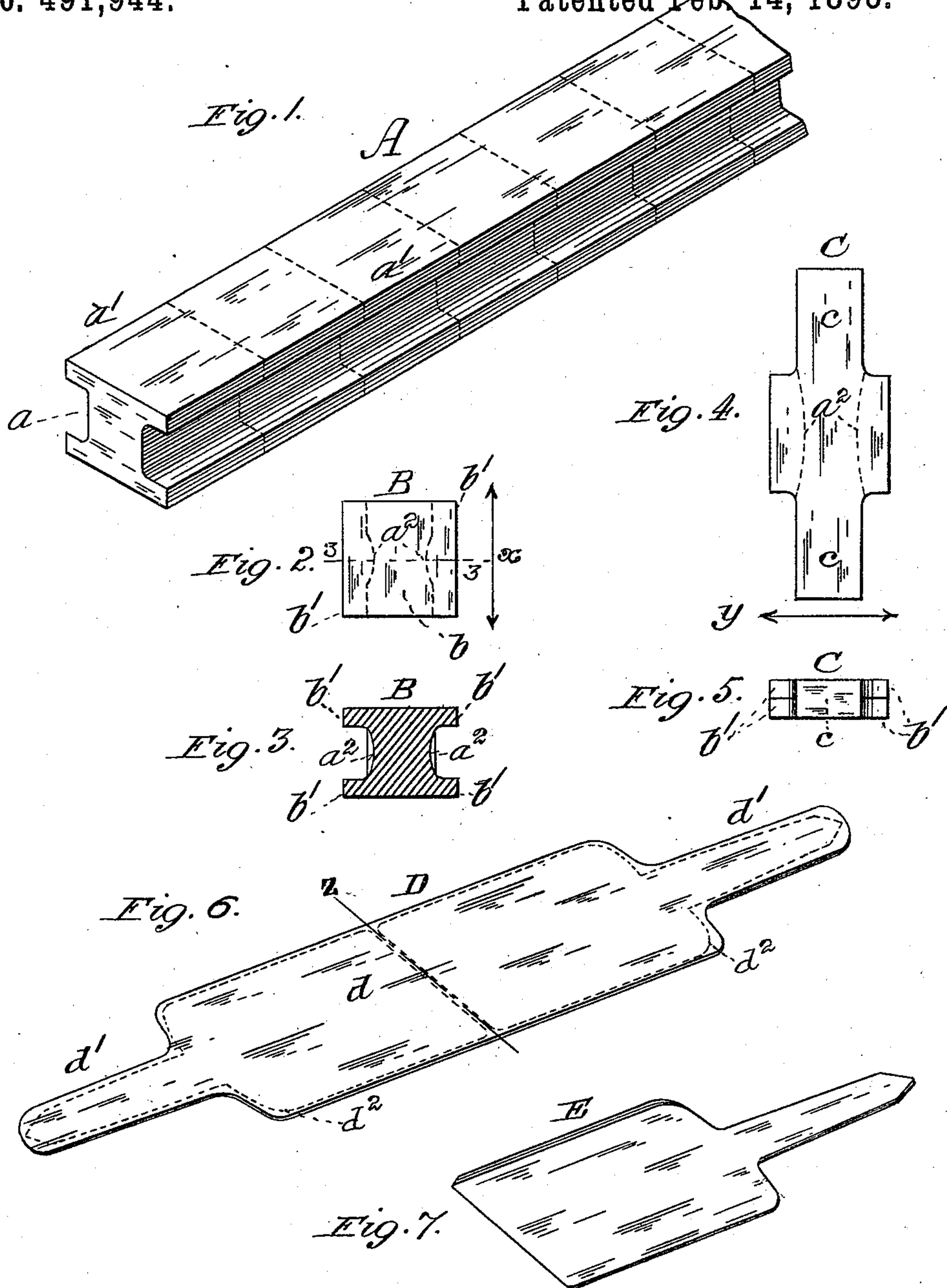


(No Model.)

P. W. GROOM, Dec'd.  
J. KENNEDY, Administrator.  
MANUFACTURE OF SHOVELS.

No. 491,944.

Patented Feb. 14, 1893.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

JOSEPH KENNEDY, OF LAMAR, ADMINISTRATOR OF THE ESTATE OF PATRICK W. GROOM, DECEASED, ASSIGNOR OF ONE-HALF TO CHARLES D. MOODY, OF WEBSTER GROVES, MISSOURI.

## MANUFACTURE OF SHOVELS.

SPECIFICATION forming part of Letters Patent No. 491,944, dated February 14, 1893.

Application filed July 21, 1892. Serial No. 440,808. (No model.)

*To all whom it may concern:*

Be it known that PATRICK W. GROOM, deceased, of St. Louis, Missouri, made a new and useful Improvement in the Manufacture of  
5 Shovels, of which the following is a full, clear, and exact description.

