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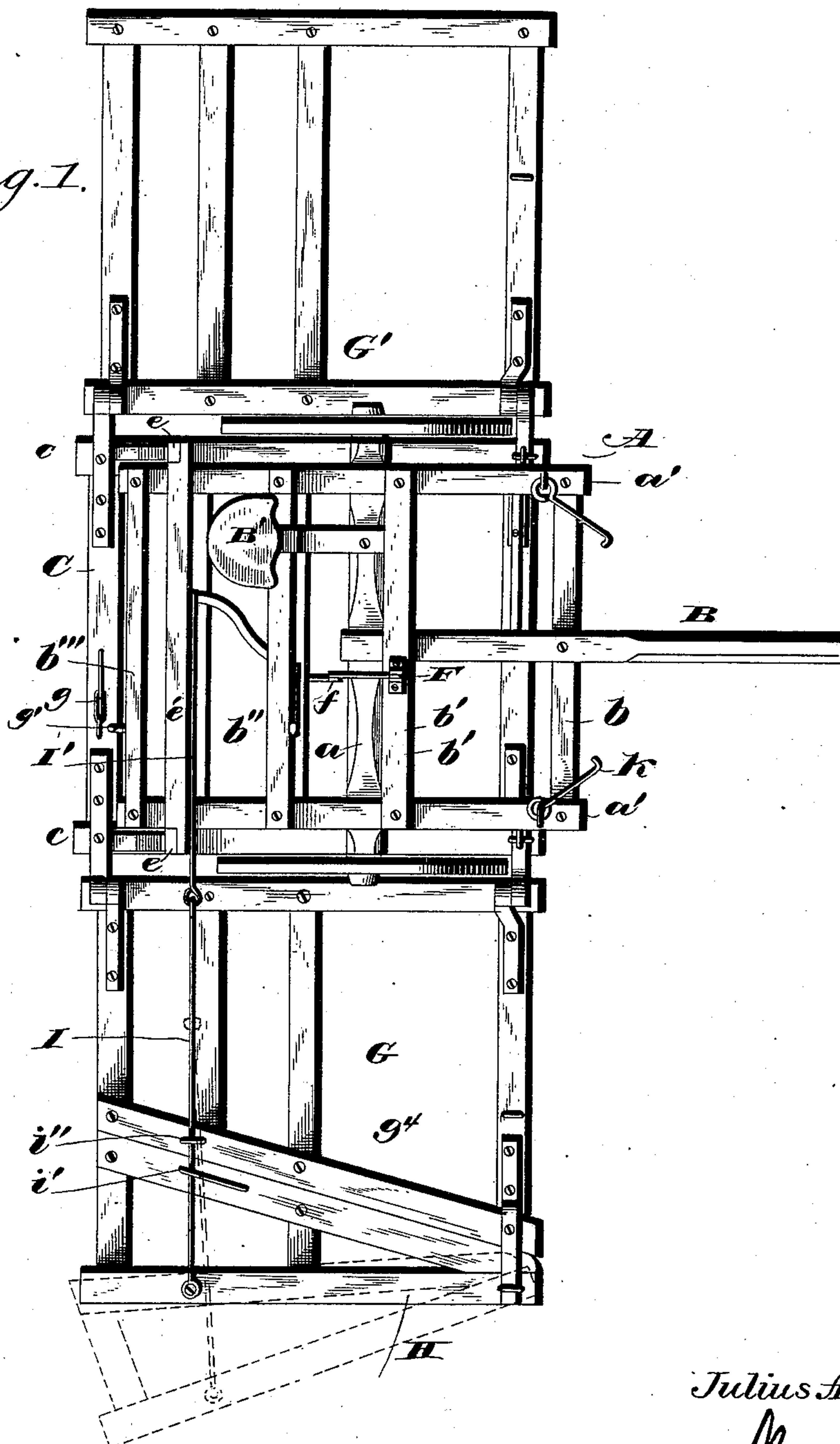
J. A. VAN TASSEL.

