

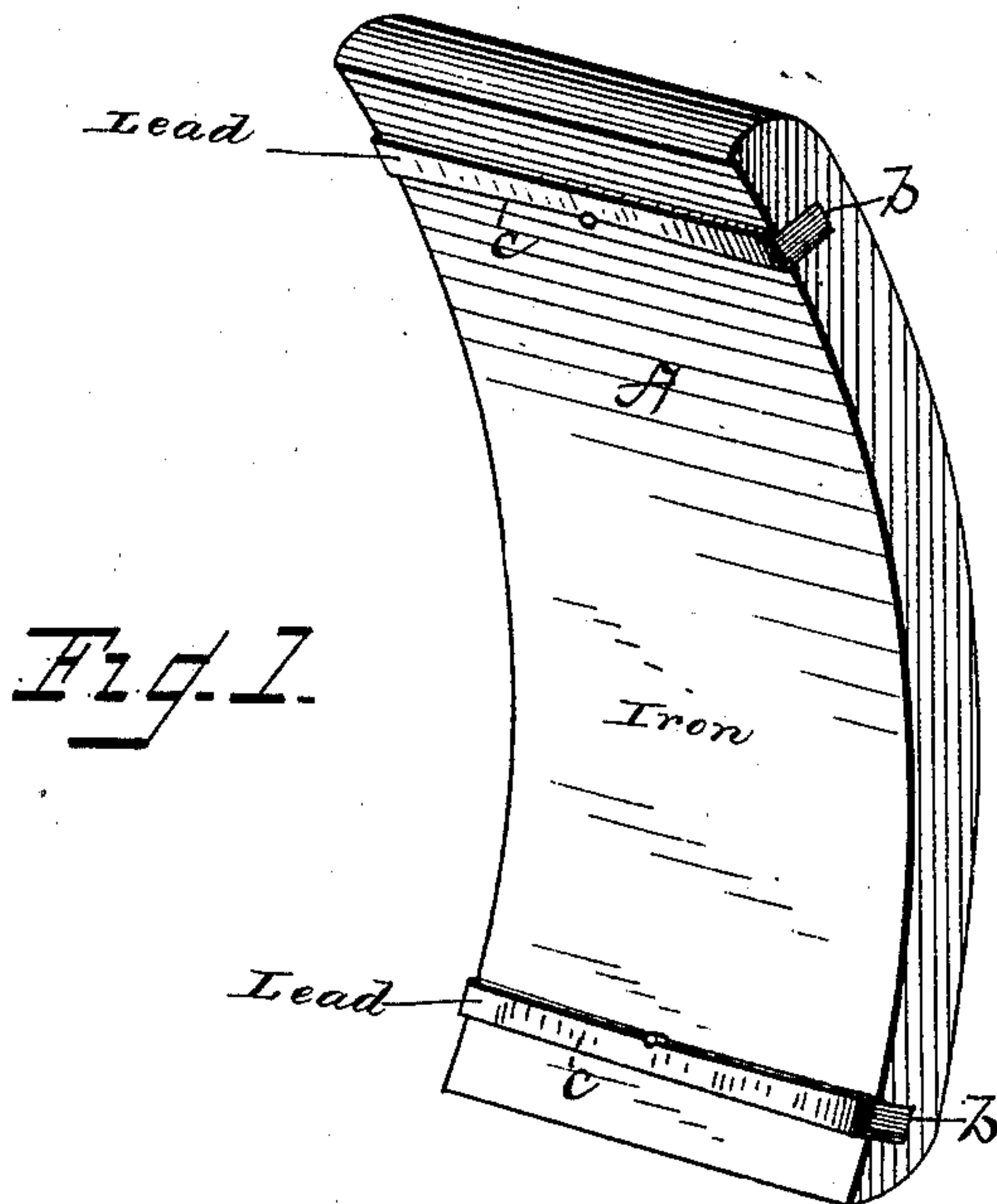
(No Model.)

