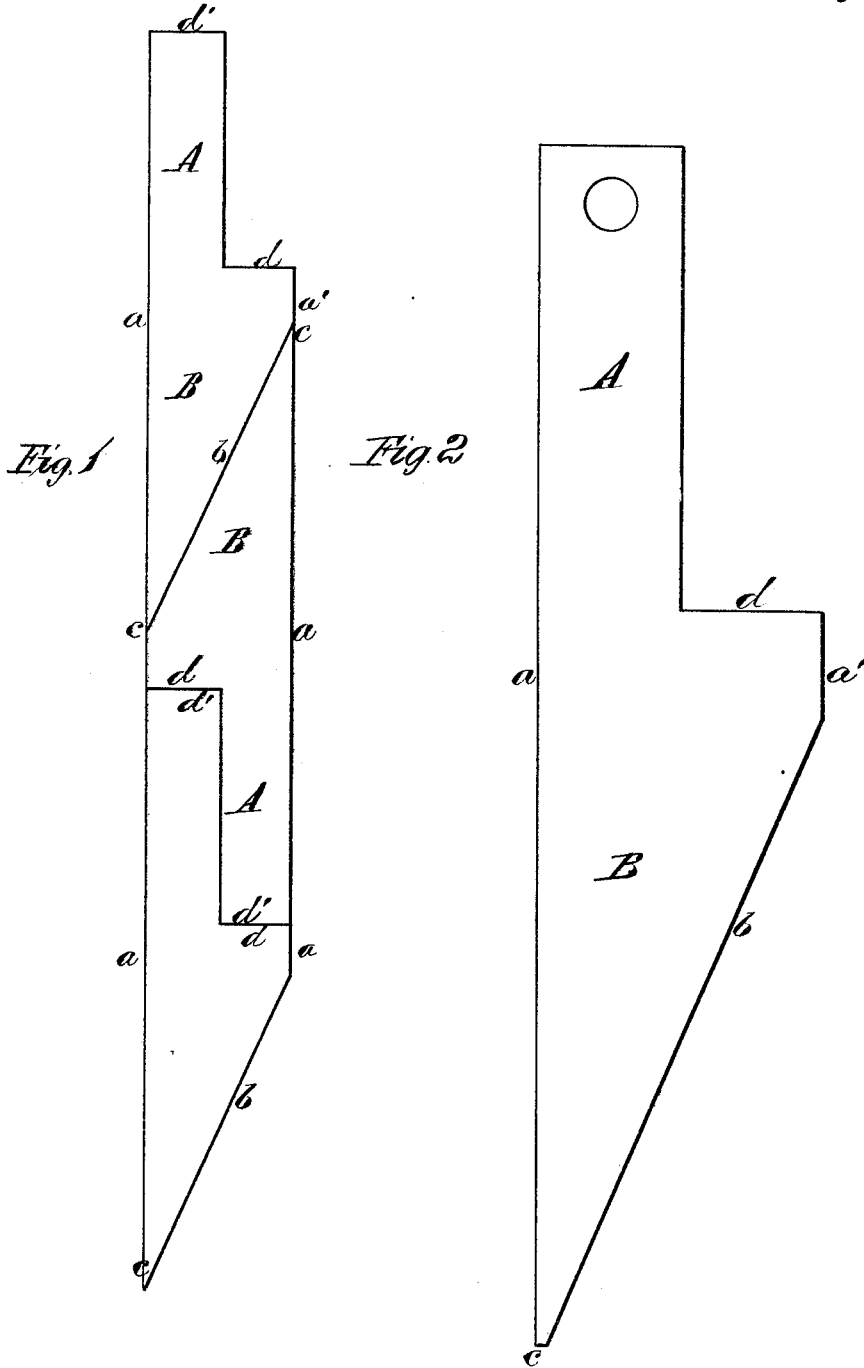


G. DONALDSON.

MANUFACTURE OF HARROW-TEETH BLANKS.

No. 181,152.

Patented Aug. 15. 1876



WITNESSES
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UNITED STATES PATENT OFFICE.

GERRIT DONALDSON, OF PLEASANT VALLEY, IOWA.

IMPROVEMENT IN THE MANUFACTURE OF HARROW-TEETH BLANKS.

Specification forming part of Letters Patent No. **181,152**, dated August 15, 1876; application filed February 19, 1876.

To all whom it may concern:

Be it known that I, GERRIT DONALDSON, of Pleasant Valley, in the county of Scott and State of Iowa, have invented a new and valuable Improvement in the Manufacture of Harrow-Teeth Blanks; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figures 1 and 2 of the drawings are representations of plan views of my harrow-tooth blank.

This invention has relation to harrow-teeth, which are made of wrought metal; and the nature of my invention consists in a method of manufacturing harrow-teeth blanks, which are of angular form, with a straight shank, and which are of such form that either a straight perpendicular edge can be presented or an inclined edge can be presented, according to the condition of the soil to be harrowed.

It is desirable to have harrow-teeth as thin as possible; at the same time to make them

strong. To this end I construct each tooth with a straight shank, A, for insertion into the harrow-beam, and with a triangular portion, B, which is flat on two sides, and which presents a straight edge, *a*, an inclined edge, *b*, and a shoulder, *d*, that abuts against the bottom of the harrow-beam when the shank A is inserted therein.

These improved blanks are stamped out of a bar of iron, the width of which is from *a* to *a'*, and the teeth are marked off on said bar, as shown in Fig. 1.

It will thus be seen that there is no waste of stock in the manufacture of the teeth.

What I claim as new, and desire to secure by Letters Patent, is—

The manufacture of harrow-teeth blanks, by cutting the same from a bar of metal of proper width, as and to the form herein described and shown.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

GERRIT DONALDSON.

Witnesses:

W. W. DAVIS,
C. J. BRIGGS.