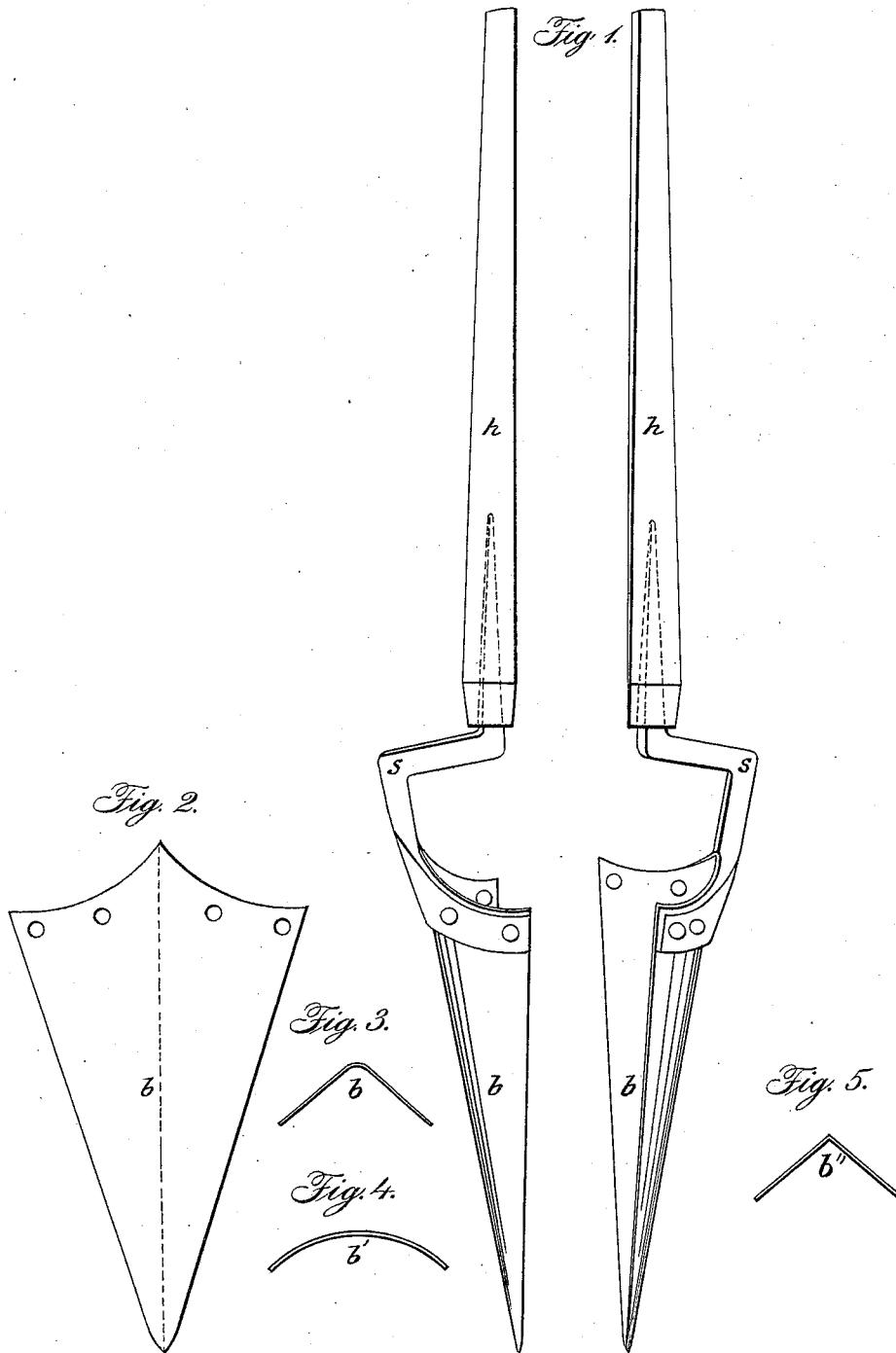


E. G. NICHOLS.

Transplanting Implement.

No. 70,457.

Patented Nov. 5, 1867.



Witnesses:

*A. B. Woodworth*  
*Joshua C. Mays*

Inventor:

*Edgar G. Nichols*

# United States Patent Office.

EDGAR G. NICHOLS, OF BEAUFORT, SOUTH CAROLINA.

