2 Sheets—Sheet 1.

A. BURGNER & K. PARKER.

Self Adjusting Drill-Hoe.

No. 215,091. **Patented May 6, 1879.**

Fig. 1.

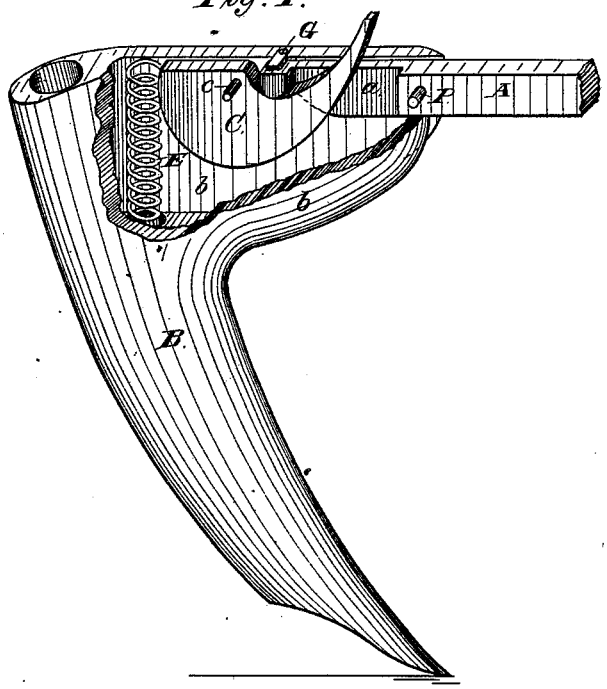
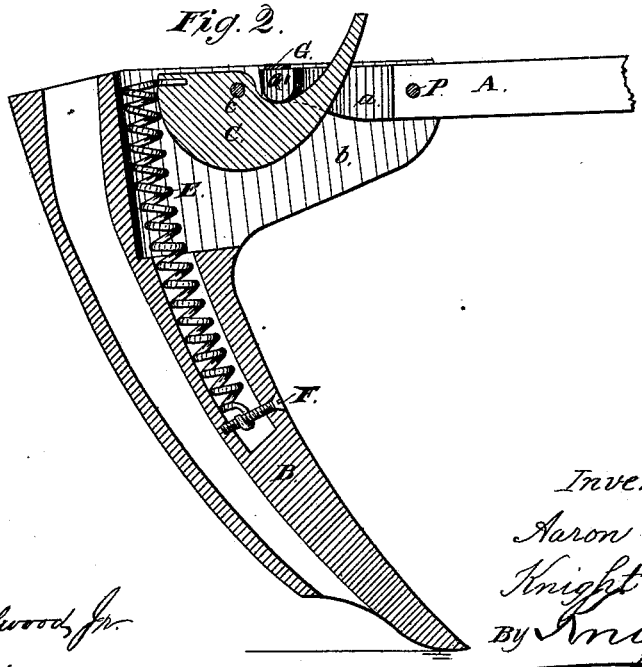


Fig. 2.



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2 Sheets—Sheet 2.

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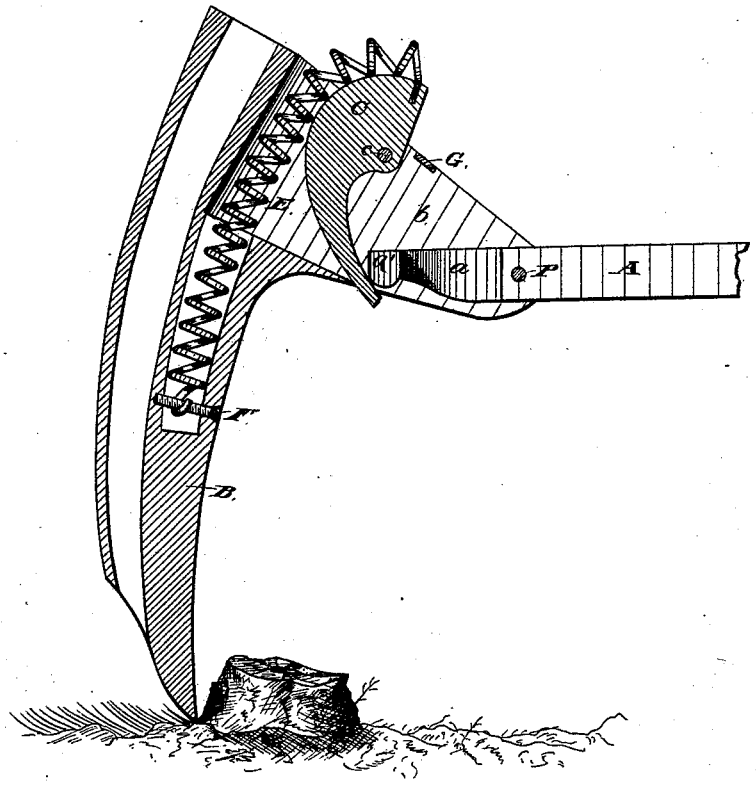
Fig. 3.



