

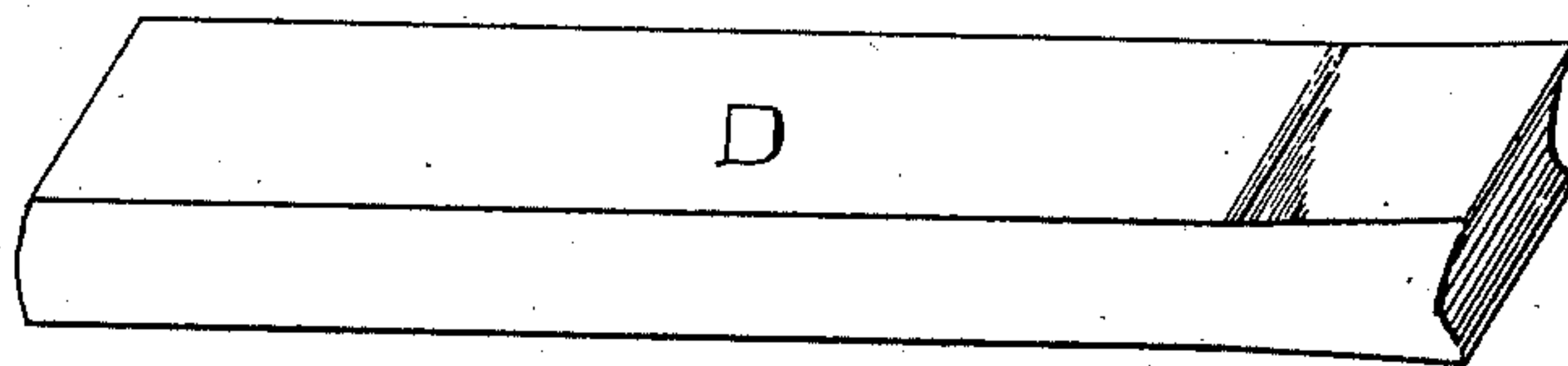
