

No. 810,405.

PATENTED JAN. 23, 1906.

J. D. GALLAGHER.
BRAKE SHOE.

APPLICATION FILED NOV. 5, 1902.

Fig. 1.

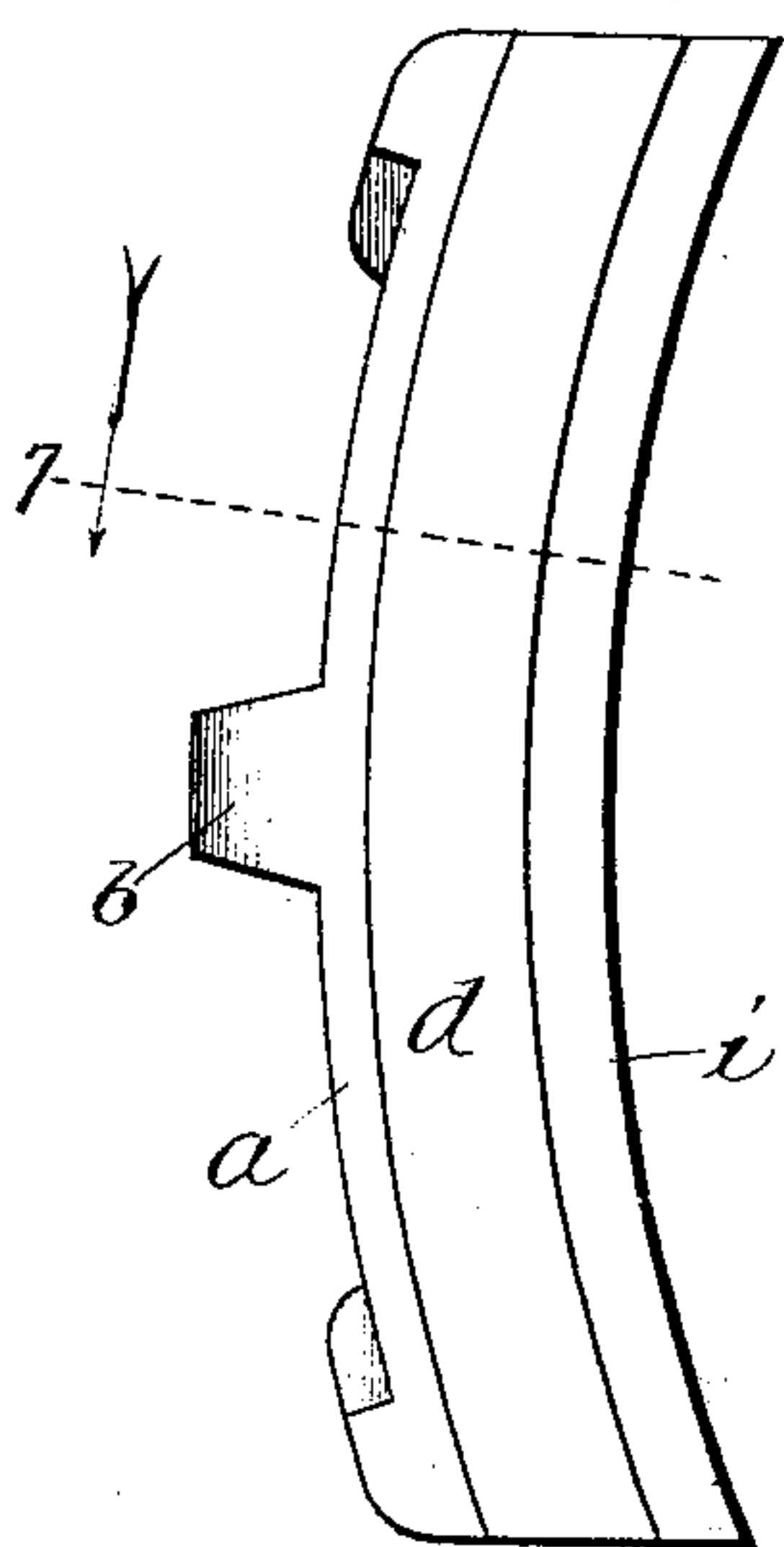


Fig. 2.

