

A. H. REID.

BRAKE SHOE.

APPLICATION FILED MAY 1, 1909.

943,995.

Patented Dec. 21, 1909.

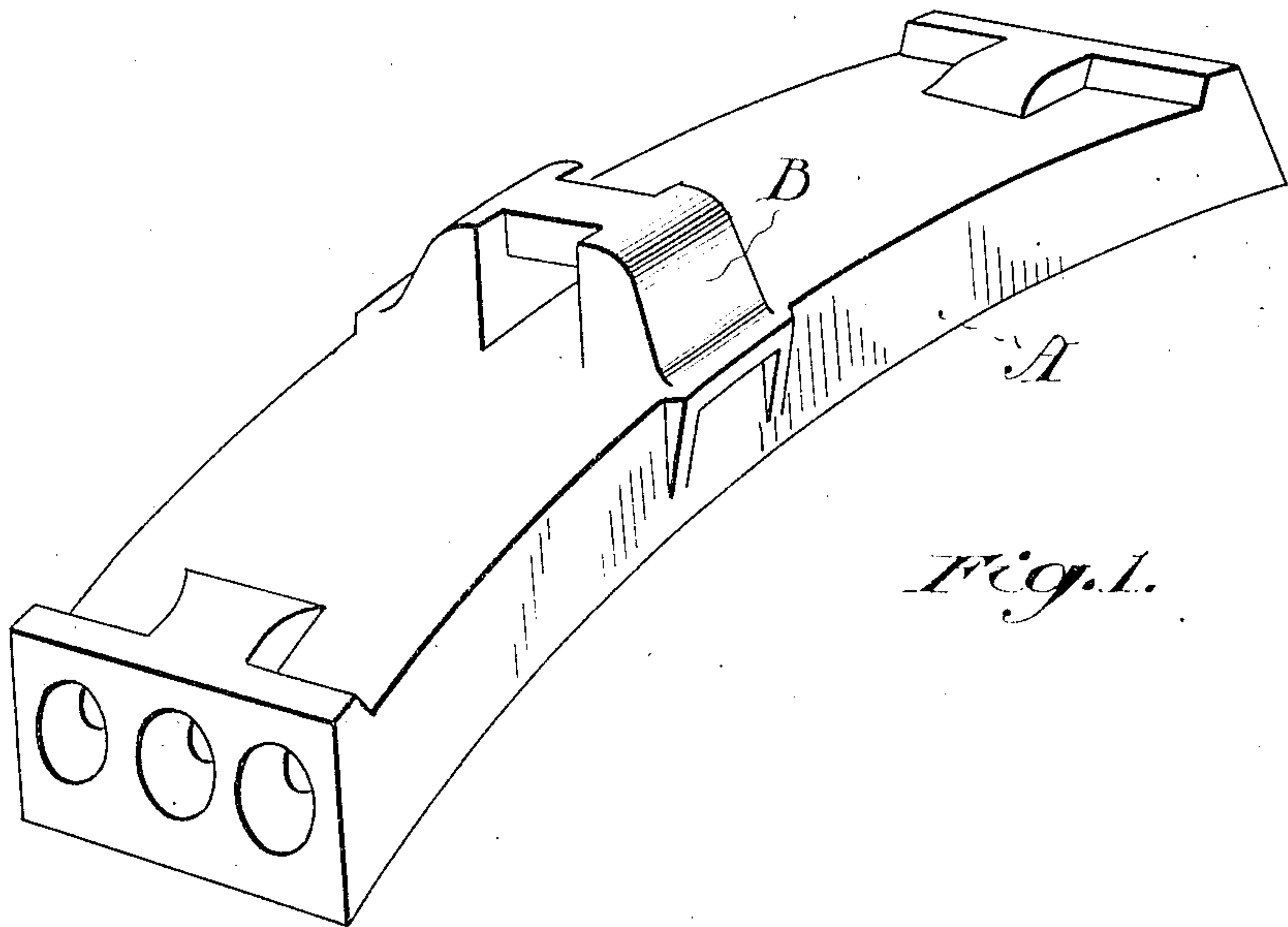


Fig. 1.

