

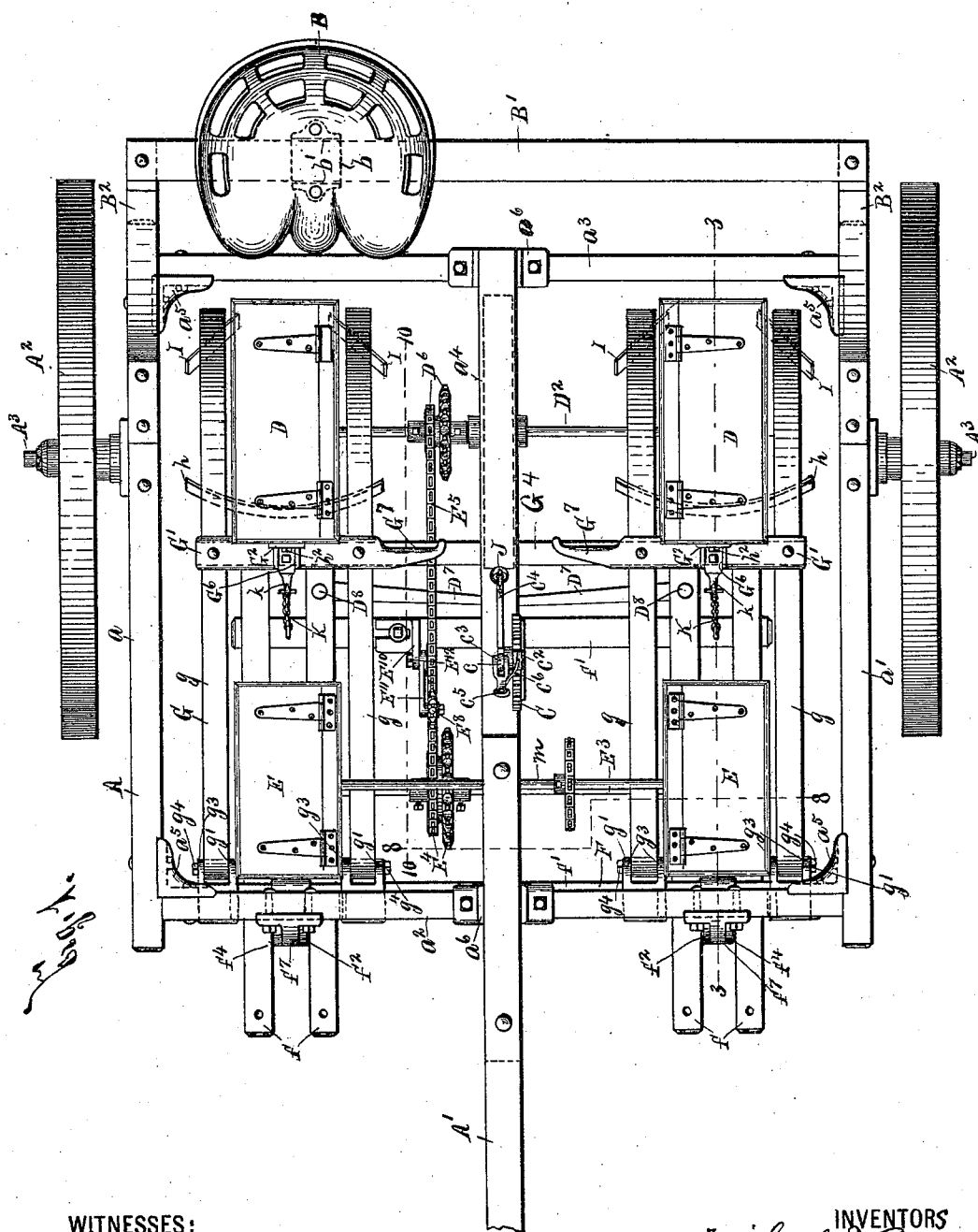
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6 Sheets—Sheet 1.

M. D. BREEN & W. H. BRACE.
PLANTER.

No. 575,101.

Patented Jan. 12, 1897.



