No. 729,049. PATENTED MAY 26, 1903.

G. M. ERVIN.

RAILWAY TRACK STRUCTURE.

APPLICATION FILED SEPT. 23, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

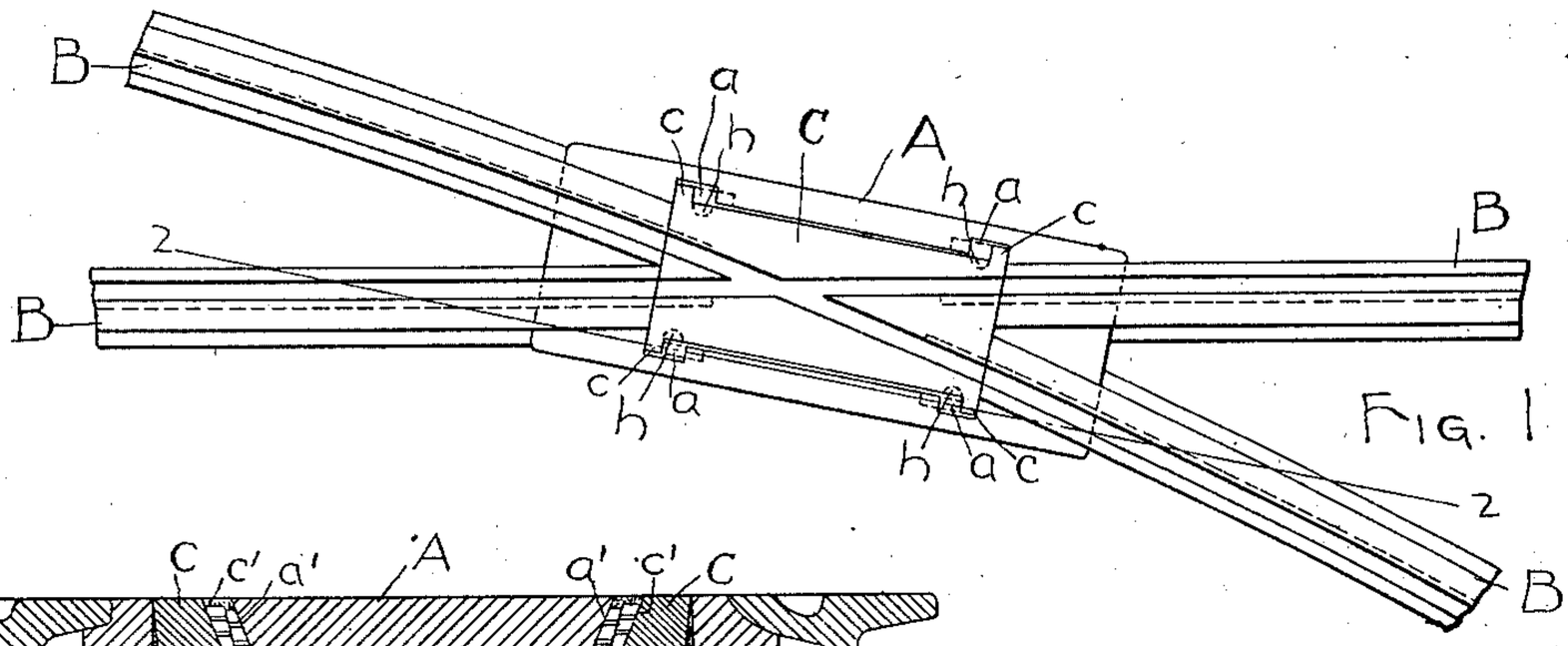

FIG. 1

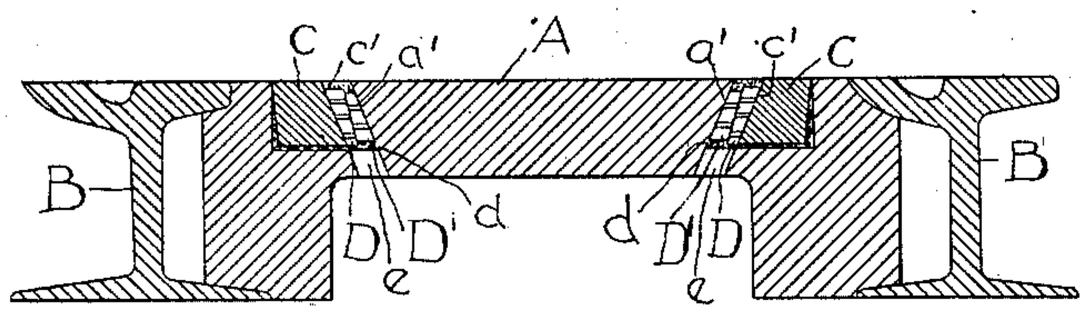

FIG. 2

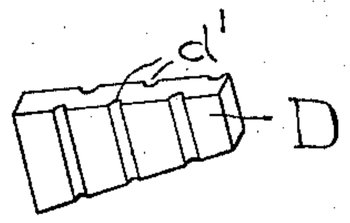