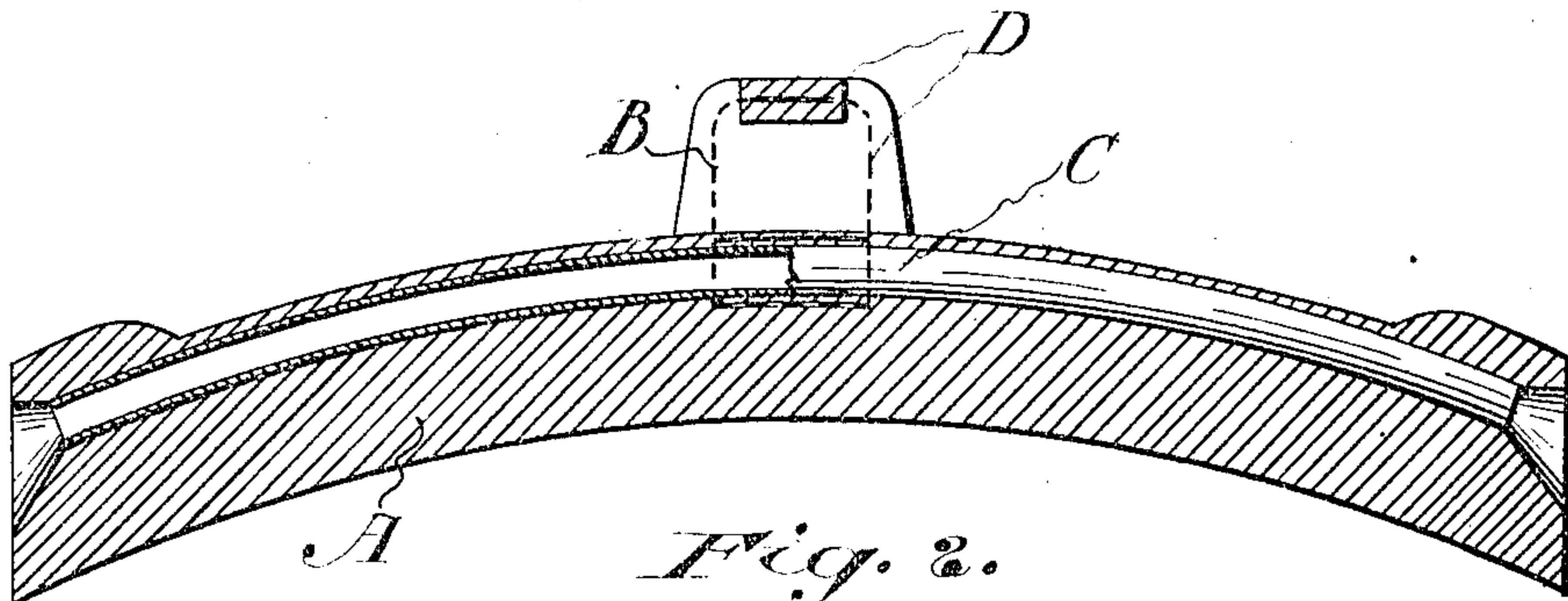


Fig. 2.