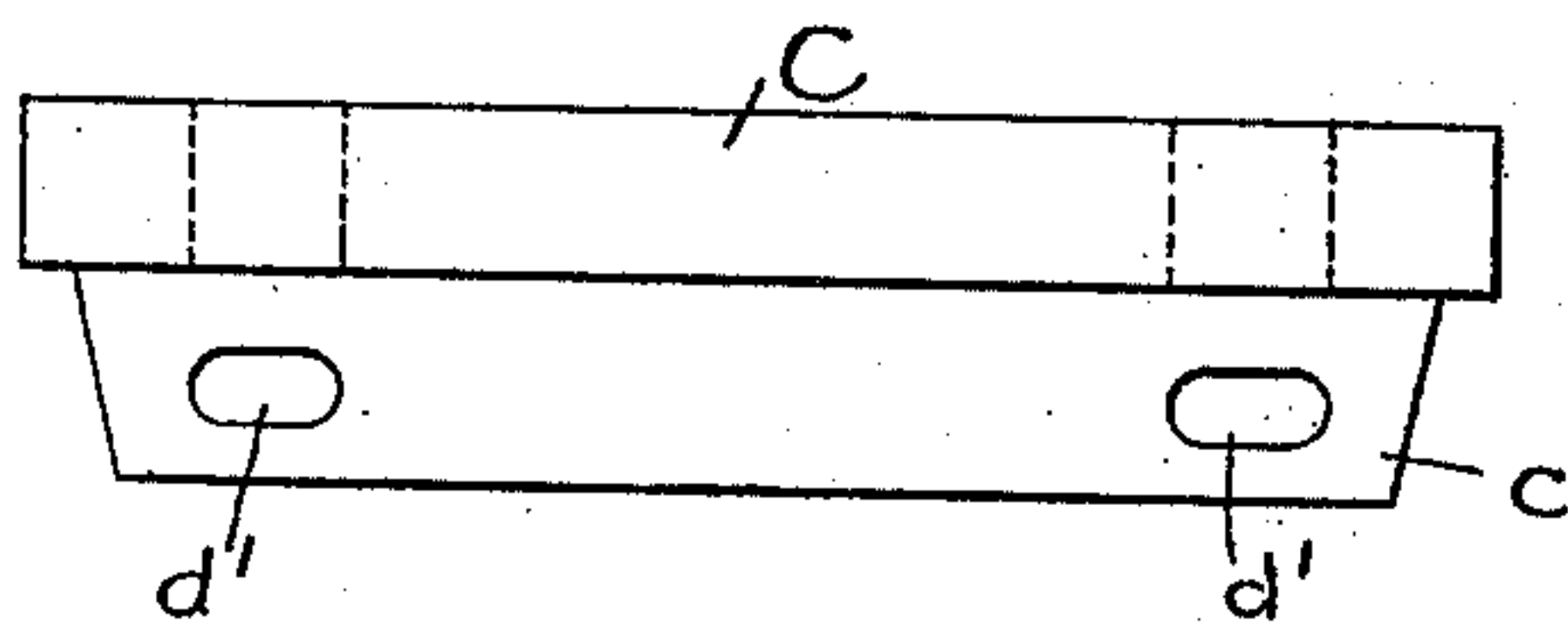
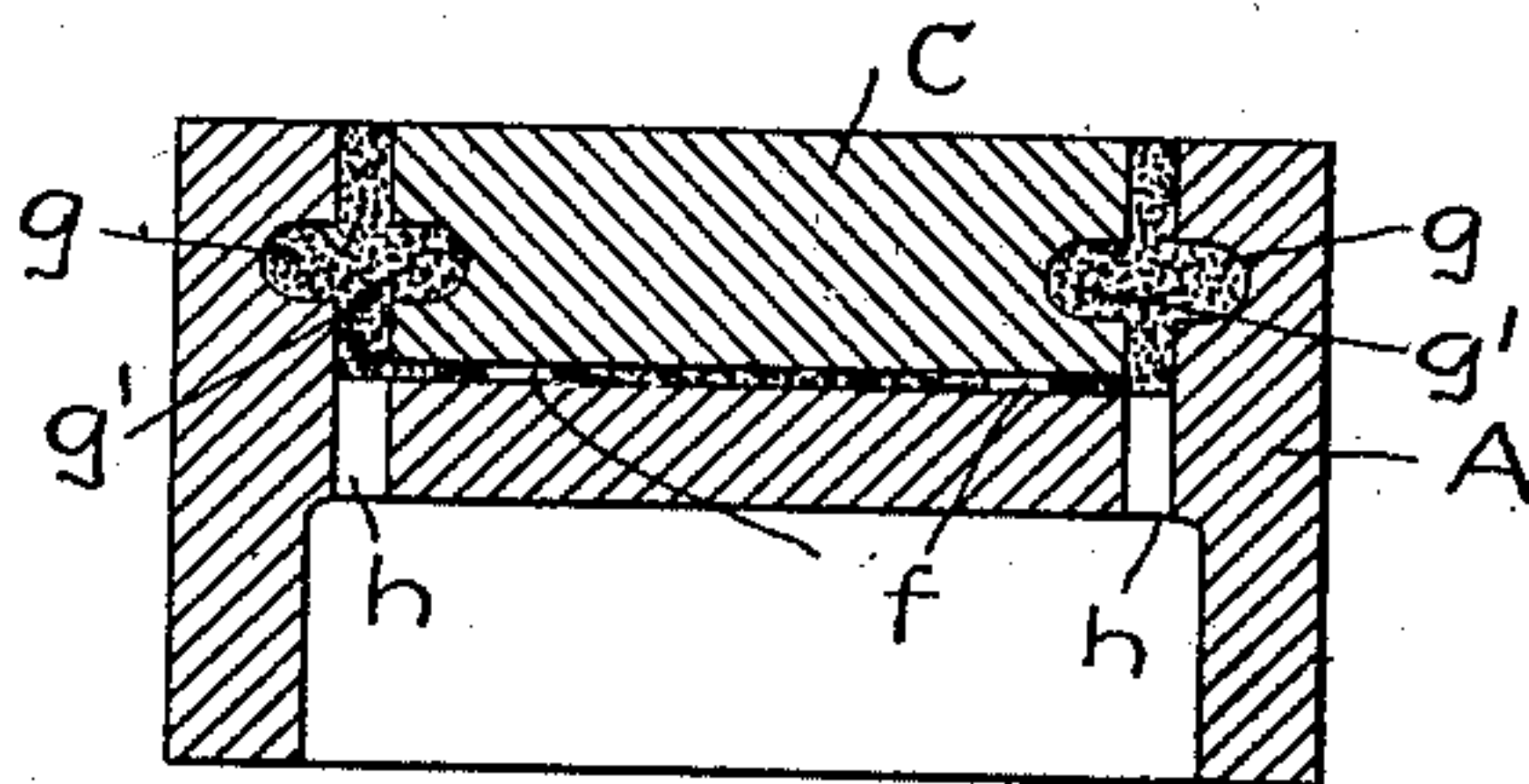