FIG. 6

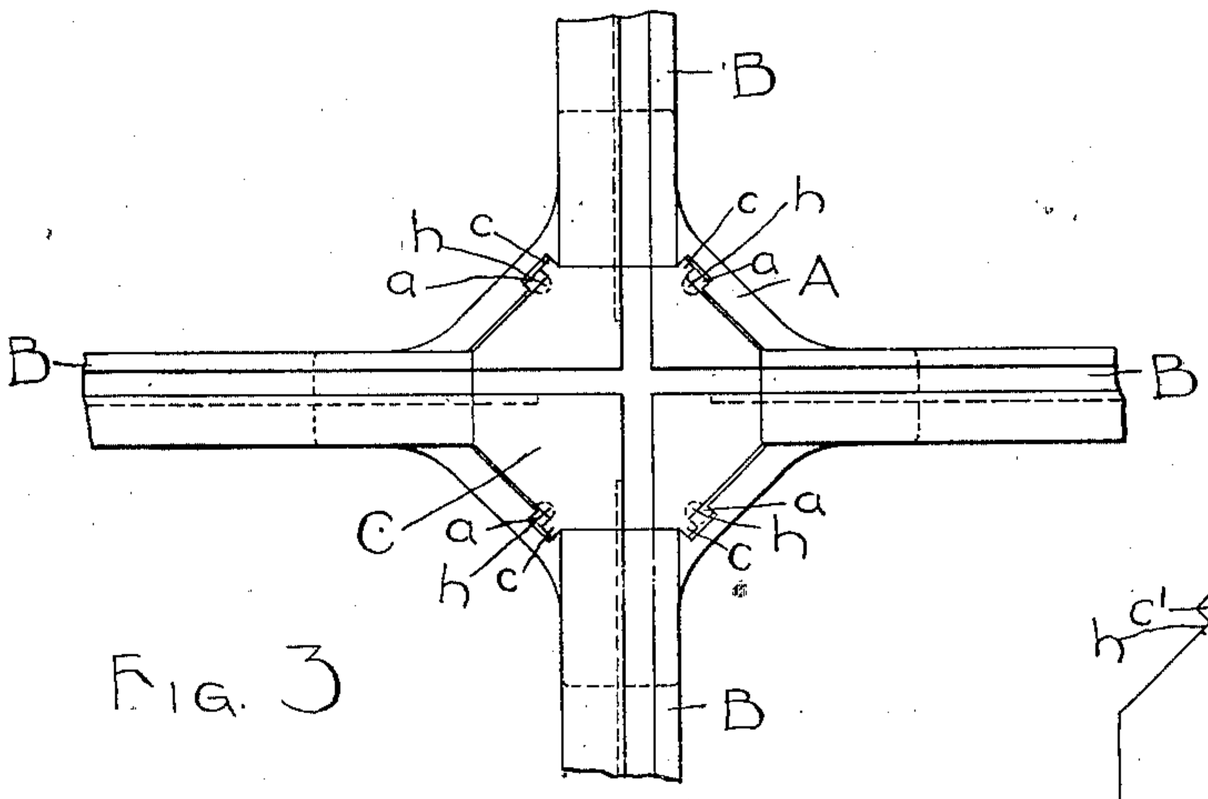

FIG. 3

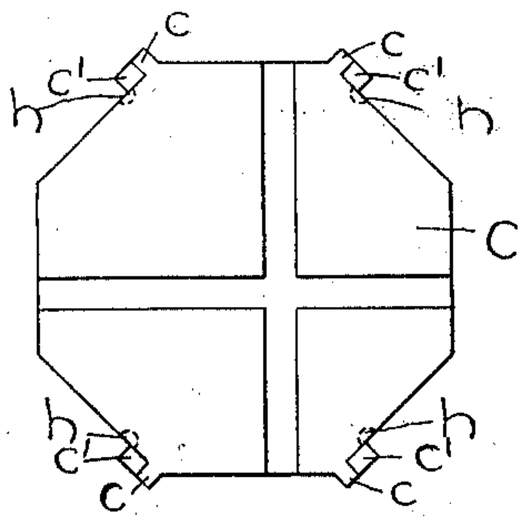

FIG. 4

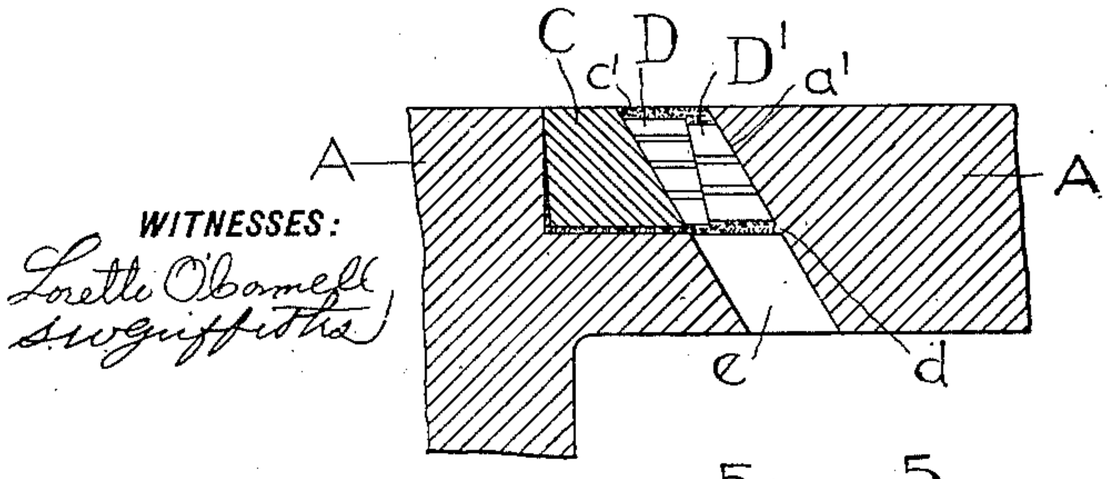

FIG. 5

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RAILWAY TRACK STRUCTURE.

APPLICATION FILED SEPT. 23, 1902.

NO MODEL. 2 SHEETS—SHEET 2.