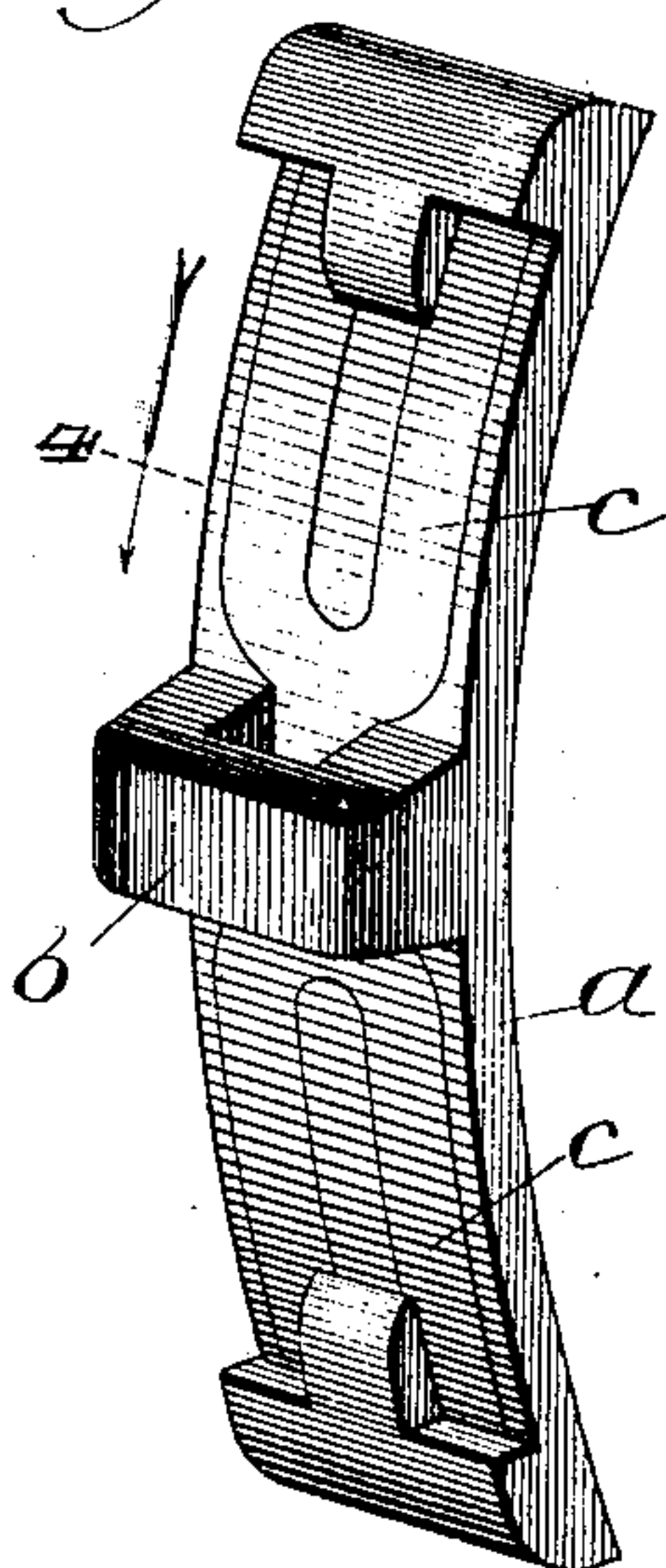


Fig. 3.

