

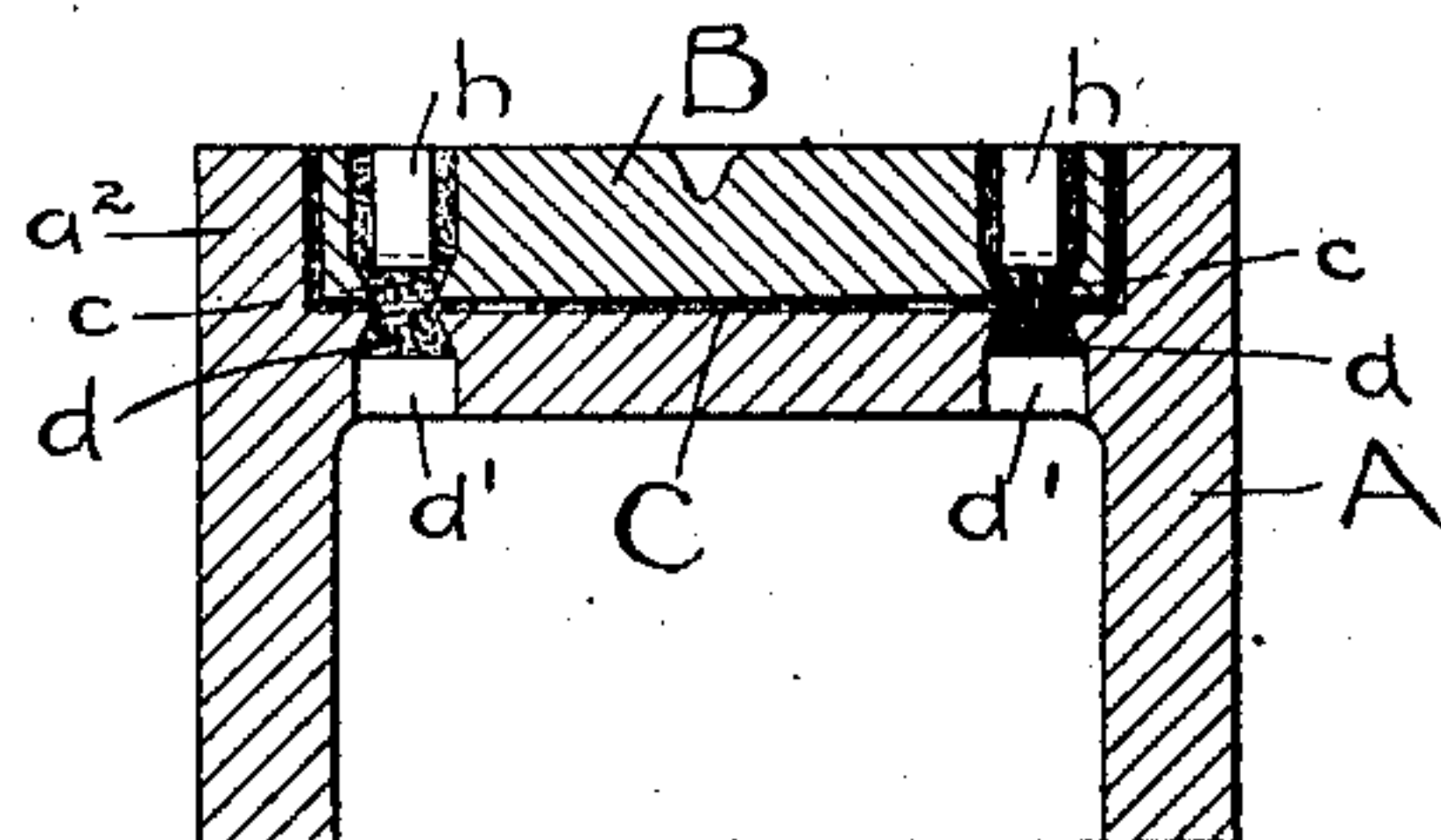