G. J. SHIMER.

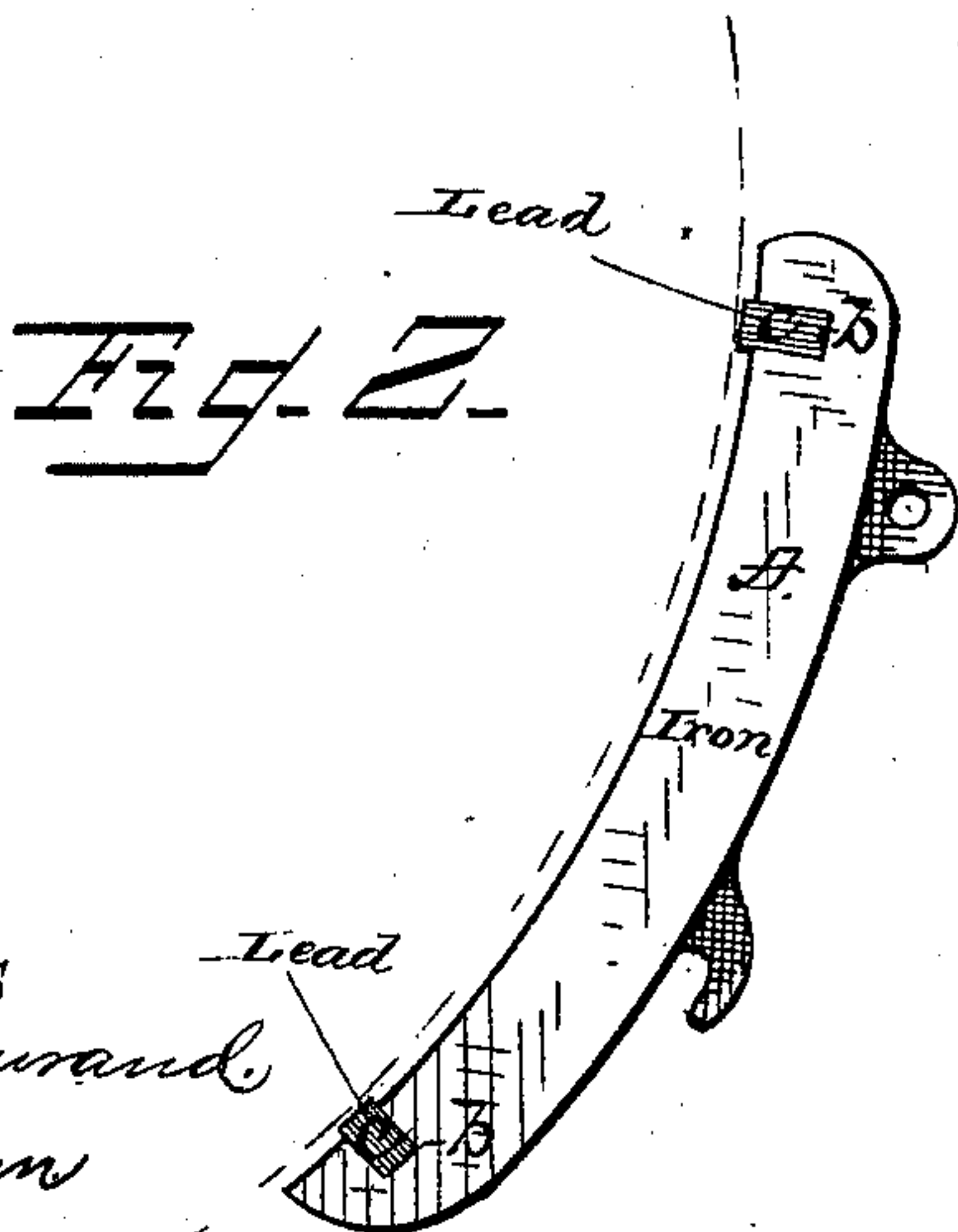
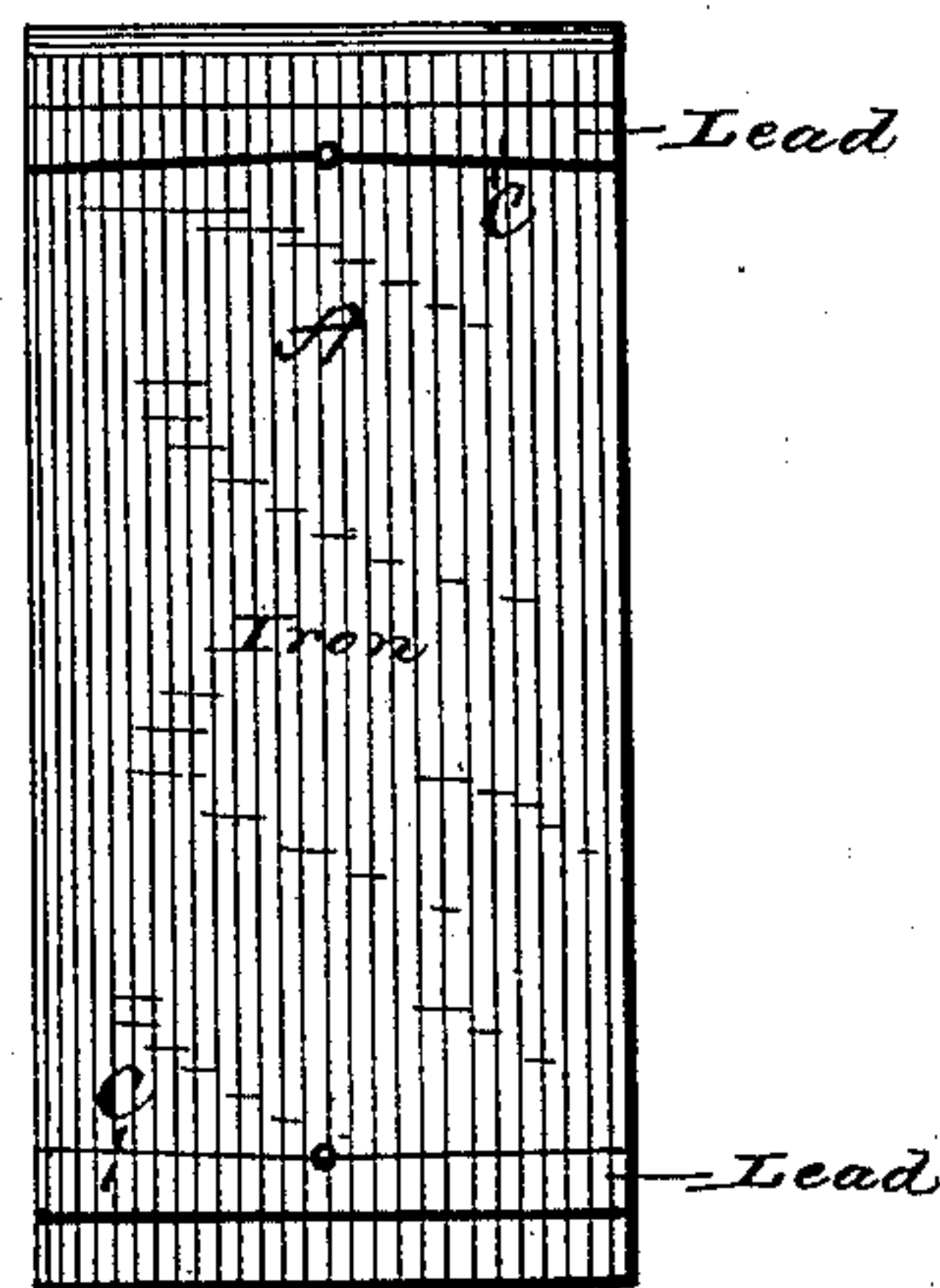
BRAKE SHOE.

