

No. 816,373.

PATENTED MAR. 27, 1906.

J. F. POWERS.
BRAKE SHOE.

APPLICATION FILED DEC. 16, 1905.

Fig. 1.

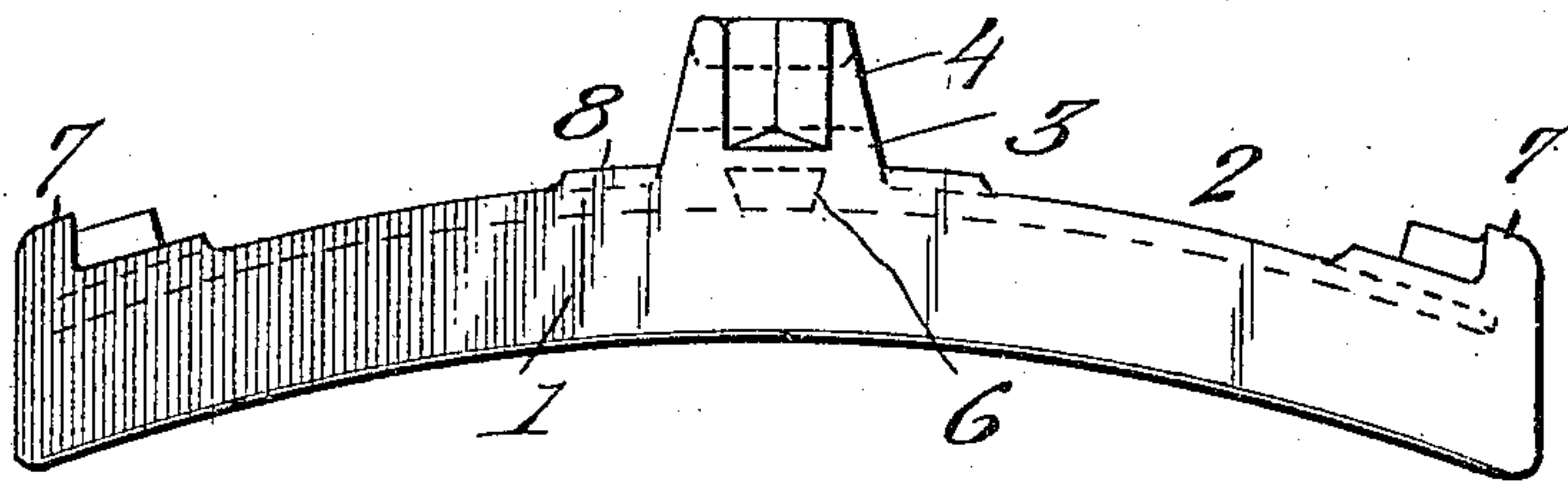


Fig. 2.

