

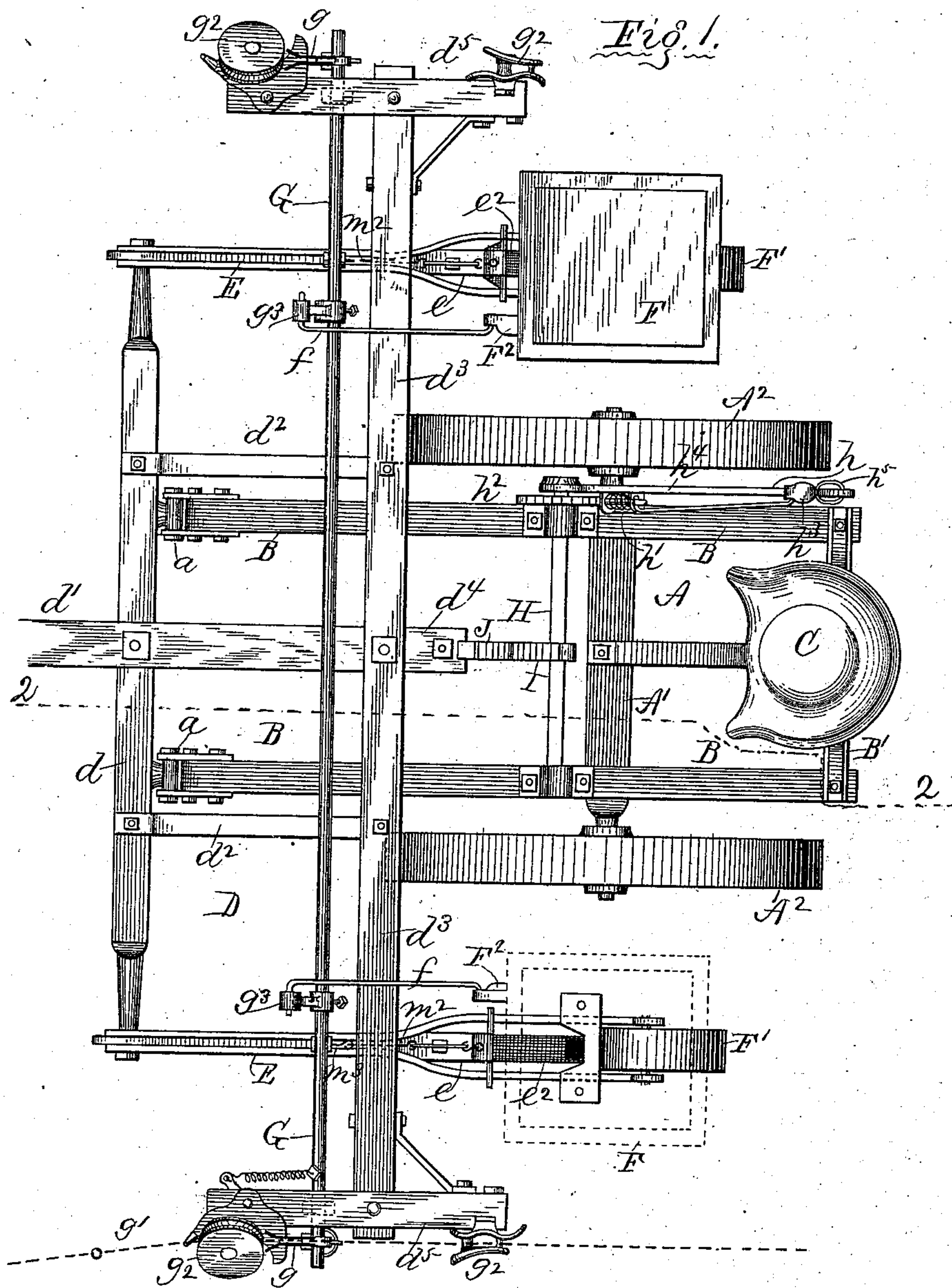
(No Model.)

4 Sheets—Sheet 1.

J. E. BERING.
CHECK ROW CORN PLANTER.

No. 381,102.

Patented Apr. 17, 1888.



Witnesses:

G. R. Richards.
L. Williams

Inventor:
Jas. Edw. Bering
By W. D. Richards.

