

J. J. GLENNON.

BRAKE SHOE.

APPLICATION FILED APR. 25, 1907

907,780.

Patented Dec. 29, 1908.

Fig. 1.

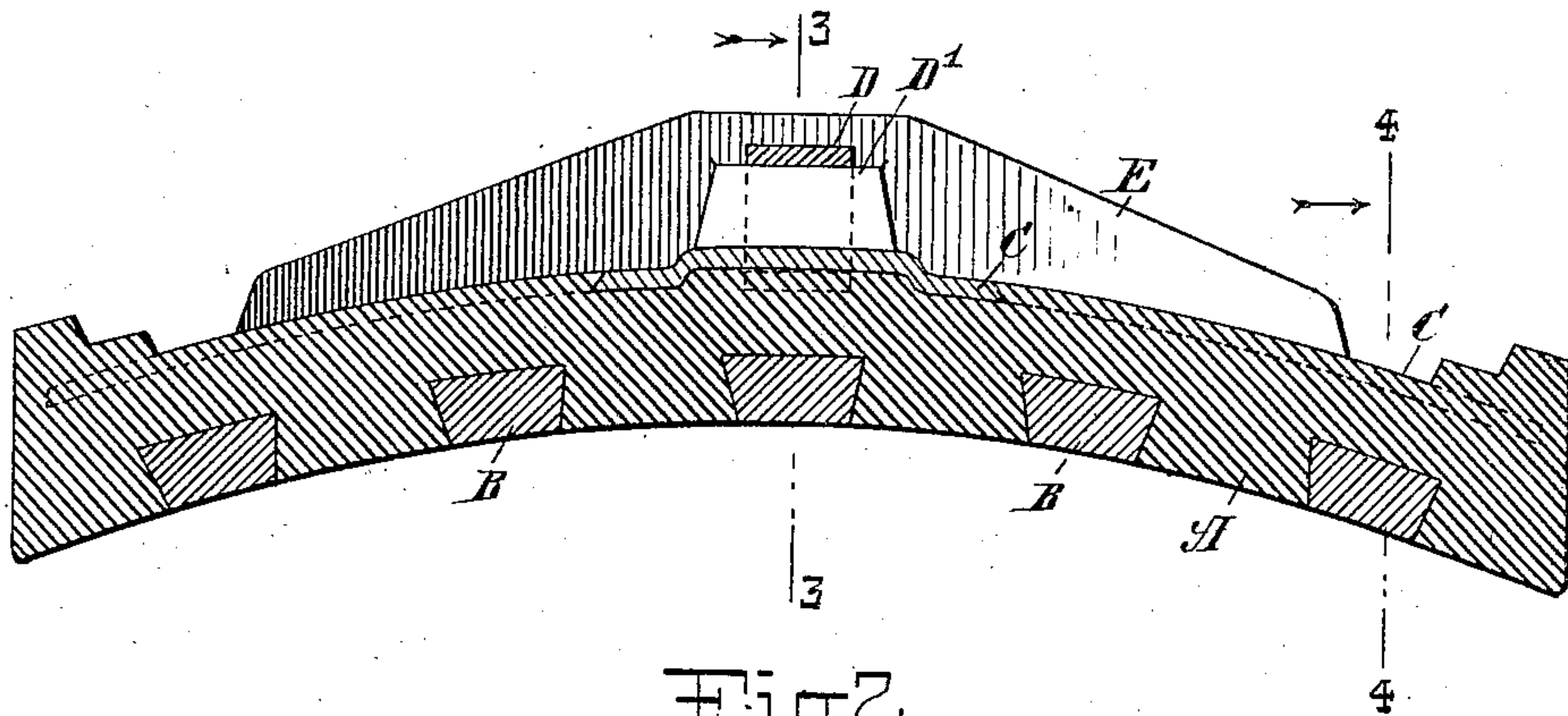


Fig. 2.

