P. H. STANDISH.

Rotary Cultivator.

No. 78,400. Patented May 26, 1868.

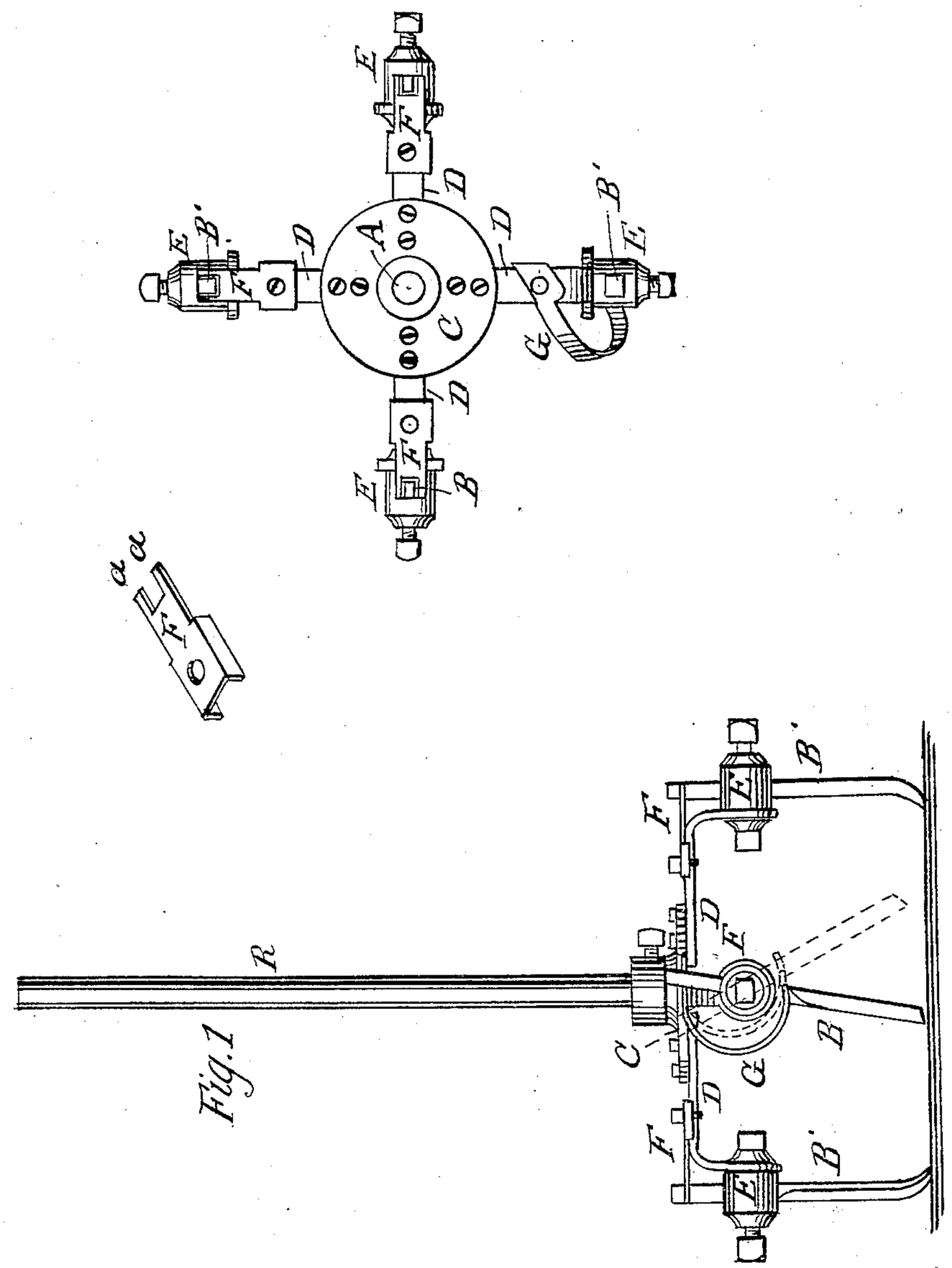

Fig. 1

Witnesses

Wm. A. Strong.