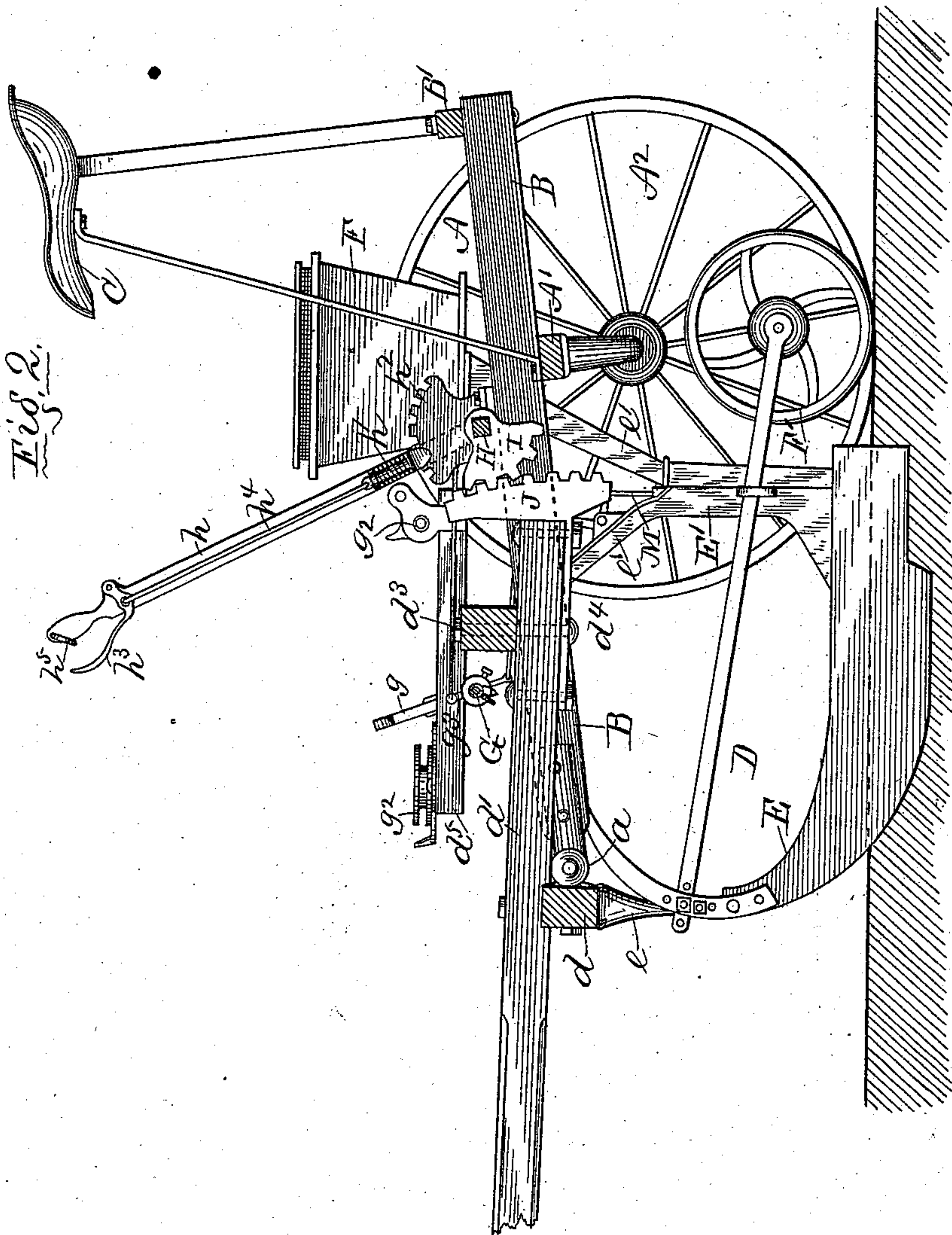
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Inventor:
Jas. Edw. Bering,
By W. B. Richards,