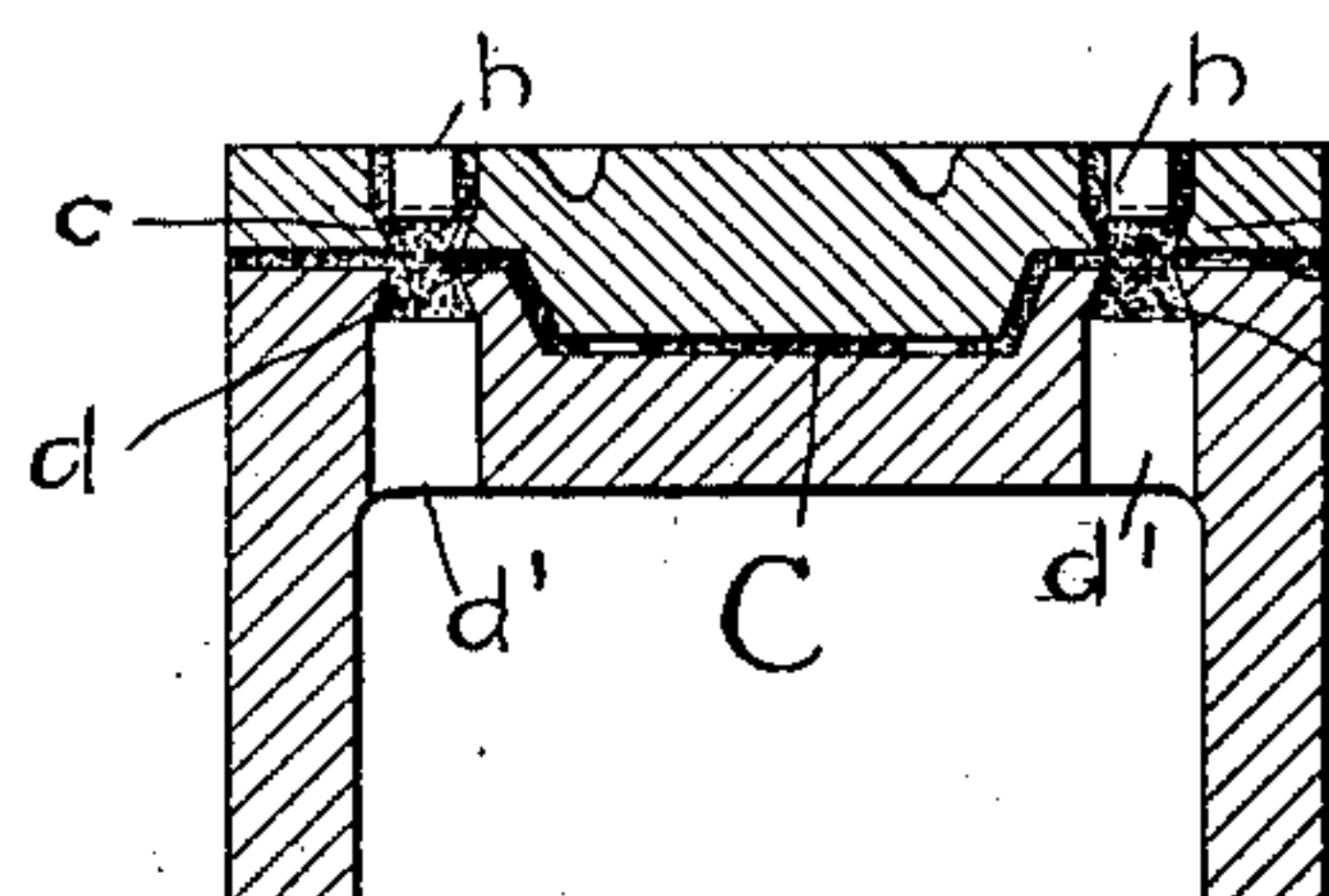
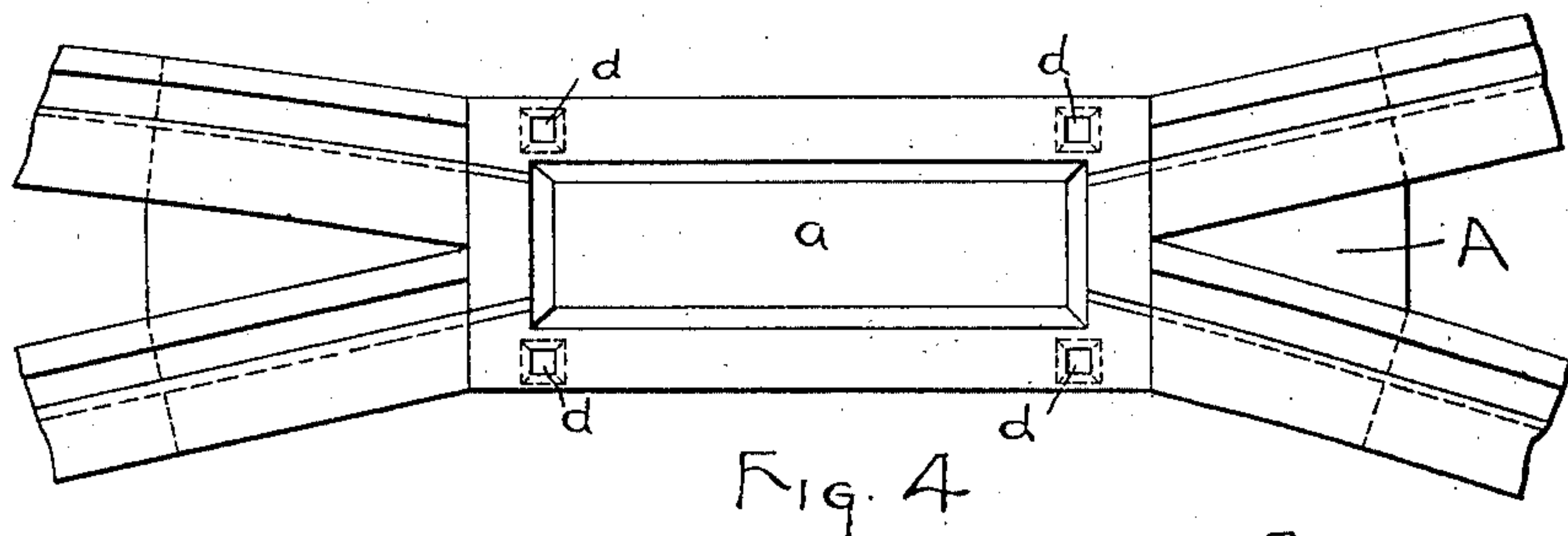
