

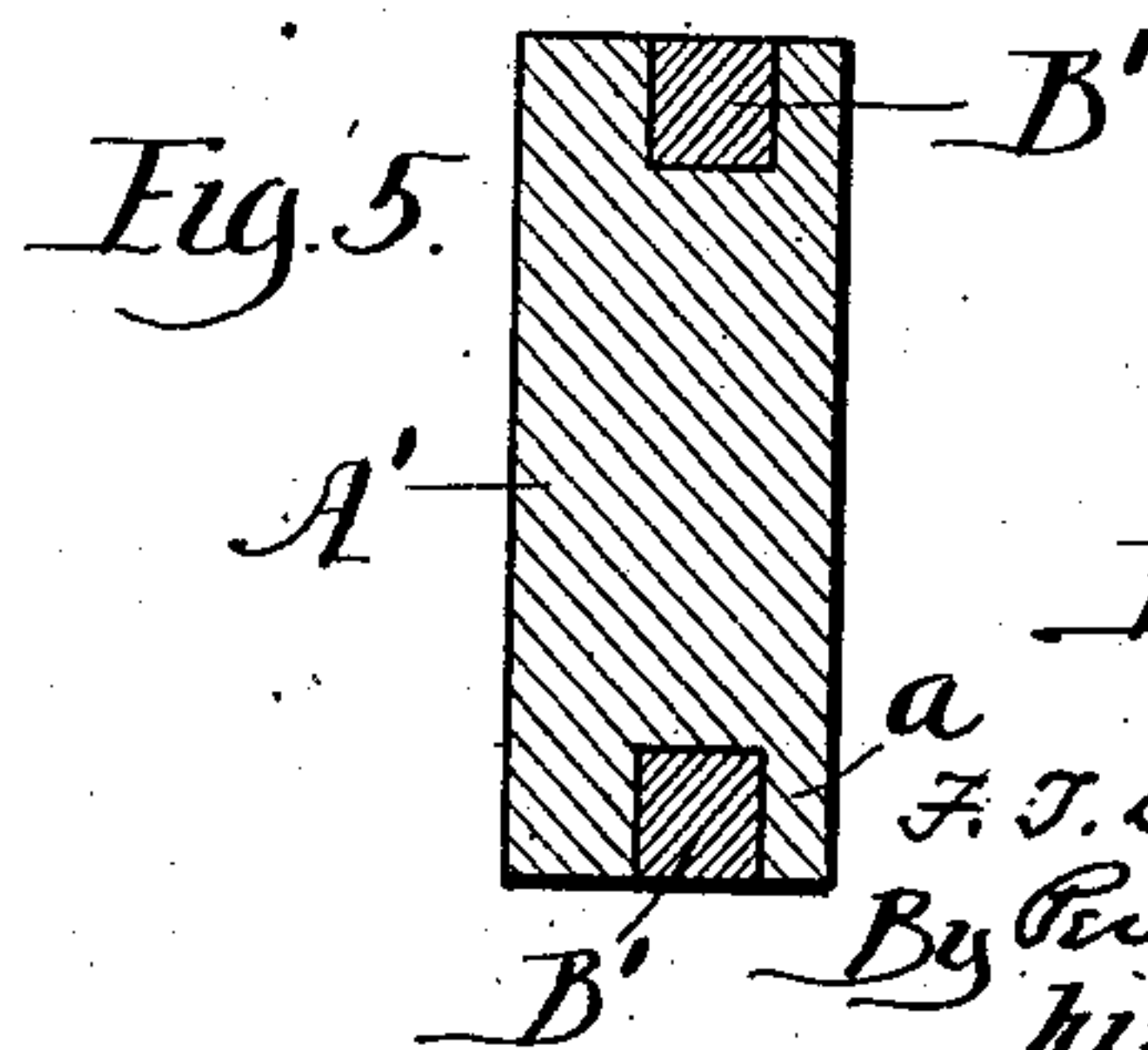
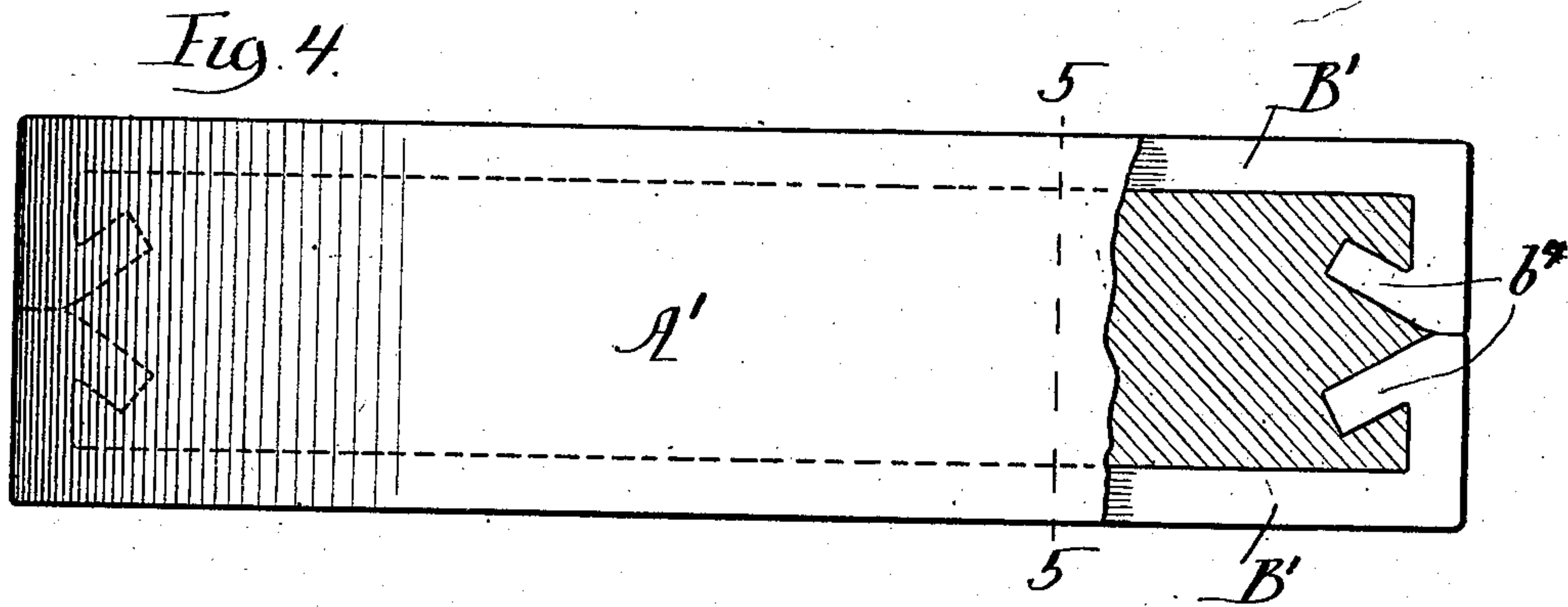