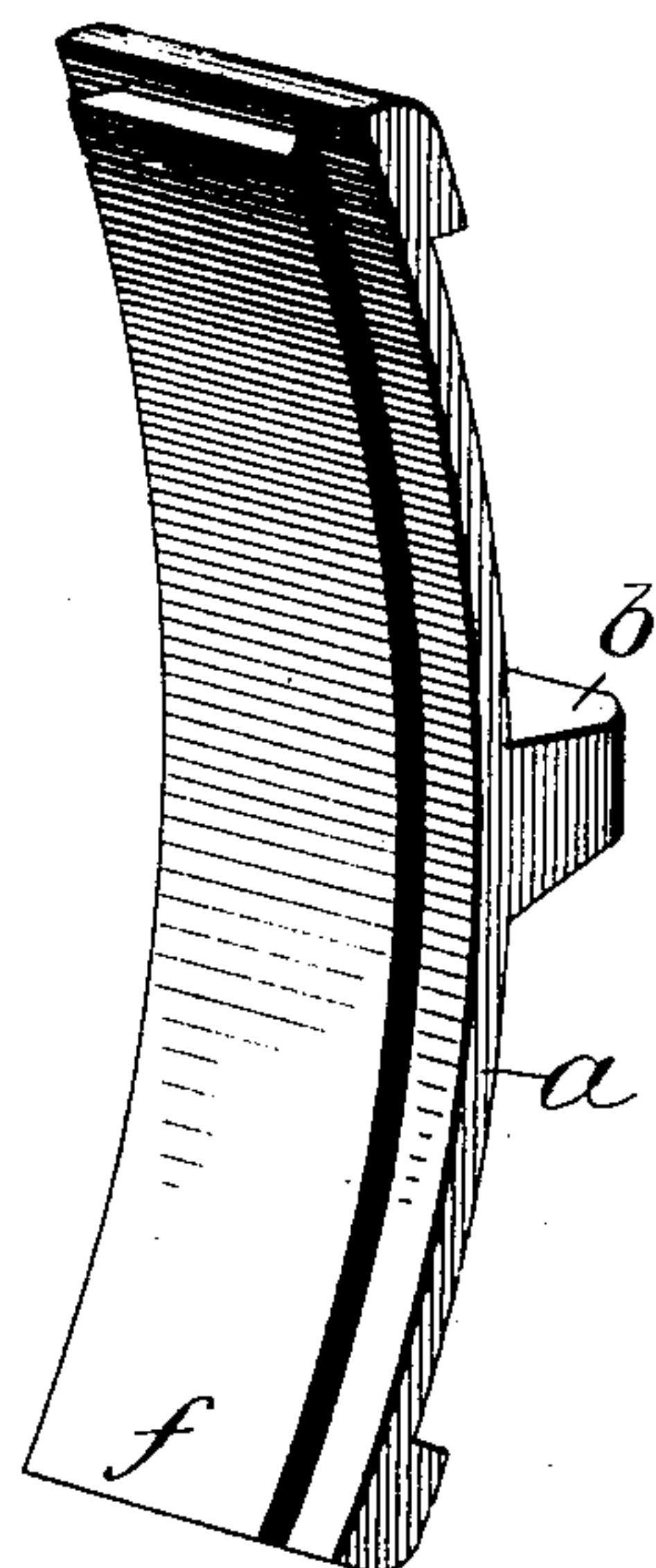


Fig. 4.

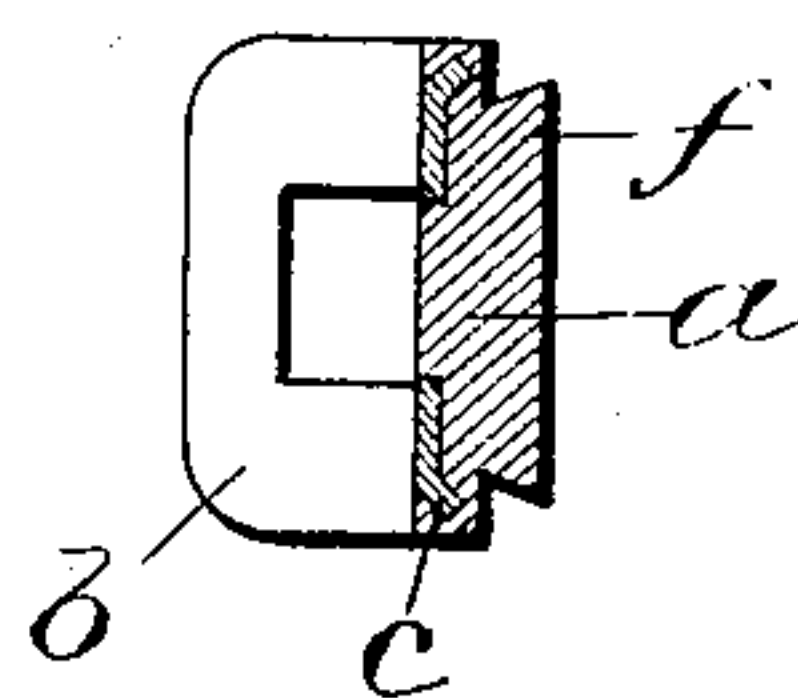


Fig. 5.

