No. 779,470. PATENTED JAN. 10, 1905.

G. M. ERVIN.

PLATE FASTENING FOR RAILWAY TRACK STRUCTURE.

APPLICATION FILED DEC. 5, 1903.

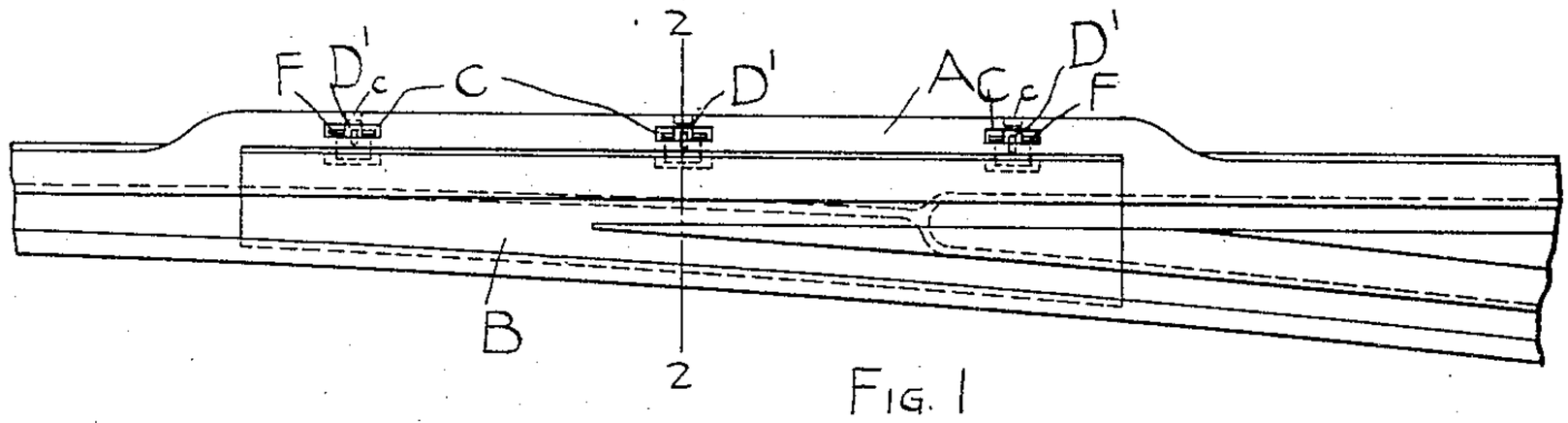

FIG. 1

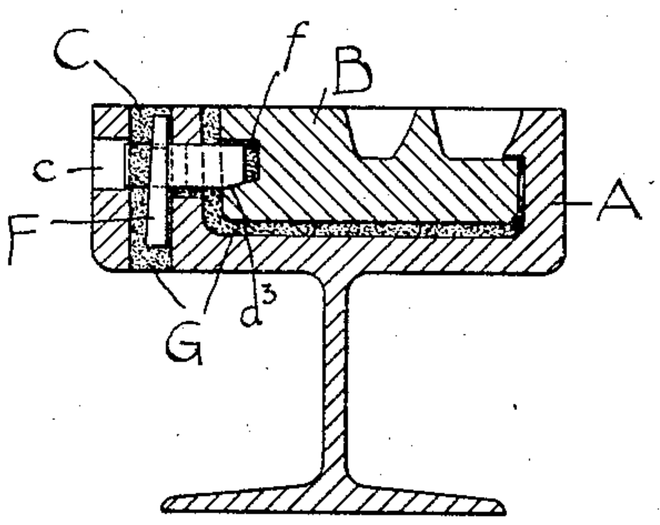

FIG. 2

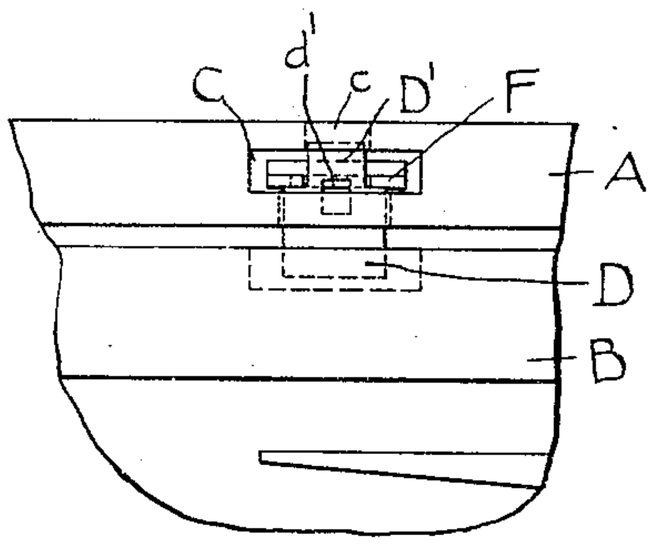

FIG. 3

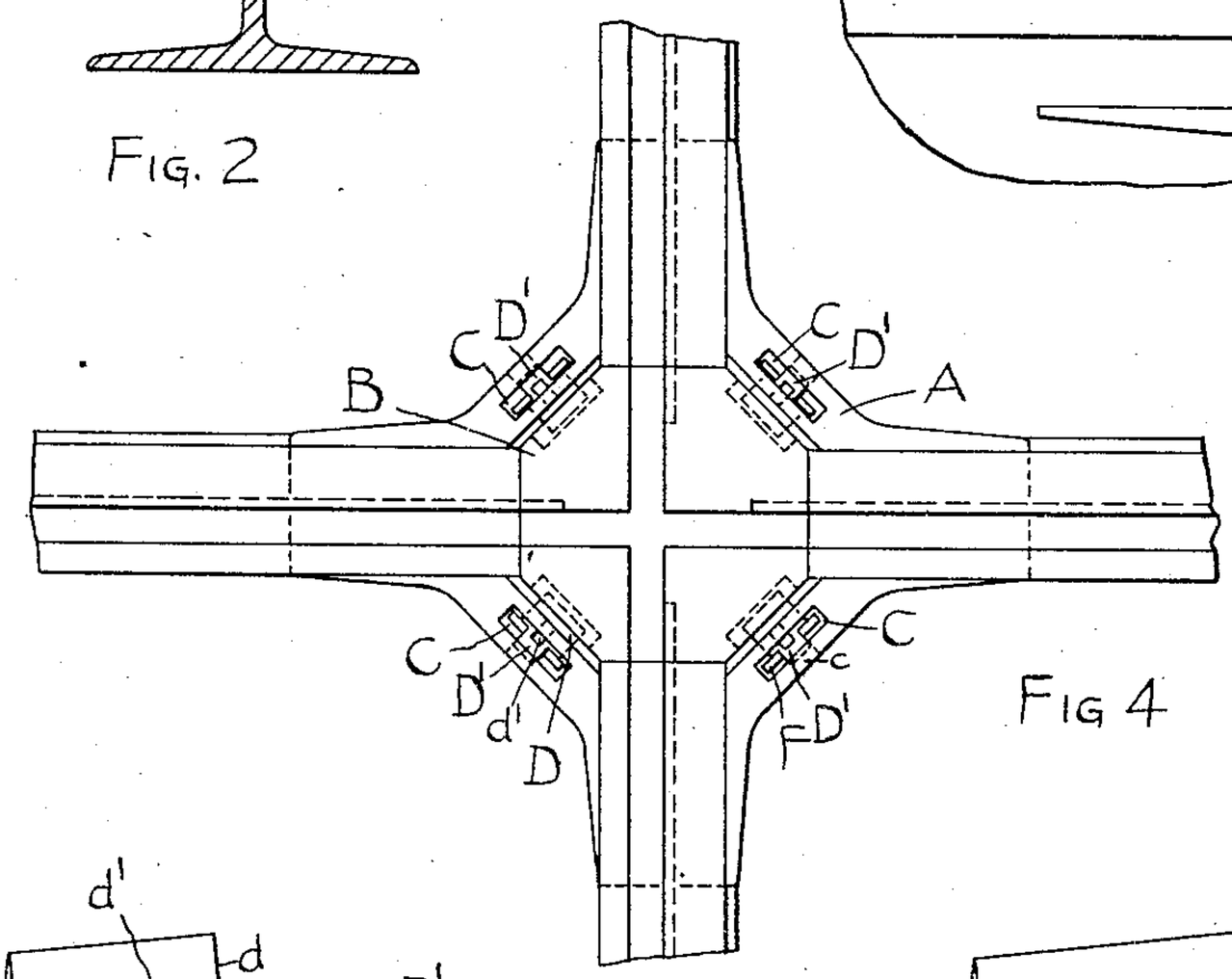

FIG 4

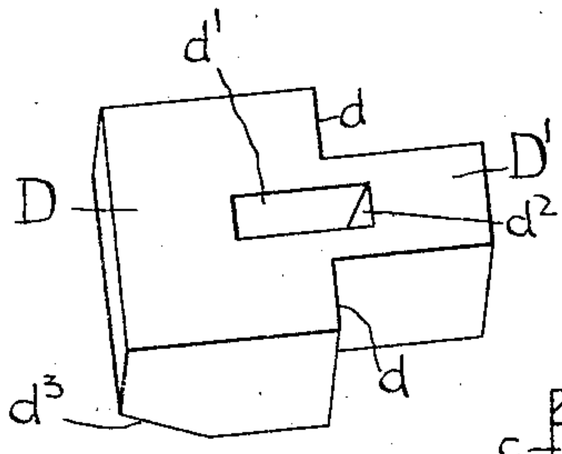

FIG. 5

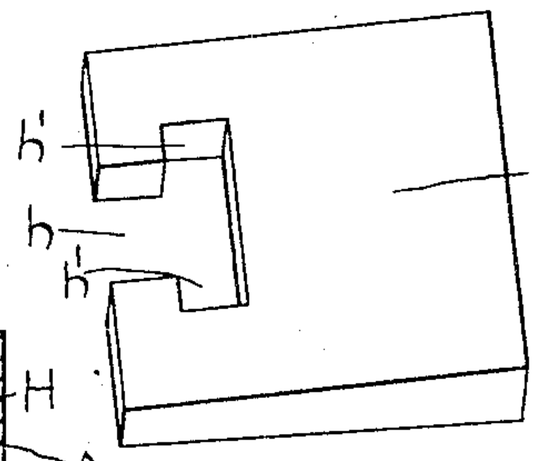

FIG 6

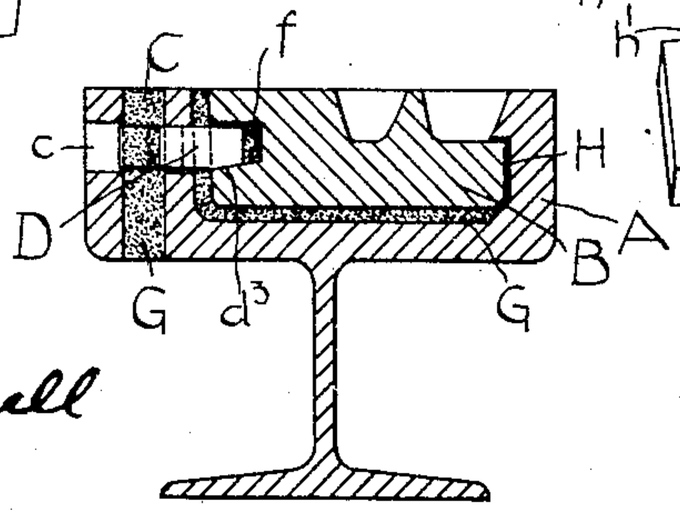

FIG 7"

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PHOTO-LITHOGRAPHED BY SACHETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 779,470. Patented January 10, 1905.

UNITED STATES PATENT OFFICE.

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

PLATE-FASTENING FOR RAILWAY-TRACK STRUCTURES.

SPECIFICATION forming part of Letters Patent No. 779,470, dated January 10, 1905.

Application filed December 5, 1903. Serial No. 183,929.

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 Plate-Fastenings for 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 plate-fastenings for railway-track structures, and is designed to provide simple and efficient means whereby plates may be rigidly secured in the structures, but in such a manner that they may be readily released from the surface of the structure and removed.

With this object in view my invention consists in the combination, in a railway-track structure, with the body portion of the structure and with a plate seated therein, of one or more laterally-movable fastening-keys seated in said body portion and adapted to be moved laterally into and out of engagement with the plate from the surface of the structure, together with means for positively securing such engagement and for releasing the same.

My invention also consists in the novel construction and combination of parts, all substantially 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 showing my invention applied to a switch-mate structure; Fig. 2, a section on the line 2 2 of Fig. 1; Fig. 3, a plan view of a portion of the structure on a larger scale and showing one of the fastenings or keys; Fig. 4, a plan view showing the invention applied to a right-angled crossing; Figs. 5 and 6, detail perspective views; and Fig. 7, a section similar to that of Fig. 2, but showing a modification.

The letter A designates the body portion of the structure, and B the track-surfaced wear-plate seated therein.

C designates vertical openings cored in the body portion of the structure and extending therethrough.