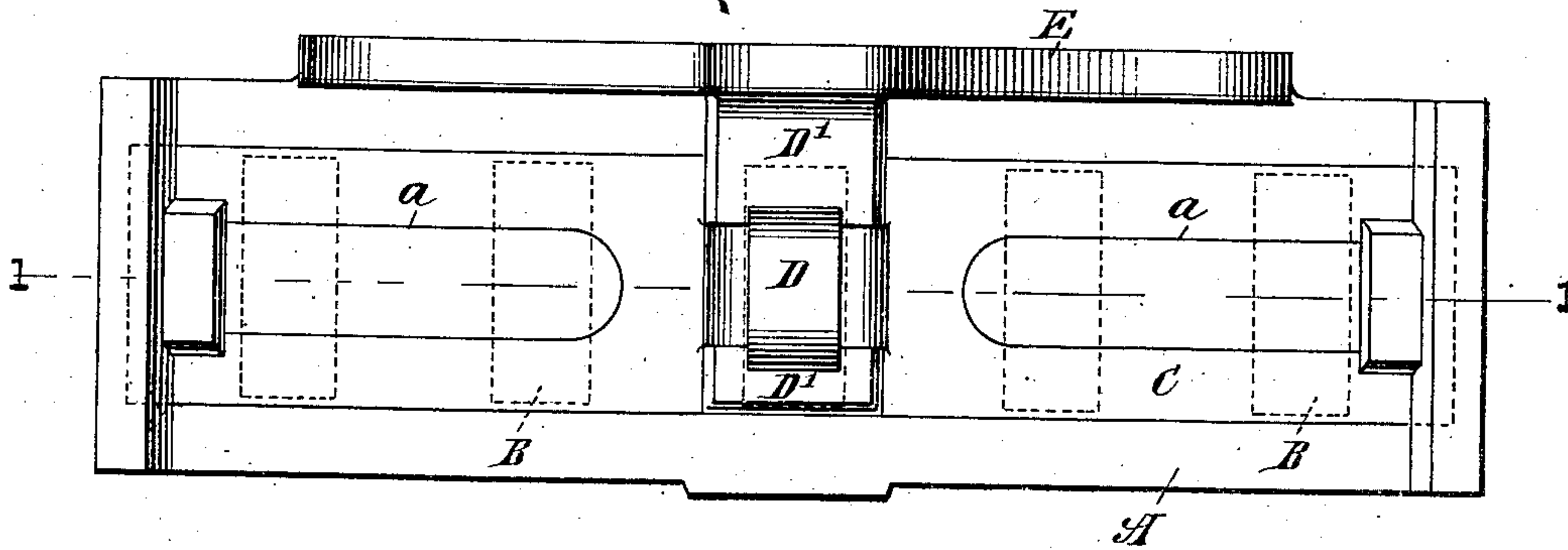


Fig. 3.

