

No. 674,300.

Patented May 14, 1901.

C. S. LEHMAN.

COMBINED FIELD ROLLER AND HARROW.

(Application filed July 9, 1900.)

2 Sheets—Sheet 1.

(No Model.)

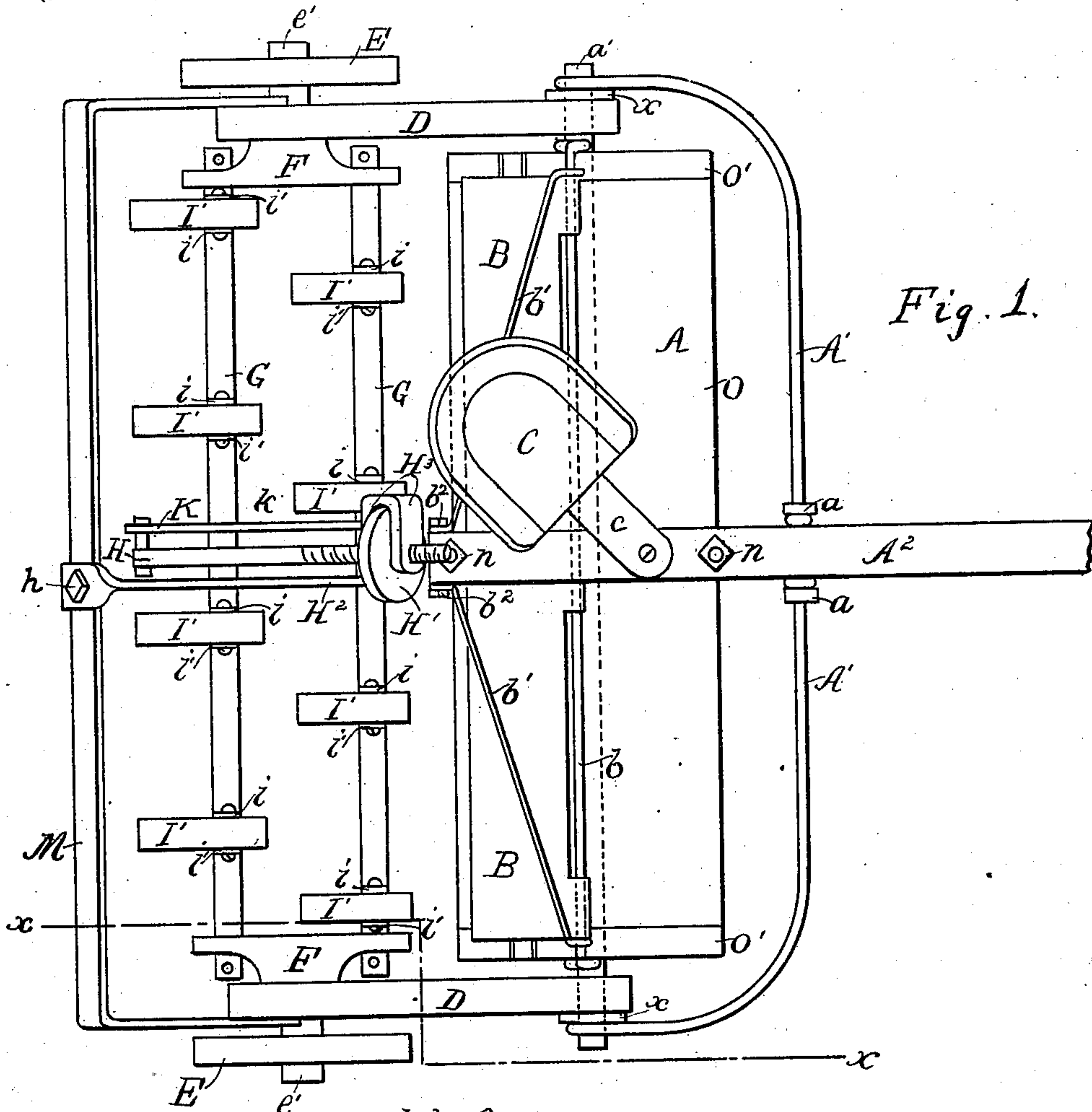


Fig. 1.