*Letters Patent No. 70,457, dated November 5, 1867.*

## IMPLEMENT FOR TRANSPLANTING FLOWERS, &c.

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

### TO WHOM IT MAY CONCERN:

Be it known that I, EDGAR G. NICHOLS, of the town of Beaufort, district of Beaufort, and State of South Carolina, have invented a new and useful Machine for Transplanting Flowers, Garden and Field Vegetables, Small Trees, and other plants, and that I have named the machine "Edgar G. Nichols's Transplanter;" 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, in which *h* designates handle, *s* shank, and *b* blade.

Figure 1 is a perspective view.

Figure 2, a longitudinal elevation of one blade before bending.

Figure 3, a horizontal section at the horizontal dotted line, said blade being bent to an angle, as shown in the figure.

Figure 4 is a horizontal section of a blade as I sometimes curve, viz, upon a cylinder. In making the pattern for this style of blade, the diagonal lines which at fig. 2 are straight should be slightly convex.

Figure 5 is a horizontal section of a blade as it may be manufactured.

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

Take a piece of steel plate, one twenty-fifth of an inch thick, eight inches wide, and thirteen and three-quarter inches long. Mark upon it the outline designated in the drawings at fig. 2, magnified to suit the length and width above given. Bend it along its vertical axis till the cross-section resembles that shown at fig. 3. Cut it out as marked. Make rivet-holes, fig. 2. Make a shank of iron, shaped as shown at fig. 1, but three times the dimensions. The step or shoulder at the angle *s* should be so nearly horizontal that the foot will not slip from it. Rivet the lower end of the shank to the blade, and leave the upper end, as shown by the dotted lines, fig. D, to fit into the handle. If the top of the blade has been made horizontal, as I sometimes make it, the middle of the shank will not need to be formed into a step. Make the handle round, and then plane from one side so much that the cross-section at top is a half circle, and at bottom two-thirds of a circle, or thereabout. Put a ring on the lower end of the handle. Bore the handle to receive the shank. Drive the handle on, and saw it off at about three feet from the extreme point of the blade. In small machines, for some uses, the handle may be made much shorter, if desired. You have now completed one part, or half, or section of the transplanter. Make the other like it, and the whole is finished.

The size and shape just described will be found the most generally useful, but the size may be varied to suit the uses for which it is intended. The thickness of the steel plate should be regulated by the strain to which it will be subject. The shape of the blade may be modified within certain limits, but every vertical line along the surface of the blade must be a straight line. The lower end of the blade must be an acute angle, and the blades must together enclose a space. The two blades, as I have hereinbefore directed them to be made, will, when placed together, nearly represent the surface of an inverted quadrangular pyramid. Another style of blade may be described as a section of the convex surface of a cylinder, made by a plane cutting the plane surface of the cylinder at one end into two half circles, and in its diagonal course leaving the cylinder before reaching the other end. A horizontal cross-section of such a blade is shown at fig. 4. At fig. 5 will be seen still another, which varies slightly from fig. 3.

To use the machine, take a handle in each hand. Set the point of one blade at the right and of the other at the left of the plant to be removed. The proper position of the machine is shown at fig. 1. With the foot on the step at *s*, drive down one blade. Do the same with the other. Then, with one or both hands clamping the two handles together, lift the machine containing the plant and the earth about it, and remove it to its destination. Fill the soil carefully against and cautiously remove the blades.

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

1. The making of a transplanter in two separate and similar parts, which, when united, enclose the roots of the plant and the soil next to them, preventing the soil from falling away from the roots in removing.

2. The so curving, or bending, or manufacturing of the blades, as shown in this specification and the draw-

ings annexed, (or the making of them in any manner which is substantially the same,) that while they enclose the necessary space, yet shall they enter the soil with the least possible disturbance thereof.

3. The shaping of the lower end of the shank to reach across the top of the blade, stiffen it, and allow thinner metal to be used for it.

4. The making of a portion of the shank horizontal, forming a step for the foot to drive down the blade.

5. The flattening of the handles on the sides approximating, to prevent slipping or rolling of the handles when clamped together.

6. The making of a transplanter with handles so long that it can be used without any stooping at any part of the process; saving thus the largest and most unhealthy part of the labor.

EDGAR G. NICHOLS.

Witnesses:

A. B. WOODWORTH,  
JOSHUA C. MAYO.