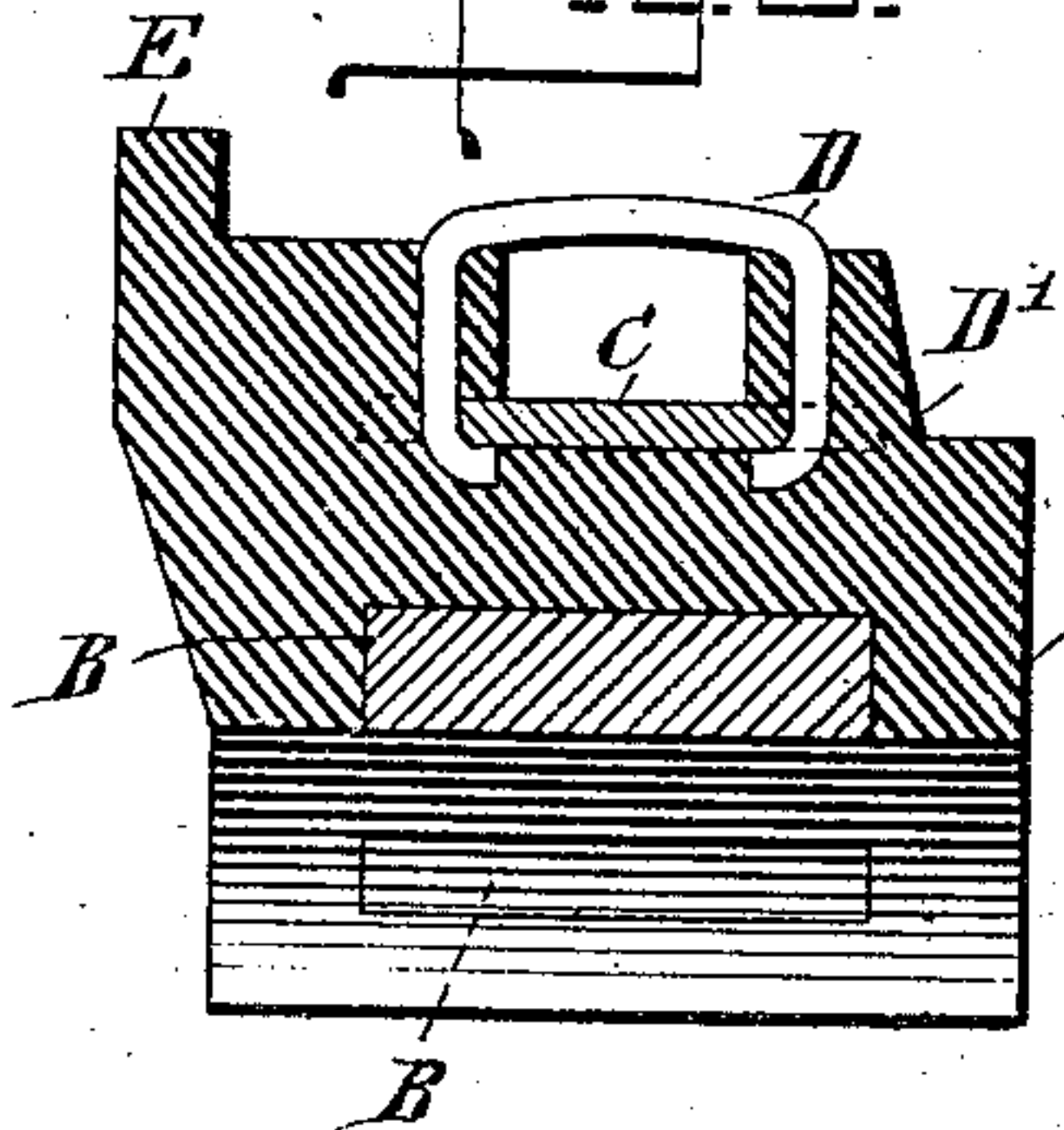


Fig. 4.