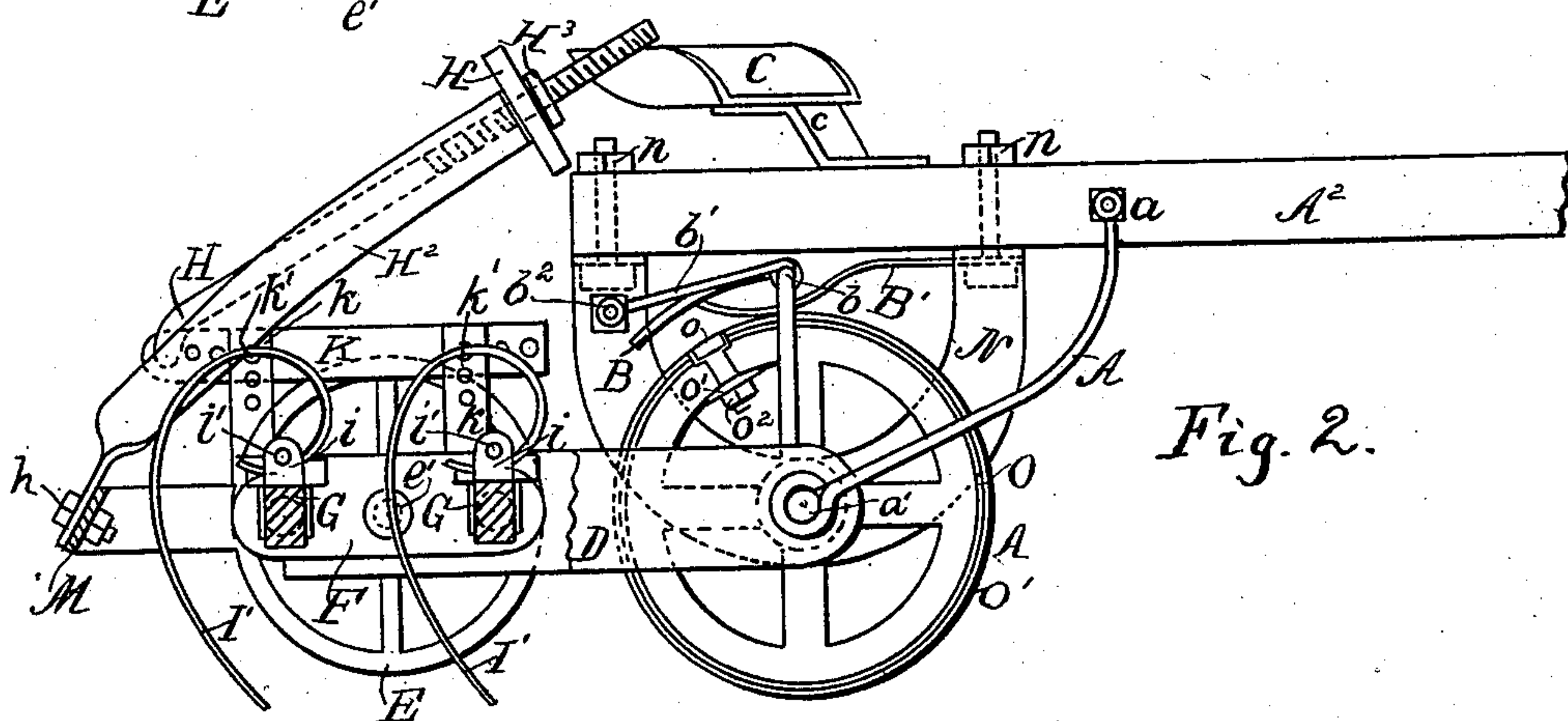


Fig. 2.