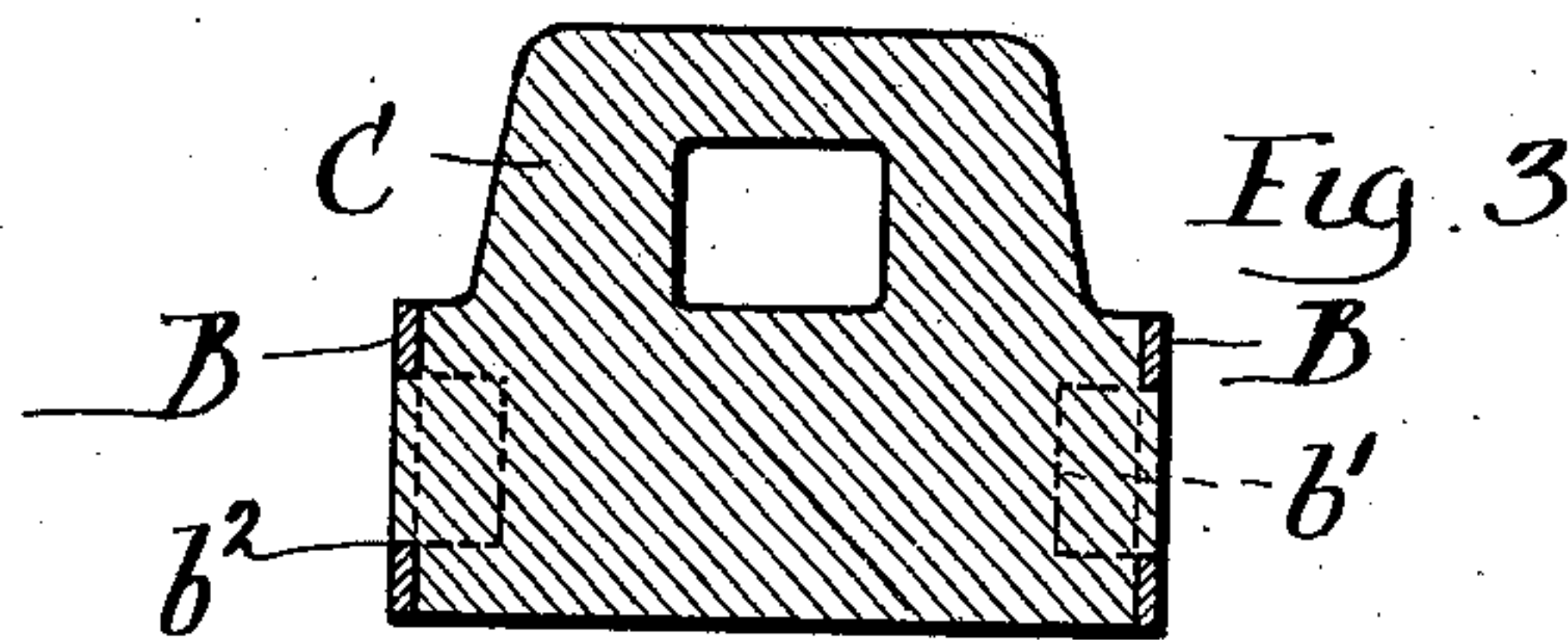
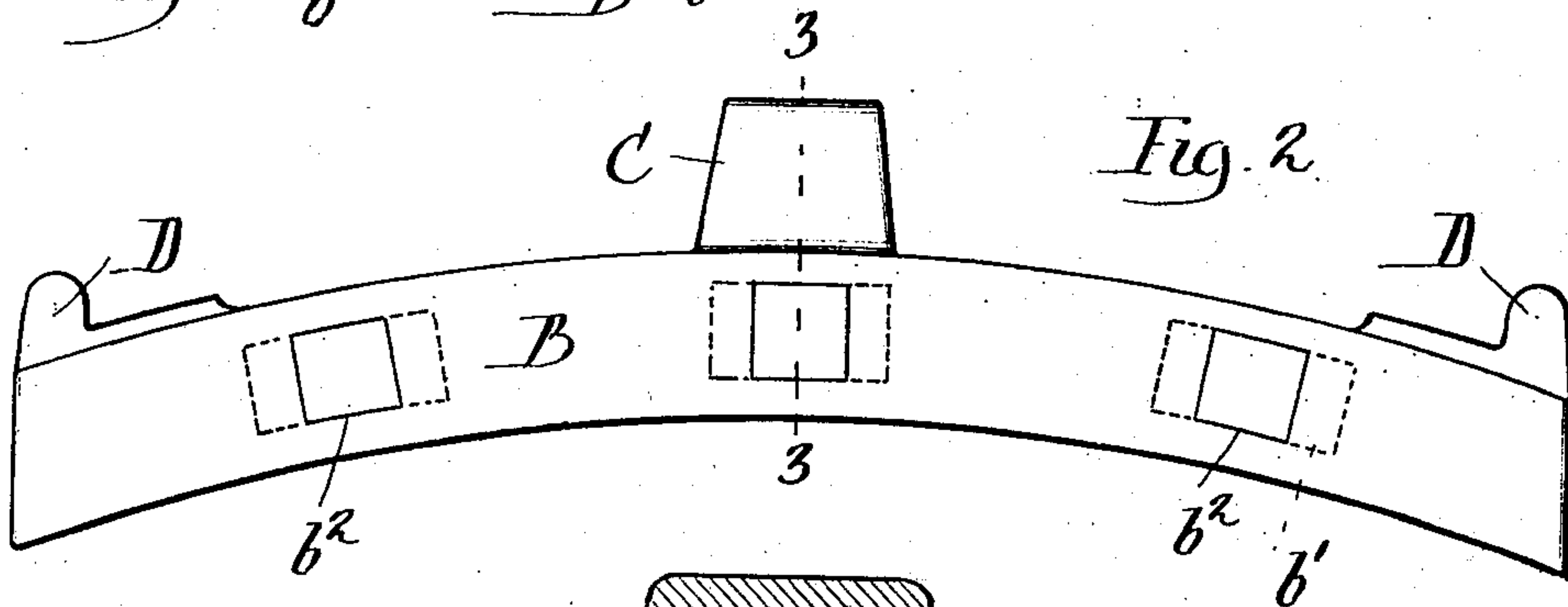