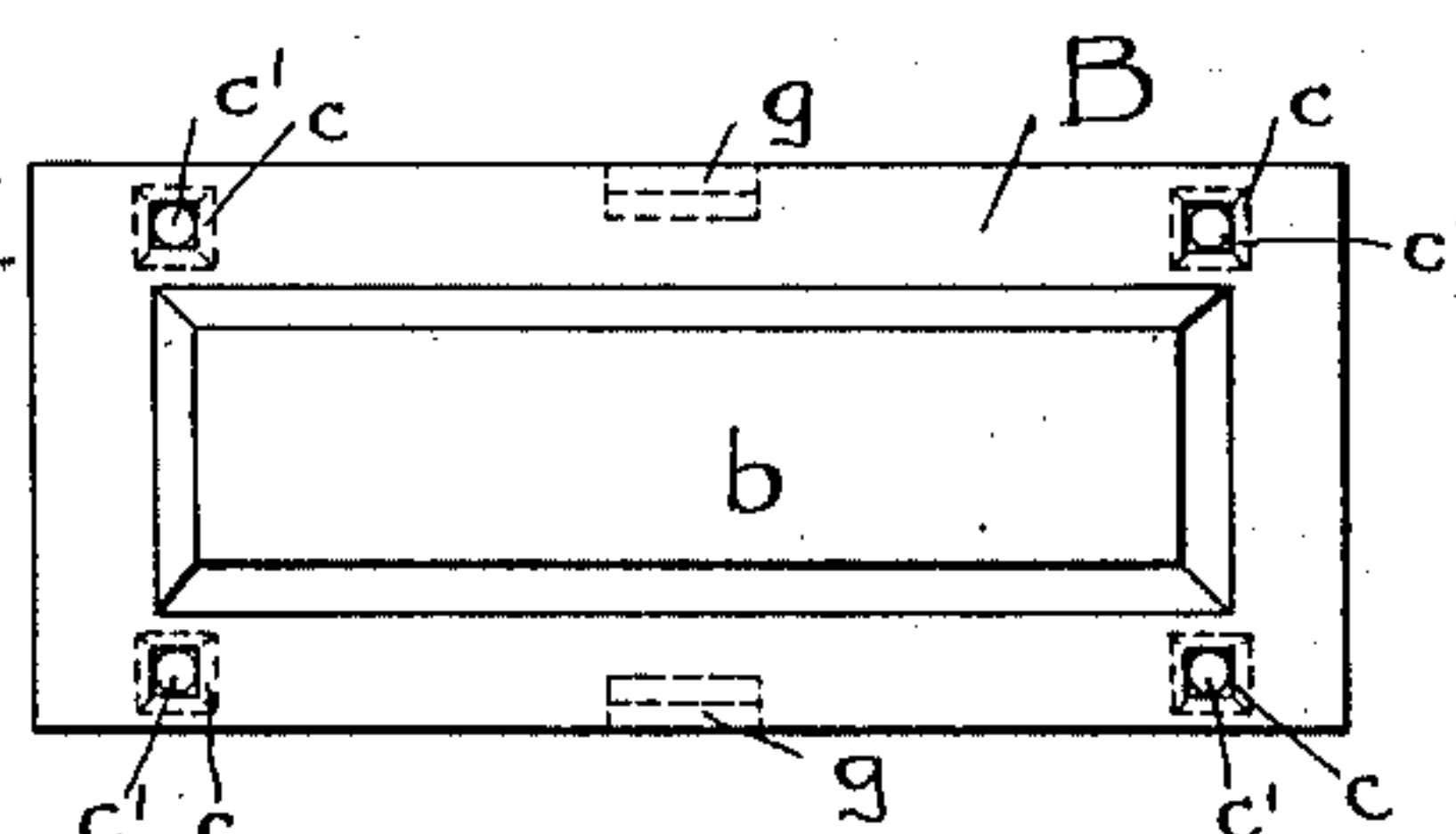
