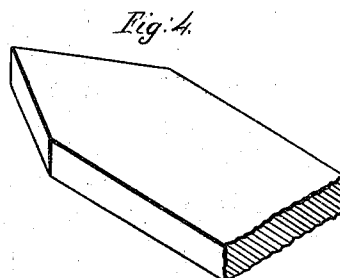
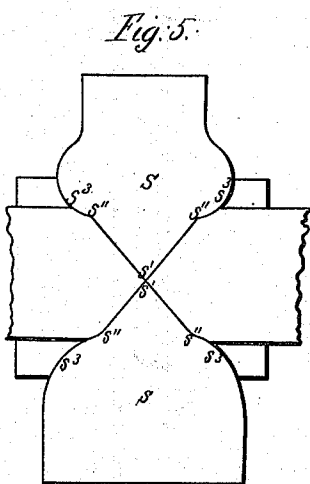
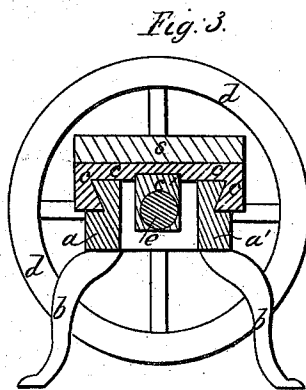
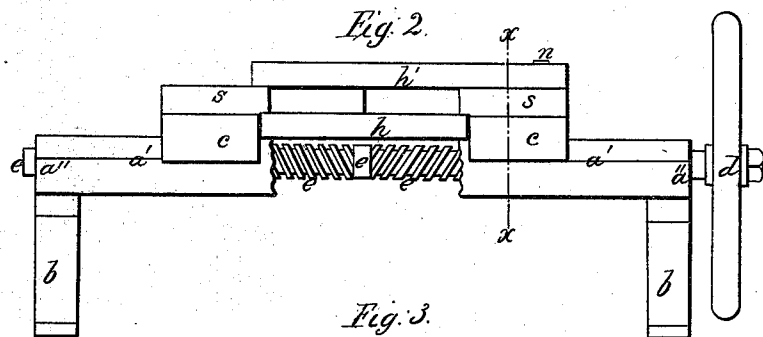
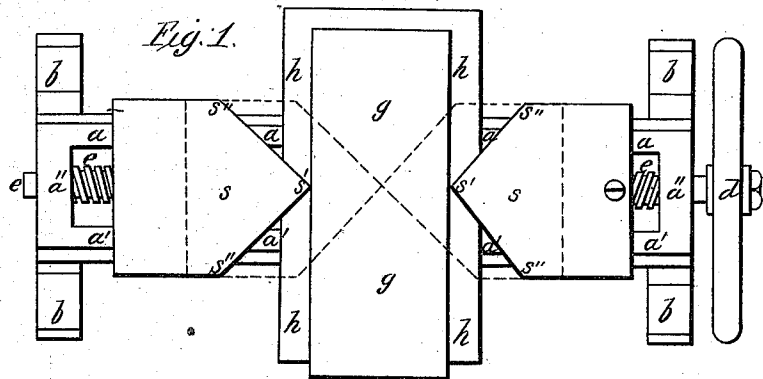


*Pedder & Abel.*

*Mach. for Making Cultivator Teeth.*

*N<sup>o</sup> 112,374.*

*Patented Mar. 7, 1871.*



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# United States Patent Office.

JOHN PEDDER AND GEORGE ABEL, OF WEST PITTSBURG, PENNSYLVANIA.

Letters Patent No. 112,374, dated March 7, 1871.

## IMPROVEMENT IN MACHINES FOR POINTING BLANKS FOR CULTIVATOR-TEETH.

The Schedule referred to in these Letters Patent and making part of the same.

### *To all whom it may concern:*

Be it known that we, JOHN PEDDER and GEORGE ABEL, of West Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Pointed Wrought-Metal Blanks; and we do declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a plan view of our machine without the top die-plate;

Figure 2 is a side elevation thereof, with a part of the frame and lower die-plate broken away;

Figure 3 is a cross-section through  $x-x$ , fig. 2;

Figure 4 is a perspective view of the end of a blank as pointed on our machine; and

Figure 5 illustrates a modification of the pointing-dies.

Like letters of reference indicate like parts in each.

In the manufacture of cultivator-teeth and other pointed articles made from plate or bar-iron or steel the blank has heretofore been cut of a rectangular form from the plate or bar, and one end or both ends drawn to a point by forging; or the corners of the blank at the point end have been sheared off, so as to give a point of the desired shape.