Inventors:
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UNITED STATES PATENT OFFICE.

AARON BURGNER AND KNIGHT PARKER, OF CLEAR PORT, OHIO.

IMPROVEMENT IN SELF-ADJUSTING DRILL-HOES.

Specification forming part of Letters Patent No. **215,091**, dated May 6, 1879; application filed March 8, 1879.

To all whom it may concern:

Be it known that we, AARON BURGNER and KNIGHT PARKER, both of Clear Port, in the county of Fairfield and State of Ohio, have invented a new and useful Improvement in Self-Adjusting Drill-Hoes, of which the following is a specification.

The subject of our invention is a self-adjusting drill-hoe adapted to yield on striking an immovable obstacle and to be restored automatically to its operative position.

To this end we employ a curved cam-lever fulcrumed between the pivot-jaws of the hoe, held down at its rear end by a vertical spiral spring located in the front of the hoe, and so arranged that the curved forward arm of said lever will press upward against the rear end of the draft-beam (which is recessed to receive it) with sufficient force to hold the hoe in its proper working position under any proper resistance of the soil, but to allow it to turn back on striking an immovable obstacle, and restore it to working position when said obstacle is past.

In order that the invention may be fully understood, we will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of the improved self-adjusting hoe, with part of one flange-jaw broken away to show the cam-lever and its accessories. Fig. 2 is a vertical section of the same. Fig. 3 is a vertical section, showing the hoe deflected backward as in passing over an obstacle.

The draft-beam A is pivoted between the jaws *b b* of the hoe B by a metal pin or bolt, P, and is recessed, as shown at *a*, to receive the upwardly-curved forward end of a cam-lever, C, which is fulcrumed on a pin or bolt, *c*, and has attached at its convex rear end a spiral spring, E, occupying a vertical pocket prepared for it in the front of the hoe, and fastened at its lower end by a pin, F. The rear extremity, *a'*, of the beam is of full width, so as to bear on the cam-lever C near its fulcrum, and the curved arm is so shaped as to adapt it to resist the pressure with sufficient force to maintain the hoe in its working position under the proper resistance of the soil. The concave bearing-surface of the forward arm of the lever causes it to receive the pressure so nearly in line with its fulcrum in all positions of the draft-beam that the power of the spring E will be effective to restore the hoe instantly to its working position when it is released after being deflected by an impediment, as illustrated in Fig. 3. The curvature of the forward arm or finger of the lever C is so proportioned as to counteract the increasing resistance or power of the spring as it is drawn out, and thus equalize the pressure in all positions of the hoe. A stop-bar, G, limits the movement of the hoe on the beam as it returns to working position.

Having thus described our invention, the following is what we claim as new and desire to secure by Letters Patent—

1. The combination, with the draft-beam A and pivoted hoe B, of the lever C, fulcrumed within the jaws of the hoe and projecting beneath the rear extremity of the beam, and the spring E, connected to the back of said lever C, substantially as and for the purpose set forth.

2. The lever C, constructed with a curved forward arm and pivoted within the jaws of the hoe, in combination with the draft-beam formed with a lug or stud to ride on the concave arm of the beam, substantially as and for the purpose specified.

3. The spring E, contained in a vertical pocket in front of the hoe and fixed to the convex rear end of the lever, so as to ride thereon when the hoe is deflected backward.

4. A self-adjusting drill-hoe attachment, consisting of a draft-beam extending back of its pivot within the jaws of the hoe, a lever fulcrumed between the jaws of the hoe and receiving on one arm the pressure of the extremity of the draft-beam, and a spring holding down the other arm or heel of the lever, substantially as described.

AARON BURGNER.
KNIGHT PARKER.

Witnesses:
JOEL C. SHAEFFER,
EVALINE SHAEFFER.