WITNESSES

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Sophie Harbeck

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By Clark Deemer & Co
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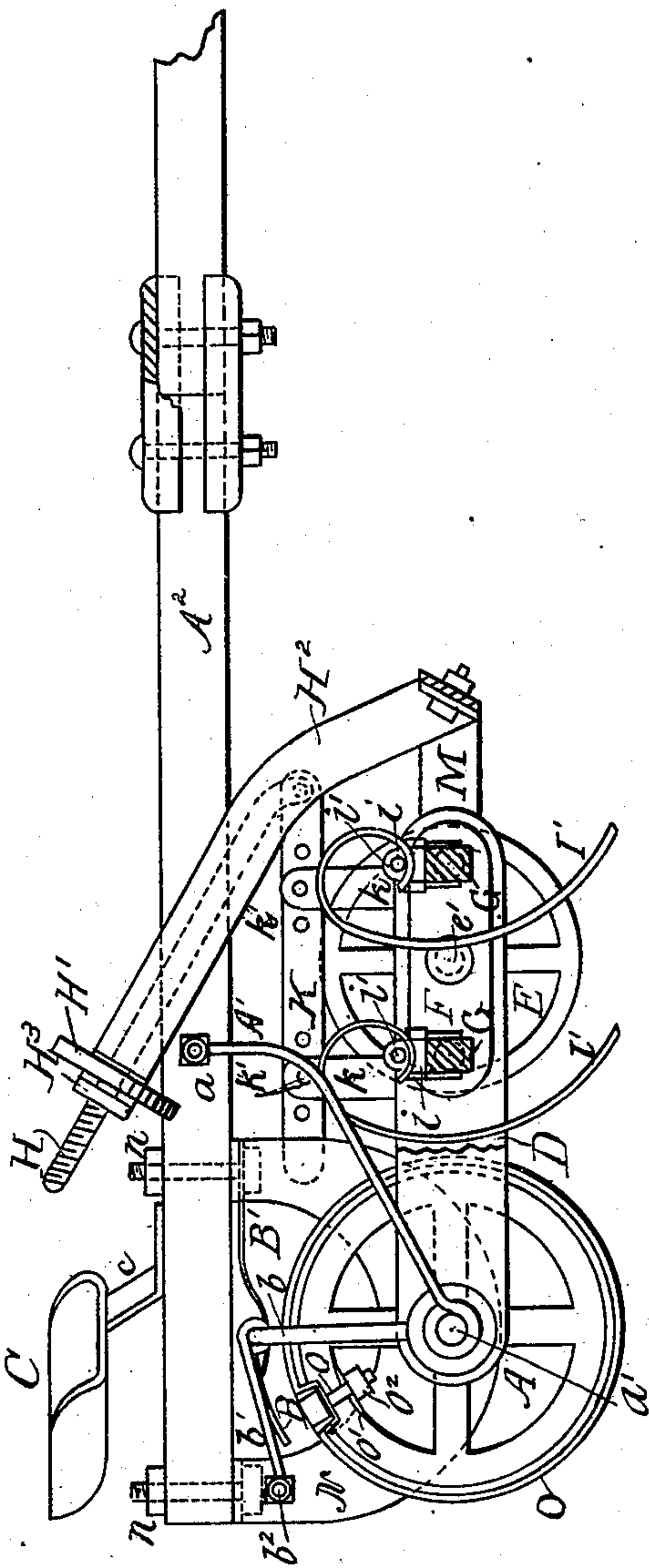
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Fig. 3.



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UNITED STATES PATENT OFFICE.

CHRISTIAN S. LEHMAN, OF LAWN, PENNSYLVANIA.

COMBINED FIELD ROLLER AND HARROW.

SPECIFICATION forming part of Letters Patent No. 674,300, dated May 14, 1901.

Application filed July 9, 1900. Serial No. 23,064. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN S. LEHMAN, a citizen of the United States, and a resident of Lawn, county of Lebanon, and State of Pennsylvania, have invented certain new and useful Improvements in a Combined Field Roller and Harrow, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to improvements in combined field rollers and harrows.

The nature and object of the invention will be fully understood from the following general description and the annexed drawings and will be subsequently pointed out in the claims.

Figure 1 is a top view of my newly-invented roller and harrow, showing the harrow-section behind the roller. Fig. 2 is a side view of the same, partly in section and partly in elevation, the section being taken on the line *xx* of Fig. 1. Fig. 3 is a side view in elevation showing the harrow-section before the roller.

Referring to the annexed drawings, which are hereby made a part of this specification, A designates the roller; *a'*, the shaft on which it revolves; D and D, the side beams of the machine; A' and A', the braces which hold the tongue to the shaft *a'* of the roller, and M the rear brace, which holds the rear ends of the side beams in position. B designates a scraper, which is pivotally mounted on the rod *b*. This rod is fastened by having an eye at each end, through which passes the shaft *a'*, and is held in position by the braces *b'*. These braces are formed with an eye at one end, which is secured to the hanger N by the bolt and the nut *b*².