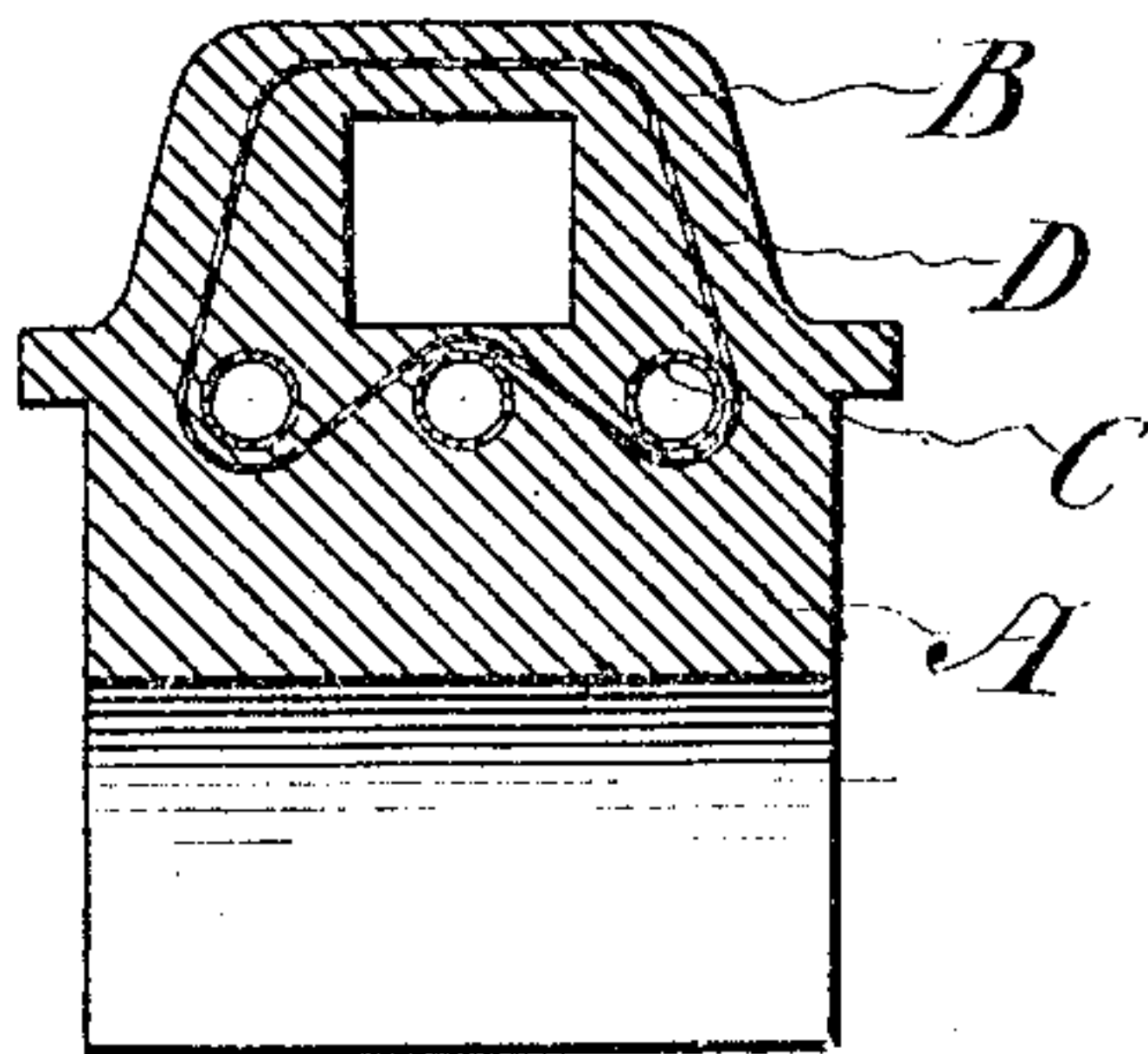


Fig. 3.

WITNESSES:

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ANDREW H. REID, OF TORONTO, ONTARIO, CANADA, ASSIGNOR OF ONE-SIXTH TO NORMAN K. REID, ONE-SIXTH TO HUGH REID, SR., AND ONE-SIXTH TO HUGH S. REID, ALL OF TORONTO, CANADA.

BRAKE-SHOE.

943,995.

Specification of Letters Patent.

Patented Dec. 21, 1909.

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To all whom it may concern:

Be it known that I, ANDREW H. REID, of the city of Toronto, Province of Ontario, Canada, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

This invention relates to improvements in brake shoes of the type in which a cast metal body is reinforced with wrought iron, steel or other tough metal and my object is to devise a shoe of this type which, 1. will have a longer life than ordinary shoes; 2, will when new weigh less than ordinary shoes without material reduction of the thickness of metal available for wear; 3, will, when worn out, weigh less as scrap than ordinary shoes; 4, and will, pound for pound, be cheaper to manufacture than ordinary reinforced shoes.

