

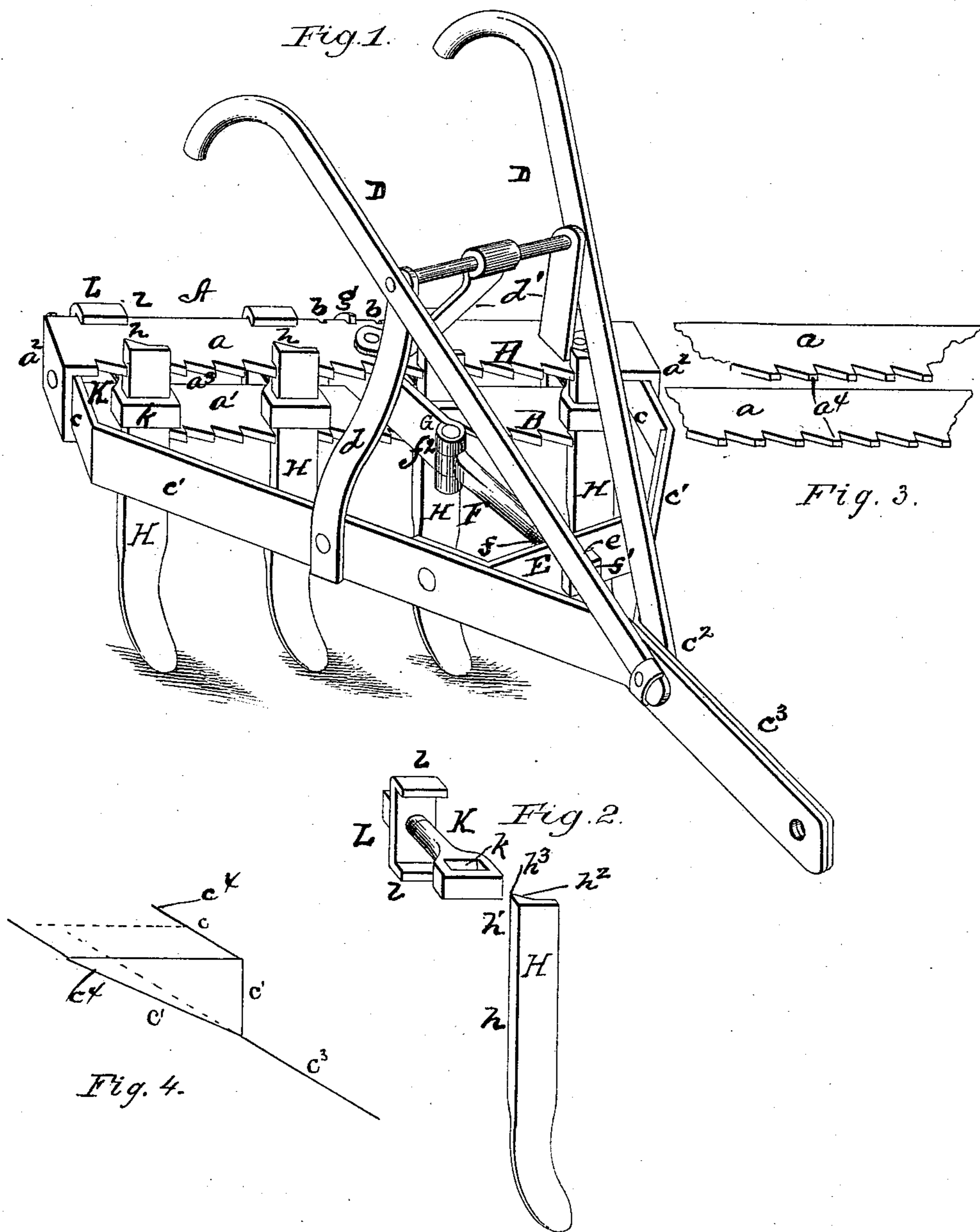
(No Model.)

W. W. POPE.

SIDE HARROW.