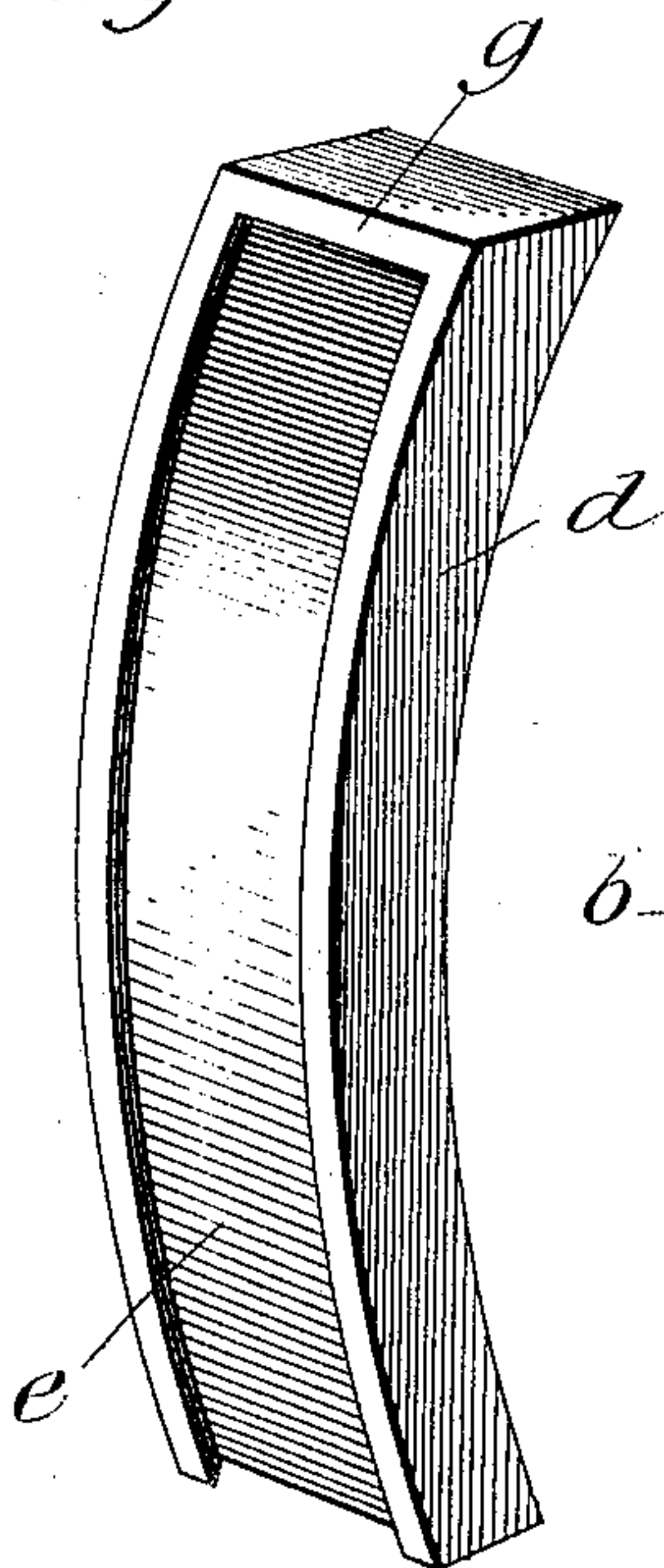


Fig. 6.