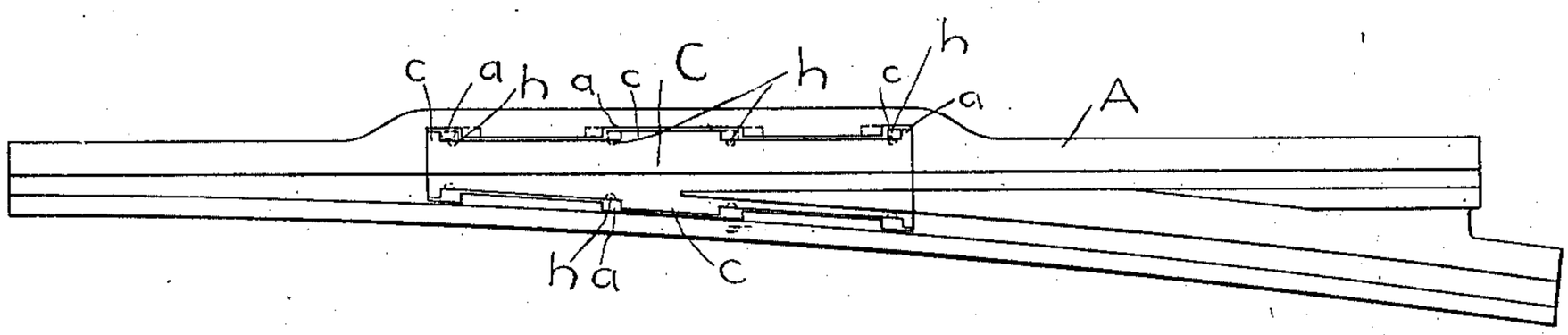

FIG. 7

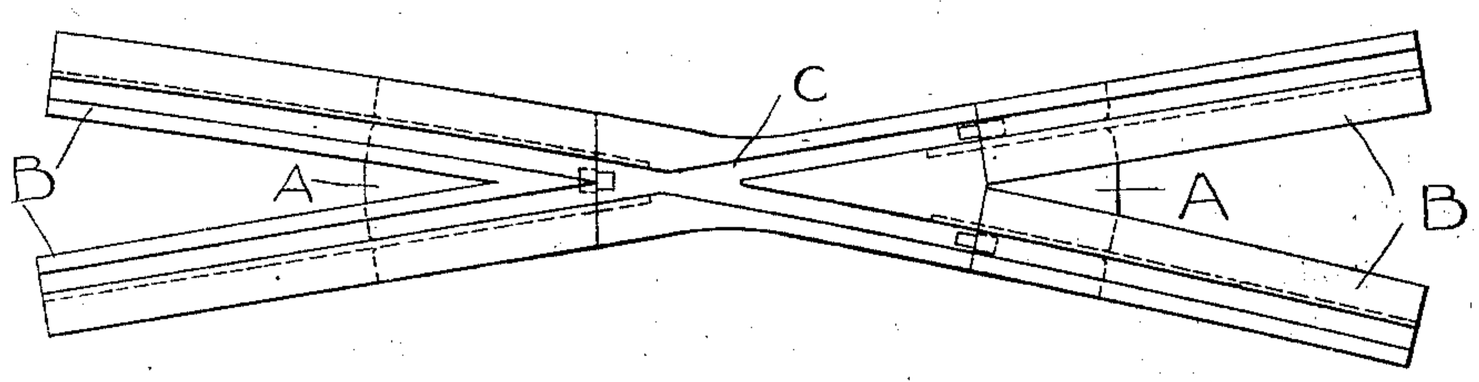

FIG. 8

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No. 729,049. Patented May 26, 1903.

UNITED STATES PATENT OFFICE.

GEORGE M. ERVIN, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

RAILWAY-TRACK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 729,049, dated May 26, 1903.

Application filed September 23, 1902. Serial No. 124,572. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. ERVIN, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Railway-Track Structures, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to certain new and useful improvements in railway-track structures of that class in which the parts subject to the greatest wear are formed by a plate of hard material removably secured in the structure.

The object of my invention is to provide means of simple and practical character whereby such plates may be rigidly secured in place in such a manner that they will not work loose under the severe hammering which they receive in service from the wheels of cars and other vehicles, but which will permit the plates to be readily removed and replaced without disturbing the balance of the structure or the adjacent pavement.

With this object in view my invention consists in the combination, in a railway-track structure with the body portion of the structure provided with a plate-seating pocket or recess and a wear-plate seated in said pocket or recess, of means for removably securing said plate consisting of one or more compound keys or wedges seated between the said plate and body portion and having each a member which can be driven from the surface of the structure to release the key or wedge.

My invention also comprises means whereby said keys when once seated are normally held against any tendency to become loose by reason of the rough service to which the structure is subjected, but which will permit of access thereto at any time for the purpose of releasing them should it be necessary to remove and replace the plate.

