A. MALTBY.

MANUFACTURE OF SHOVEL BLANKS.

No. 190,055. Patented April 24, 1877.

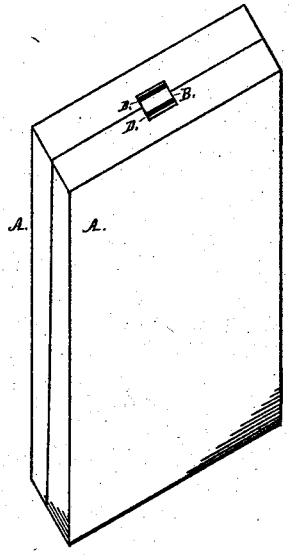

fig. 1.

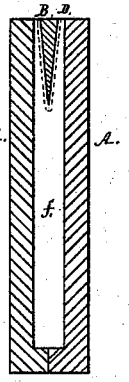

fig. 2.

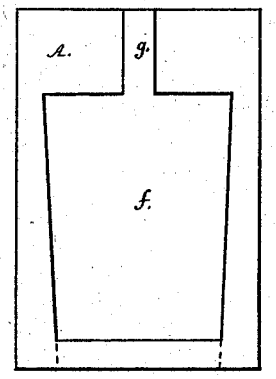

fig. 3.

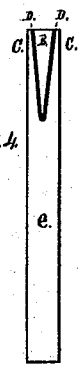

fig. 4.

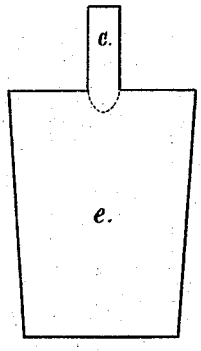

fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT MALTBY, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN THE MANUFACTURE OF SHOVEL-BLANKS.

Specification forming part of Letters Patent No. **190,055**, dated April 24, 1877; application filed November 18, 1876.

To all whom it may concern:

Be it known that I, ALBERT MALTBY, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Shovel-Blanks; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists in constructing the shovel-blank with lugs for forming the straps, the inner face or wall of said lug being cast against wrought-iron, so as to form a union therewith in the process of casting the blank.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification, Figure 1 is a perspective view of the ingot-mold for casting my improved shovel-blank. Fig. 2 is a vertical section of the same. Fig. 3 is a face view of one-half of the ingot-mold. Fig. 4 is an edge view of the shovel-blank. Fig. 5 is a face view of the shovel-blank.

In the accompanying drawings, A A represent the two halves of the ingot-mold, placed together in juxtaposition. B represents a wedge placed in the cavity *g* of the mold, for forming the lugs C C, for the formation of the straps for the handle of the shovel, and also for forming the socket for the lower end of the handle. *f* represents the cavity in the ingot-mold for forming the blank for the shovel-blade. The cavity *f* may extend to the bottom of the mold, as indicated in Fig. 3, when the blank is poured by inverting the mold, so as to have the molten steel flow into the space on each side of the wedge B in the cavity *g* of the mold. When the blanks for the handle-straps are made separate from the body of the blank *e*, the mold is constructed with suitable cavities for receiving the separate blanks, which blanks may be made of wrought-iron or soft steel by any of the known means, and are placed in the cavities of the mold and the steel cast around them, so as to form a weld and union therewith. A thin wrought-iron flat bar, of about three-sixteenths ($\frac{3}{16}$) of an inch in thickness, may be bent so as to fit closely to two of the walls of the wedge B, and as indicated by the dotted lines at D in Fig. 2, and placed in the mold, and the steel blanks cast by the pouring process, so as to form a weld with the wrought-iron, whereby the inner walls of the lugs which form the shovel-straps will consist of wrought-iron. The blanks are heated and welded, or hammered, or rolled in the usual manner, and by the ordinary means. By constructing shovel-blanks as hereinbefore described, steel shovels may be constructed with great facility and economy of labor, and at a diminished cost.

In practice, the mold for the blank should be heated, also the wedge B, and the wrought-iron bent around it. It will be found that in the process of casting the blanks, it will be best to have the cavities *g* in the bottom part of it, so that in the process of casting it the molten steel will fall with force on the heated wrought-iron D, and thereby form a perfect weld and union with the steel. The advantage of the union of wrought-iron with the steel in the lugs C C, as herein described, will be apparent to the skilled roller or hammerman, and also to the workman, in furnishing the shovel with its wooden handle.

Having thus described the nature and construction of my improvement, what I claim as of my invention, and desire to secure by Letters Patent, is—

A steel shovel-blank cast in one piece, having lugs C C, and a cavity for the reception of the lower end of the handle, the inner walls of the lugs being wrought-iron, substantially as herein described, and for the purpose set forth.

ALBERT MALTBY.

Witnesses:

A. C. JOHNSTON,

JAMES J. JOHNSTON.