WITNESSES:

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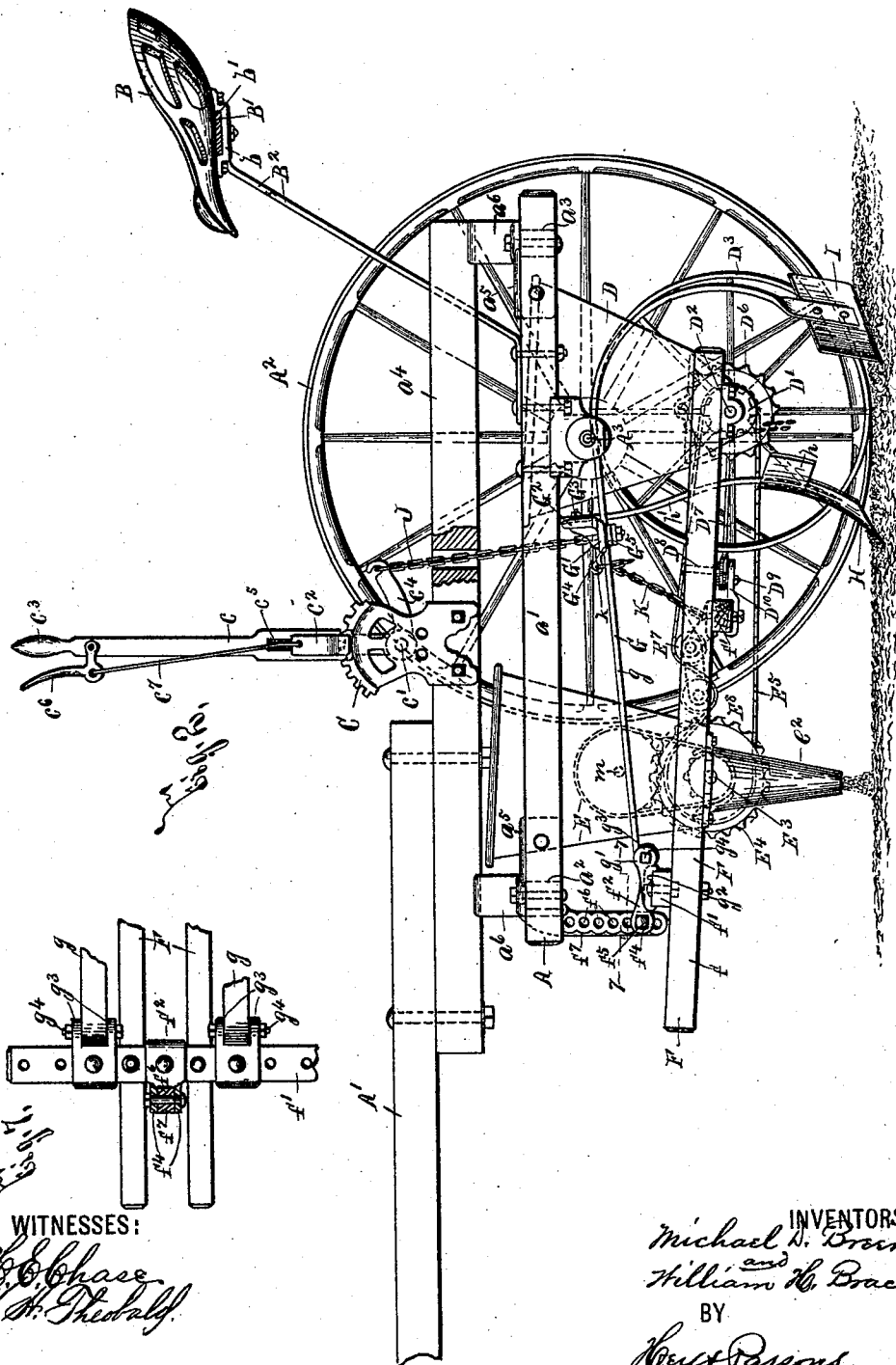
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6 Sheets—Sheet 2.

M. D. BREEN & W. H. BRACE.
PLANTER.

No. 575,101.

Patented Jan. 12, 1897.