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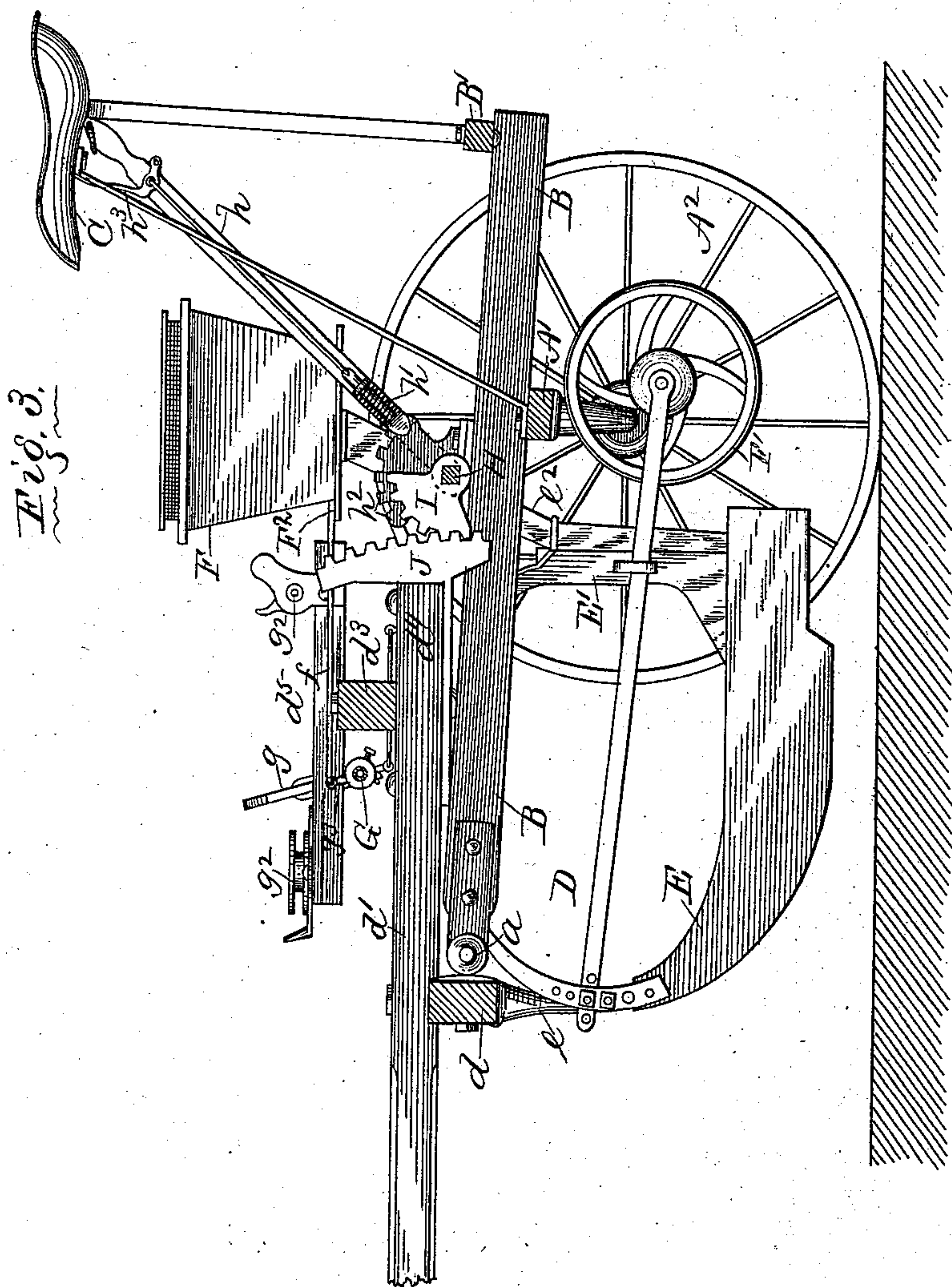
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Patented Apr. 17, 1888.