My invention also consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a frog or curve-crossing embodying my invention; Fig. 2, a longitudinal vertical section on the line 2 2 of Fig. 1; Fig. 3, a plan view showing the invention as applied to a right-angled crossing; Fig. 4, a plan of the plate of Fig. 3 removed; Fig. 5, a detail sectional view showing on a larger scale the manner in which the keys are seated; Fig. 6, a perspective view of one of the key members removed; Fig. 7, a plan view showing the arrangement of keys for a switch-mate; and Fig. 8 a plan view of a frog or curve-crossing, showing a modified arrangement of the keys.

In the views the letter A designates the body of the structure, in which are cast the rail members B. I desire it understood at the outset, however, that my invention is equally adapted to track structures which are cast in an integral piece and also to built-up work.

The body portion A of the structure is cored out to form a seat for the removable track-surfaced plate C, which is usually formed of some material, such as manganese steel, which is of harder or more durable nature than the material of the rest of the structure. The said pocket is formed at its ends with lateral recesses or offsets *a*, having each a beveled undercut wall *a'*. The plate C is formed at its ends with the lateral offsets *c*, which fit into the recesses *a* and are formed with the beveled surfaces *c'*. Each offset *c* is smaller than the corresponding recess *a*, so that there is left between the beveled surfaces *a'* and *c'* a rhomboidal space for a wedging-key D D'. This key is split vertically into two sections or members, so as to form two complemental oppositely-acting wedges.

It will be readily seen that when the key is seated by driving on the wedge member D the plate will be securely wedged in place against both vertical and lateral movement. In order to hold the wedge members D' while the members D are being thus driven, the frangible lips *d* may be formed on the surfaces *a'* to catch and hold said members D'. This, however, is not essential, since the openings *e*, which extend through the body portion A below the keys, are usually filled with wooden or clay plugs (for the purpose hereinafter described) while the keys are be-

ing seated and tightened, and these plugs will prevent the members D′ from falling through.