S. M. Smith.

Inventor

Philander H. Standish

United States Patent Office.

PHILANDER H. STANDISH, OF MARTINEZ, CALIFORNIA.

Letters Patent No. 78,400, *dated May* 26, 1868.

IMPROVED METHOD OF MOUNTING THE CUTTERS OF ROTARY PLOUGHS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, PHILANDER H. STANDISH, of Martinez, county of Contra Costa, State of California, have invented an Improved Method of Mounting the Cutters of Rotary Ploughs; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to an improvement in an invention for which I have applied for Letters Patent, called "Standish's Steam-Plough," and consists of an improved method of mounting the rotating knives or cutters, so that the plough can be worked in rough or stony land without breaking them, this being accomplished by making the cutters flexible or yielding.

For this purpose, a number of arms are attached to the bottom of a vertical driving-shaft, these arms turning in a horizontal plane, as described in my former application. At the extremities of these arms are attached stout hubs of iron, turning on horizontal axes. Through these hubs the cutters pass vertically, and, for use in soil which contains but few stones, they are held by a supporting-piece of cast iron, which is strong enough for ordinary work, but which breaks off if the cutter strikes a stone, thus allowing the hub to revolve backward until the cutter has passed over the stone, when a new support is attached.

If the land is very stony, the cutter is mounted upon a hub in the same manner, but is held in place by a spring sufficiently stiff to keep it to its work in the soil, but which will allow it to turn back by contact with a stone.

To more fully explain my invention, reference is had to the accompanying drawings, forming a part of this specification, of which—

Figure 1 is a side elevation of one spindle, with the cutters attached.

Figure 2 is a plan.

Figure 3 shows one of the holders or breaking-pieces.

Similar letters of reference, in each of the figures, indicate like parts.

A is one of the series of vertical shafts or spindles of the plough which gives motion to the knives or cutters B B B′. A disk, C, is firmly attached to the bottom of this spindle, and has the arms D D, projecting from it, radiating from the centre. I have hitherto employed four arms, but do not confine myself to any particular number, as two can be made to answer in some cases. These arms are bent at right angles at the outer ends, so as to form supports for the axes of the hubs E E, to which the cutters are attached.

The cutters B B′ pass vertically through these hubs, and, when not fastened, can turn with them about their axes. For use in soil that contains but few stones, the cutters are retained in a vertical position by the light supporters F F, which may be of cast iron. These supporters are bolted to the arms D D, and have each a slot made in the projecting end, which clasps the head of the cutter, and holds it rigidly in place under any ordinary strain; but, if the cutter strikes a stone or other obstruction, one of the projecting lugs or sides (*a a*, fig. 3) will be broken off, so that the hub can revolve and carry the cutter backward until the obstruction is cleared, when a new supporter can be attached. As these castings cost but a few cents, and are easily substituted, they will be the most efficient protection to the cutters; but, if the soil is very rocky, the cutters may be retained in place by a flexible arm or spring, G, which is fastened to the top of the arm D, and curves around, so as to clasp the cutter below the hub. Whenever the cutter strikes a stone, the spring yields, and allows the cutter to take the position shown in red, thus passing the obstruction without breaking the cutter. The cutters may be made straight, as shown at B, or they may be curved, as at B′, so as to throw up the soil, or both kinds may be used at once.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The revolving hubs E E and the supporters F F, constructed and operating substantially as and for the purpose described.

2. I claim a flexible or yielding arm, having the spring G, or its equivalent, together with the rotary cutter, substantially as and for the purpose described.

In witness whereof, I have hereunto set my hand and seal.

PHILANDER H. STANDISH. [L. S.]

Witnesses:

J. L. BOONE,

C. W. M. SMITH.