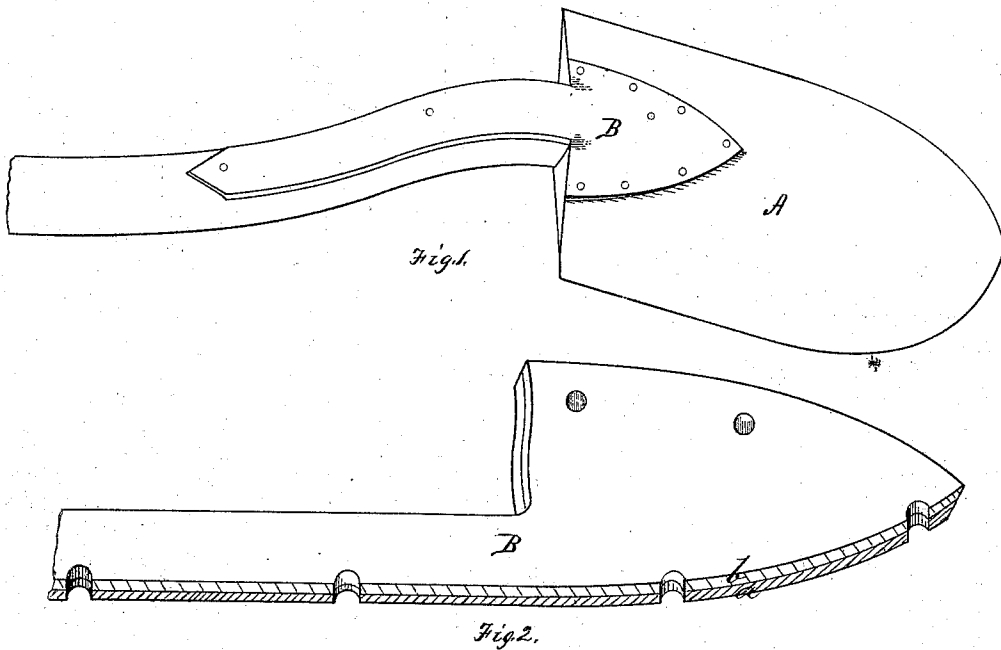


E. A. BARNES.
BACK STRAPS FOR SHOVELS.

No. 173,883

Patented Feb. 22, 1876.



WITNESSES.

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UNITED STATES PATENT OFFICE.

ELMORE A. BARNES, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN BACK-STRAPS FOR SHOVELS.

Specification forming part of Letters Patent No. **173,883**, dated February 22, 1876; application filed January 28, 1876.

To all whom it may concern:

Be it known that I, **ELMORE A. BARNES**, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Back-Straps for Shovels; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 represents a shovel provided with a back-strap embodying my invention. Fig. 2 is a sectional view of portions of a back-strap enlarged to clearly indicate the materials composing the same.

Like letters refer to like parts wherever they occur.

My invention relates to the manufacture of shovels having riveted straps, and consists in a wrought-iron back-strap having a steel wearing or convex surface, whereby adaptability, strength, and durability are obtained.

In the manufacture of cheap shovels, as commonly practiced, and especially in that class of shovels provided with steel blades, the back-strap is secured by riveting, and is of wrought-iron, which can be readily set up and adapted to the handle. Now, it is well known that by far the most destructive wear in the use of such shovels takes place on the under or convex face of the back-strap, which projects from the surface of the blade, and is subjected to friction in inserting and withdrawing the shovel, and, as a consequence, the soft iron strap often breaks or wears out, while the blade, which is of more durable material, is still useful.

The object of the present invention is, therefore, the production of a durable back-strap adapted to the class of shovels having riveted straps.

I will now proceed to describe my invention

so that others skilled in the art to which it appertains may make and use the same.

In the drawing, A indicates a shovel having a riveted back-strap, B, the convex or wearing surface of which *a*, is of cast-steel, and the inner face or body of wrought-iron, *b*. The material used may be produced by taking a sheet of wrought-iron of the desired thickness and cleaning the surface thereof, so as to remove all scale or like substances, and then securing in a mold and pouring in cast-steel to form the opposite or wearing face; or by casting a steel face upon a wrought-iron bar, and rolling the ingots into a plate of the desired thickness; or by any of the well-known methods of obtaining steel-backed iron plates.

Having obtained a plate of the nature specified, I cut therefrom a back-strap of the pattern desired, punch the rivet-holes, and swage the blank up to form the socket, leaving the convexity upon the steel face. All this can be readily done while the plate is heated, and the strap can then be tempered, to give the requisite hardness to the convex or wearing face.

The advantages of my improved back-strap are, that the wearing face of the strap gives durability to a shovel, while the strength and adaptability of the wrought-iron strap are preserved.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The wrought-iron back-strap, having a steel wearing or convex surface, substantially as and for the purpose specified.

In testimony whereof I, the said **ELMORE A. BARNES**, have hereunto set my hand.

ELMORE A. BARNES.

Witnesses:

W. N. PAXTON,
JAMES I. KAY.