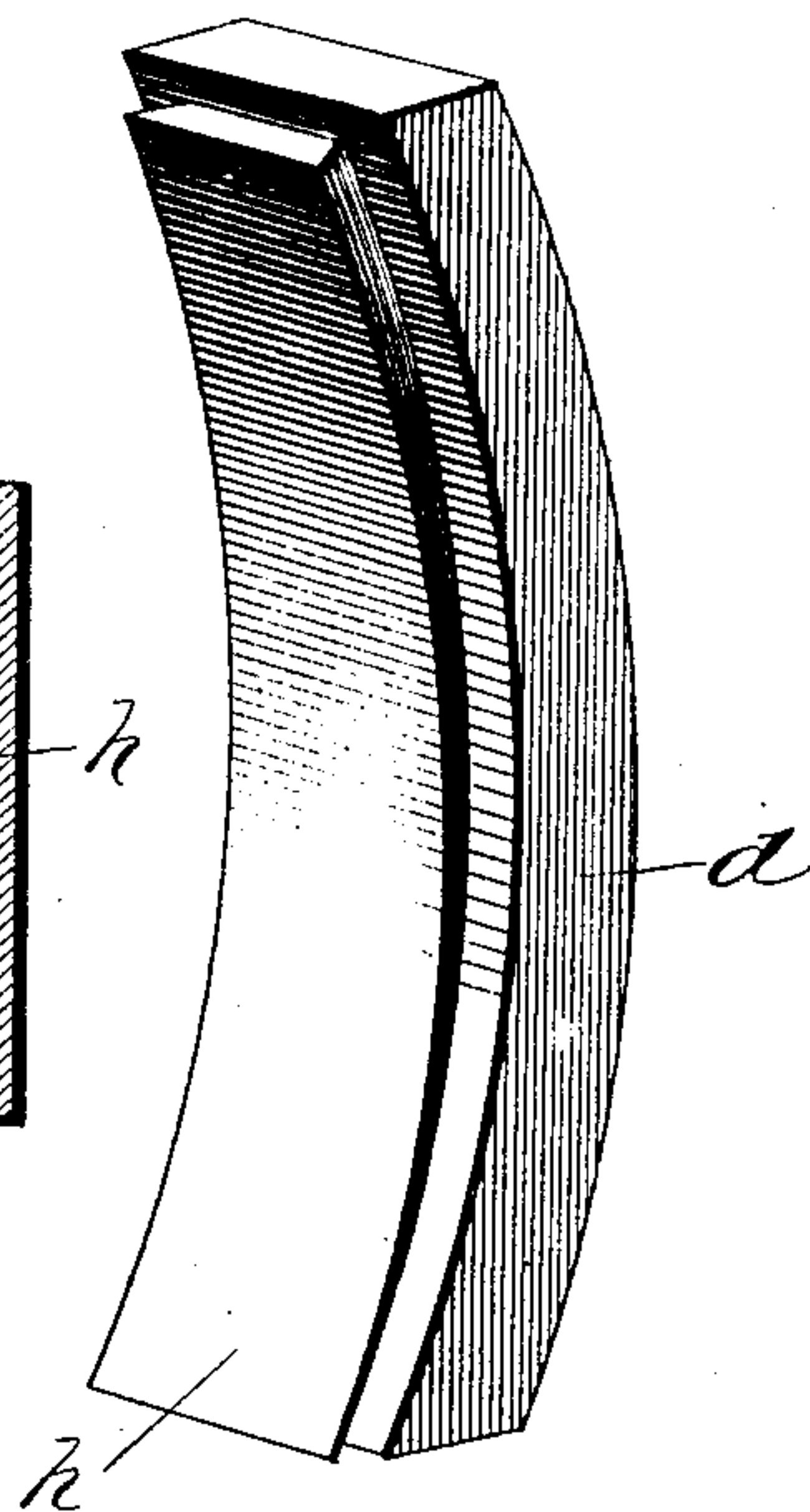
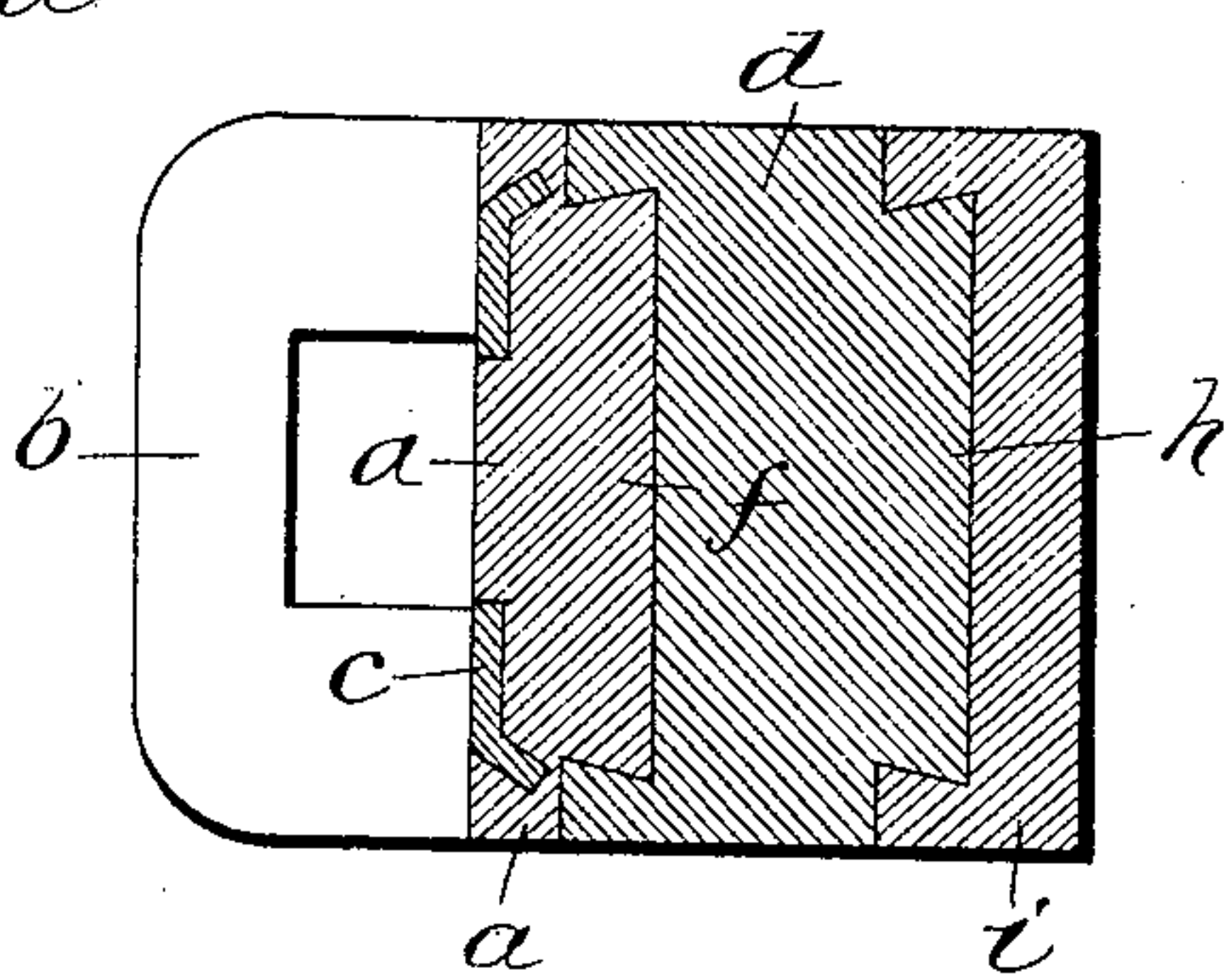