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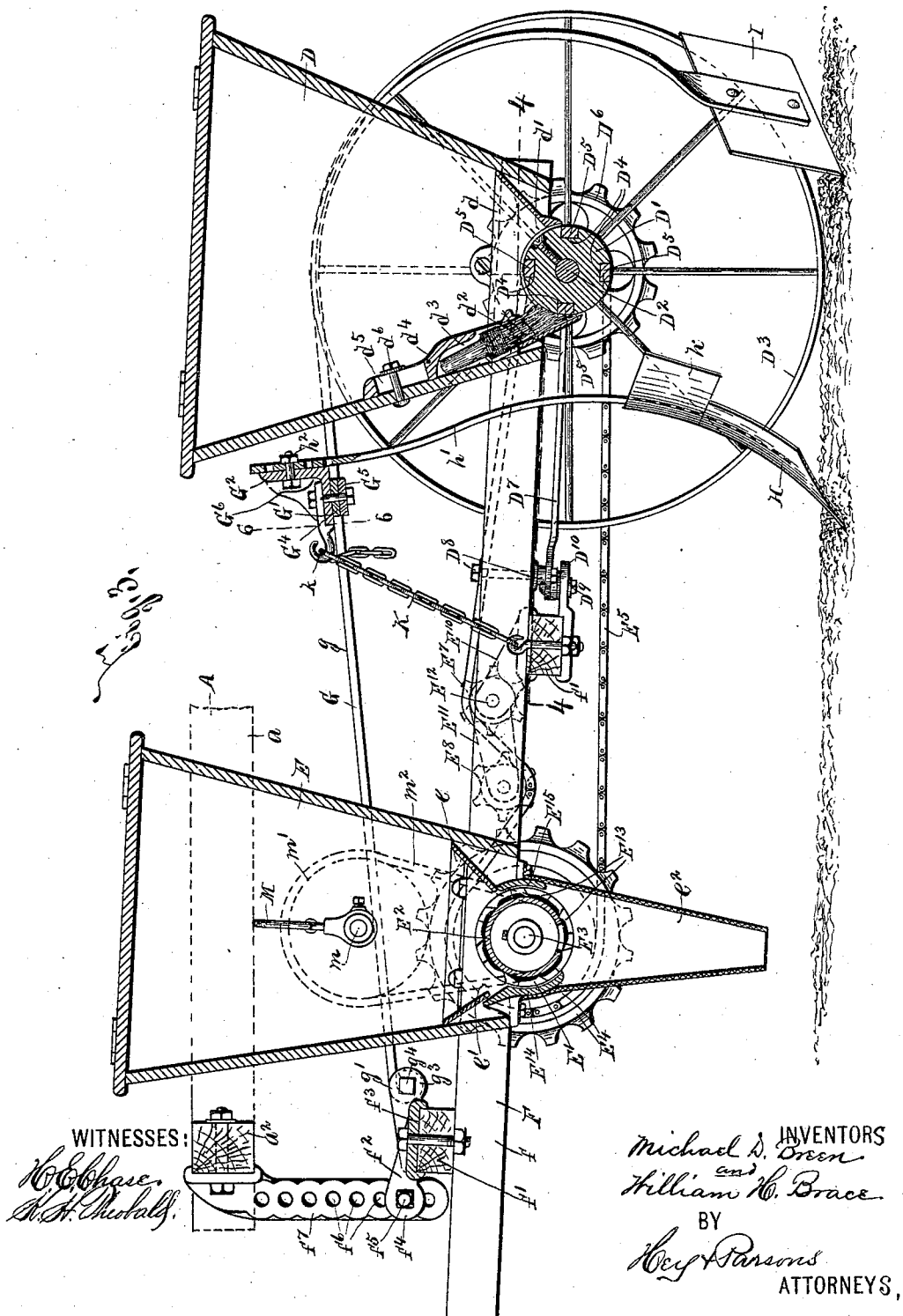
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6 Sheets—Sheet 3.