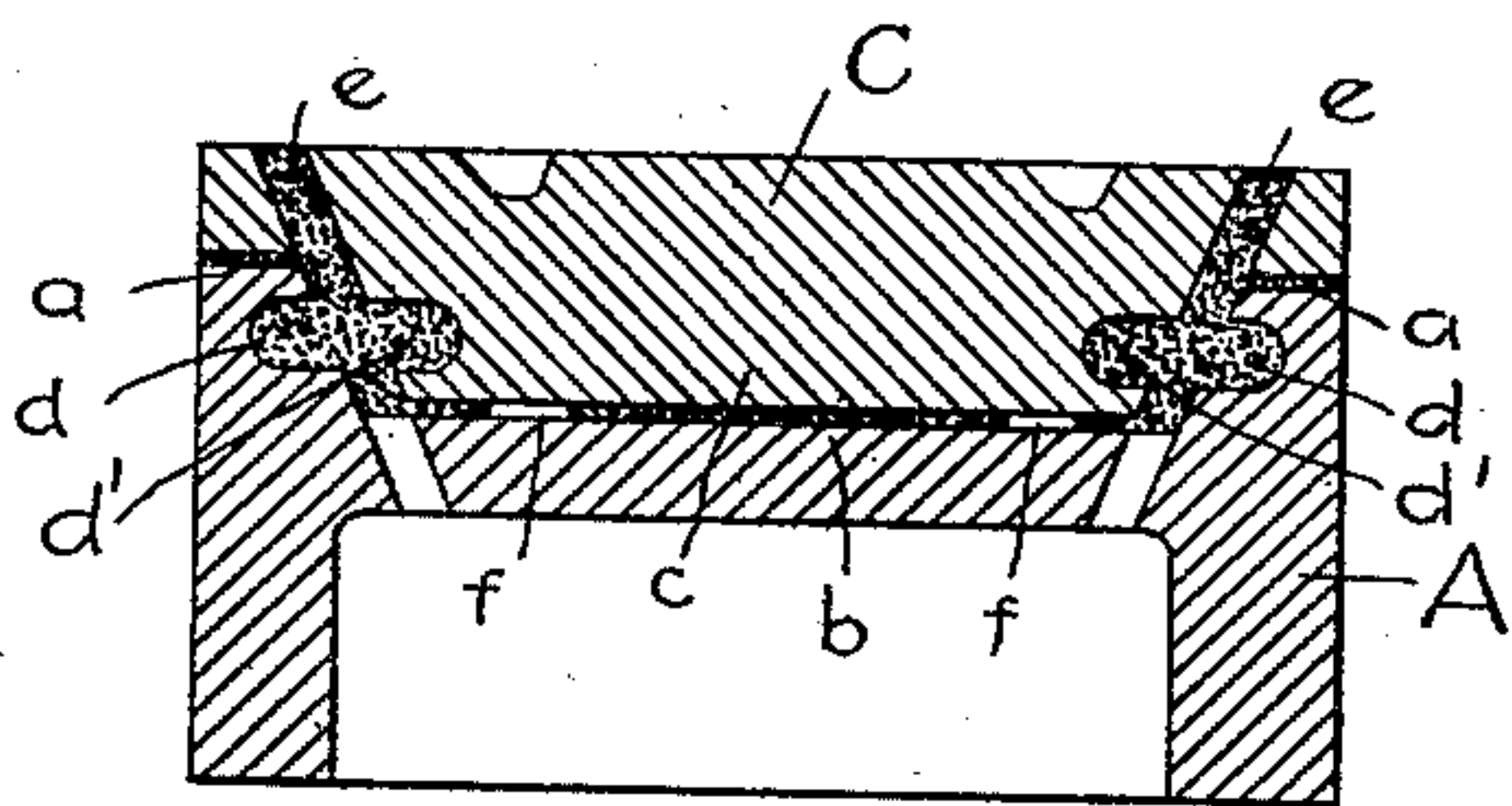
