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PATENTED JULY 26, 1904.

G. M. ERVIN.  
RAILWAY TRACK STRUCTURE.  
APPLICATION FILED MAR. 18, 1903.

NO MODEL.

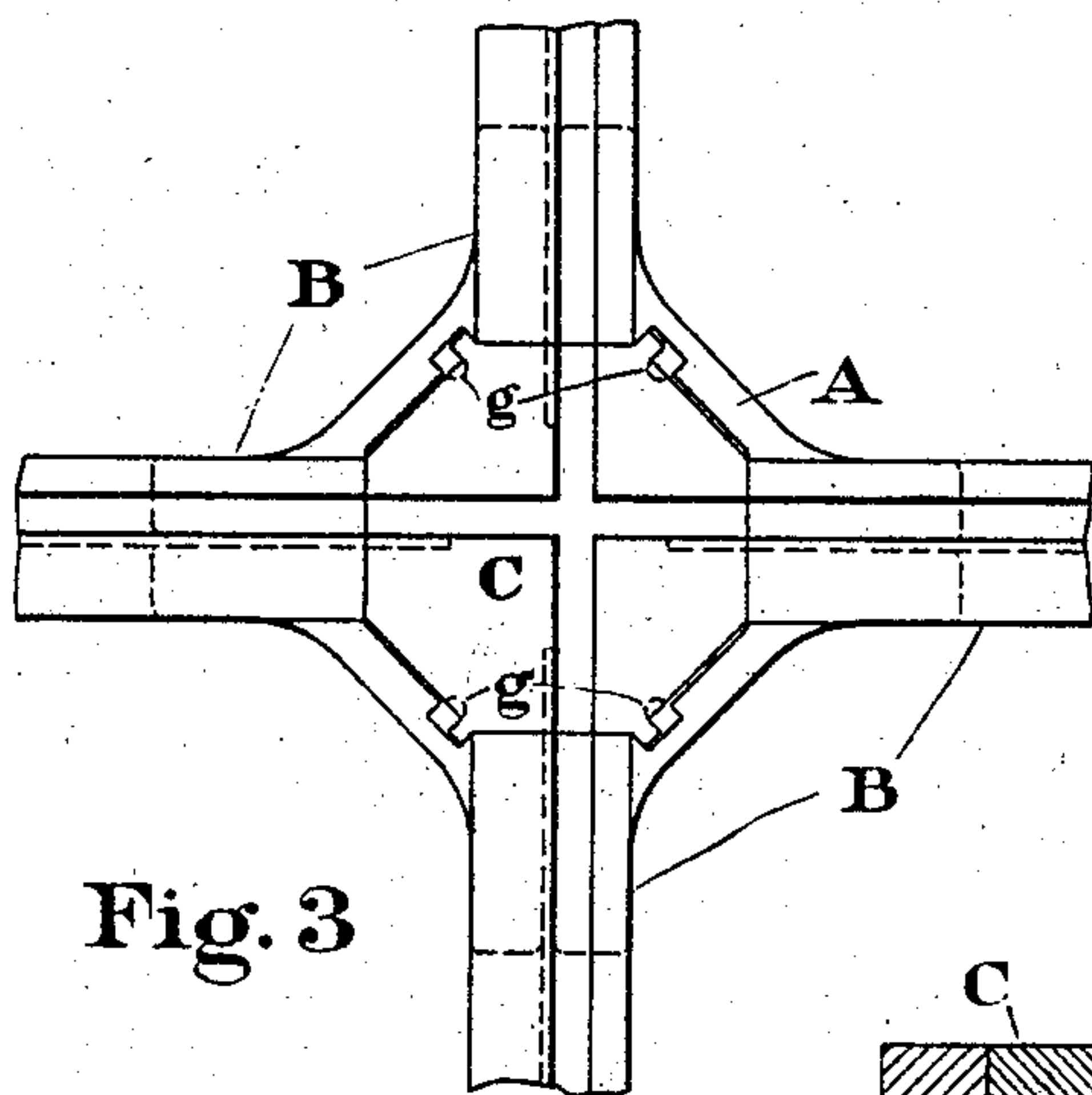