D D′ designate the laterally-movable keys or fastenings, consisting each of a nose portion D and a heel portion D′. These keys are arranged to work in guides formed by the openings *c*, which intersect the openings C.

In assembling the structure the plate is seated and properly leveled up and alined, the keys D D′ having been previously seated. A piece F, such as shown in Fig. 6, is then preferably seated behind and against the shoulders *d* of each of said keys. A cold-chisel or other suitable tool is next driven behind each of said pieces F, thereby forcing the nose portions of the keys into the recesses *f* in the edges of the plate, as clearly shown in Figs. 2 and 7. Spelter or similar bedding material G is then poured underneath and about the plate, and the unoccupied portions of the openings C are also filled with this material. The chisels or other tools can then be withdrawn. The spelter behind the pieces F forms a solid backing for the keys, which prevents them from working loose.

To release the plate, a suitable drift is applied to the upper ends of the pieces F, and they are driven down through the structure, the openings left thereby serving to permit the keys to be moved back to disengage the plate. This is accomplished by driving a tapered tool through the opening *d′* in the heel portion of each key against its beveled wall d^2, thereby drawing the key outward. The pieces F are preferably made of increasing size toward their lower ends, so that they will the more readily free themselves as they are driven out. The offset portions *h* of the slots *h′* in said pieces fill up with the spelter as it is poured, forming a holding means for the said pieces. These offsets may, however, be omitted, as the spelter underneath the lower ends of said pieces will ordinarily be sufficient to prevent them from working out. The purpose of these pieces F is to provide means which can be readily driven out to release the keys. They may, however, be omitted, and the entire space behind the keys be filled with the spelter, as shown in Fig. 7. This body of spelter is then drifted through the structure to release the keys.

The nose portions D of the keys are bev-

eled, as shown at d^3, and the bottoms of the recesses f are similarly beveled in order to take care of slight variations in the thickness and adjustment of the plates. To take care of greater variations, thin shims can be placed in the bottoms of the recesses f.

In the construction shown in Fig. 1 the keys are used at one side only of the plate, the other side being engaged with the undercut wall H of the plate-pocket. Fig. 4 shows the invention applied to a right-angle crossing having an octagonal plate. In this case the keys are seated at opposite corners.

The particular location and arrangement of the keys will vary somewhat, according to the type of track structure in which they are employed and with the size and shape of the plate. Hence I do not wish to be limited to the particular constructions and arrangements 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 of the structure and the wear-plate therein, of a laterally-movable key seated in said body portion and engaging an edge of said plate, and means for driving a key or wedge against the movable key from the surface of the structure to retract it from engagement with the said plate.

2. In a railway-track structure, the combination with the body of the structure, and a wear-plate therein, of a laterally-movable key seated in said body portion and having a lateral engagement with the said plate, said key having a beveled wall, and an opening leading from the surface of the structure to said wall.

3. In a railway-track structure, the combination with the body portion of the structure, and the wear-plate seated therein, of laterally-movable keys seated in said body portion, means whereby said keys may be driven into and out of engagement with the plate from the surface of the structure, and a backing behind said keys which can be driven through the structure to release the keys.

4. In a railway-track structure, the combination with the body portion, and the plate seated therein, said body portion having horizontal openings forming, key-seats, and vertical openings intersecting the horizontal ones, of the laterally-movable keys, seated in said horizontal openings, and the removable locking means in said vertical openings.

5. In a railway-track structure of the class described, the laterally-movable keys seated in the body portion of the structure and engaged with said plate, releasing members seated behind said keys, and a body of spelter or like material behind said releasing members, said body portion having openings through which the releasing members may be driven.

6. In a railway-track structure, the combination with the body portion and the plate seated therein, of the laterally-movable keys, having the beveled nose portions and the slotted heel portions.

7. In a railway-track structure, the combination with the body portion of the structure, and the wear-plate therein, of laterally-movable keys seating in said body portion and adapted to laterally engage and secure the said plate, and means whereby a releasing-tool may be engaged with said keys from the top surface of the structure to retract them from engagement with the said plate.

8. In a railway-track structure, the combination with the body portion, and the wear-plate therein, of laterally-movable keys seated in said body portion, and arranged to laterally engage and secure said plate, means whereby a releasing-tool may be engaged with said keys from the top surface of the structure to retract them from engagement with the said plate, means for normally locking the keys, and means for releasing such lock preparatory to the operation of the releasing-tool.

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

GEORGE M. ERVIN.

Witnesses:
LORETTO O'CONNELL,
H. W. SMITH.