at the outer side of the crossing-rail it may be so confined in place that in case of fracture the parts remain in place, and the broken insert is thus kept practically intact.

It will be observed that the rails A and B are, as more clearly shown of the rail A in Fig. 4, deflected as to their heads, necks, and flanges by bending them at the points *x*, thereby bringing these parts between the points of deflection into different planes parallel with those of the corresponding parts beyond the points of bending. The inner side of the head of each bent rail is likewise brought by the bending into a different plane; but it is planed off on that side to cause it to aline along the line *t* (except for the recesses *c*) throughout the rail as to that side of the head. This feature of the construction while not forming an indispensable part of the invention is desirable, because it enables the positioning of the hard-metal inserts closer to the flanges of wheels passing over the crossing where the rails are subjected to the greatest wear.

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

1. A railway-crossing having inserts of relatively hard metal secured to the outer sides of the main crossing-rails adjacent to points of intersection of said rails, for the purpose set forth.

2. A railway-crossing having inserts of relatively hard metal confined in pockets at the outer sides of the main crossing-rails adjacent to their points of intersection, for the purpose set forth.

3. A railway-crossing having recesses in the outer sides of the heads of the main crossing-rails adjacent to points of intersection of said rails, and inserts of relatively hard metal confined in said recesses, for the purpose set forth.

4. A railway-crossing having recesses, each

formed with a straight intermediate portion and beveled ends, in the outer sides of the main crossing-rails adjacent to the points of rail intersection, and inserts of relatively hard metal fitting and confined in said recesses, for the purpose set forth.

5. A railway-crossing having the outer sides of the heads of main crossing-rails therein and the inner sides of the heads of the respective reinforcing-rails provided with coincident recesses adjacent to the points of rail intersection, and inserts of relatively hard metal confined in said recesses, for the purpose set forth.

6. A railway-crossing having the outer sides of the heads of main crossing-rails therein and the inner sides of the heads of the respective reinforcing-rails provided with coincident recesses adjacent to the points of rail intersection, and inserts of relatively hard metal confined in said recesses and expanded below the heads of the rails toward their necks and seating on their adjacent flanges, for the purpose set forth.

7. A railway-crossing having parallel main crossing-rails each deflected inward between its ends with the inner side of the head of the deflected portion alining with the corresponding side of the head at the end portions, and bars of relatively hard metal secured to the outer sides of said rails adjacent to the points of rail intersection, for the purpose set forth.

8. A railway-crossing having parallel main crossing-rails each deflected inward between its ends with the inner side of the head of the deflected portion alining with the corresponding side of the head at the end portions, recesses in the outer sides of said heads adjacent to the points of rail intersection, reinforcing-rails provided in the inner sides of their heads with recesses respectively coinciding with those in said main rails, and bars of relatively hard metal confined in said recesses, for the purpose set forth.

AXEL A. STROM.

In presence of—

J. H. LANDES,

A. U. THORIEN.