The keys may be released whenever it is desired to remove the plate by driving on the wedge members D′, the openings *e* permitting said members to be driven entirely through and out. The plate can then be removed by inserting pry-bars in recesses formed at *h* for that purpose or by any suitable lifting appliance after the wedges have been driven through. These recesses can be filled with clay or wooden plugs, which can be easily cut or dug out. The plate is preferably bedded in spelter or similar material in the usual manner, and this spelter is allowed to flow up and around the keys, as shown, to prevent them from working loose. Shallow grooves or corrugations *d′* may be formed in the keys, as shown in Fig. 6, in order to cause them to be held more firmly by the spelter without preventing them from being driven loose in the manner above described. While the spelter is being poured the openings *e* may be closed with plugs of wood or clay. The spelter above the keys can be readily chipped out to enable the keys to be reached, while that underneath them can be readily fractured as they are driven through.

Should a plate develop looseness in service from any cause, the spelter at the top of the keys can be removed and the members D′ be driven tight again. Fresh spelter can then be poured over the keys.

In Fig. 7 I have indicated the arrangement of keys for the plate of a switch-mate. These plates, being of considerable length, should have additional keys intermediate of the ends, as shown.

Fig. 8 shows a modification wherein the side walls of the plate-seating pocket are omitted and the key-seats are formed at the sides of the plate. The keys are seated in the same manner as illustrated in Fig. 5. This construction has the advantage of making a lighter and cheaper structure and one in which the surface area of metal in the street is considerably reduced.

It will be apparent that in the construction shown in Figs. 1 to 7, inclusive, the recesses *a* may be made in the plate and the projections *c* be formed on the walls of the pocket, if desired.

Various other modifications may be made without departing from the spirit and scope of my invention as defined in the appended claims. Hence I do not wish to limit myself to the particular construction, arrangement, and combination of parts which I have herein shown and described.

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

1. In a railway-track structure, the combination with the body portion of the structure provided with a plate-seating pocket having in its side or end walls one or more key seats or bearings, and a plate adapted to seat in said pocket and having complementary key seats or bearings, of split keys or wedges in said seats or bearings and having each a member which can be released by driving.

2. In railway-track structure having a wear-plate removably seated therein, obliquely-driven keys which secure said plate in place.

3. In a railway-track structure, the combination with the body portion of the structure provided with a plate-seating pocket formed with key seats or bearings in its side or end walls, and a plate removably seated in said pocket and having complementary key seats or bearings, of keys securing said plate, one member of each key having its widest portion at its lower end.

4. In a railway-track structure having a wear-plate seated therein, means for removably securing said plate consisting of obliquely-arranged compound wedges or keys which may be driven to either secure or release the said plate.

5. In a railway-track structure having a wear-plate removably seated therein, said structure and plate having parallel oblique key seats or bearings, of obliquely-driven keys which secure said plate consisting of two wedging members bearing respectively upon the parallel sides of the seats, and driven one upon the other.

6. In a railway-track structure, the combination with the body portion of the structure, formed with a plate-seat, and a plate in said seat, said seat and plate having oblique parallel key seats or bearings, of keys consisting each of two reversely-acting wedging members, and means for normally holding said keys from working loose.

7. In a railway-track structure, a body portion having a pocket or seat therein a wear-plate in said pocket or seat, said pocket or seat and the plate having oblique key seats or bearings, and keys for securing said plate consisting each of two reversely-acting wedging members, retaining material poured about said keys, and openings through the body of the structure below said keys substantially as described.

8. In a railway-track structure a body portion having a pocket or seat therein, a wear-plate in said pocket or seat, said pocket or seat and the plate having oblique key seats or bearings, keys for securing said plate comprising reversely-acting wedging members, and a retaining material forming a bed for the plate and filling the space about said keys, substantially as described.

9. In a railway-track structure, the combination of a body portion having a plate seat or pocket formed with oblique key seats or bearings, a plate formed with inclined key seats or bearings, keys consisting each of two reversely-acting wedging members, and a retaining material embedding or partially embedding said keys, and openings through the

body portion beneath said keys, substantially as described.

10. In a railway-track structure, having a removable plate, means for removably securing said plate in the body portion of the structure, consisting of keys driven obliquely between the plate and the body portion of the structure and consisting each of two oppositely-acting wedges, and a retaining material embedding said keys, the body portion of the structure having openings beneath said keys through which they may be driven, substantially as described.

11. In a railway-track structure having a wear-plate, means for removably securing said plate to the body portion of the structure, consisting of obliquely-seated keys or wedges engaging the said plate and body portion and having each a member which may be driven to release its holding action.

12. In a railway-track structure having a wear-plate, means for securing said plate to the body portion of the structure, consisting of a compound wedge, one member of which may be driven to secure the plate and the other member of which may be driven to release the same.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEO. M. ERVIN.

Witnesses:
GEO. H. PARMELEE,
H. W. SMITH.