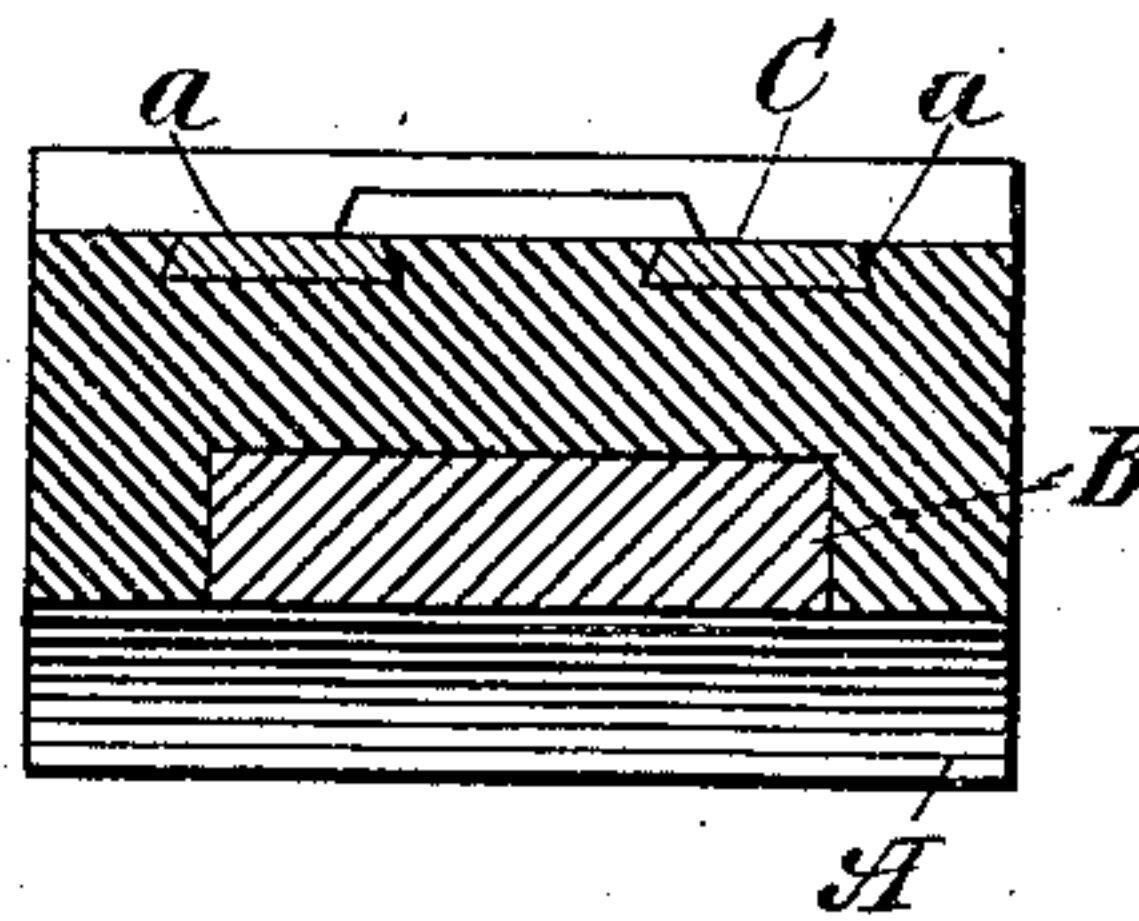
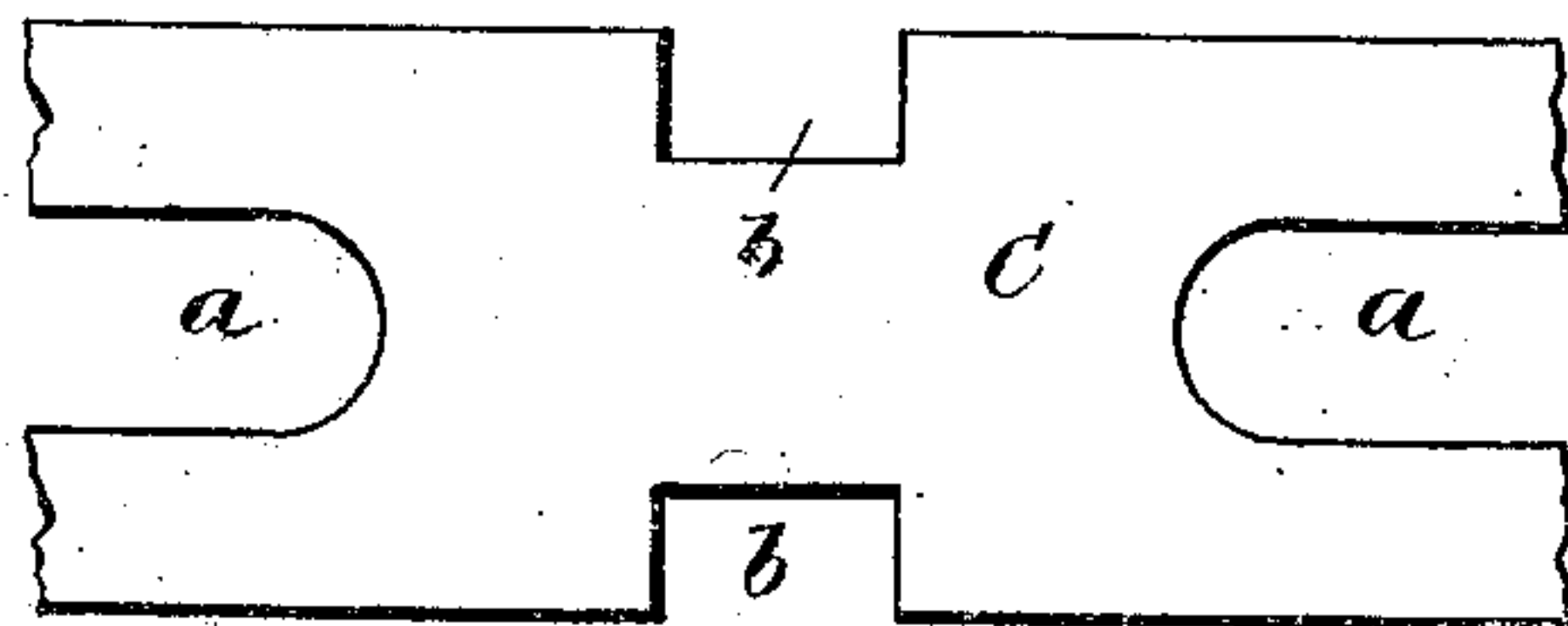


