

No. 609,812.

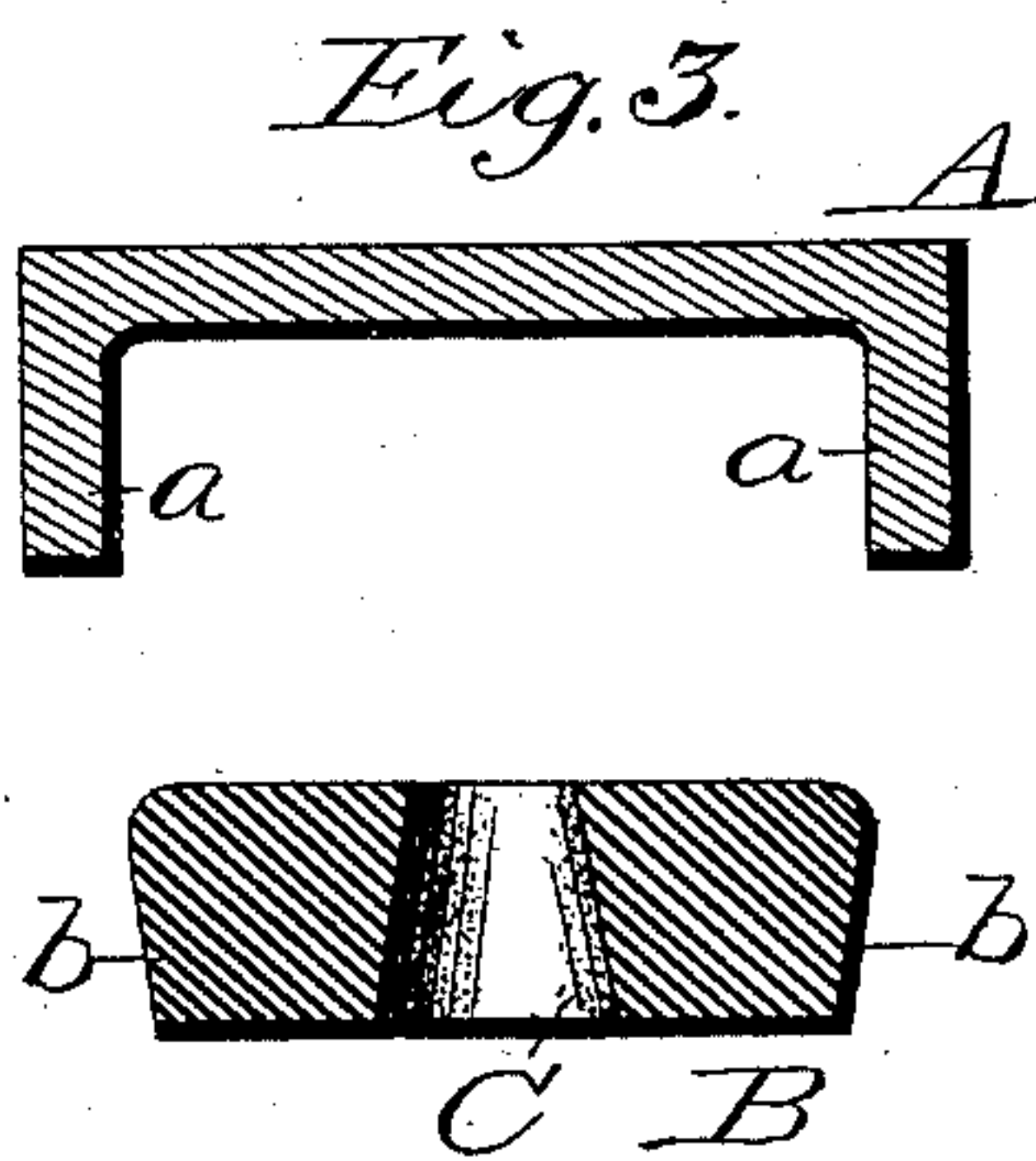
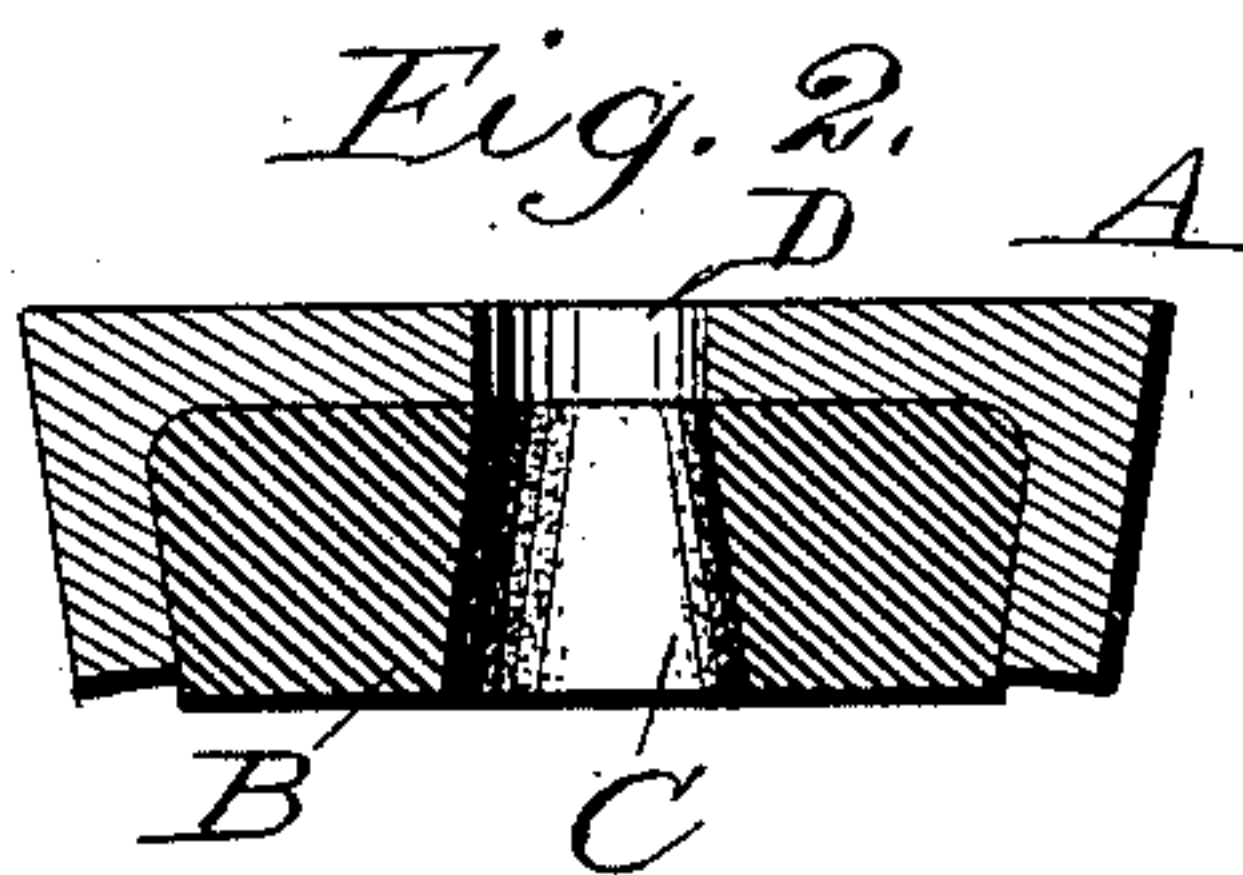