The former mode involves the additional expense of reheating and forging, and the latter is objectionable on account of the waste of material, as the parts sheared off are valueless except for reworking.

By our improvement we cut off and point the blanks at one operation, and this we accomplish by the use of cutting and pointing-dies, which have a contour of face from the point or cutting-edge backward corresponding to the form desired in the point of the blank.

Such cutters operate against the edge of the bar or plate, while the latter is inclosed on its upper and lower sides by two die-plates, which prevent the vertical expansion or spread, while the bar or plate from which the blank is to be cut is left free to move endwise.

To enable others skilled in the art to make and use our improvement, we will proceed to describe its construction and manner of use.

The supports  $b$  of the machine are of any desired construction.

On these we mount a frame,  $a\ a'\ a''$ , which consists of two parallel bars or rails, preferably of cast-iron, secured to the supports  $b$  at the proper distance apart.

The outer sides of the rails  $a\ a'$  are grooved, so as to receive by a dovetail or other suitable joint, as in fig. 3, the sliding heads  $c\ c'$ , which are correspondingly

tongued, the object being to allow the sliding heads to move back and forth along the frame to and from each other, but not up or down nor sidewise.

In the ends  $a''$  of the frame, or in other suitable fixed support, the bearings of the right-and-left-hand screw  $e$  are placed, which screw is operated by a wheel,  $d$ , or other suitable device.

Each sliding head  $c$  has a tapped nut,  $c'$ , securely fastened thereto, which projects down between the rails  $a\ a'$ , fig. 3, and through which the threaded screw  $e$  passes, one nut operating on one end of the screw and the other on the other, so that by turning the screw the sliding heads  $c$  shall be caused to approach or recede from each other.

These sliding heads  $c$  carry each a cutting and pointing-die,  $s$ .

The cutting and pointing-dies  $s$  being open, as in fig. 1, the plate or bar  $g$ , from which the blank is to be cut, is placed on the lower die-plate  $h$ , which is of sufficient width to permit the ends of the dies  $s$ , when withdrawn, to rest on its surface, as shown in fig. 1.

The thickness of the dies  $s$  should equal the thickness of the plate or bar  $g$ .

The upper die-plate  $h'$  is then placed in position, fig. 2, and properly secured. Then, by turning the wheel  $d$ , the dies  $s$  are caused to approach each other, severing the bar or plate  $g$  as they advance, and forming a well-shaped point on the several ends, as illustrated by dotted lines in fig. 1.

The top and bottom die-plates  $h\ h'$  prevent the upward and downward spread of the metal of the plate  $g$ , and the plate  $g$  is free to project or extend out lengthwise while the cutting is going on.

The dies  $s$  are then opened, the plate  $g$  fed in, and another blank is cut off and pointed in the same manner. This will give blanks for reversible teeth.

For single-pointed teeth the blank can be made double, pointed at the ends, and afterward sheared apart at the middle.

We do not limit ourselves to any particular shape for the dies  $s$ . From the points or cutting-edges  $s'$  back to the heels  $s''$  they may have any desired form, such as will give in the blank the form of point desired, such as concave, convex, or straight.

For convenience, the top die-plate  $h'$  may be hinged by a pin,  $n$ , if so desired.

In operating the dies  $s$  we do not confine ourselves to the use of the right-and-left-hand screw, since other devices, such as cams, eccentrics, wedges, &c., can be substituted therefor, so as to perform the same mechanical function, and the substitution of such or similarly-operating devices, we include in our invention.

The pointing dies  $s$  may also be made as illustrated in fig. 5, with a die-face,  $s^3$ , back of the heel  $s''$ , of any desired form, either curved, as shown, straight, inclined, or protruding forward, so as to swage the edge of the blank back of the point to any desired form.

In this way the tooth may not only be pointed, but also its body may be swaged to any desired regular or irregular width at the same operation; hence

What we claim herein, and desire to secure by Letters Patent, is—

In a machine for cutting and pointing wrought-metal blanks, a pair of movable dies, each such die having a double-beveled cutting-edge coming to a

point,  $s'$ , and a die-face extending therefrom of a form suitable for pointing the blank, in combination with top and bottom die-plates  $h$   $h'$ , which prevent the vertical spread of the metal, but permit the plate and blank to move longitudinally while the cutting is being done, substantially as described.

In testimony whereof we, the said JOHN PEDDER and GEORGE ABEL, have hereunto set our hands.

JOHN PEDDER.  
GEO. ABEL.

Witnesses:

LOUIS AURIN,  
PHILLIP HAAS.