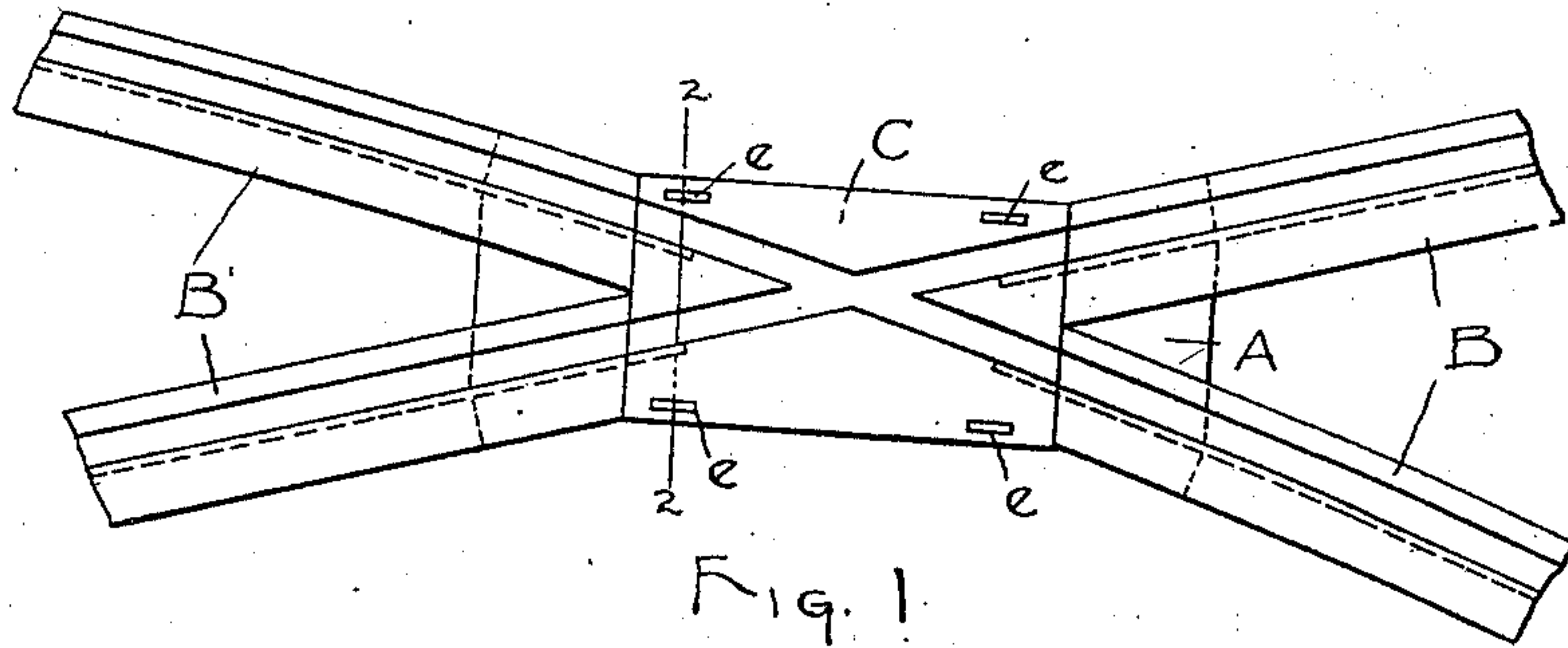
No. 729,089.

