

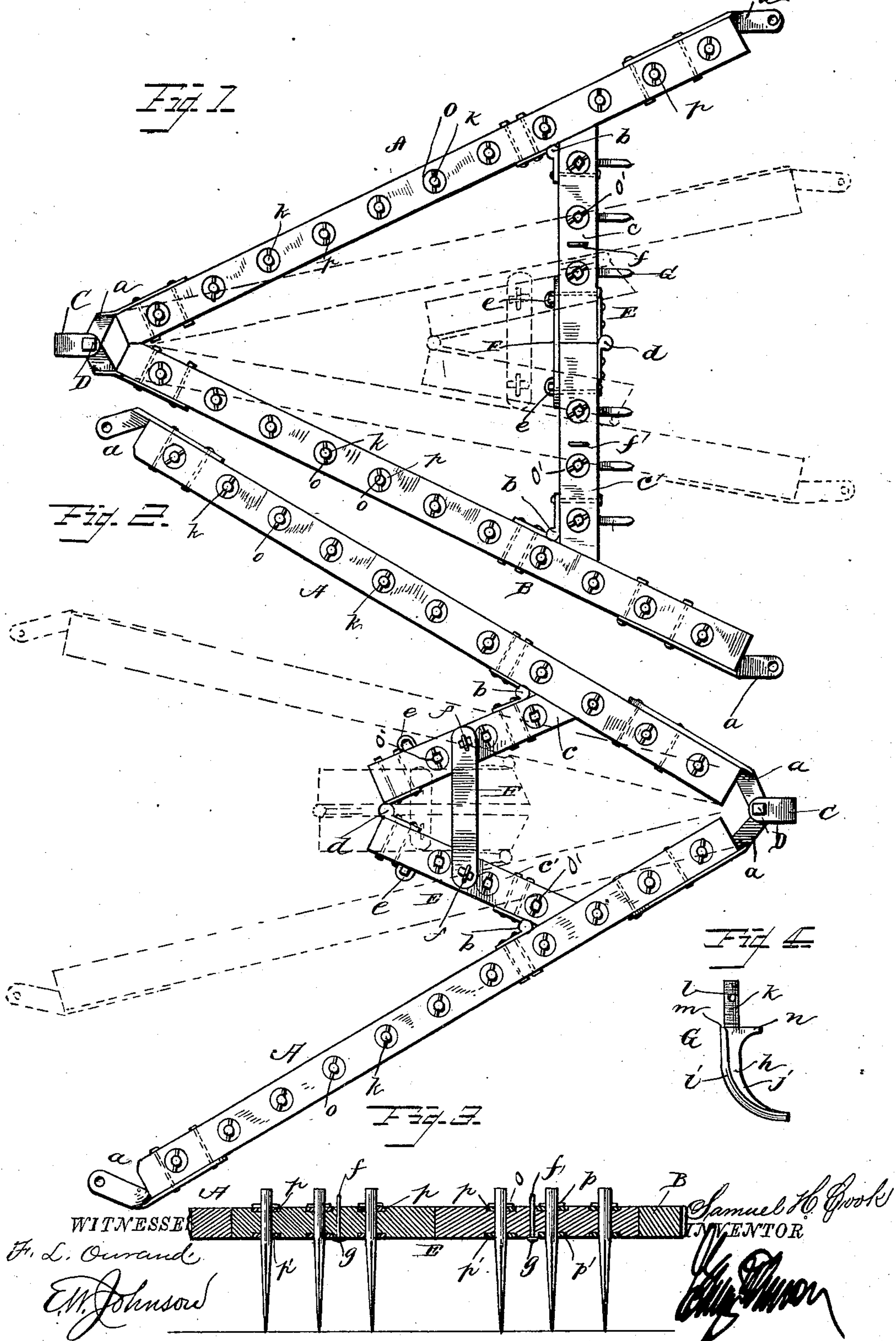
(No Model.)

S. H. COOK.

HARROW.

No. 316,244.

Patented Apr. 21, 1885.



UNITED STATES PATENT OFFICE.

SAMUEL H. COOK, OF JOHNSONVILLE, ILLINOIS.

HARROW.

SPECIFICATION forming part of Letters Patent No. 316,244, dated April 21, 1885.