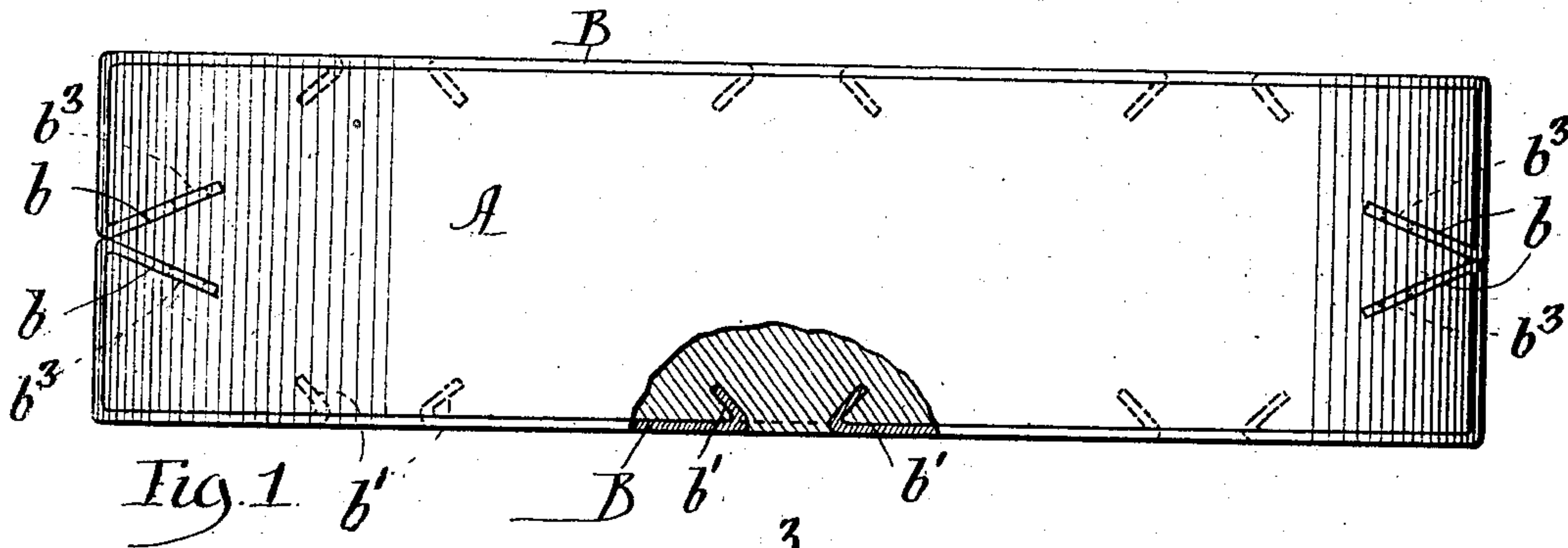
No. 751,477.