No. 272,911.

Patented Feb. 27, 1883.



*Fig. 3*



WITNESSES  
Frank L. Ourand.  
J. Heylman

INVENTOR  
George J. Shimer  
by Heylman & Kaug.  
Attorneys

# UNITED STATES PATENT OFFICE.

GEORGE J. SHIMER, OF FREEMANSBURG, ASSIGNOR OF ONE-HALF TO  
SAMUEL J. SHIMER, OF MILTON, PENNSYLVANIA.

## BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 272,911, dated February 27, 1883.

Application filed November 22, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE J. SHIMER, a citizen of the United States of America, residing at Freemansburg, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Brake-Shoes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention, which relates to brake-shoes for railway-cars, street-cars, and the like, has for one of its objects to construct the bearing-surface of a brake-shoe of cast-iron and lead, or the equivalent of lead, to prevent cutting or granulating of the cast-iron, as is the case now with the common brake-shoe.

It seems to be a fact that the common brake-shoe, made of cast-iron, after being in use for a short time, becomes granulated on the bearing-surface on account of the frequent frictional contact with the wheel, which causes the brake-shoe to wear away rapidly and injure the wheel.

My invention consists in a brake shoe or block composed of cast-iron and lead filling, or their equivalents, as an improved article of manufacture.

In the annexed drawings, Figure 1 shows in perspective one form of a brake-shoe embodying my improvement. Fig. 2 is an end view, and Fig. 3 is a front view, of the same.

The brake shoe or block A shown in the accompanying drawings represents one of the many styles of brake shoes or blocks to which my improvement may be applied. The bearing-surface of the brake-shoe is preferably made at each end with a transverse groove or recess, *b*, of any desired shape both transversely and longitudinally, which grooves or recesses may be made, at the time of casting the brake-shoe, by sand cores or other means; or these grooves or recesses may be formed after the cast-iron brake-shoe is removed from the mold by suitable means. These grooves or recesses are filled with lead or a soft alloy of lead, as designated by *c*, and should slightly

project beyond the face, so as to come in contact with the car-wheel before the body of the shoe touches. This lead filling may be either cast or pressed into the grooves or recesses or perforations of the brake-shoe, so as to secure a firm connection, and the lead filling may be additionally secured to the shoe by means of small rivets. The lead filling above and below, as shown, will, when the brake-shoe is first applied to the car-wheel, give a good seat to the shoe. The object or office of this lead filling or its equivalent in the bearing-face of the brake shoe or block is to provide a dry lubricant. The wearing away of the lead filling, and with the iron when flush, will glaze or slightly cover the face of the contact-wheel and shoe, which covering, acting in the nature of a dry lubricant, will prevent the cutting or granulating of the cast-iron composing the body of the shoe, and at the same time without injuring the tread of the wheel. This lead filling, acting as a dry lubricant, does not make the brake-shoe any the less effective in operation, while it greatly lessens the wear on the wheel and brake-shoe.

The lead used can be of the cheapest kind of "hard lead," and a slight alloy of other metals will not hurt the lead for the use intended, so long as the peculiar tough and soft properties of the metal are not destroyed; but pure lead is preferred; also, instead of the transverse grooves or recesses to receive the lead filling, perforations, or both perforations and grooves, may be made to receive the lead filling or its equivalent, and these distributed over the bearing-surface.

What I claim as my invention, and desire to secure by Letters Patent is—

As an improved article of manufacture, a brake shoe or block composed of cast-iron and lead filling, substantially as described.

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

GEORGE J. SHIMER.

Witnesses:

FR. M. RAUCH,  
MARY C. DANIEL.