WHEEL HARROW.

No. 359,478.

Patented Mar. 15, 1887.

Fig. 1.



WITNESSES

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(No Model.)

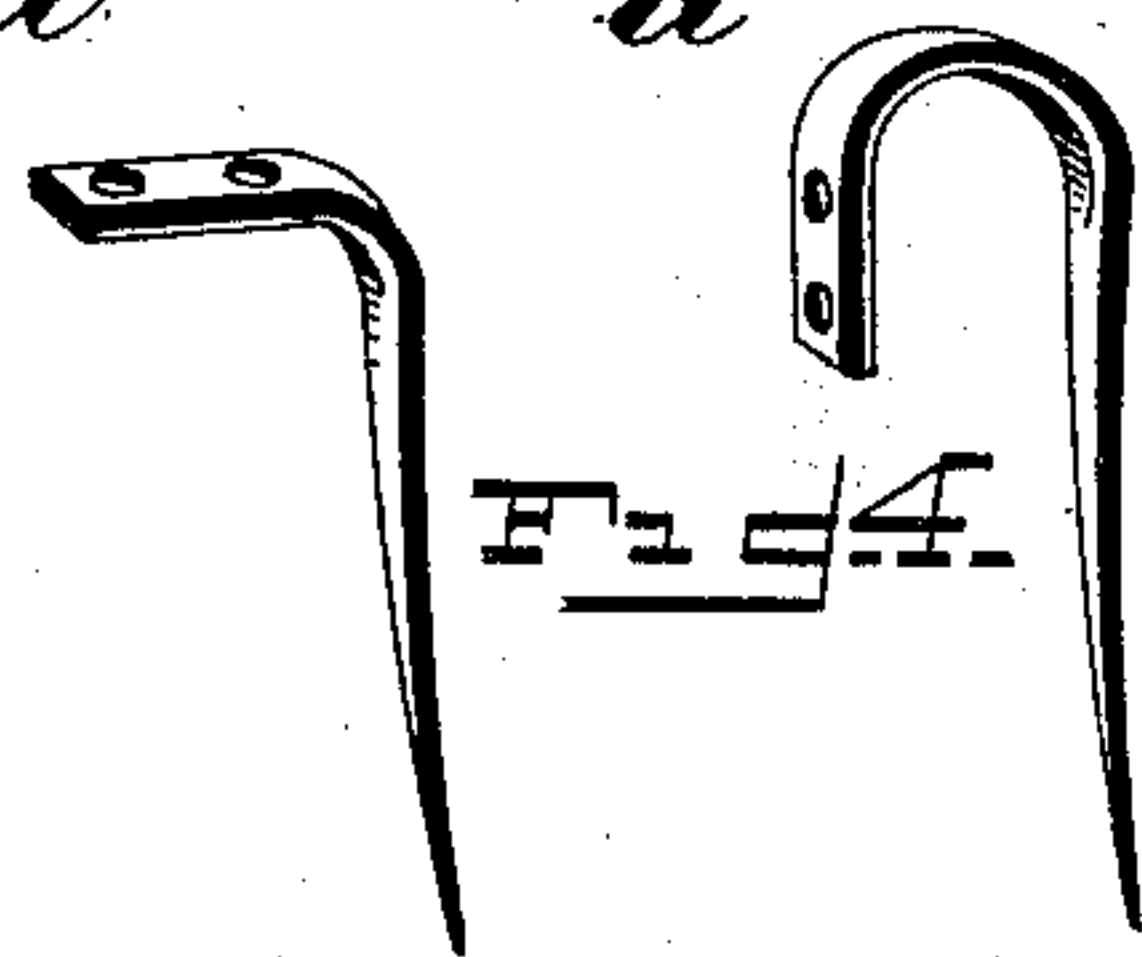
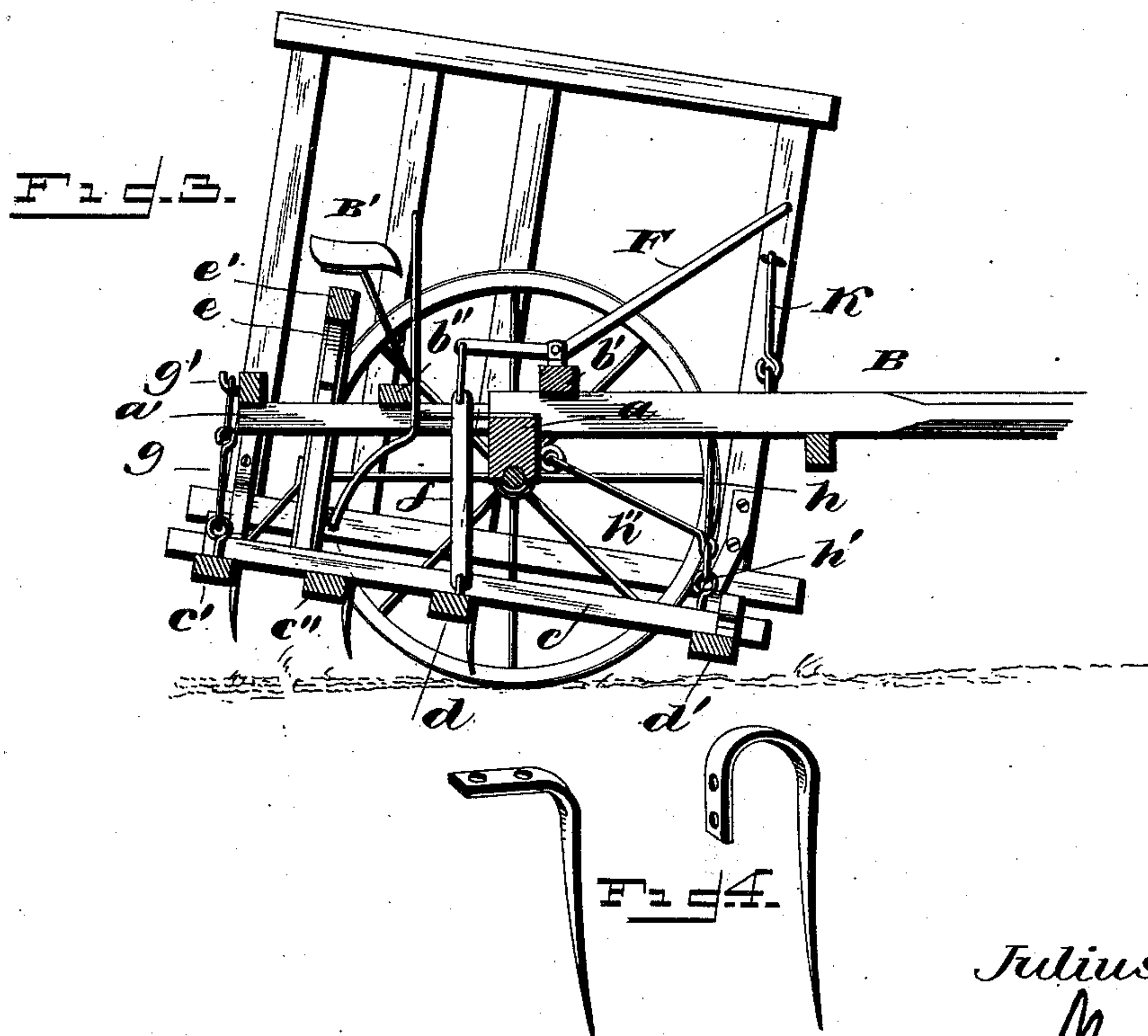