Witnesses:

D. R. Richards.
L. Williams

Inventor:

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 Atty.

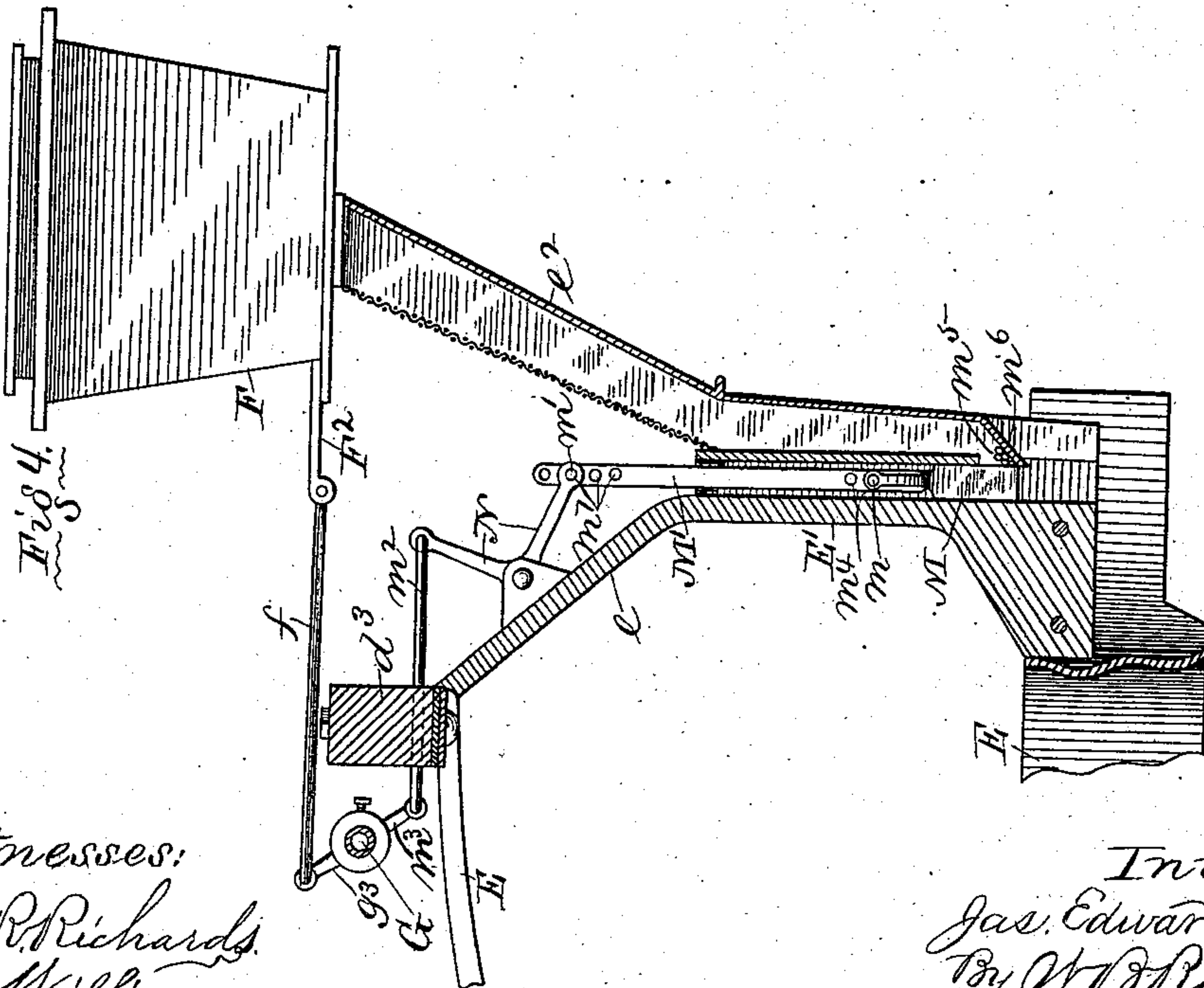
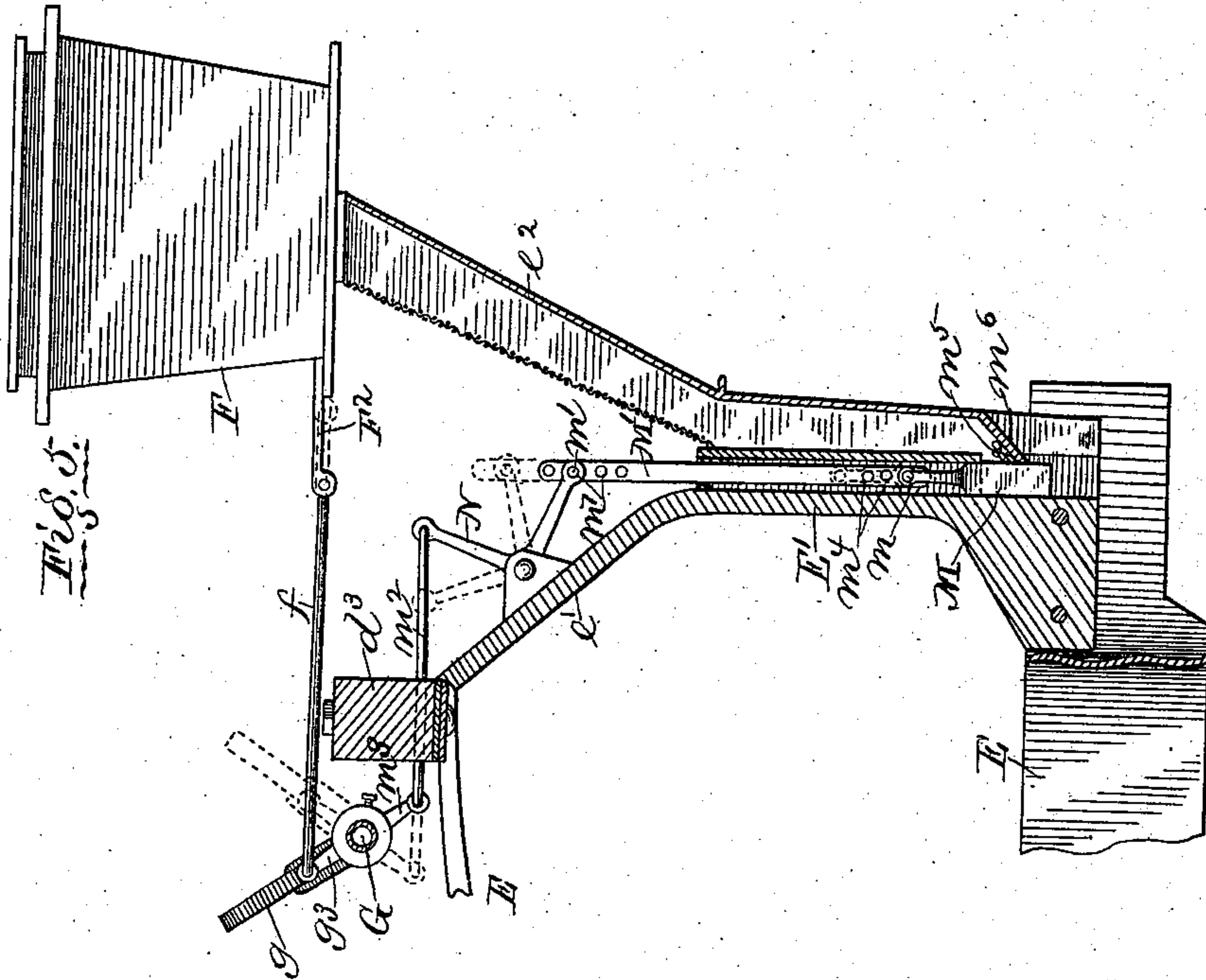
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Patented Apr. 17, 1888.