The invention is an improved mode of making shovels and analogous tools having handle straps integral with the body of the tool.  
10 I prepare, by any suitable means, a straight, flat, iron or steel bar grooved or channeled longitudinally in its side edge, or in its side edges according as the bar is designed for making single or double shovel-blanks, and  
15 then cut the bar transversely into blanks of a suitable length for making a shovel-blank. The blank is then rolled in a direction transversely to its longitudinal axis; that is, transversely to the longitudinal axis of the ultimate shovel, until the solid portion of the  
20 blank has been widened sufficiently or thereabout, to form the width of the shovel. The grooved portions of the blank, however, do not materially widen during the rolling just  
25 described, the upper and lower parts of the blank containing the grooves in practice merely coming together or substantially together. The blank thus reduced is then rolled in the direction of the length of the shovel,  
30 or shovels as the case may be, ultimately made from the blank, by which operation the wide portion of the blank is elongated sufficiently for the blade of a shovel, or of two shovels, according as the blank is a single or  
35 a double one, to be made therefrom by the customary means employed in cutting shovels out of shovel blanks, and the remaining portions of the blank (described above as the grooved portions) are elongated sufficiently  
40 for the straps of the shovels to be made therefrom by the customary means employed in forming shovel-straps out of shovel blanks. The usual socket, which it is desirable to have in the blade at the point where the straps join  
45 the blade is, when used, preferably formed by puncturing the blank before it is rolled.

The annexed drawings, making part of this specification, illustrate substantially the various steps of the process under consideration.

Figure 1 therein is a view in perspective of  
50 the bar from which the blanks are cut; the broken lines indicate the blank-lengths: Fig. 2 is a plan of a blank cut from the bar; the broken lines indicate the lines of the channels in its side edges and the position of the  
55 punctures made in the blank to form the sockets in the shovel-blades: Fig. 3 is a vertical, longitudinal section on the line 3—3 of Fig. 2: Figs. 4 and 5, are, respectively, a plan and a side elevation of the blank after it has  
60 been rolled transversely; Fig. 6 is a view in perspective of the finished double shovel-blank: and Fig. 7 is a view in perspective of one of the shovels cut from the double shovel  
65 blank and ready to be finished.

The same letters of reference denote the same parts.

A represents the bar from which the blanks may be obtained. It is of suitable proportions for the purpose in question, and it has  
70 a channel *a* in each of its side edges *a'*, *a'*, for forming a double blank B, Figs. 2, 3, that is, a blank from which a double shovel blank is made. For while the hereindescribed process can be employed in making a shovel  
75 blank having straps at but one end only, it is profitable to apply it in making the double shovel blank described, as the double blank can be heated, and in reducing it, can be  
80 passed through the rolls, substantially as readily as can be a single blank. The sockets, *a*<sup>2</sup>, Figs. 2, 3, and 4, can be formed in the blank B by any means suitable for puncturing iron in the form shown.

The reduction of the blank B into the form  
85 shown at C, Figs. 4, 5, is effected, preferably, by passing the blank through suitable rolls such as used in rolling mills for reducing metal bars or plates of a nature analogous to the one under consideration. The blank is  
90 rolled in both directions as indicated by the double headed arrow *x*, Fig. 2, as thereby the metal in the central portion *b* of the blank is transferred evenly to both sides of the blank as shown at *c c* Figs. 4, 5. In this operation  
95 the blank is proportionately reduced in thickness, and the parts *b'*, *b'*, closed together, substantially as shown in Fig. 5. The blank,



thus reduced, is then rolled, forward and backward as indicated by the double headed arrow  $y$ , Fig. 5, in the direction of the length of the blank, and it is thereby reduced still  
5 more and shaped into the form shown substantially at D Fig. 6, in which  $d$  represents the body of the blank, and  $d'$ ,  $d'$ , at each end of the body, a divided tang. Then, by dividing the double shovel blank D transversely, as indicated by the broken line  $z$ , Fig. 6, two single  
10 shovel blanks  $d^2$ ,  $d^2$ , can be formed, and out of each of these single shovel blanks a shovel E, Fig. 7, can be stamped in the usual manner, the body or blade of the shovel coming  
15 out of the part  $d^2$ , of the body of the blank and the shovel straps coming out of the divided tang  $d'$ . The usual means, such as the introduction of sand or dust therein, may be used to prevent the divided tang-ports, in  
20 rolling the blank, from being welded together. In carrying out the first two steps of the method hereindescribed and claimed; that is, in producing the blanks B, Figs. 2, 3, the right is claimed, and wished to be so construed, to  
25 employ any equivalent step or steps. That is, said blanks B might be forged, cast, or other-

wise formed directly and separately, instead of being cut from a bar such as the bar A.

The bar, A, is shown flat upon its upper and under surfaces. This is desirable, although  
30 not absolutely essential, as a fair result can be obtained from a bar not strictly flat.

What is claimed as the invention is—

The hereindescribed improved method of producing blanks for shovels and analogous  
35 tools having handle-straps integral with the body of the tool, the same consisting in making a bar grooved or channeled in its side edge or side edges, then cutting said bar transversely into blanks, then reducing said blanks  
40 and widening the solid portion of the blank as described, and then further reducing the blank and elongating both its solid and its grooved portions to form the desired shovel-  
45 blank.

Witness my hand this 27th day of June, 1892.

JOSEPH KENNEDY,  
*Administrator of Estate of Patrick W. Groom,*  
*Deceased.*

Witnesses:

HALBERT H. MCCLUER,  
E. STANLEY WILSON.