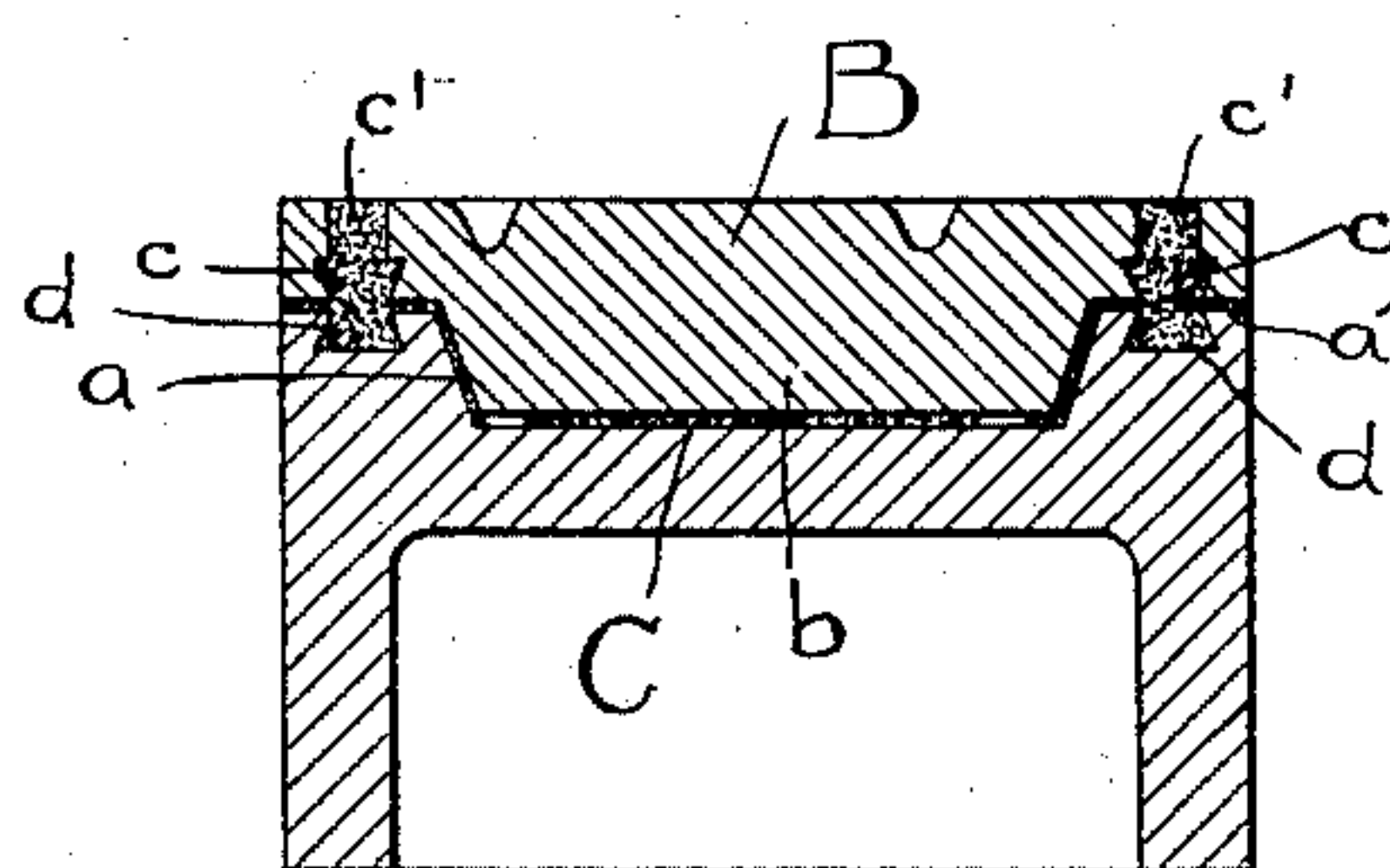