PATENTED MAY 26, 1903.

G. H. PARMELEE.  
RAILWAY TRACK STRUCTURE.

APPLICATION FILED NOV. 13, 1902.

NO MODEL.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

GEORGE H. PARMELEE, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

## RAILWAY-TRACK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 729,089, dated May 26, 1903.

Application filed November 13, 1902. Serial No. 131,082. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. PARMELEE, 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 railway-track structures—such as frogs, curve-crosses, girder-crosses, switches, switch-mates, and the like—wherein a portion of the track or wear surface of the structure is formed by a removable plate or block of durable material. These plates or blocks must necessarily be secured to the body or bed of the structure in a very rigid manner in order to enable them to withstand the severe usage which they undergo in track service, and at the same time the fastening means employed must be of such character as to enable the plates or blocks to be readily removed and replaced should they become defective from any cause. It is also very desirable to accomplish this result without taking the structure out of its place in the track and without even disturbing the adjacent pavement. These desiderata, it will be seen, are largely inconsistent with each other, since the requirement for a rigid fastening which will not permit the plate to become loose in service makes it difficult to provide for ready removal and replacement, while the requirement that the structure and pavement shall not be disturbed in removing and replacing the plate makes it necessary that the fastening be capable of being applied and removed wholly from the surface of the structure, and thereby increases the difficulty of providing a secure and rigid fastening.

By my present invention I provide a means of fastening for the removable plates of track structure which combines both the above-stated features and which also reduces to a minimum the work required in making and assembling the parts of the structure.

My invention in its preferred form also very materially lessens the amount of metal in the body or bed of the structure, thereby making it much lighter to handle, and re-

duces the cost of manufacture and freightage, and also decreases the area of metal surface in the street.

With these objects in view my invention consists in the combination, with the bed or body portion of a railway-track structure and a plate seated therein or thereon, of removable fastening means for said plate, consisting of an integral body of soft metal, such as spelter, seated partly in the body portion and partly in the plate and rigidly securing the latter in position and having an integral connecting portion lying between the plate and the body portion, which may be reached and fractured or sheared from the surface of the structure.

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 showing my invention as applied to a frog or crossing; Fig. 2, a section on the line 2-2 of Fig. 1; Fig. 3, a similar view showing a modified form of construction; Fig. 4, a side view of the plate of Figs. 1 and 2 removed from its seat, and Fig. 5 a detail view of a fracturing or shearing tool for use in removing the plates.

In the figures the letter A designates the body portion of the structure, and B the rail members thereof. The latter may consist of pieces of rolled sections having their ends secured to or in the body portion, which in such case is of cast-iron, or the rail members and body portion may be of an integral casting, my invention being equally applicable to both types of construction. Formed in or upon the body portion A, between the ends of the rail members, is a seat *a* for the track-surfaced removable wear-plate C, which is of hard material, (preferably manganese-steel or chrome-steel.) The seat *a* is preferably made without side walls, as shown in Figs. 1 and 2, as my improved fastening does not require their use, which is objectionable on account of the increased width and weight which they give the structure. The central portion of said seat is formed with a cavity or depression *b* to receive a central projection *c* of the plate. Formed in the



side walls of the cavity or depression *b* are laterally-extending small cavities or pockets *d*, of any suitable form, and similar pockets or cavities *d'* are formed in the sides of the projection *c*, directly opposite the cavities or pockets *d*. The projection *c* is made to fit loosely into the cavity *b*, so as to leave a space (preferably about one-half an inch in width) between the mouths of the opposing pockets *d* *d'*. Extending more or less obliquely through the body portion of the plate adjacent to each cavity *d'* is a slot or opening *e*.

The plate is seated on the bed and is adjusted to the proper level by means of thin shims *f*, Fig. 2, placed between it and its seat. Melted spelter or other soft metal is then poured into the openings *e*, whence it flows down and fills the pockets or cavities *d* *d'*, also the space around the projection *c*, the space between the under side of the plate and its seat, and also the opening *e*. To prevent the spelter from flowing out at the sides during the pouring, a dam is made by suitable clamps at the side of the structure. The spelter soon hardens, and the portions in and between the opposing pockets form solid keys or fastenings, which securely hold the plate against movement.

Should it ever be necessary to remove the plate and replace it, some of the spelter is chipped or cut out of the openings *e* to permit of the insertion of a shearing or fracturing tool, such as shown at D, Fig. 5. By driving on this tool with a sledge that portion of the spelter between the opposing pockets may be fractured or sheared, after which the plate can be readily removed, the remaining spelter acting simply as a bed without holding-down effect. The bottom of the cavity or depression *b* should be open in whole or part, so that the fracturing or shearing tool can be driven through as far as necessary and the fractured portion of the spelter be driven through and out.