A² designates the tongue, which is held in place by the braces A' and the nuts *a a*. The roller A is divided into two equal sections, between which the hanger N engages the shaft *a'* and is fastened to the tongue A² by the bolts and nuts *n*. X designates a removable box, which, if it be desired, may be used to interpose between the shaft *a'* and the bearing of the roller, as illustrated in Fig. 1. The body of each roller is a structure, which may be made of any suitable material and is incased by a cylindrical sheath of sheet metal,

(designated by O,) or the rollers may be made with metallic heads fastened in the ends of sheet-metal cylinders. This cylinder is kept in place by the metallic bands O' at each end. These bands are fastened in a groove at each end of the roller by the bolts *o* and nuts *o*². These bolts pass through the said bands O', the roller-casing O, the wall of the roller, and the washer-plate *o'*. The scraper B is normally held raised a little from the roller by the spring B', which fastens by one end under the tongue A². A seat C is provided for the driver, which is supported by the brace *c*.

G and G designate two parallel beams extending almost through the entire breadth of the machine and secured to the side beams D by the studs F and proper pins or bolts passing through the ends of each. The studs F are pivotally connected with the side beams D. The ears *i* are fastened on these beams G. In the ears *i* are fastened the curved resilient harrow-teeth I' by means of the bolts *i'*, as illustrated. The brackets *k* are firmly attached to the cross-beams G. To these brackets *k* is pivotally attached the bar K by the bolts *k'*, and said bar K is pierced with divers adjusting-holes. The bar K is also pivotally attached to the flat shank of the screw H. The bar H² is pivotally attached to the rear brace M and, extending inclined forward, terminates in two parallel ears H³. Through proper holes in these ears passes the screw H. The adjusting-nut H' works on the screw H between these ears H³. The axles *e'* are fastened in the said beams D. On these axles *e'* are mounted the wheels E, which, running on the ground, support the harrow-section of the mechanism.

To use my invention as a roller and harrow combined, with the harrow behind the roller, the parts should be in their normal position, as illustrated in Figs. 1 and 2. It will then be found that by turning the nut H' the stud F will turn a little on its pivotal connection and the position of the bar K will be changed so as to raise or lower the points of the teeth, as may be required.

Thus far the machine has been described as a harrow working behind a roller, as illustrated in Figs. 1 and 2; but sometimes it is desirable to have the harrow work in front of the roller. To this end the bar H² is released

from the rear brace M and the bar K from the brackets *k*. The beams D are then swung around on the shaft *a'*, so as to bring the rear brace M in front of the roller under the tongue, and the studs F turned on their pivotal connection so as to bring the teeth I' into operative position. The bar H², the screw H, and the bar K are then placed on their proper connections. The whole device will be then as illustrated in Fig. 3 and the harrow will work in front of the roller. If it should be found desirable, the braces A' may be detached from the shaft *a'* and fastened on the axles *e'* to give the harrow greater steadiness.

The harrow-section may be easily taken off by detaching the beams D from the shaft *a'*. The remaining part of the mechanism will then be only a roller alone, which may be used as a roller in the common and well-known way.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a combined field roller and harrow, the combination of side beams, adapted to be pivoted to the shaft of a roller as specified, by their forward ends; and a rear brace holding the rear ends of said beams in position; of studs pivoted to the said side beams; bars connecting said studs; and harrow-teeth, mounted on brackets on said bars; and said studs, bars, brackets and teeth forming a reversible harrow, all substantially as and for the purpose set forth.

2. In a combined roller and harrow, the com-

bination with side beams pivotally attached to the shaft of said roller; studs pivoted thereon; and bars connecting said studs; of brackets mounted on said bars; and harrow-teeth mounted on said brackets; all arranged and adapted to form a reversible harrow; substantially as and for the purpose set forth.

3. In a combined field roller and harrow, the combination with side beams having their front ends pivotally mounted on the shaft of said roller; a rear brace holding the backward ends of said beams in position; studs pivoted to said beams; and parallel bars connecting said studs; of brackets mounted on said bars; a horizontal bar pivotally and adjustably attached to said brackets; a screw pivotally attached to said horizontal bar; another bar extending forwardly and pivotally attached to said rear brace; ears on the free end of said last-named bar, pierced with holes through which said screw extends; an adjusting-nut on said screw between said ears; and all adapted and arranged to regulate the pitch of harrow-teeth mounted on said parallel bars, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 15th day of June, A. D. 1900.

CHRISTIAN S. LEHMAN.

Witnesses:

R. M. RISSER,

ELIAS E. RISSER.