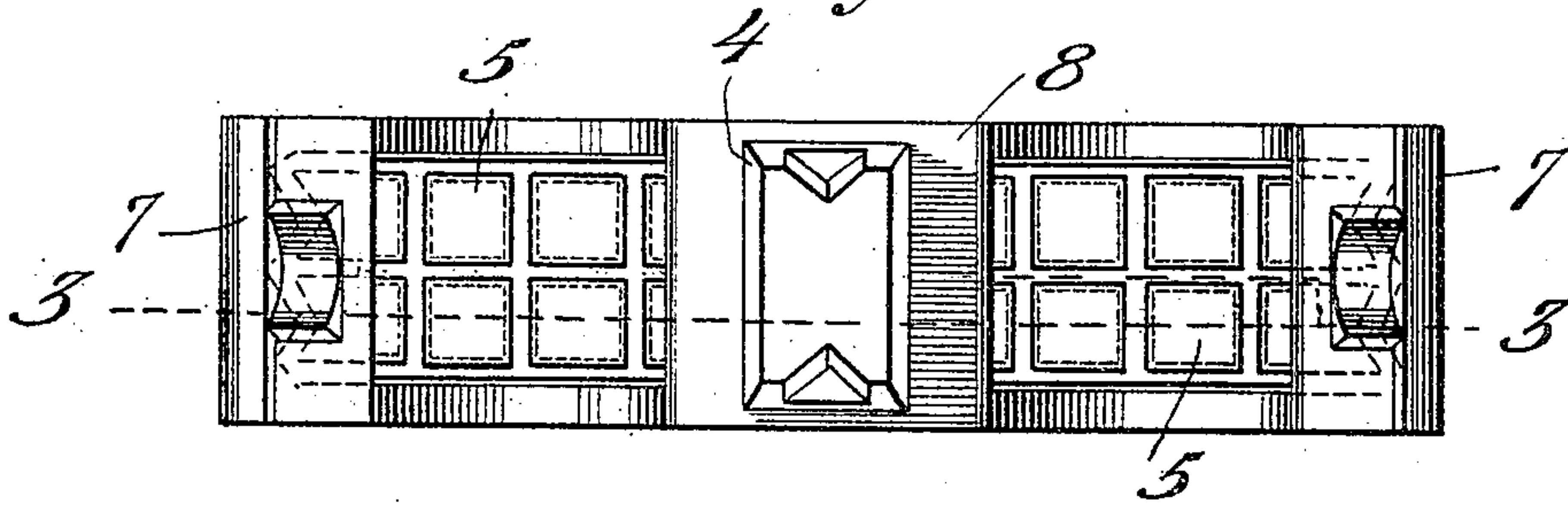
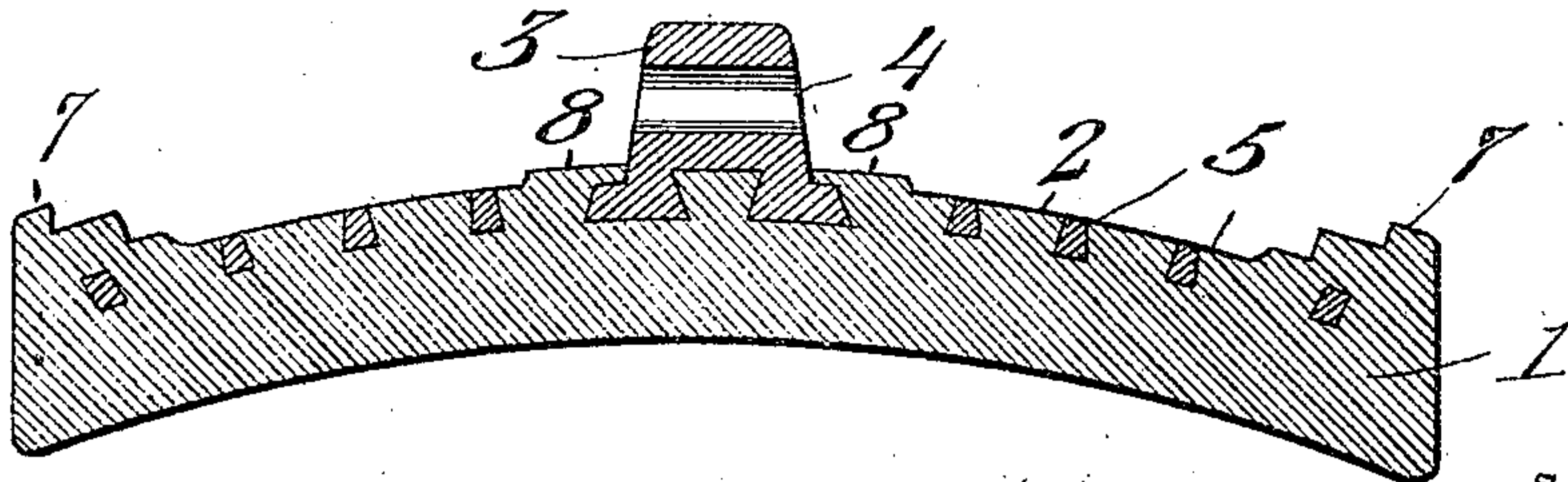


Fig. 3.