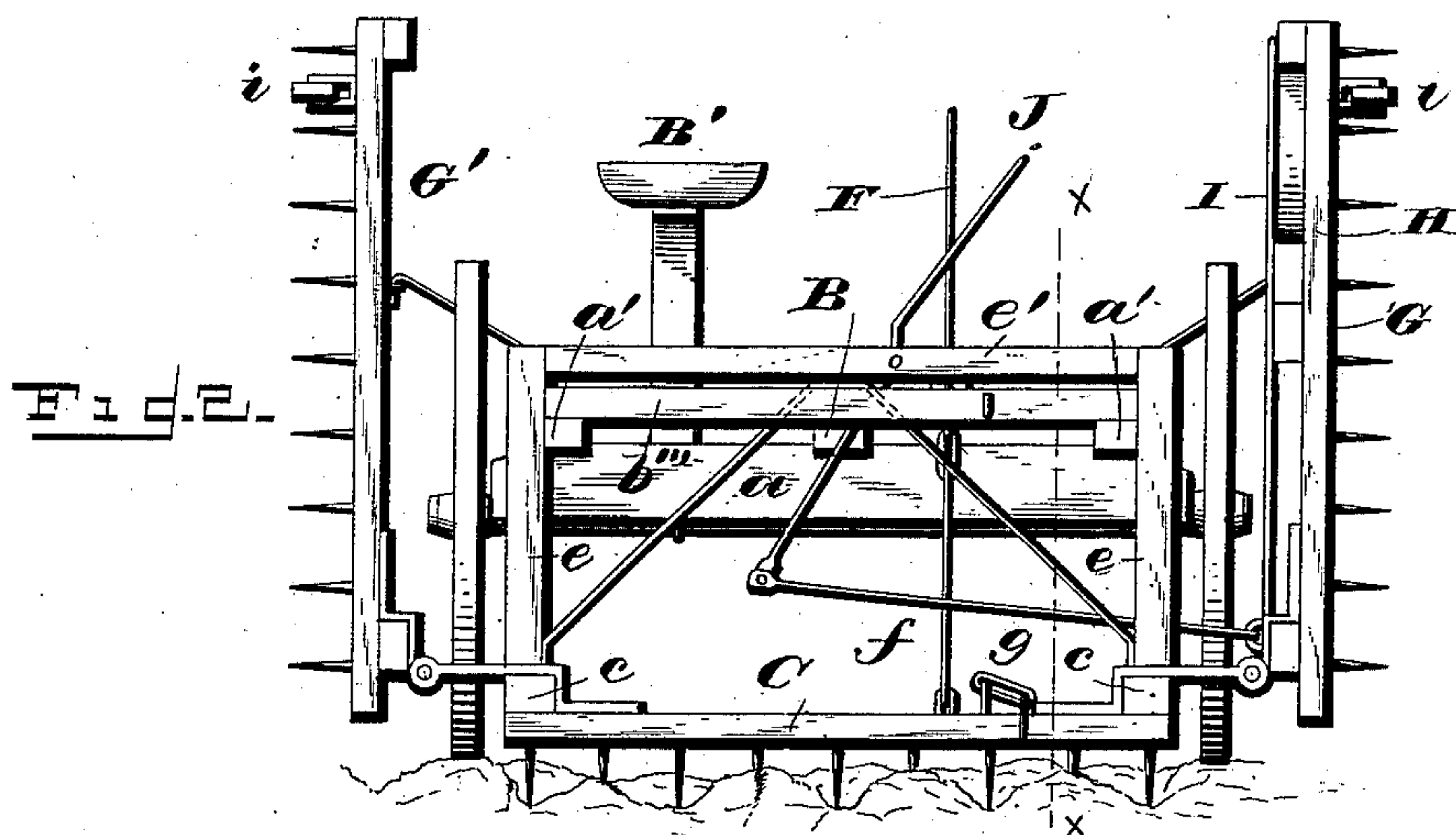
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