PATENTED FEB. 9, 1904.

F. T. DICKINSON.
BRAKE SHOE.

APPLICATION FILED MAY 27, 1903.

NO MODEL.



Witnesses:
Fred Gilack
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Inventor:

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UNITED STATES PATENT OFFICE.

FRANK T. DICKINSON, OF CHICAGO, ILLINOIS.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 751,477, dated February 9, 1904.

Application filed May 27, 1903. Serial No. 158,905. (No model.)

To all whom it may concern:

Be it known that I, FRANK T. DICKINSON, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a full, clear, and exact description.

This invention has relation more particularly to that class of brake-shoes for railway-car wheels, the bodies of which shoes are formed of cast metal reinforced or strengthened by wrought or malleable metal; and the object of the invention is to provide a strong, durable, and effective construction of brake-shoe and one that may be readily and cheaply manufactured.

The invention consists in the features of improvement hereinafter described, illustrated in the accompanying drawings, and more particularly pointed out in the claims at the end of this specification.

Figure 1 is an inverted plan view of a brake-shoe embodying my invention, a part being broken away for better illustration. Fig. 2 is a view in side elevation. Fig. 3 is a view in vertical transverse section on line 3 3 of Fig. 2. Fig. 4 is an inverted plan view showing a modified form of brake-shoe, a part being broken away for better illustration. Fig. 5 is a view in transverse section on line 5 5 of Fig. 4.

Referring more particularly to the form of brake-shoe shown in Figs. 1 to 3 of the drawings, A designates the body of the shoe, that is formed of cast iron or steel, and B denotes the surrounding frame or band, that incloses the sides and ends of the cast-metal body A. In the preferred form of the invention the frame or band B is formed of two separate strips, the ends *b* of which are embedded in the cast metal at the end of the shoe, and by preference these ends *b* are divergently arranged, as clearly shown in Fig. 1 of the drawings. In the preferred form of the invention also the sides of the band B (and the ends also, if desired) are provided with inwardly-extending lips *b'*, that are embedded in the cast-metal body A of the shoe. Preferably these lips *b'* are formed, as shown in Figs. 1 to 3 of the drawings, by slitting the band or frame B and

forcing inward the metal at such points, thereby forming openings *b²* in the frame or band B. The back of the shoe is shown as formed with the usual cast-metal retaining-lug C and end lugs D, formed integral with the body A.