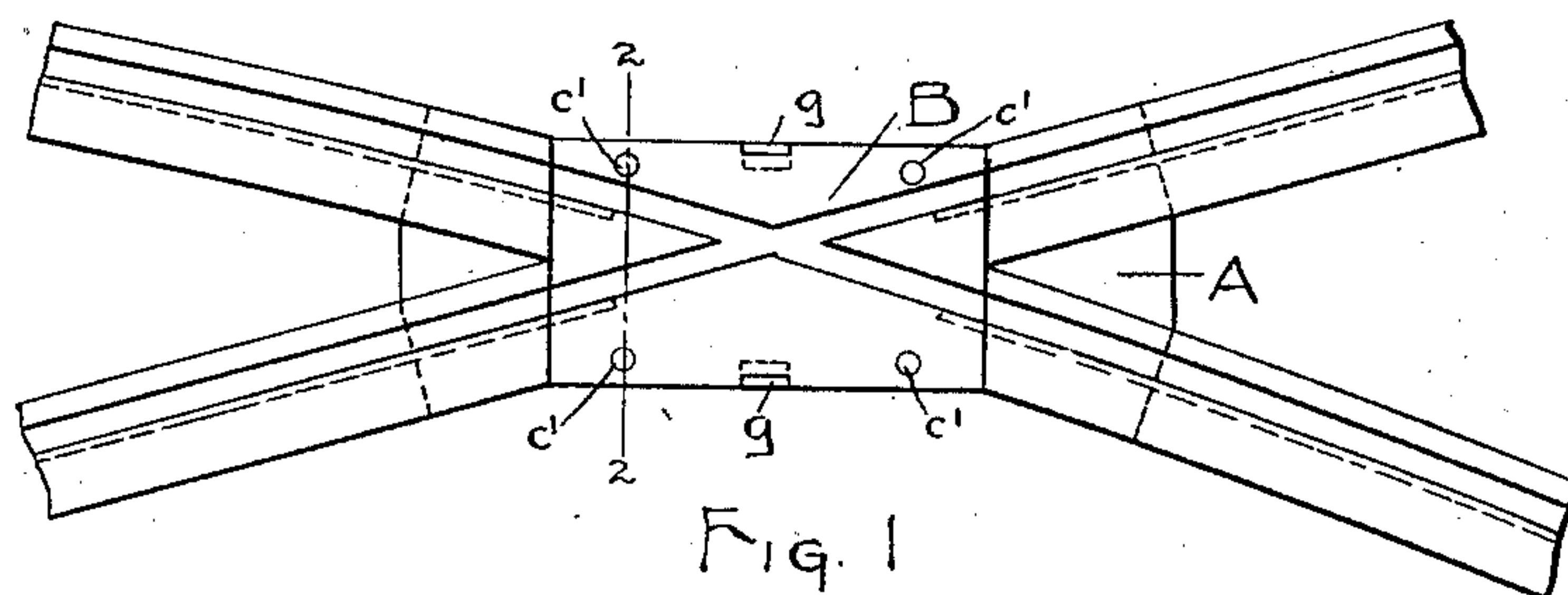
No. 729,058.