Witnesses:
G. R. Richards.
L. Williams.

Inventor:
 Jas. Edward Bering,
 By W. D. Richards,
 atty.

UNITED STATES PATENT OFFICE.

JAMES EDWARD BERING, OF DECATUR, ILLINOIS, ASSIGNOR TO THE CHAMBERS, BERING, QUINLAN COMPANY, OF SAME PLACE.

CHECK-ROW CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 381,102, dated April 17, 1888.

Application filed January 3, 1888. Serial No. 259,571. (No model.)

To all whom it may concern:

Be it known that I, JAMES EDWARD BERING, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Check-Row Corn-Planters, of which the following is a specification.

My present invention relates to check-row corn-planters, and while a part of the improvements herein described relate specifically to that type of planter shown in the patent to John Kaylor, No. 340,511, issued April 20, 1886, and I have shown and described them embodied in a planter of that type, it will readily be seen that a portion of the improvements may be applied to almost any type of planter having mounted thereon check-row devices of that class which are actuated by a tappet check-row line.

One main object of my invention is to provide improved means for raising and lowering the forward frame and furrow openers, and for adjusting these parts at different heights; and such means may be broadly said to consist in a shaft operated by a lock-lever, and provided with a quadrant-gear, which is engaged with a segmental gear fixed to an extension of the tongue in rear of the front frame.

Great difficulty is frequently experienced in mounting a check-rower on a corn-planter so that the periodic seed-dropping in the return-row will be in check-line with the dropping of the previous row, or passage of the planter, and this is usually corrected by the tedious and difficult operation of moving the check-rower apparatus forward or back on the planter, and again securing it in place; and another object of my invention is to provide simple means for effecting accurate check-rowing without moving the check-rower on the planter; and to this end my invention consists in a valve in the seed-tube, which valve is adjustable to delay or hasten the discharge of the seed, as may be necessary to secure accurate seed-dropping in check-rows or rows transverse to the path of the planter.