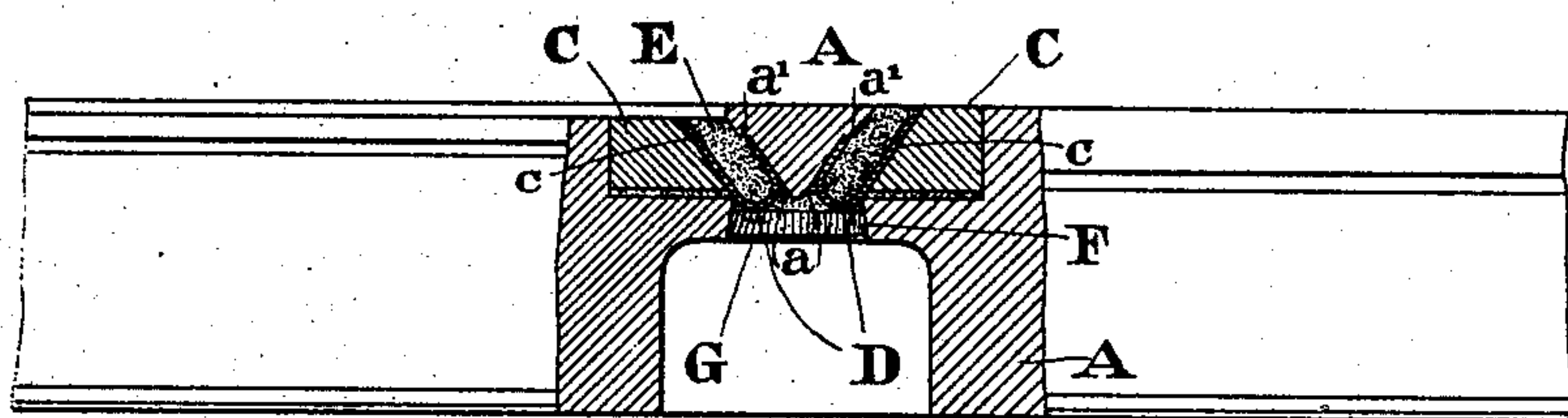
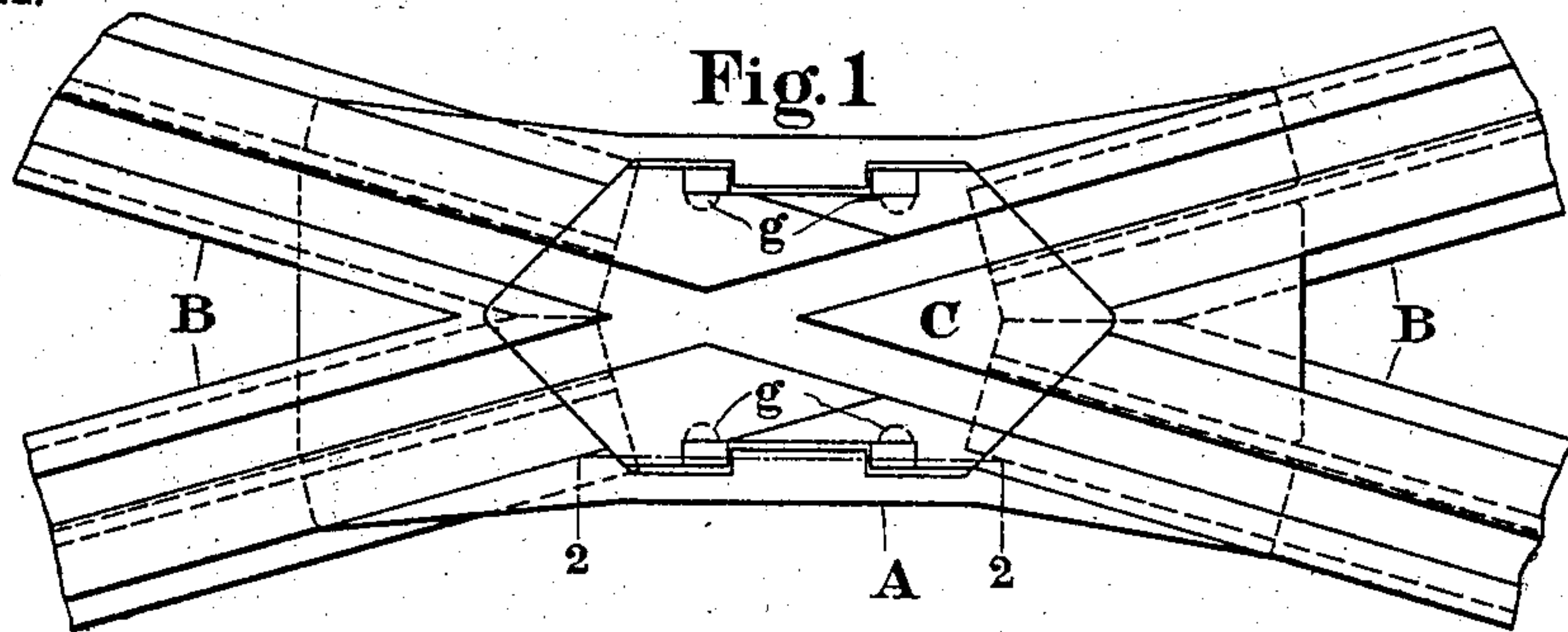
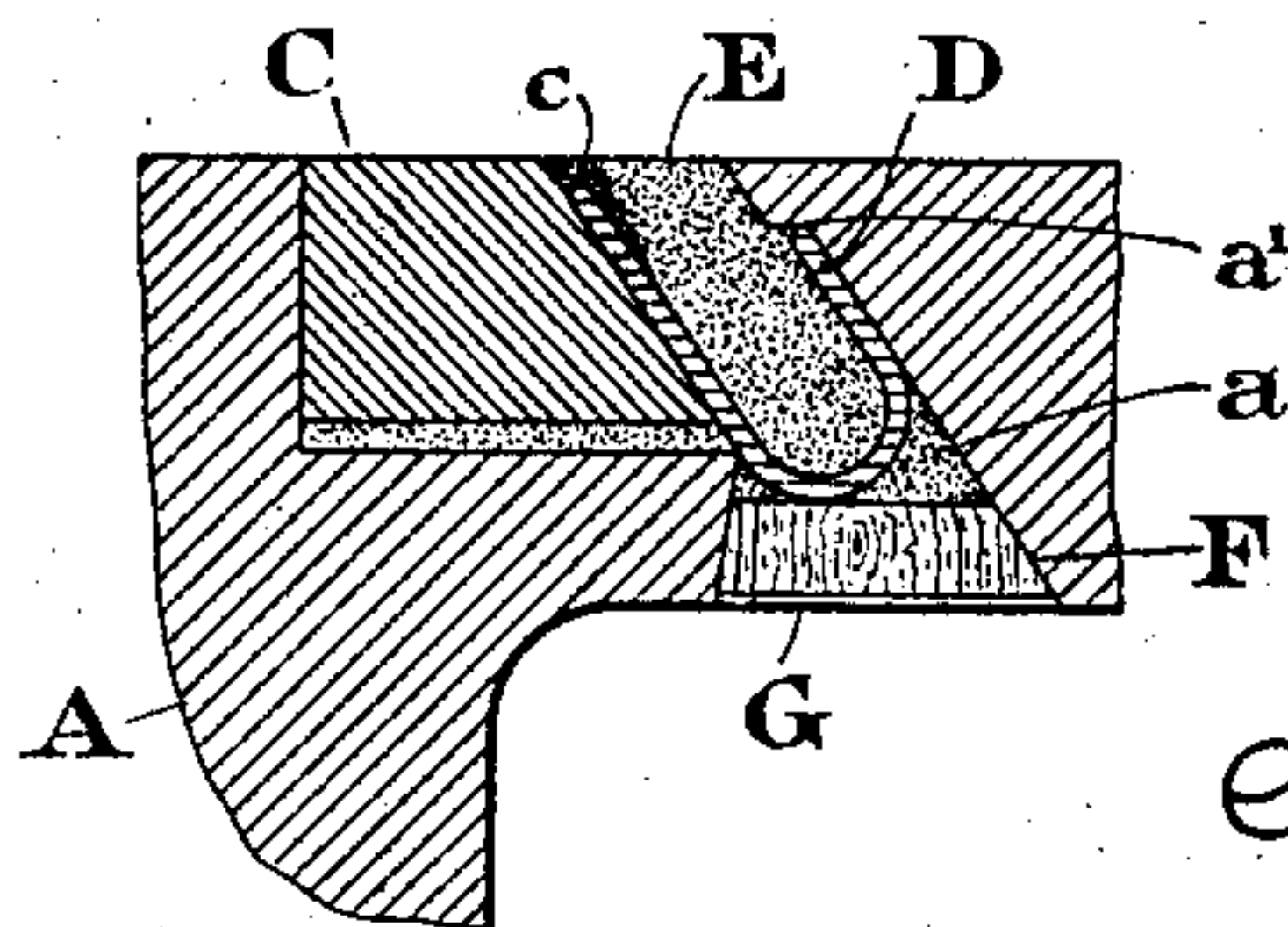