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BRAKE-SHOE.

No. 816,373.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed December 16, 1905. Serial No. 292,109.

To all whom it may concern:

Be it known that I, JAMES F. POWERS, a citizen of the United States, residing at Elkton, in the county of Cecil and State of Maryland, have invented new and useful Improvements in Brake-Shoes, of which the following is a specification.

This invention relates to brake-shoes of the type embodying a cast-metal body portion and a hard-metal strengthening member or core, and has for its objects to provide a comparatively simple device of this character which may be inexpensively produced, one wherein the strengthening member serves in addition to its primary function the secondary function of forming a backing-face for the shoe, one wherein the body and the strengthening member will be firmly united throughout their entire length, thus forming practically an integral part of each other, one in which the wearing capacity of the shoe will be materially increased and its life consequently prolonged, and one wherein the strengthening member may, after the shoe has served its usefulness, be readily separated from the shoe and again utilized, thus effecting a considerable saving in the cost of manufacture.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation of a brake-shoe embodying the invention. Fig. 2 is a rear face view of the same. Fig. 3 is a section taken on the line 3 3 of Fig. 2.

Referring to the drawings, 1 designates the body of the shoe composed of cast metal and having applied to its rear face a steel or other hard-metal strengthening member 2, partially embedded in the body 1 and provided at its longitudinal center with an integral upwardly-projecting bearing portion or head 3, having a transverse bearing-opening 4 to receive a coupling member by means of which the shoe is attached to a brake-beam, there being formed at appropriately-spaced intervals through the surface of the member 2 and on opposite sides of the head 3 a series of dovetailed openings or perforations 5, the marginal walls of each of which diverge from the inner toward the outer face of the strengthening member, while formed at the center of the member 2 and within the head 3 is a

dovetailed recess 6, which, together with the openings 5 and during the operation of casting the body 1, becomes filled with the metal thereof for uniting the strengthening member firmly to the body.

Formed upon the ends of the body 1 and cast integral therewith are terminal enlargements 7, in which the ends of the strengthening-plate 2 are embedded, there being also cast upon the body at its center an enlargement 8, in which the member 2 is embedded at opposite sides of the head 3.

In practice the member 2 having been properly formed is placed in a suitable mold, which is thereafter filled with the molten metal to form the body 1, the openings 5 and recess 6 becoming during the casting operation filled with the molten metal, and which upon hardening securely unites the strengthening member with the body 1, as will be readily understood. It is to be particularly observed that owing to the provision of the central recess 6 a firm union is formed between the strengthening member and body, at the center of the latter, and that owing to the strengthening member 2 being applied to and only partially embedded in the rear face of the body 1 said member in addition to its primary functions of strengthening the body forms a facing or backing therefor, and, further, that owing to the application of the strengthening member to the rear face of the body 1 the wearing capacity of the latter is measurably increased. Furthermore, it will be seen that after the body 1 is worn down to the strengthening member the portions of the material which fill the openings 5 may be readily punched therefrom and the strengthening member detached from the body for reuse, it being obvious that in practice the strengthening member is subject to little or no injury and may consequently be repeatedly used in the manufacture of the shoes. It may also be mentioned that by providing the central recess 6 to form the union, as before explained, between the strengthening member and body of the shoe, at the center of the latter, the parts are strengthened relatively at the point subject to the greatest amount of strain owing to the movements of the brake-beam in practice.

From the foregoing it is apparent that I produce a simple device admirably adapted for the attainment of the ends in view, it being understood that in attaining these ends

minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus described my invention, what
5 I claim as new is—

A brake-shoe comprising a cast-metal body portion having a hard-metal strengthening member applied to the rear face thereof, said member being provided with a plurality of
10 dovetailed openings and with an intermediate bearing-head having a dovetailed recess

formed therein, said recess and openings being designed to receive material of the body for uniting the strengthening member thereto and the body having enlargements in which
15 the member is terminally embedded.

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

JAMES F. POWERS.

Witnesses:

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