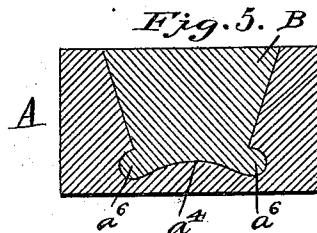
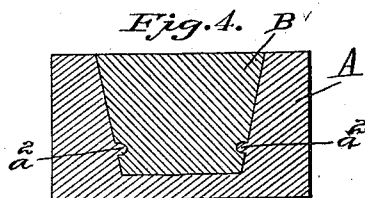
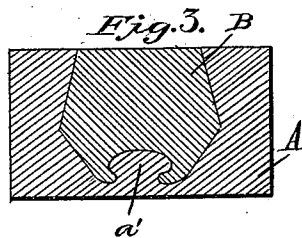
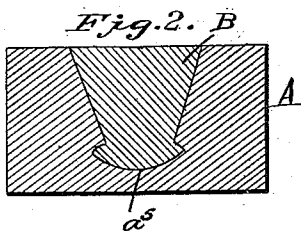
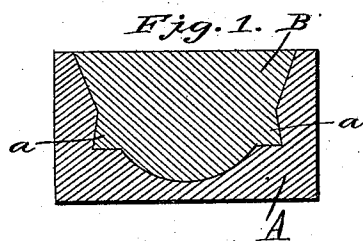


(No Model.)

E. W. APPLGATE.
BRAKE SHOE.

No. 569,983.

Patented Oct. 20, 1896.



Witnesses
Edwin G. Knapp
K. A. Han

Inventor
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UNITED STATES PATENT OFFICE.

EUGENE W. APPLGATE, OF CORNING, NEW YORK, ASSIGNOR TO WILLIAM
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BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 569,983, dated October 20, 1896.

Application filed January 24, 1896. Serial No. 576,666. (No model.)

To all whom it may concern:

Be it known that I, EUGENE W. APPLGATE, a citizen of the United States, residing at Corning, in the county of Steuben and State of New York, 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 relates to certain new and useful improvements in brake-shoes; and it has for its objects, among others, to provide a shoe which shall combine strength and durability, economy in material and cost of manufacture, and general efficiency in operation.

In carrying out my invention I place the soft inset-block in the mold and pour the iron around it, leaving the top or face one-sixteenth of an inch flush with the other iron. The inset chill-block may be of any desired form. It may be formed with inclined sides or ends to better hold it in, or it may be held in place by hooks, chaplets, drafts, bevels, or any other method or means.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a cross-section of my improved shoe. Figs. 2, 3, 4, and 5 show various forms of soft-iron insets or chill-blocks that may be employed.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the main part or body of the shoe, and B the soft cast-iron inset-block. This block may assume any one of a variety of forms. For instance, in Fig. 1 it is shown as having its opposite sides oppositely inclined, forming a wedge, as it were, so that the block may be firmly retained within the body A; or, instead of being of the form illustrated in Fig. 1, the block may be of substantially the form shown in Fig. 2, having

plain converging sides, and if formed with its lower portion rounded it should preferably be formed with the lugs or tapered portions a ; or the rounded portions and lugs may be formed as seen in Fig. 2 and the opposite walls of the block tapered, as indicated in the same view; or the said block may be of substantially the contour seen in Fig. 3, the recesses a' therein constituting a draft into which the molten metal will flow to hold it into the body portion; or the block may be formed with the recesses a^2 in its sides, which are also inclined, as indicated in Fig. 4, and which recesses form drafts to secure the block within the body portion. Instead of forming the block as seen in Fig. 2 its lower face may be concave, as seen at a^4 , instead of convex, as seen at a^5 in Fig. 2, and the lugs or projections a^6 rounded or inclined, as seen in Fig. 5. These and numerous other forms may be employed for holding the block within the shoe-body.

In practice the block A is first cast and then placed in the mold to constitute the chill and the molten metal poured in to cast the main body thereupon or thereabout, and thus forming an integral composite shoe, with the soft-metal inset securely bound or held therein against displacement. The interior of the main body A of the shoe immediately about the block B is chilled to a depth sufficient to insure durability and strength to the shoe. By this method of forming a brake-shoe I obtain an equal and uniform distribution of the hard and soft frictional surfaces which are presented or brought to bear against the tread of the car-wheel, and the tendency thereof is to maintain an even face or tread thereon. One, two, or more of these blocks may be provided in each shoe, preferably three at least, and these will be separated by a transverse section or bridge of the cast main body, which portion will be chilled or hardened between the soft-metal blocks.

What I claim as new is—

1. A composite brake-shoe consisting of a cast-metal body portion and a soft-metal block having tapered sides and held therein against displacement by drafts, projections or the like independent of said tapered sides, substantially as described.

2. A composite brake-shoe composed of the main body and a soft-metal block having tapered sides and about which the body is cast and to which it is held by projecting parts
5 such as projections on the soft-metal block forming anchors in the main body in addition to said tapered sides, the main body having chilled sections along the sides and at ends of said soft block, substantially as described.
10 3. In a brake-shoe a block of metal softer than the immediately-surrounding parts of the main shoe-body and formed with projecting portions, the said projecting portions be-

ing independent of and in addition to the inclined sides of said block and shoe-body, and 15 the latter cast about and upon said projecting portions, which latter are thus integrally united with said body portion, substantially as described.

In testimony whereof I have signed this 20 specification in the presence of two subscribing witnesses.

EUGENE W. APPLGATE.

Witnesses:

GEO. T. SPENCER,
E. D. MILLS.