Fig. 6



Fig. 5



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

GEORGE M. ERVIN, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE  
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## RAILWAY-TRACK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 765,661, dated July 26, 1904.

Application filed March 18, 1903. Serial No. 148,336. (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 Structure, 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 means for fastening in place the renewable wear portions or plates of railway-track structures, and is designed to provide a novel and simple fastening which will hold the plate securely in place and which can be readily released from the surface of the structure in its place in the street to permit the plate to be removed and replaced.

With this object in view my invention consists in the combination, with the body portion of a track structure and a wear-plate seated therein, said portion and plate having substantially parallel key-bearing surfaces, of a compressible key driven between the said surfaces and compressed to exert a holding-down action upon the plate and capable of being driven through the structure to release its hold. In its preferred form the key or fastening is made of spring metal, such as spring-steel, so that as it is driven between substantially parallel surfaces of the plate and body portion it is compressed between said surfaces and is by its expansive force made to bear strongly and securely against the same. The space between the arms of the key is preferably filled with the material used in bedding the plate. This material is usually spelter, poured underneath and at the sides of the plate in a molten state and portions thereof will flow in and over the keys and form a further safeguard against their displacement.

The invention also consists in the novel construction, arrangement, 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 portion of frog embodying the invention; Fig. 2, a view of the same, partly in section and partly in side

elevation, the section being taken on the line 2 2 of Fig. 1. Fig. 3 is a plan view of a portion of a ninety-degree-girder crossing embodying the invention. Fig. 4 is a detail sectional view on a larger scale. Fig. 5 is a side view of one of the keys or fastenings, and Fig. 6 is a plan view of the same.

The letter A designates the body portion of the structure, B the diverging rail members thereof, and C the renewable track-surfaced wear portion or plate, which is seated in a pocket or cavity of the body B. The sides of the plate C are shaped to form the converging inclined surfaces *c*, which face and are substantially parallel to the undercut inclined bearing-surfaces *a* on the lateral walls of the body portion A, the surfaces *c* and *a* being separated by rhomboidal spaces for the keys or fastenings D. The latter consists of short flat strips of metal, preferably spring-steel of from three-sixteenths to five-sixteenths of an inch in thickness, bent (in the particular form herein shown) into U shape and adapted to be driven into the said spaces to substantially the positions shown in Figs. 2 and 4. In forming the keys they are preferably bent so that their lower closed ends are of about the proper width to enter said spaces neatly, while the free portions or arms diverge considerably from the position which they occupy when driven. This is shown in Fig. 5. As the key is forced to its seat these arms are drawn into parallel relation and bear squarely against the surfaces *a* and *c*. After the keys are thus seated the spelter or other similar material (shown at E) is poured in to form the bedding for the plate and also filling and bedding the keys. I have shown the surfaces *a* as being formed with shoulders *a'* to prevent any possible tendency of the keys to work upwardly under the hammering and pounding which the plate receives in service. These may, however, be omitted, as the filling material E is usually sufficient to prevent any such tendency.