Fig. 5.



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BRAKE-SHOE.

No 907,780.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed April 25, 1907. Serial No. 370,226.

To all whom it may concern:

Be it known that I, JOSEPH J. GLENNON, a citizen of the United States, and a resident of Uniontown, in the county of Fayette and State of Pennsylvania, have made and invented certain new and useful Improvements in Brake-Shoes; of which the following is a specification.

My invention relates to an improvement in brake shoes, and more particularly to the kind or style thereof having relatively hard and soft inserts located in the wearing face of the cast iron shoe, the object being to so construct the shoe as to obviate the danger of its breaking or cracking; further, to so construct the shoe that in the event of its cracking after being worn down in service, the parts will be prevented from separating to such an extent as to allow the inserts to drop out or become disengaged from the body of the shoe.

With these and other ends in view, the invention consists in certain novel features of construction and combinations of parts, as will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a shoe constructed in accordance with my invention, taken on the line 1—1 of Fig. 2. Fig. 2 is a plan view of the same. Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1. Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1. Fig. 5 is a detached view of a part or portion of the steel back.

Referring to the drawings, A represents the body of a brake shoe preferably made of cast iron and provided in its wearing face with the inserts B, made of relatively hard and soft metal. At or adjacent to the back of the shoe, is the plate C, formed of steel, wrought or malleable iron, or other tough or ductile metal, such plate being employed for the purpose of preventing the shoe from falling apart if broken when worn thin from service, and also acting as the tension member of the trussed arch hereinafter described. This plate is provided with the holes or openings *a*, through which the cast metal of the body A is allowed to flow, in order to assist in anchoring or securing the plate in its proper position. The central portion of the plate is preferably notched or cut away, as illustrated at *b*, (Fig. 5), to receive the ends of the key-lug D, preferably made of wrought iron, the extreme ends of which lug

are bent under the plate to assist in locking the same in place, as illustrated in Fig. 3.

Along one side of the body of the shoe, is formed the flange or arch E, the same being cast integral with the body of the shoe, the central portion thereof, that is, that portion lying opposite the key-lug D, having the greatest height or width, in order to impart the greatest strength to the central portion of the shoe, the height or width of the arch gradually decreasing towards its ends, the length of the flange being usually somewhat shorter than the body of the shoe. This arch or flange E, formed and located as described, when employed in connection with the plate C, operates as a trussed arch, the plate C acting as the tension member, and the arch or flange the compression member of a truss, the result being that should any fracture occur in the body A, any tendency of the parts to open or separate will be resisted by the combined action of the plate which binds the broken parts together, and the metal of the arch or flange, which operates to prevent the bending of the plate, which plate should the flange be omitted, would bend and permit the body of the shoe to open along the line of fracture sufficiently to allow the insert to drop therefrom. In the case of the trussed arch, however, even though the body of the shoe be fractured on the line of one of the inserts B, the several parts of the shoe will be so held together as to obviate all danger of the inserts falling or dropping out of place.