PATENTED MAY 26, 1903.

A. L. GEORGE.
RAILWAY TRACK STRUCTURE.

APPLICATION FILED NOV. 13, 1902.

NO MODEL.



WITNESSES:
A. V. A. B. M. Tuley.
Loretto O'Connell

INVENTOR
A. L. George,
BY
Geo. H. Parmelee
his ATTORNEY.

UNITED STATES PATENT OFFICE.

ARTHUR L. GEORGE, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE
LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

RAILWAY-TRACK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 729,058, dated May 26, 1903.

Application filed November 13, 1902. Serial No. 131,094. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR L. GEORGE, 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 improvements in means for securing in place and removing therefrom the renewable portions or plates of railway-track structures. These renewable portions or plates, which are of a hard and durable quality of steel, require to be very securely held in place, so that they will not work loose under the heavy pounding which they receive from car-wheels and miscellaneous street traffic. At the same time it is very desirable that they be capable of being readily and quickly removed and replaced without disturbing the track structure as a whole and also without disturbing the adjacent pavement. The fastening employed must therefore be of such character that it can be applied and removed from the surface of the structure. My present invention is designed to provide such a fastening; and it consists in the combination, with the body portion of the structure, having a seat for a renewable portion or plate, said seat being formed with pockets or cavities therein, of a renewable portion of plate having similar registering pockets or cavities in its bottom and also openings leading from its upper surface to the said pockets or cavities, of retaining material bedding the said plate and filling the said pockets or cavities to form fastenings for the plate, said openings forming means whereby a drill or punch may be employed to cut or fracture said retaining material to thereby release 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 curve, cross, or frog embodying the invention; Fig. 2, a section on the line 2 2 of Fig. 1. Fig. 3 is a bot-

tom plan view of the plate removed. Fig. 4 is a plan view of the body portion of the structure with the plate removed, and Figs. 5 and 6 are transverse vertical sections illustrating modifications.

The letter A designates the body portion of the structure, which is formed with a seat *a'* for the track-surfaced renewable portion or plate B, said seat having a cavity *a* therein to seat a downward extension *b* of the plate. Said extension is made somewhat smaller than the cavity *a* in order to form a space for the retaining material C, the purpose of the extension being to provide lateral bearing for the plate. Cored in the under side of the plate are a number of dovetailed pockets *c*, from the upper or inner ends of which vertical openings *c'* lead to the surface of the plate. Cored in the seat *a* are similar registering pockets *d*. The openings *c'* should be approximately the same diameter as the mouths of the pockets *c*.

In assembling the structure the plate is seated in the body of the structure and is properly leveled up by means of thin shims or blocks *f*. The retaining material is then poured through one or more of the openings *c'* and fills said openings and the pockets *c* and *d* and also the space between the plate and its seat and around the extension *b*. During the pouring suitable clamps or dams are placed over the openings at the side between the plate and body portion to keep the retaining material from flowing out. When this material cools, it not only forms a bedding for the plate, but the portions in the pockets *c* and *d* form secure fastenings for the plate. By reason of the shape and arrangement of these pockets any shrinkage of the retaining material is taken advantage of to bind the plate more securely, and any tendency to compression will likewise wedge the material more tightly in the pockets.