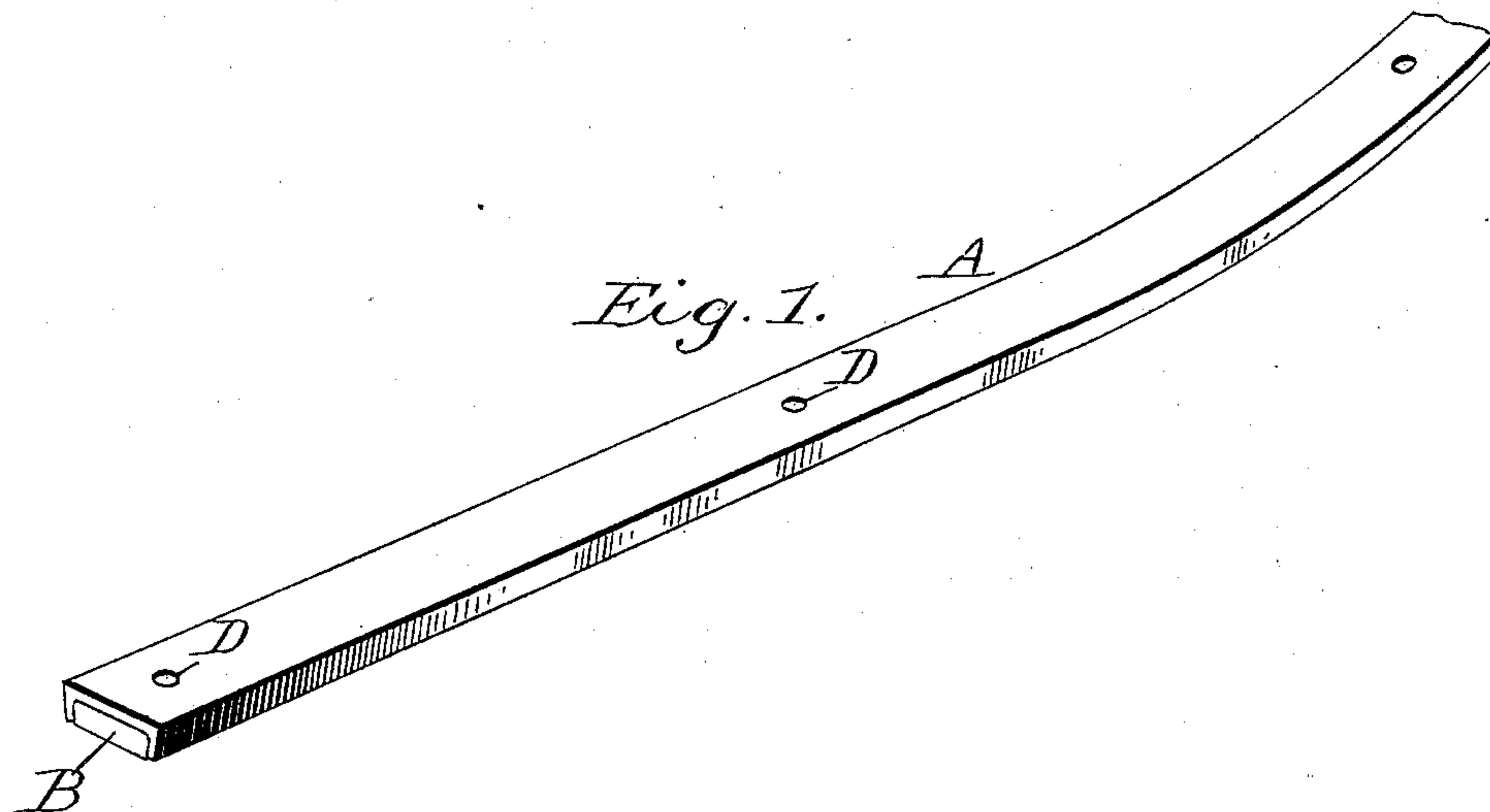
Patented Aug. 30, 1898.

