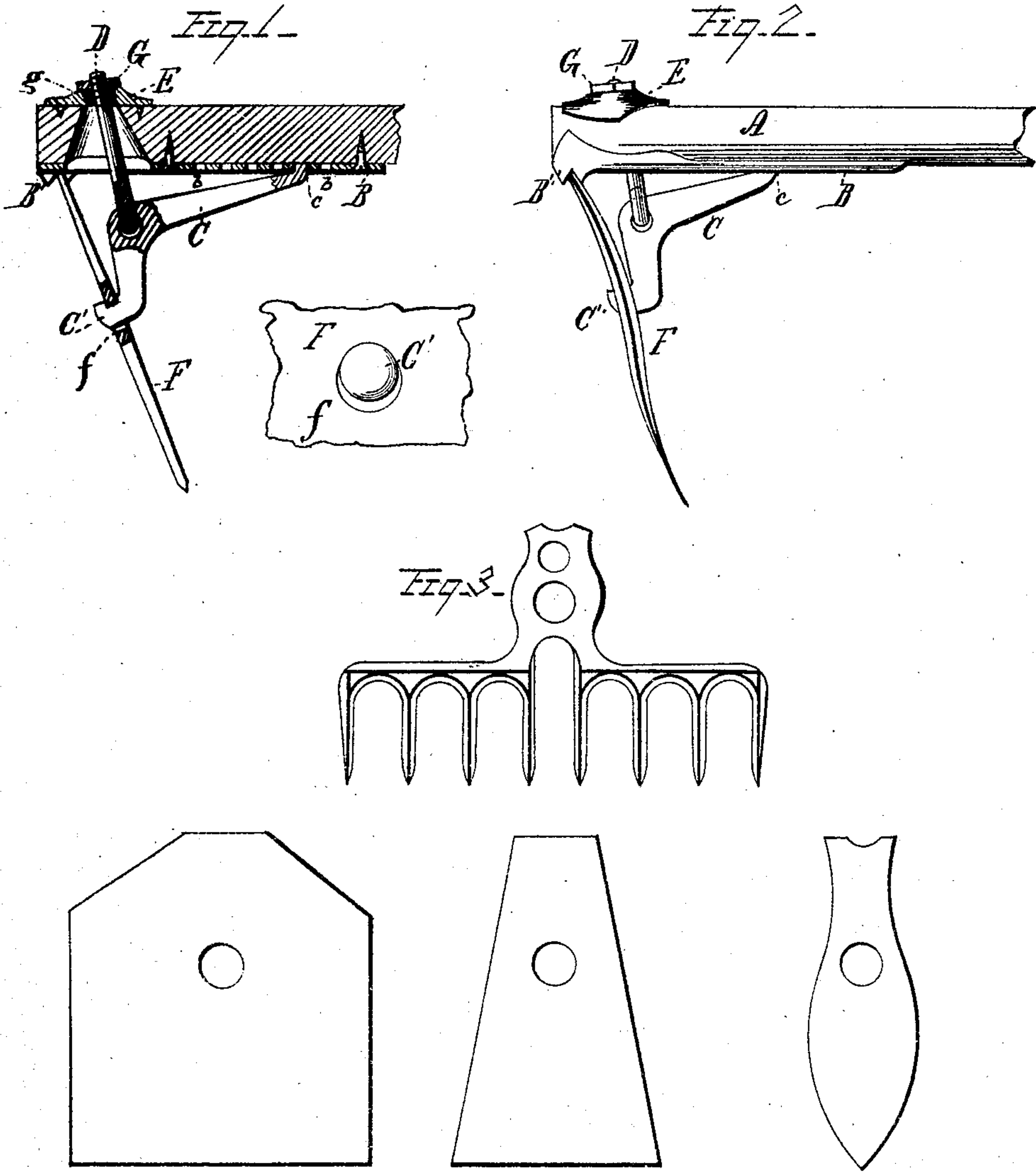


R. T., J. O. D. & D. B. SMITH & M. W. CARDEN.

**Hoes.**

No. 147,026.

Patented Feb. 3, 1874.



**WITNESSES.**

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# UNITED STATES PATENT OFFICE.

ROBERT T. SMITH, JOHN O. D. SMITH, DALLAS B. SMITH, AND MOSES W. CARDEN, OF OPELIKA, ALABAMA.

## IMPROVEMENT IN HOES.

Specification forming part of Letters Patent No. **147,026**, dated February 3, 1874; application filed January 16, 1874.

*To all whom it may concern:*

Be it known that we, ROBERT T. SMITH, JOHN O. D. SMITH, DALLAS B. SMITH, and MOSES W. CARDEN, all of Opelika, in the county of Lee and State of Alabama, have invented certain new and useful Improvements in Hoes, Rakes, &c.; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention consists in certain improvements in hoes, rakes, &c., and their attachments to a handle; and consists in improved mechanism whereby the hoe, rake, &c., may be readily attached and detached, as well as adjusted at any desired angle, all substantially as hereinafter set forth and claimed.

In the drawings, Figure 1 is a longitudinal section, showing our several improvements. Fig. 2 is a view in elevation of the same. Fig. 3 are separate views of parts that may be substituted for that shown in Figs. 1 and 2.

This device is intended as an improvement upon that patented by L. J. Aderbold, July 19, 1870.

A is the handle, upon the under side of which is the plate B attached thereto. It is provided at one end with the holes or notches *b*, and at the other end terminates in a notched head, B'. C is an elbow, provided at one end with the lug *c*, and at the other end is provided with an enlarged cylindrical head, C', that passes through a corresponding round opening, *f*, in the blade F, or other attachment. D is a draw-bolt passing from the elbow C through a longitudinal slot in the plate B, thence through the handle A and plate E placed against the upper side thereof, and there terminates in a screw-cut end. G is a nut that has a shoulder, *g*, upon its under side that fits into the opening in the plate E, and thus prevents the said plate from injuring the threads of the screw. F is the hoe-blade or other attachment. It is sharpened upon its upper and lower edges, and may, if desired, be also sharpened on its lateral edges;

and, to avoid the necessity of re-enforcing the same in order to increase its stiffness, we make the blade itself, as shown in Fig. 1, thick, along the middle portion, and tapering from thence to the edges.

It will be seen that we dispense with the necessity of ferrules and wedges, and also with the necessity of a re-enforce, and diminish considerably the number of pieces, thereby simplifying the construction.

Heretofore the arm has been made so sharp at the head that it would pass through a narrow longitudinal slot in the hoe-blade and its re-enforce, and, as a result, the head has rapidly cut its way through the blade until the latter has been destroyed. We form a large cylindrical head, and a corresponding hole, *f*, in the blade or other attachment, and upon the upper side of that enlarged head we make a notch, in which the blade rests, thus insuring a broad bearing for the blade F against the head C'.

The attachments are adjusted to any angle by means of the nut G and the elbow C, the lug *c* of which may be made to rest in any one of the holes or notches *b*.

What we claim is—

1. In a hoe, rake, &c., the arm C, provided with a lug, *c*, and enlarged cylindrical head C', with notched bearings, substantially as and for the purpose set forth.

2. In combination with the arm C and handle A, the rod D, the plate E and nut G, the latter being provided with a shoulder, *g*, to project through the opening in the plate E, substantially as and for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 6th day of January, 1874.

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