No. 352,982.

Patented Nov. 23, 1886.



Witnesses:

Wm. R. Singleton

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UNITED STATES PATENT OFFICE.

WILLIAM WINSTON POPE, OF WALKER'S BRIDGE, MISSISSIPPI.

SIDE HARROW.

SPECIFICATION forming part of Letters Patent No. 352,982, dated November 23, 1886.

Application filed June 9, 1886. Serial No. 204,659. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WINSTON POPE, a citizen of the United States, residing at Walker's Bridge, in the county of Pike and State of Mississippi, have invented certain new and useful Improvements in Side Harrows; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective view of the device; Fig. 2, of a detail; Fig. 3, a modification, and Fig. 4, a diagram of a modification.

This invention relates to improvements in harrows, more especially the kind called "side harrows." It has for its object the production of a light strong harrow in which the teeth are adjustable up and down and side-wise.

The invention consists in the construction hereinafter set forth and claimed.

In the annexed drawings, the letter A represents a frame consisting of the plates $a\ a'$ and the ends $a^2\ a^2$, with a space, a^3 , between such plates. These plates $a\ a'$ have on their front edges the teeth B, and about midway of their rear edges indentations b . To the ends of this frame A are secured the rear ends, $c\ c$, of bars $c'\ c'$, which converge at c^2 , and have the extension c^3 for the draft-clevis. Secured to these bars $c'\ c'$ are the handles D D', which are also supported by braces $d\ d'$, the former connecting handle D with one bar, and the latter connecting the handle D' with the frame A. Fastened to the bars $c'\ c'$ at their interior angle is a transverse brace, E, in which is a hole, e , at its middle. Through this hole e passes loosely the end f of a rod, F, which is held by a nut, f' . This rod is hinged at f^2 to a plate, G. This plate passes between the two plates $a\ a'$ of frame A, and has ears $g\ g$, which catch behind such plates and engage the indentations b .

The letter H indicates the teeth of the harrow. On one edge these teeth are made with a rib, h , which is flat at the back h' , and has its front h^2 at an angle to said back, forming the edge h^3 . The angle of this rib corre-

sponds with that of the teeth B on the plates $a\ a'$. These teeth H are held in eyes k of bolts K. These bolts pass between the plates $a\ a'$, and are held thereto by the clamps L at the rear. These clamps L have lips $l\ l$, which engage the said plates $a\ a'$.

As is clearly indicated, the teeth H are held firmly in place by tightening the clamps L, which draw said teeth H against the teeth B. The teeth H can be moved along the frame A, or can be separately moved up and down; or teeth of different sizes or kinds can be used in the same harrow. The frame A is light and yet strong. It is fully braced by the rod F and plate G against draft-strain.

By means of the hinge f^2 the plate G can be swung so as to bring the ears g at any one of the set of indentations b .

In Fig. 3 is shown a modification. Here between the notches of teeth B is a straight portion, a^1 , instead of the sharp edge, this being to prevent them from being battered in use.

Fig. 4 shows diagrammatically a modification. Here the left bar c extends out parallel with the bar c^3 , and the left brace d' is connected to it. This throws less strain on the plowman. At the points $c^4\ c^4$ the standard-braces $d\ d'$ are secured.

Having described my invention, what I claim is—

1. The frame A, consisting of the ends $a^2\ a^2$ and plates $a'\ a'$, the latter having the teeth B, in combination with the teeth H, having the rib h , and held against such frame, as set forth.

2. The combination of the frame A, consisting of the ends $a^2\ a^2$ and the plates $a'\ a'$, having the teeth B, with the teeth H, having the ribs h , the rods or bolts K, having eyes k , and the clamps L, as set forth.

3. The combination of the frame A, the bars $c'\ c'$, brace E, and rod F and plate G, the latter two hinged together, as set forth.

4. The frame A, having the teeth B, with a straight portion, a^1 , between the notches, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM WINSTON POPE.

Witnesses:

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W. C. NAUGHT.