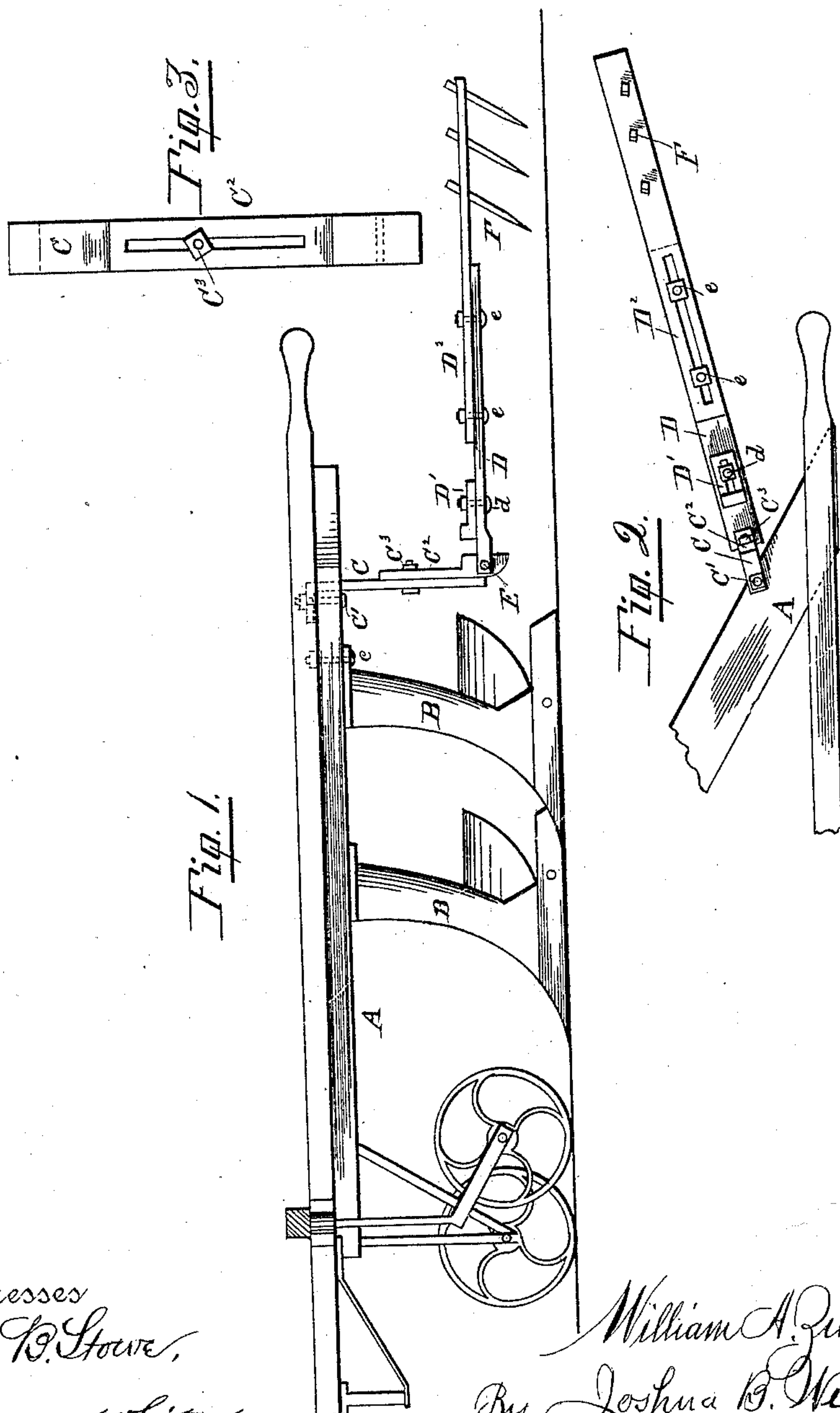


(No Model.)

W. A. ZUMWALT.  
GANG PLOW HARROW.

No. 433,608.

Patented Aug. 5, 1890.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM A. ZUMWALT, OF FARMINGTON, CALIFORNIA.

## GANG-PLOW HARROW.

SPECIFICATION forming part of Letters Patent No. 433,608, dated August 5, 1890.

Application filed May 20, 1890. Serial No. 352,568. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. ZUMWALT, a citizen of the United States, residing at Farmington, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Combined Adjustable Gang-Plow 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 of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in combining a gang-plow and a harrow; and it consists in the combination, with the main beam of the gang-plow, of a harrow which is adjustable both as to width and depth.

In the accompanying drawings, Figure 1 is an elevation showing my entire invention. Fig. 2 is a plan of a portion of the plow-beam and of the harrow attachment. Fig. 3 is a detached view of a harrow-standard.

A represents the main beam of a gang-plow, to which any desired number of plows B may be secured by bolts *c*. A vertical standard C, having an angular head, is bolted near each plow, and is provided with a slot taking a bolt *C*<sup>3</sup>, which also engages with a vertical standard C<sup>2</sup>, provided with a slot corresponding to that of the standard C. The standard C<sup>2</sup> is provided with a stout foot E, to which is flexibly attached a horizontal bar D, having a short slot at its inner end, which has a bolt *d*, to which is attached a face-block D'. To the rear of the bar D is attached the harrow-bar D<sup>2</sup>, having the teeth F at its rear, and being provided with a slot at its front end, by means of which it is secured to the bar D<sup>2</sup> by bolts *e*.

If preferred, the heads of the standards C may be secured to the beam A by the bolts *c*, which secure the standards B to the beam A.

By means of the slots in the standards C the standards C<sup>2</sup> are vertically adjustable and the height of the harrow-bar made to conform to the depth at which the plows B may be set.

By means of the slots in the harrow-beams D<sup>2</sup> the width of cut of the harrows may be adjusted, as the style of plows shown have a tendency to leave a ridge of earth, which the following harrows will remove.

In light soils the flexible attachment of the standards C<sup>2</sup> and beams D is sufficient, as the weight of the harrows will cause them to remain in the ground when the gang-plow is moving; but in stiff lands the face-blocks D' must be moved up closely to the feet E of the standards C<sup>2</sup> and the nuts of the bolts *d* screwed up tightly, so as to make a rigid connection of the standards C<sup>2</sup> and beams D.

Having thus described my invention, what I claim as new and of my invention is—

A combined adjustable gang-plow harrow composed of the main beam A, having suitable plows B, in connection with a series of adjustable harrows, consisting of the slotted standards C, attached to the beam A, the standards C<sup>2</sup>, attached to the standards C and having the feet E, the bars D, flexibly or rigidly attached to the feet E and provided with slots carrying the blocks D', and the slotted adjustable harrow-bars D<sup>2</sup>, attached to the bars D and having the teeth F at their outer ends, all substantially as shown and described.

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

WILLIAM A. ZUMWALT.

Witnesses:

JOSHUA B. WEBSTER,  
JAMES T. SUMMERVILLE.