Application filed April 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, SAM. H. COOK, a citizen of the United States of America, residing at Johnsonville, in the county of Wayne and State of Illinois, have invented certain new and useful Improvements in Harrows; and I 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention is a harrow; and it consists in the improvements hereinafter fully described and set forth.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a harrow constructed in accordance with my invention and illustrating one arrangement thereof, and Fig. 2 is another plan view illustrating a different arrangement of parts. Fig. 3 is a detail sectional view, and Fig. 4 is a detail view, of one of the harrow-teeth.

Two main beams, A B, are provided at each end with a tongue or strap, *a*. The said beams A B are designed to be pivotally connected together by a clevis, C, and a bolt, D, and are intermediately braced near their free ends by means of a transverse bar, E, connected at each inner end with the beams A B by means of a hinge device, *b*. The said cross-bar E consists of two sections, *c* and *c'*, centrally hinged together on their outer side by a hinge device, *d*.

Staples *e*, arranged on the inner faces, are adapted to pass through perforations in a clamp-plate, F, which rigidly locks the beams in the position illustrated in Fig. 1, the displacement or disarrangement of the clamp-plate being averted by passing retaining-bolts through the projecting portions of the staples *e*. The said sections *cc'* are furthermore provided with staples *f f'* on their upper sides, which are adapted to receive the clamp-plate F, when the same is applied and the parts are in position illustrated in Fig. 2.

To secure the highest degree of strength in said staples *e f*, and enable them to resist great strain, they are formed, preferably, of U-

shaped bolts, which pass completely through the sections *c c'*, and are threaded on their extremities to receive clamp-nuts *g*.

In Fig. 4, I have illustrated in detail the particular form of harrow-tooth I employ upon the sectional cross-bar and in connection with the improved structure illustrated in the remaining figures of the drawings.

The said tooth G consists of a curved body portion, *h*, having one face, *i*, curved, as illustrated in said figure, while its rear face converges to an edge, *j*, as shown. A rectangular shank, *k*, is integral with said body portion, and is provided with a transverse perforation, *l*. The upper edge of the said body portion *h* presents a shoulder, *m*, which is extended at the rear to form a nose, *n*.

When the said teeth are applied to the sections *c c'*, they are passed through perforations formed in said sections, so that the perforated portions of their shanks project above the upper sides of said sections, and permit bolts *o'* to be passed through said perforations and secure said teeth in position.

Metallic disks or washers *p p'* are respectively interposed between the bolts *o o'* and the upper side of the beam and the shoulder *m* at the under side of the beams, and in addition to affording a positive bearing of the parts prevent undue friction and wear.

When it is desired to use the least width of harrow, the parts are adjusted to the position shown in dotted lines in Fig. 1, and, should an increased width be desired, by removing the clamp-plate F, the side pieces can be expanded and securely braced apart. When in the position shown in Fig. 1, the direction of the draft is such that the curved teeth upon the cross-sections will act as pulverizers. Should it be desired to employ the teeth G as cutters, said teeth being rigidly attached to the sections *c c'*, the clevis is removed from the ends of the beams and attached to the opposite ends, the cross-section being secured in the position shown in Fig. 2. By this construction, roots, as corn-stubble, may readily be removed from the ground and the field harrowed at the same time. The parts are locked in the positions shown by the plate F, which is caused to engage with the staples, as shown.

When the harrow is not in use, the parts

may be moved to the position illustrated by dotted lines, Fig. 2, in which position they occupy a minimum amount of space.

The teeth G and the sectional cross-bar may
5 be reversed to bring the curved portion *i* into operative position, the teeth then acting as a pulverizer; or the blades *j*, which will serve as a cutter. As the curved portion *i* will be
10 that most generally employed, it will have the greater amount of resistance to overcome, and hence the provision of the nose affords an increased bearing in the direction of the strain.

I claim—

1. In a reversible harrow, the two side beams
15 provided at their ends with straps *a a a a* for the attachment of a clevis, whereby the opposite ends can be connected to each other,

and provided with a sectional cross-bar having teeth G, said cross-bar being hinged to the side beams, substantially as shown and for the
20 purpose set forth.

2. In a reversible harrow, the side beams adapted to be connected to each other at either end, and provided with straight teeth, as shown, in combination with the sectional cross-beam
25 hinged thereto and provided with teeth G, for the purpose set forth, and staples *e e f f*, and strap F, substantially as shown and set forth.

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

SAMUEL H. COOK.

Witnesses:

JESSE C. HENSON,

W. J. BROWN.