Instead of spelter I may use any suitable material which flows freely in pouring and contracts but little, if any, in cooling and which compresses but very slightly under the action of heavy blows, so that looseness in the said pockets will not develop under the hammering action of car-wheels, while at the same time a considerable section may be fractured or sheared by the heavy blows of a sledge imparted through a suitable tool applied directly to the point to be fractured or sheared.

It will be noted that the formation of the body A and of the plate B is such as to render very simple the work of the pattern-maker and of the molder and that no machine-work is necessary to enable the parts to be fitted and assembled beyond a little grinding, in some cases, of the ends of the plate.

While, as above stated, I prefer to form the seat for the plate without side walls, owing

to the economy in metal thereby effected, my invention can be used with side walls, as shown in Fig. 3. In such cases these walls are formed with pockets or cavities *g*, opposite pockets or cavities *g'* on the edges of the plate, the projection *b*, cavity *c*, and openings *e* being omitted. Openings *h* are formed through the bottom of the plate seat or pocket to permit the fractured spelter to be driven through and out. The spaces between the side walls of the pocket or seat and the edges of the plate are made wide enough over the pockets to permit of the insertion of a shearing or fracturing tool, the shearing or fracturing and driving out of a portion of the spelter fastening to thereby release the plate being an essential characteristic of my invention.

The number of fastenings required for any plate will depend largely upon the length of the plate. For an ordinary frog or curve-cross two or three of the fastenings at each side are amply sufficient. For a long switch or mate plate the number may be increased in proportion to the length.

It is obvious that the invention is susceptible of many modifications without departing from its spirit and scope as defined by the following claims. Hence I do not wish to limit myself to the particular embodiments thereof which are herein shown and described.

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

1. The combination with a bed or body portion of a railway-track structure, and a plate seated in or upon the same, of removable fastening means for said plate, consisting of an integral body of soft metal seated partly in said body portion and partly in the plate, and having a portion lying between the body portion and plate which can be reached and fractured or sheared from the surface of the structure.

2. In a railway-track structure, the combination with a body or bed portion, and a plate seated in or upon the same, said body or bed portion and the plate having adjacent pockets or cavities formed therein and separated from each other by spaces which communicate with the surface of the structure, and an integral body of relatively soft metal filling said pockets or cavities and the spaces, said body or bed portion having openings extending below the soft-metal filling and forming downward continuations of said spaces.

3. In a railway-track structure having a body portion and a removable wear-plate, a fastening for said plate consisting of a body of soft metal, such as spelter, seated partly in the body portion, and partly in the plate, and having an integral frangible or shearable connecting portion lying between the body portion and the plate.

4. In a railway-track structure, the combination of a body portion formed with a plate-



seat having a central cavity or depression, a plate adapted to said seat and having a projection fitting loosely said cavity or depression, opposing surfaces of said cavity or depression and of said projection having oppositely-arranged pockets therein, spaces separating opposite pockets and extending to both surfaces of the structure, and bodies of spelter, or similar material, filling said pockets 10 and spaces.

5. In a railway-track structure, the combination of a body portion having a plate-seat formed without side walls, but with a central cavity or depression, opposing surfaces of 15 said cavity or depression and of said projection having oppositely-arranged pockets therein, spaces separating opposite pockets and extending to both surfaces of the structure, and bodies of spelter, or similar material, filling said pockets and spaces. 20

6. In a railway-track structure having a body portion and a removable wear-plate, a fastening for said plate consisting of an inte-

gral body of soft metal, such as spelter, seated partly in the body portion, and partly in 25 the plate, and having a frangible or shearable connecting portion lying between the body portion and the plate, said body portion having openings below said connecting portions.

7. In a railway-track structure having a 30 body portion, and a renewable wear portion or plate, a fastening for said renewable portion or plate consisting of a solid body of shearable or frangible material seated partly in the body portion and partly in the plate, 35 and having a connecting portion accessible from the surface of the structure and unsupported at its lower side, whereby it may be driven and fractured or sheared.

In testimony whereof I have affixed my sig- 40 nature in presence of two witnesses.

GEORGE H. PARMELEE.

Witnesses:

LORETTO O'CONNELL,  
H. W. SMITH.