Fig. 7.



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JOSEPH D. GALLAGHER, OF GLENRIDGE, NEW JERSEY.

BRAKE-SHOE.

No. 810,405.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed November 5, 1902. Serial No. 130,171.

To all whom it may concern:

Be it known that I, JOSEPH D. GALLAGHER, of Glenridge, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

The invention relates to brake-shoes constructed for use in connection with railway-cars, and particularly to the construction and arrangement by which the wearing-surface of the brake-shoe may be renewed or repaired, as desired, all of which will more fully hereinafter appear.

The principal object of the invention is to provide a simple, economical, and efficient brake-shoe—one that may be entirely consumed in service with no waste.

A further object is to provide a simple, economical, and efficient brake-shoe made in two or more parts—a holding and wearing part—interchangeably secured together, so that either part may be renewed or repaired, as desired.

Further objects will appear from an examination of the drawings and the following description and claims.

The invention consists principally in a brake-shoe in which there is combined an integral supporting back portion and a wearing-block removably secured thereto.

The invention consists, further, in a brake-shoe in which there is combined an integral holding back portion and a wearing-block intermeshing therewith so as to be removable therefrom.

The invention consists, further, in an integral holding back portion provided with a wrought-metal insert cast therein so as to strengthen the back portion, a dovetail thereon, and a wearing portion provided with a dovetail groove removably intermeshing with the holding back portion.

The invention consists, further and finally, in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a brake-shoe constructed in accordance with these improvements; Fig. 2, a perspective view of the integral holding back portion; Fig. 3, a similar view of the same portion looking at the dovetail front portion thereof; Fig. 4, a cross-sectional view taken on line 4 of Fig. 2 looking in the direction of the arrow; Fig. 5, a perspective view of the rear portion of the wearing part, show-

ing its dovetail groove; Fig. 6, a similar view of the same part, showing the front dovetail portion, and Fig. 7 a cross-sectional view taken on line 7 of Fig. 1 looking in the direction of the arrow.