I attain the objects of my invention by using as a reinforcement a plurality of tubes of tough metal extending lengthwise of the shoe close to the back and opening through the ends thereof. By this arrangement I secure the greatest possible strength in the reinforcement with the minimum weight of reinforcing material. The reinforcing tubes displace a larger amount of cast metal than solid reinforcing material and a reduction of weight in the shoe is thus effected, but as this material is displaced near the back of the shoe the amount of material available for wear is not materially reduced. When the shoe is worn down to the reinforcement it is ready to be scrapped and as the part scrapped contains the tubes its weight is much less than that of solid material. As shoes are bought by weight and the scrap is sellable only at a very small price the reduction in the weight of the scrap is of great advantage to the railways. The tubes also serve as air passages to cool the shoe and as cool shoes wear less rapidly than hot shoes the mileage of the shoes is materially increased by my construction. I employ a center lug on the back of the shoe and this lug is reinforced by wire netting engaging the reinforcing tubes as hereinafter described.

Figure 1 is a perspective view of my improved brake shoe. Fig. 2 is a longitudinal section of the same. Fig. 3 is a cross-section of the same taken through the key lug.

In the drawings like letters of reference indicate corresponding parts in the different figures.

A is the body of the brake shoe made of cast iron and provided with the usual key lug B used in attaching the shoe to the brake head. It is now common to reinforce such brake shoes with wrought iron, steel or other tough metal, but such reinforcements have heretofore always consisted of solid metal. In reinforcing my shoe I use on the contrary a hollow reinforcement preferably comprised of a plurality of tubes C of any suitable tough metal. The tubes will usually be of wrought iron or steel and will run longitudinally of the brake shoe as shown in the drawings.

The tubes are arranged side by side, as shown, as close to the back as possible, sufficiency of cast metal being left above them to insure the strength of their connection with the body of the shoe. These tubes open through the ends of the shoe, as shown, so that a clear passage way for air is formed through these tubes. The ends of the shoe are preferably provided with conical counter-sunk mouths. These mouths serve to gather air and direct it into and through the tubes.

The key lug B being of cast metal is liable to injury owing to the brittle nature of the cast metal. I therefore provide for the latter a metal reinforcement D. This preferably is formed of wire netting extending through the lug around the key opening and embracing the reinforcing tube C in the manner shown particularly in Figs. 2 and 3. The tubes thus support the reinforcement D in position while the brake shoe is being cast. Though I consider the wire netting as the best material for this reinforcement I do not desire to bind myself to its use.

It will be found that a shoe constructed in the manner described will possess all the advantages set out in the preamble to this specification, and it will be noted that all the advantages of increased life, strength and lightness are attained by the expedient of using metal tubes as a reinforcement, the tubes opening through the ends of the shoe.

While I show cylindrical shoes in the drawings it will be understood that any other shape might be employed, though as the cylindrical tubes are cheapest and possess the advantage of the greatest strength with the least amount of material they will usually be employed. My system of rein-

forcing is also applicable to other forms or designs of brake shoe than that illustrated in the drawings.

Another advantage possessed by my shoe is that when the shoe is worn down partly into the reinforcement channels are thereby opened up for the escape of the ground off particles of the shoe body and reinforcement. This is a great advantage as the wear of the shoe is much more rapid under the conditions set out.

What I claim as my invention is:—

1. A brake shoe comprising a cast metal body and a tubular reinforcement cast therein.

2. A brake shoe comprising a cast metal body and a tubular reinforcement cast therein, and having its ends opening through the body of the shoe.

3. A brake shoe comprising a cast metal body and a metal reinforcing tube cast in the body lengthwise of the same and adjacent to the back.

4. A brake shoe comprising a cast metal body and a plurality of metal reinforcing tubes cast in the body side by side, length-

wise of the body and adjacent to the back thereof.

5. A brake shoe comprising a cast metal body and a metal reinforcing tube cast in the body lengthwise of the same and adjacent to the back, the ends of the tube opening through the ends of the shoe.

6. A brake shoe comprising a cast metal body and a plurality of metal reinforcing tubes cast in the body side by side, lengthwise of the body and adjacent to the back thereof, the ends of the tubes opening through the ends of the shoe.

7. A brake shoe comprising a cast metal body with a key lug cast at the back thereof, a longitudinal reinforcement cast in the body of the shoe, and a reticulated reinforcement extending around the key-opening in said lug and embracing the reinforcement of the shoe body.

Toronto, this 29th day of April 1909.

ANDREW H. REID.

Signed in the presence of—

J. EDW. MAYBEE,

EDGAR M. SHAPPARD.