I have found from numerous experiments that when the arch or flange is omitted and the body of the shoe cracked or fractured along the lines of one of the inserts B, the plate C is liable to bend, thereby permitting the two sections or parts of the broken shoe to so separate at the fracture as to allow the insert at the line of fracture, to become disengaged and drop out of the body of the shoe. I have also found that where the arch is employed, and the plate or tension member of the truss omitted, if the shoe cracks at the line of the insert, or in fact anywhere else; the crack invariably extends through the flange, thus permitting the two sections to fall apart and destroy the shoe, but that when both flange and plate are used, the fracture usually stops at the plate, and that should it extend beyond the latter into the flange or arch, nevertheless the parts of the shoe will not separate far enough to permit

of the falling out of an insert, the plate or tension member of the truss acting to hold or bind the sections together, and by reason of its being locked and anchored to the body of the shoe, it converts the arch or flange into the compression member of the truss, and a fracture to the flange is resisted by the crushing strength of the metal contained therein, rather than by its tensile strength, as is the case when the plate is omitted.

As clearly shown in Figs. 1, 2 and 3, the wrought metal lug D is partially surrounded by the metal lug D', formed or cast integral with the body of the shoe. It will be understood, however, without further description and illustration, that the key-lug may be formed wholly of cast metal in the usual and well known manner. In each instance, however, this cast metal D' forming a part of the key-lug, will be formed integral with the arch E and with the central or highest portion thereof, thereby imparting additional strength thereto.

It will be understood from the foregoing that the trussed arch, the feature which adds or imparts the additional strength to the shoe, is superimposed upon the body thereof, that is, over and above any and all portions of the shoe which are exposed to wear, thereby materially prolonging the life of the shoe, as the same may be worn down until comparatively thin. Furthermore, by reason of the additional strength imparted to the shoe, I am enabled to employ much thicker inserts than is usually the case; in fact such may be extended to within a short distance of the back C.

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

1. A brake shoe comprising a cast metal body and provided with a trussed arch, substantially as described.

2. A brake shoe comprising a cast metal body and provided with a trussed arch superimposed thereon, substantially as described.

3. A brake shoe comprising a cast metal body and a trussed arch superimposed there-

on, and inserts located in said body and extending from the wearing face thereof to within a short distance of the back, substantially as described.

4. A brake shoe comprising a cast metal body, an arch cast integral therewith, and a plate located at or adjacent to the back of said body and cooperating with said arch to form a truss, substantially as described.

5. A brake shoe comprising a cast metal body, an arch cast integral therewith and along one side thereof, and a plate located at or adjacent to the back of the shoe, substantially as described.

6. A brake shoe comprising a cast metal body having inserts located in the wearing face thereof, an arch or flange cast integral with the body and along one side thereof, and a plate located at or adjacent to the back of the shoe, substantially as described.

7. A brake shoe comprising a cast metal body, a flange formed integral therewith and along one side thereof, and extending above the back of the shoe, and a plate anchored to the shoe at or adjacent to the back thereof, substantially as described.

8. A brake shoe comprising a cast metal body provided with a key-lug, a flange formed integral with the body of the shoe and alongside thereof and with said key-lug, and a back plate anchored to the body of the shoe at or adjacent to the back thereof, substantially as described.

9. A brake shoe comprising a cast metal body, a flange formed integral therewith and along one side thereof, a key-lug cast integral with the body of the shoe and with the central portion of said flange, and a back plate anchored to the body of the shoe and located at or adjacent to the back thereof, substantially as described.

Signed at Uniontown, in the county of Fayette, and State of Pennsylvania, this 20th day of April A. D. 1907.

JOSEPH J. GLENNON.

Witnesses:

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