J. A. JOHNSON.

SLED RUNNER.

(Application filed Apr. 7, 1898.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN A. JOHNSON, OF MADISON, WISCONSIN.

SLED-RUNNER.

SPECIFICATION forming part of Letters Patent No. 609,812, dated August 30, 1898.

Application filed April 7, 1898. Serial No. 676,762. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. JOHNSON, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Sleigh-Runners, of which the following is a specification.

My present invention pertains to improvements in sleigh-runners, the advantages and construction of which will be hereinafter more fully set forth, reference being had to the annexed drawings, wherein—

Figure 1 is a perspective view of a runner viewed from the upper side and broken off at its forward end; Fig. 2, a cross-sectional view, the line of section being taken through one of the openings formed in the runner for the purpose of attachment; and Fig. 3, a similar view, the parts being shown in the form they present before being assembled.

The object of my invention is to provide a simple, strong, and highly-efficient runner and one which is comparatively light and yet durable.

The invention has for a further object the production of a runner such that the hard central or bearing surface thereof will be supported in a manner that should it through any accident become broken the broken pieces or sections thereof will be properly supported by the outer member and not drop out of place. By the construction employed for bringing about this end there is presented at each side of the hard central or bearing surface a softer or milder surface which wears away ahead of the harder part, and thus while supporting the same does not interfere with the easy action of the runner due to the hard portion only being directly exposed and acting as the bearing-surface proper.

I am aware that heretofore various attempts have been made to produce a runner in substantially the same manner in which mine is produced; but so far as I am aware such attempts have resulted in failure. In some of them it has been proposed to unite a hard shoe to a wrought back or support; but the construction was such that the hard brittle part was too much exposed and liable to fracture, and when broken was liable to come out

of its place, and thus render the entire runner useless. Under such constructions, moreover, in the attempt to overcome this difficulty the runner had to be made quite heavy.

Referring to the drawings, A denotes a channel bar or piece which forms the main body of the runner and is preferably made of wrought-iron.

B indicates the shoe of the runner, which is cast in the desired shape, having at its forward end the proper or necessary curvature. Suitable tapering openings C are cored out in the step of casting the shoe, and the casting is preferably chilled to give it the necessary and desired hardness.

Before the parts are assembled the channel bar or piece is of the form shown in Fig. 3. The bar is then heated and after the shoe is placed therein the edges *a* of the bar are rolled down and in against the inclined faces *b* of the shoe, the bar cooling and shrinking tight up against the shoe throughout.

Openings D are bored through the channel-bar in line with the openings C, said openings D being formed after or before the parts are assembled, as may be desired.

It has been found from actual use of the runner thus constructed that it gives highly-efficient results and that should the shoe become broken through excessive or sudden shocks the pieces will be held in place and the practical use of the runner remain unimpaired. The close support of the sides *a* nearly down to the wearing-face of the shoe does away with any leverage upon a broken piece which would otherwise be present were it supported only at its upper end.

The tapering openings C afford a ready means of attaching the runner by the use of a bar or bolt having a reversely-tapered head.

Having thus described my invention, what I claim is—

1. A sleigh-runner comprising a hard shoe B, and a channel-piece A of relatively soft metal mounted and shrunk upon the upper part thereof, the sides of the channel-piece extending down about the sides of the shoe B nearly to the lower face thereof.

2. A sleigh-runner comprising a hard cast-metal shoe B; and a channel-piece A of

wrought metal mounted and shrunk upon the upper part thereof, the side members *a* of the channel-piece extending down about the sides of the shoe B approximately to the lower face
5 thereof, whereby a hard central bearing-face is formed supported upon each side by a relatively softer surface.

It witness whereof I hereunto set my hand in the presence of two witnesses.

JOHN A. JOHNSON.

Witnesses:

CHAS. H. ALLYN,
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