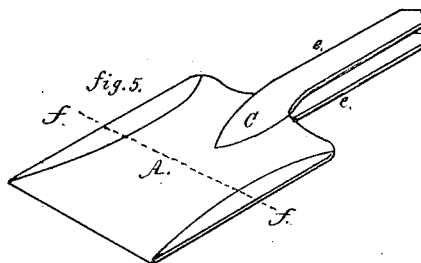
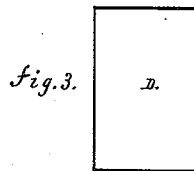
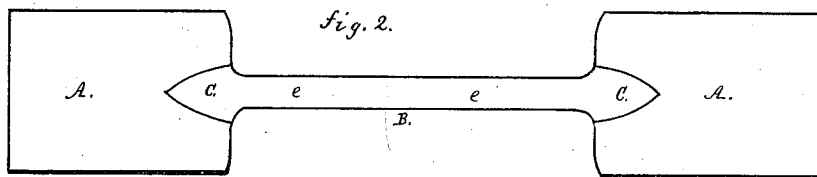
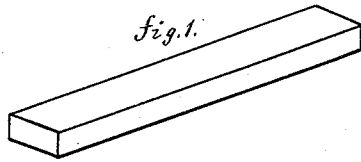


H. M. MYERS.

MANUFACTURE OF SHOVELS AND SPADES.

No. 185,187.

Patented Dec. 12, 1876.



Witnesses

*A. H. Johnston*

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# UNITED STATES PATENT OFFICE.

HENRY M. MYERS, OF BEAVER FALLS, PENNSYLVANIA.

## IMPROVEMENT IN THE MANUFACTURE OF SHOVELS AND SPADES.

Specification forming part of Letters Patent No. **185,187**, dated December 12, 1876; application filed September 4, 1876.

*To all whom it may concern :*

Be it known that I, HENRY M. MYERS, of Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented a certain new and useful Improvement in Method of Constructing Shovels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to the manufacture of shovels; and consists in the method of constructing them, as will hereinafter more fully appear.

To enable others skilled in the art with which my invention is most nearly connected to make and use it, 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 a bar of soft steel or semi-steel. Fig. 2 is a face view, representing the form into which the bar shown in Fig. 1 is forged by the forging or "plating" process, well understood by shovel-makers. Fig. 3 represents a face view of a plate of fine cast-steel. Fig. 4 represents the blank shown in Fig. 2 doubled together, and the plate shown in Fig. 3, inserted between the parts which form the shovel-blade. Fig. 5 represents the finished shovel ready for the reception of the wooden handle.

In the manufacture of steel shovels, blanks of steel have been cast, and subsequently forged and rolled into the desired form for the blade and strap for the handle. Experience has demonstrated that the straps when thus formed have not the desired softness and pliability for fitting them with facility to the wooden handle.

Another method of manufacturing steel shovels consists in constructing the straps of wrought-iron, and then casting cast-steel for the shovel-blade around them. Steel shovels have also been made by forging the blades and straps out from bars of cast-steel. Both of these methods are costly, and therefore do not meet the wants of the manufacturer and trade, and the handle-straps in the latter method are not sufficiently pliable for fitting them with facility to the wooden handle. Shovels have also been constructed of wrought-iron with steel points, which are known to the trade as "steel-pointed shovels."

The difficulty of welding the steel point to the wrought-iron blade is such that the steel point often breaks off at the point of union between wrought-iron and steel.

For the purpose of furnishing the trade with a steel shovel which will be cheap and meet the wants of the user, I construct my improved shovel in the following manner: I take a bar of soft steel or semi-steel (see Fig. 1) and forge it into the form shown in Fig. 2, the parts marked A being for the blade, and the part marked *e* being for the handle-straps. The cavities C, formed by means of dies, are for forming the socket for the lower end of the wooden handle.

The blank shown in Fig. 2 is bent at B so as to bring the parts marked A together. I then take a plate, D, of fine cast-steel—that is to say, steel of a good quality, and place it between the parts marked A, as shown in Fig. 4. I then heat the parts to the proper degree, and weld them together by the welding process in the ordinary manner of forging and plating shovels, thereby forming a shovel, such as shown in Fig. 5, ready for the wooden handle. The shovel is finished the usual manner.

By constructing a shovel by the method hereinbefore described, the outer surfaces of the blade and the handle-straps will consist of soft steel or semi-steel, and the center of the blade to about the dotted line *f* will be fine steel.

A shovel thus constructed will be susceptible of a "high finish." The handle-straps *e* will be strong and sufficiently pliable to be fitted to the wooden handle with ease and rapidity. The outer surfaces of the blade, being softer than the center, will cause the shovel to so wear that its point will always be sharp.

Having thus described my improvement, what I claim as my invention is—

As an improvement in the method of making shovels and spades herein described, the interposition of the cast-steel plate B between the soft-steel blades A, substantially as described, and for the purpose set forth.

HENRY M. MYERS.

Witnesses:

JAMES HOUSTON,  
S. C. STEWART.