If it becomes necessary to remove the plate, a suitable drift is placed against the upper ends of the plugs E of filling material and driven with a hammer or sledge sufficiently hard to shear or separate the plugs from the



similar material filling the spaces at the sides of the plate. Said plugs, together with the keys, can then be readily driven out through the openings F in the bottom of the plate-seating pocket. Before the spelter is poured these openings may be closed up with plugs G. After the keys have been driven out in this manner the plate can be readily lifted or prized from its seat, and to facilitate this recess *g* is cored in its lateral edges to receive a pry-bar or lifting device. In this manner the plate can be readily removed and renewed without disturbing the pavement around the structure. While the keys are, as above stated, preferably made of spring material, this is not essential, since a key of this shape which has no spring action may be used, in which case it acts as a wedge, which will adjust itself to the surfaces between which it is driven and which can be readily driven out.

The invention is readily applicable to any track structure in which wear-plates are employed. It is also obvious that instead of forming the seats for the keys in the particular manner herein shown and described they may be otherwise formed, the essential feature being to provide substantially parallel bearing-surfaces for the keys on the plate and the body portion of the structure. I therefore do not wish to limit myself to the details of construction and arrangement 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 a body portion, and a wear-plate seated therein, said body portion and plate having substantially parallel key-bearings, of compressible key driven between said bearings and compressed thereby.

2. In a railway-track structure, the combination with a body portion, and a wear-plate seated therein, said body portion and plate having substantially parallel key-bearings, of spring-key driven between said bearings and compressed thereby.

3. In a railway-track structure, the combination with a body portion, and a renewable portion or plate seated therein, of a fastening therefor consisting of a U-shaped piece of metal, one arm of which bears against the plate and the other arm against the said body portion.

4. In a railway-track structure, the combination with a body portion and a renewable wear portion or plate seated therein, said body portion and plate having opposing and sub-

stantially parallel key-bearing surfaces, of a U-shaped fastening-key driven between the said surfaces, and means whereby said key may be driven below the bottom of the plate.

5. In a railway-track structure, the combination with a body portion and a renewable wear portion or plate seated therein, said body portion and plate having opposing and substantially parallel key-bearing surfaces, of a U-shaped fastening-key of spring metal driven between the said surfaces, and means whereby said key may be driven below the bottom of the plate.

6. In a railway-track structure, the combination with a body portion and a renewable wear portion or plate seated therein, said body portion and plate having opposing and substantially parallel key-bearing surfaces, of a U-shaped fastening-key of spring metal driven between the said surfaces, and means whereby said key may be driven below the bottom of the plate, together with a body of spelter, or like material, filling and bedding the said key.

7. In a railway-track structure, the combination with a body portion having a plate-seating pocket formed with oblique undercut key-bearing surfaces on its lateral walls, and a plate seated thereon and formed with inclined surfaces at its lateral edges which face said undercut surfaces, of U-shaped keys driven between the said surfaces, and a body of relatively soft metal filling and bedding said keys, said body portion having openings in its bottom portion into which the said keys may be driven.

8. In a railway-track structure, the combination with a body portion, and a renewable wear-plate seated therein, said body portion and plate having substantially parallel oblique key-bearing surfaces, one of which is formed with a key-retaining shoulder, of a U-shaped spring-key driven between the said surfaces.

9. In a railway-track structure, the combination with a body portion, and a renewable wear-plate seated therein, said body portion and plate having substantially parallel opposing oblique key-bearing surfaces, of spring-keys driven between the said surfaces and compressed thereby, said body portion also having openings into which said keys may be driven to release them.

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

GEO. M. ERVIN.

Witnesses:

LORETTO O'CONNELL,  
H. W. SMITH.