In the drawings herewith, Figure 1 is a top plan of a corn-planter embodying my invention, but only showing a portion thereof; Fig. 2, a sectional elevation in the line 2 2 in Fig. 1, showing the planter adjusted for operation

in planting. Fig. 3 is a sectional elevation in same plane as Fig. 2, showing the planter adjusted for local transportation on its own wheels. Figs. 4 and 5 are sectional elevations of the seed-tube, part of the runner, check-row bar, and rock-shaft, and elevations of other accessory parts, showing different adjustments of the discharging-valve.

The rear frame, A, of the planter, which I have shown herewith, consists of an axle, A', supported on wheels A², side frame bars, B, extending well forward of the axle, and transverse bar B'. This frame A supports a seat, C, in rear of the axle, and is hinged at a to a forward frame, D, which consists of a bar, d, tongue d', bars d², and a bar, d³, which constitutes the check-row bar and also forms a part of the frame D, as the bars d² and the tongue are bolted to it, the tongue having an extension, d⁴, in rear of it. The runners E are fixed to pendants e from the bar d, and to the bar d³, and to the lower ends of the seed-tubes E'. One branch, e', of the seed-tube is fixed to the bar d³, and its other branch, e², carries the seed-box F on its upper end. Gage and covering wheels F' are adjustably attached to the runners and seed-tubes, as shown and described in said Kaylor patent. The check-row rock-shaft G has forked levers g actuated by a tappet check-row line, g', in the ordinary manner. Guide-pulleys g² are mounted on heads d³ on the bar d³. A rod, f, connects an arm, g³, on the rock-shaft G with the seed-dropping slide F² in the seed-box F, which slide is only partly shown, but may be such as shown in said Kaylor patent, or of any other suitable construction.

The parts hereinbefore described by reference-letters are substantially the same in construction, relative arrangement, and operation as the same parts shown and fully described in said Kaylor patent, and therefore need not be any fuller described herein.

I will now proceed to describe my improvement for raising and lowering, and also for adjusting the forward frame at different elevations.

H is a rock-shaft, journaled in suitable bearings in the bars B, and provided at one end with a hand-lever, h, which is provided with a spring-actuated dog, h', that engages with a

curved rack-bar, h^2 , and is operated by a thumb-latch, h^3 , and rod h^4 .

I is a sector-shaped or quadrant gear, mounted on a squared portion, or otherwise fixed to the shaft H, near the center of the length of said shaft. The sector-gear I is in gear with a segment-shaped gear, J, which is fixed to the rear end of the extension d^4 of the tongue. By means of this lock-lever and my improved means of transmitting motion from the rock-shaft H to the forward frame, it will be seen, without particular description, that the forward frame and runners may be raised and lowered with great ease and certainty by the driver in his seat, and that when so adjusted, as desired, the spring-dog on the hand-lever may be engaged with the rack-bar to hold the parts firmly fixed to each other for gaging the depth of planting or for other purposes. When desired to have the hinge-connection between the forward and rear frames free, then the link h^5 may be engaged with the thumb-latch h^3 to hold the dog h' free of the rack h^2 .

At Figs. 4 and 5 I have clearly shown my improved means for delaying and accelerating the periodic seed-dropping, as may be required for adjusting the check-rower to align the seed deposits in the check-rows. The seed measuring and discharging valve F^2 in the seed-box (but partly shown) is actuated periodically by the rod f and check-row rock-shaft, as is also the discharge-valve M in the lower end of the seed-tube, which valve is connected to the lower end of a stem, M' , by a pin-pivot, m , the upper end of the stem M' being connected by a pin-pivot, m' , to one arm of a bell-crank lever, N, the other arm of which bell-crank lever is similarly hinged or pivoted to a link-rod, m^2 , which extends to and is pin-pivoted to an arm, m^3 , projecting from the rock-shaft G. This discharge-valve and the means last described for operating it are the same as shown and described in the Kaylor patent hereinbefore referred to; but while I have chosen to show my improvement therein as embodied in this type of valve and means for operating it I do not limit my claims in connection with it to the peculiar type of dropping mechanism, as it will readily be seen that the main feature of the improvement may be easily applied to other check-row planters.