JULIUS A. VAN TASSEL, OF BENONA, MICHIGAN.

WHEEL-HARROW.

SPECIFICATION forming part of Letters Patent No. 359,478, dated March 15, 1887.

Application filed December 2, 1886. Serial No. 220,568. (No model.)

To all whom it may concern:

Be it known that I, JULIUS A. VAN TASSEL, a citizen of the United States of America, residing at Benona, in the county of Oceana and State of Michigan, have invented certain new and useful Improvements in Wheel-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 relates to certain new and useful improvements in sulky-harrows, the object of my invention being to provide a sulky-harrow which is mounted on a suitable frame so that the center portion of the harrow, which carries the side wings, can be elevated and depressed by the driver.

My invention also consists in providing a central harrow with side wings which are pivoted thereto, so that they may be raised and lowered, said side wings being provided with extensible side pieces, whereby the width of the side sections may be increased.

My invention further consists in the construction and combination of the parts, as will be hereinafter fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, which illustrate my invention, Figure 1 is a plan view of a sulky-harrow constructed in accordance with my invention. Fig. 2 is a rear elevation. Fig. 3 is a sectional view taken through the line *xx* of Fig. 2, and Fig. 4 are detail views of spring-teeth which may be employed upon the harrow-sections.

In the accompanying drawings, A refers to a suitable rectangular frame, to the underside of which is rigidly attached an axle, *a*, said axle extending beyond the rectangular frame and carrying suitable supporting-wheels. The rectangular frame hereinbefore referred to is made up of longitudinal side bars, *a'*, and transverse bars *b b' b'' b'''*, all of said bars being rigidly attached to the longitudinal bars *a'* in any suitable manner.

The draft-tongue B is attached to the rectangular frame immediately above the cross-

bar *b* and to the axle *a*, and said axle also serves as a support for the driver's seat B'.

The central harrow section, C, consists or is made up of side bars, *c c'*, which lie immediately within the supporting-wheels, and to the side bars are attached, to the under side thereof, cross-bars *c', c'', d, and d'*, and between the rear cross-bar, *c'*, and the next cross-bar adjacent thereto are attached vertical standards *e*, which are connected to each other at their upper ends by cross-bar *e'*, said standards being suitably braced to each other and to the harrow-frame by bars, as shown.

The corners of the central harrow-frame are provided with suitable straps with eyes, with which engage the pintles which project from similarly-constructed straps, so as to form a hinge-joint between the central harrow-section and the side wings. To the cross-bar *b'* is pivotally attached a lever, F, said lever at its rearwardly-projecting end being provided with a link, which engages with a bar, *f*, which is pivotally attached to the cross-bar *d* of the central harrow-section, and when the hand-grasping portion of this lever F is depressed the rear portion of the harrow-section will be elevated, and may be maintained in an elevated position by causing the links *g*, attached to the rear cross-bar, *c'*, of the harrow, to engage with a hook, *g'*, which projects from the rear side of the bar *b'''*. The front portion of the central harrow is attached to the supporting-frame by means of depending bars *h h'*, which engage with eyes *h'*, attached to the front corners of the same, said bars *h* having a rearwardly-extending portion, *h''*, which is attached to the axle by means of suitable eye-bolts. By this construction the center harrow-frame is held relatively at the same distance from the supporting-frame when the rear portion is elevated or depressed.

The lever F, for elevating or depressing the central harrow-frame, may engage with a toothed segment or suitable curved bar for holding the same in position.

G and G' refer to the side wings or sections, which are hinged to the central harrow-section, and these side wings are provided at their outer ends with a rearwardly-tapering bar, *g⁴*, the front portion of the side wings being wider than the rear portion, as shown, and to the

front outer corners are pivoted triangular sections H, which can be swung in and out from the main portion of the side wings, as shown in dotted lines. Both of the side wings G and G' are provided on their under sides with 5
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