From the foregoing description it will be seen that when my improved brake-shoe is to be formed the frame or band B will be set in the mold and the metal will then be poured in to form the cast-metal body A, the attaching-lug C, and end lugs D. The cast metal flowing around the ends *b* and lips *b'* of the frame or band B securely unites this frame or band to the body of the shoe, and, indeed, the metal of the frame or band becomes practically "burnt" or welded onto the body of the shoe during this casting operation. Inasmuch as the inwardly-turned ends *b* of the frame or band B extend below the lugs D, there is ample cast metal above these ends *b* to prevent the frame or band from weakening the ends of the shoe. If desired, the inwardly-turned ends *b* of the frame or band B may be formed with holes *b³*, as shown, through which the cast metal will flow, thereby giving greater strength to the end portions of the shoe. It will thus be seen that when the cast-metal body A of the shoe has been connected to the surrounding frame or band B not only does the frame or band serve to greatly strengthen the body of the shoe, but in case the cast-metal body should crack or break the frame or band B will prevent any part of the shoe from falling onto the track. The extension of the frame or band B around the ends of the cast-metal body of the shoe is a material advantage not only in that it gives greater strength to the extreme end portions of the cast-metal body, but also because it insures a more accurate casting of the shoe-body. Indeed, one particular advantage of employing a frame or band that surrounds both the sides and ends of the shoe is that the frame or band can be used as part of the mold wherein the body of the shoe is cast. In practice such mold will be provided with a top and bottom plate, these plates being formed with inwardly-extending parts adapted to close the holes *b²* in the frame or band, so that the cast metal cannot flow therethrough in the casting operation.

In the form of the invention illustrated in Figs. 4 and 5 of the drawings the cast-metal body A' of the shoe has embedded in the sides thereof a frame or band B', that surrounds the sides and ends of the cast-metal body of the shoe and is embedded therein. In this form of the invention, as in that hereinbefore described, the surrounding band B' is formed of two separate parts, the inwardly-turned ends δ^4 of which are embedded in the cast-metal body of the shoe at its ends. In this form of the invention the frame or band B' is preferably set somewhat below the top surface of the shoe, thereby leaving a small portion of cast metal α above the surrounding frame or band B'. In manufacturing the shoe illustrated in Figs. 4 and 5 of the drawings the frame or band B' will be set within the mold, and as the cast metal is poured it will surround the frame or band, which in the casting operation thus becomes firmly embedded in the body of the shoe. If the casting is effected in metal molds, these will divide upon the center line of the frame B'. It will be found that the frame or band B' will impart great strength and durability to the shoe.

It is obvious that the precise details of construction above described may be varied without departing from the spirit of the invention and that features of the invention may be employed without its adoption as an entirety.

Having thus 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 a frame or band open at its top and bottom and surrounding both the sides and ends of the cast-metal body of the shoe and united thereto in the casting operation.

2. A brake-shoe comprising a cast-metal body and a frame or band surrounding both the sides and the ends of said cast-metal body of the shoe, said frame or band having inwardly-extending portions embedded in the cast-metal body of the shoe.

3. A brake-shoe comprising a cast-metal body and a frame or band surrounding the sides and ends of said cast-metal body, said frame or band having formed integral therewith inwardly-extending lips embedded in the body of the shoe in the casting operation.

4. A brake-shoe comprising a cast-metal body and a frame or band surrounding the sides and ends of said cast-metal body and having inwardly-turned ends embedded in the cast-metal end portions of the shoe-body.

5. A brake-shoe comprising a cast-metal body, a frame or band extending around the sides and ends of said cast-metal body and provided at its ends with inwardly-extending portions and at its sides with inwardly-extending portions embedded in the cast-metal body of the shoe.

6. A brake-shoe comprising a cast-metal body and a frame or band extending at the sides of said body and having intermediate between its ends inwardly-extending lips formed integral therewith and embedded in the cast-metal body in the casting operation.

7. A brake-shoe comprising a cast-metal body, a frame or band surrounding the sides and ends of the cast-metal body, said frame or band having openings in its sides and having at said openings inwardly-extending lips extended in the cast-metal body of the shoe.

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