The lower end of the valve-stem M' has a series of holes, m^4 , whereby the valve M may be adjusted lengthwise of the seed-tube and be held after adjustment by the pin m . At Fig. 4 the valve M is shown adjusted in a higher position with reference to the stem M' than at Fig. 5, and at both of said figures the valve M is in the position it occupies when at rest after each discharge of seed and in position to receive and hold the seed ready for discharge when the valve is raised by the check-row devices.

When the valve M is adjusted, as shown at Fig. 4, it will be raised to permit the seed m^5

to drop from the shelf m^6 during the first part of the movement of the forked lever g ; but when said valve is adjusted lower, as shown at Fig. 5, then the discharge will not be opened without greater movement of said valve and while the forked lever g is moving through the latter part of its throw. When the planter has been moved across the field the first time, and the seed dropping has been effected, and the planter is started in a return or opposite direction, and it is found that the seed is dropped too soon to form deposits in line in the check-rows, the valve M can quickly and easily be adjusted lower, so as to delay the dropping of each charge of seed, and thus correct the dropping without the usual proceeding of remounting and fixing the check-row apparatus farther forwardly or rearwardly on the planter. If it is found that the seed is not dropped soon enough, then the valve may be adjusted in a higher position on the valve-stem to hasten the period of discharge in reference to the throw of the forked lever while acted on by one of the tappets on the check-row line.

At both Figs. 4 and 5 the valve-stem M' is shown as having a series of holes, m^7 , by means of which and the pin m' the valve M may be adjusted in higher or lower positions in the seed-tube to perform precisely the same functions as when adjusted as hereinbefore described, and these matters of specific methods or ways of effecting the adjustment of the discharging-valve I consider of minor importance, the main feature of my invention being a discharge-valve adjustable in the seed-tube to cause it to discharge the seed as desired, while the check-row rock-shaft and its forked lever are in any part of their throw or movement.

What I claim as new is—

1. In a corn-planter, in combination with the rear frame carried on wheels, the forward frame hinged thereto and provided with the seed dropping and planting mechanisms, and a rock-shaft, H, journaled to the rear frame and provided with a lock-lever, h , at one end and a sector-gear at its mid-length, the tongue extended in rear of the forward frame and provided with a segment-gear, J, which gears with the sector I, substantially as and for the purpose specified.

2. In combination with a corn-planter of the type herein described, having a rear frame mounted on wheels and extended forward and hinged at its forward end to the forward end of a forward frame, to which the tongue is fixed to extend in rear of said forward frame, a rock-shaft journaled to said rear frame and provided with a lock-lever at one end and a sector-gear at its mid-length, and a segment-gear on the rear end of the tongue, substantially as and for the purpose described.

3. In combination with a corn-planter of the type herein described, having a rear frame mounted on wheels and extended forward and hinged at its forward end to the forward end of a forward frame, to which the tongue is fixed

to extend in rear of said forward frame, a rock-shaft journaled to said rear frame and provided with a lever at one end and a sector-gear at its mid-length, and a segment-gear on the rear end of the tongue, substantially as
5 and for the purpose specified.

4. In a check-row corn-planter with seeding mechanisms actuated by a check-row line having tappets, in combination with said actuating and seed-dropping mechanisms, a discharge-valve in the seed-tube adjustable with
10 reference to the seed-tube and its actuating mechanism, whereby it may be made to delay or hasten the discharges, substantially as and
15 for the purpose specified.

5. In a corn-planter, in combination with a seed-tube, and a discharging-valve adjustably connected with its actuating mechanism, and with reference to the seed-tube discharge-
20 opening, substantially as and for the purpose described.

6. In combination with the seed-tube E', bell-crank lever N, and its actuating mechanism, and the discharge-valve M, an adjustable valve-stem, M', substantially as and for the
25 purpose specified.

7. In a corn-planter, in combination with check-rower actuating mechanism of the type herein described, a seed-measuring valve in the seed-box, and a discharging-valve in the
30 seed-tube, said valves both actuated by the same check-row rock-shaft, and an adjustable connection between the discharge-valve and its actuating mechanism, substantially as and
35 for the purpose specified.

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

JAMES EDWARD BERING.

Witnesses:

R. J. SIMPSON,

WM. B. CHAMBERS.