In the art to which this invention relates it is well known that when the ordinary brake-shoe is broken it must be discarded or thrown away and that it is the wearing part of the brake-shoe which is subjected to the most destructive action and as a consequence is most liable to break. Various expedients and devices have been designed for the purpose of minimizing this objection, and it is to this end that this invention is particularly designed—that is, to produce a brake-shoe formed of several intermeshing parts so constructed and arranged that when any one part is broken, particularly the wearing part, it may be renewed without throwing away the other part. An examination of the drawings will also show that the brake-shoe is so constructed and designed as to get the greatest amount of wear out of the metal—that is, the removable wear-block may be removed when it is considerably worn, a new block put on, and the old block engaged with the face of the new block, so as to entirely wear out the remainder of the old or partly-worn block—an advantage which will be understood and appreciated by those skilled in the art.

In constructing a brake-shoe in accordance with these improvements I make an integral supporting holding back portion *a* of the desired size, shape, and strength to hold and support the other parts in position. This back portion, as shown in the drawings, is provided with a lug *b* so constructed as to be secured to the ordinary brake-shoe head and in the usual manner. While only the usual Master Car Builders' lug is shown, it is obvious that any simple attaching device may be used on the back of the shoe. It will further be seen from an inspection of Figs. 6 and 7 that it has a wrought-metal piece *c* cast therein, which insert is perforated, so that during the operation of casting the molten metal may flow all around the same and hold it in intimate engagement therewith, the advantage being that should the cast portion of the back become broken at any point the wrought-metal insert would still hold the part in efficient operative condition. I may also make the whole back of some malleable or ductile metal, such as steel or malleable iron.

It is well known in this art that the braking-surface of the ordinary brake-shoe is subjected to the greatest wearing action, and as a consequence is most liable to break, and if the entire shoe is formed in one integral structure—that is, the wearing and supporting parts made in one piece, as in the usual form of shoe—the entire shoe would have to be discarded when worn thin or cracked in use, while in the “steel-back” shoe, though it might be held in condition for efficient use, yet its use would still be objectionable on account of the somewhat impaired efficiency, and even a steel-backed shoe must be scraped before the whole metal of the shoe is used up in service. It is desirable, therefore, to make this wearing part or block in such a manner that it may be removably engaged with the holding back portion and also hold a partly-worn part in position to be completely used up, so that if the wearing-block be cracked or worn the whole shoe will not have to be scraped. To accomplish this result, I make a wearing portion or block of the desired size and shape and provide it with a dovetail groove *e* in the rear part, adapted to be engaged or intermeshed with a dovetail lug *f* on the front part of the holding back portion, as shown particularly in Fig. 7. This dovetail groove, it will be seen, is closed at one end at *g*, so as to prevent the wearing part from dropping down and out of position, and also to form a stop, so as to obtain the desired engagement. If desired, the wearing-block can be held from movement in the opposite direction by a pin; but I have found in practice that the friction of the several parts of the shoe upon each other is sufficient to prevent this movement. The front part of this wearing plate or block is provided with a dovetail *h* the counterpart of that shown on the holding back, so that it may receive a partly-worn wearing-block *i*, as shown in Fig. 7, and hold it in operative position until such block is completely worn out.

In operation and preparing the brake-

shoe for first use the supporting or holding back portion is engaged with a wearing-block *d*, and both placed in engagement with the usual brake-shoe head. When the block *d* is partly worn—say to the condition of the part shown at *i* in Fig. 7—it is removed from its position with the holding back portion, a new block placed in engagement therewith, and a partly-worn block engaged with the front thereof, as shown at *i* in Fig. 7.

The principal advantages of this construction are the economy of repair and renewals and the increased longevity of the shoe.

I claim—

1. A brake-shoe divided into two independent parts having adjacent surfaces extending through the shoe longitudinally between the back and face, and means for attaching the two parts together, substantially as described.

2. A brake-shoe divided into two independent parts having adjacent surfaces extending through the shoe longitudinally parallel with the face of the shoe, and means for attaching the two parts together, substantially as described.

3. A brake-shoe divided into two independent parts having adjacent surfaces extending through the shoe longitudinally parallel with the face of the shoe, the lower part having its back and face parallel with each other, and means for attaching the two parts together, substantially as described.

4. In a brake-shoe of the class described, the combination of a holding back portion provided with a dovetail on the front portion thereof, a wearing-block provided with a dovetail groove on the rear portion to engage with the holding back portion and a dovetail slide on the opposite side with which a partly-worn wearing-block may be engaged, substantially as described.

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