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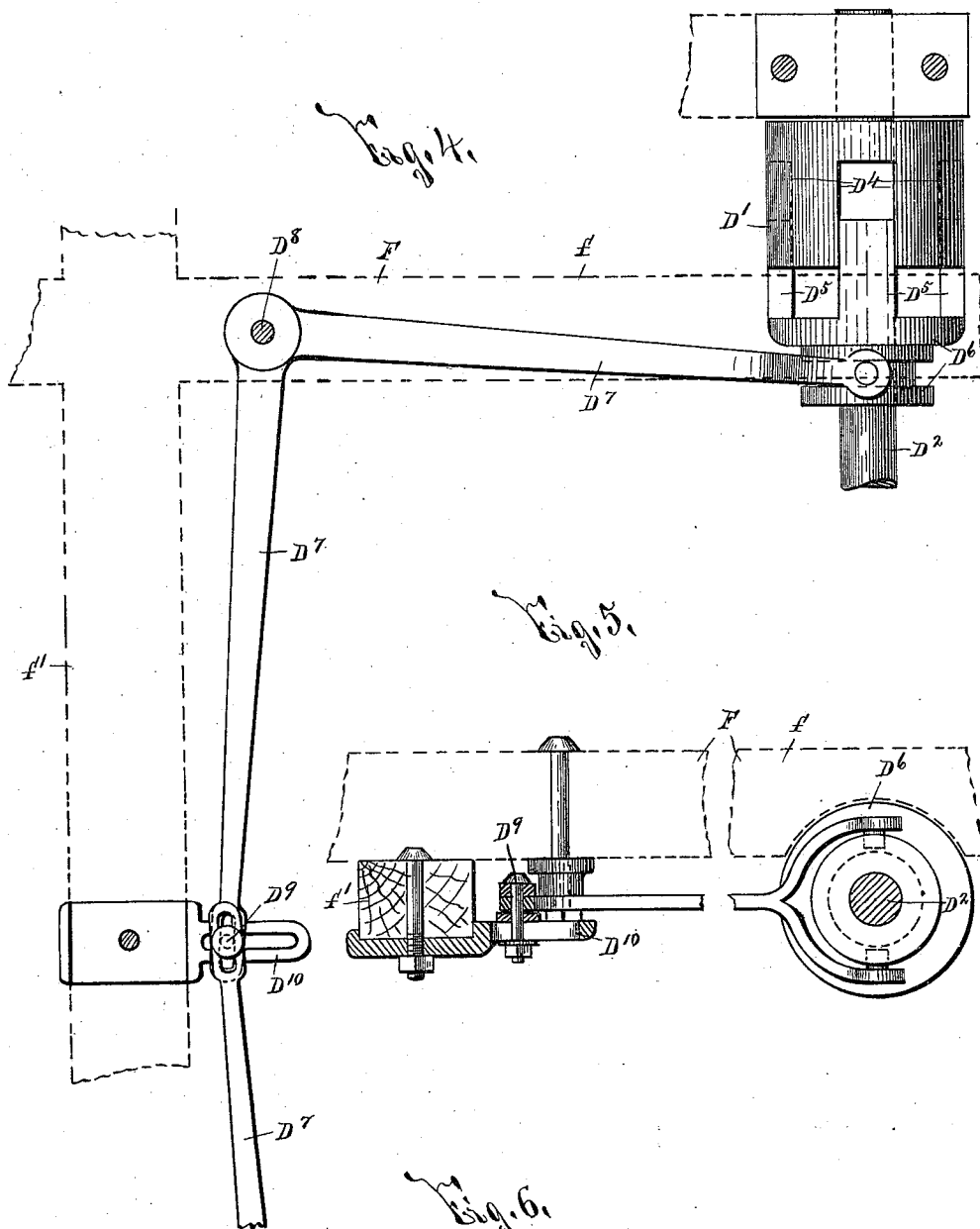
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M. D. BREEN & W. H. BRACE.
PLANTER.

No. 575,101.

Patented Jan. 12, 1897.