To remove the plate, a drill or boring-tool is used to drill through the openings *c'* and pockets *c*, and inasmuch as the said openings are of approximately the same diameter as the mouths of the pockets *c* as soon as the drill or boring-tool reaches the mouth of the pocket *d* the holding-down connection for the

plate is entirely released. The plate can then be pried or lifted from its seat and the structure be prepared for a new plate by removing the retaining material from the pockets *d*.

5 This can be done by drilling, chipping, or melting.

To provide a bearing for the drilling or boring tool, a suitable knee or brace can be applied to the structure by means of the recesses *g*, cored in the sides of the plate, or such bearing can be provided for in any other suitable manner. The amount of drilling or boring required to release the plate can be considerably reduced by pouring the retaining material at one or two of the openings *c'* and filling the remaining opening with plugs of wood or clay, which can be readily dug or cut out. In the modification shown in Fig. 5 the bottoms of the pockets *d* are extended through the structure by means of openings *d'*, and instead of releasing the plate by drilling plugs *h*, of iron or steel, are seated in the openings *c'*. These plugs are made smaller than the openings *c'*, so that the retaining material can be poured around them, and their lower ends extend slightly into the pockets *c*. When the plate is to be removed, a drift or punch is applied to these plugs, and they are driven with a sledge sufficiently hard to cause a fracture of the retaining material where it joins the pockets *c* and *d*. The plate can then be pried or lifted from its seat, and the retaining material left in the pockets *d* can be driven out through the openings *D'*.

Fig. 6 shows a similar construction except that a flat plate is used, and the plate-seat is provided with side walls *a'* to provide lateral bearing for the plate.

40 The retaining material used may be of any suitable kind. I have found spelter to be a very suitable material owing to its hardness and toughness, its resistance to compression, and its cheapness. The invention is applicable to frogs, crossings, mates, switches, and, in fact, to all track structures in which a renewable portion or plate is to be seated in a body portion of the structure. It will also be obvious that various changes may be made in the details of construction and arrangement without departing from the spirit and scope of my invention.

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 having a seat for a renewable portion or plate, said seat having pockets or cavities therein, of a renewable portion or plate having similar pockets or cavities in its bottom and also openings leading from said pockets or cavities to the surface of the structure, of retain-

ing material filling the said pockets or cavities and securing the said plate.

2. In a railway-track structure, the combination of the body portion, and the plate seated therein, said body portion and plate having registering dovetailed pockets or cavities in their horizontal seating-faces, and the plate having openings leading from the bottoms of said pocket to the surface of the structure and retaining material bedding the said plate and filling the said pockets or cavities.

3. In a railway-track structure, a body portion having a horizontal plate-seating surface and a plate seated thereon, said body portion and plate having registering pockets or cavities on their seating-faces, the plate having openings leading from the bottoms of its pockets or cavities to its surface, and the body portion having openings leading from the bottoms of its pockets or cavities through to its under side.

4. In a railway-track structure, the combination of the body portion, and the plate seated thereon, said body portion and plate having registering vertically-extending pockets or cavities, said plate also having openings leading from the bottoms of its pockets or cavities to its surface, the diameters of said openings being as large as the area of the mouths of said pockets or cavities, and retaining material bedding the plate and filling the said pockets or cavities substantially as described.

5. In a railway-track structure, the combination with a body portion, and a renewable portion, or plate, seated therein, said body portion and plate having registering vertically-extending pockets or cavities therein and also openings leading from the bottoms of said pockets or cavities to the surface of the plate and the under side of said body portion, plugs or drifts seated in the openings leading through the plate, and retaining material filling the said pockets or cavities, substantially as described.

6. In a railway-track structure, the combination of the body portion having a plate-seating pocket therein, and a plate seated in said pocket, said body portion or plate having registering vertically-extending cavities in their seating-faces, retaining material filling said cavities and securing the plate, and means whereby those portions of the retaining material which connect the portions in the said cavities may be severed from the surface of the structure.

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

ARTHUR L. GEORGE.

Witnesses:

LORETTO O'CONNELL,
H. W. SMITH.