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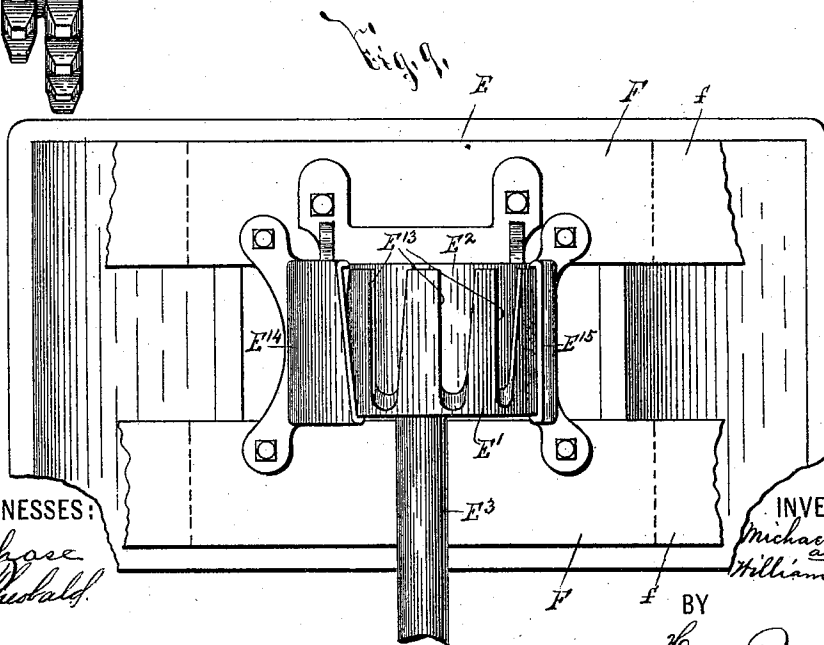
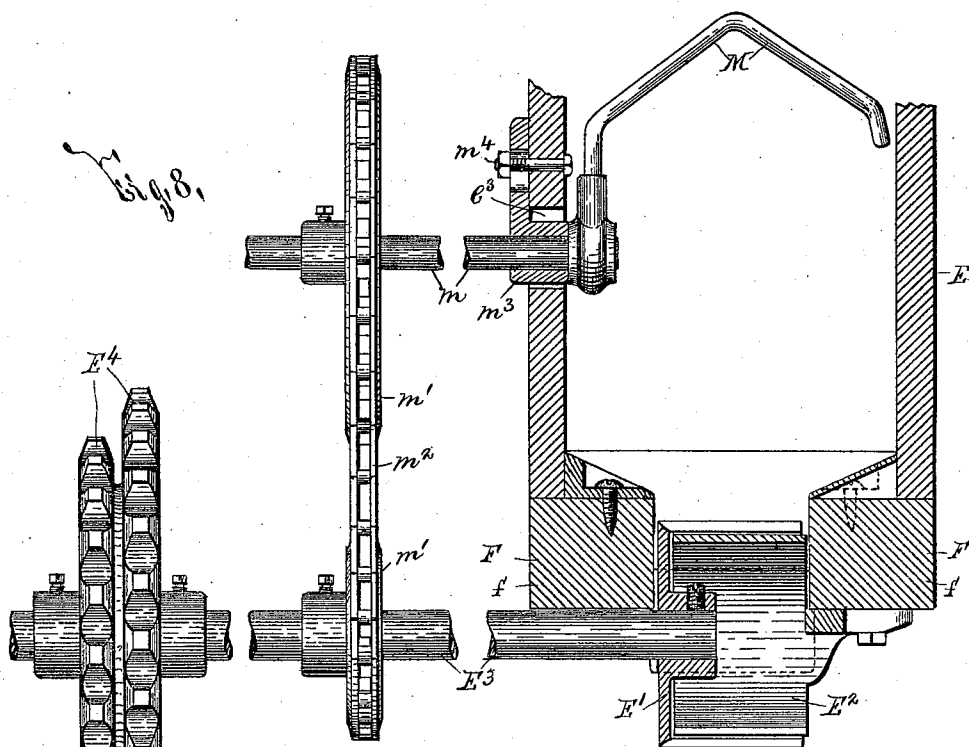
(No Model.)

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M. D. BREEN & W. H. BRACE.
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No. 575,101.

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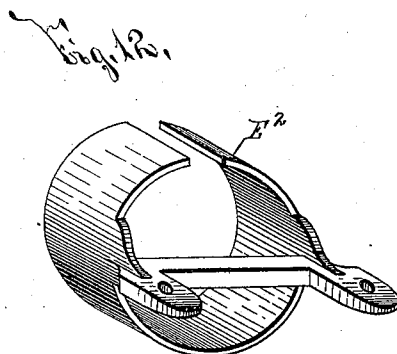
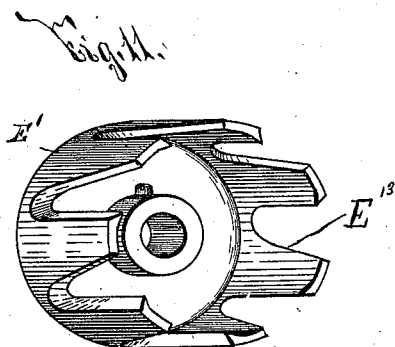
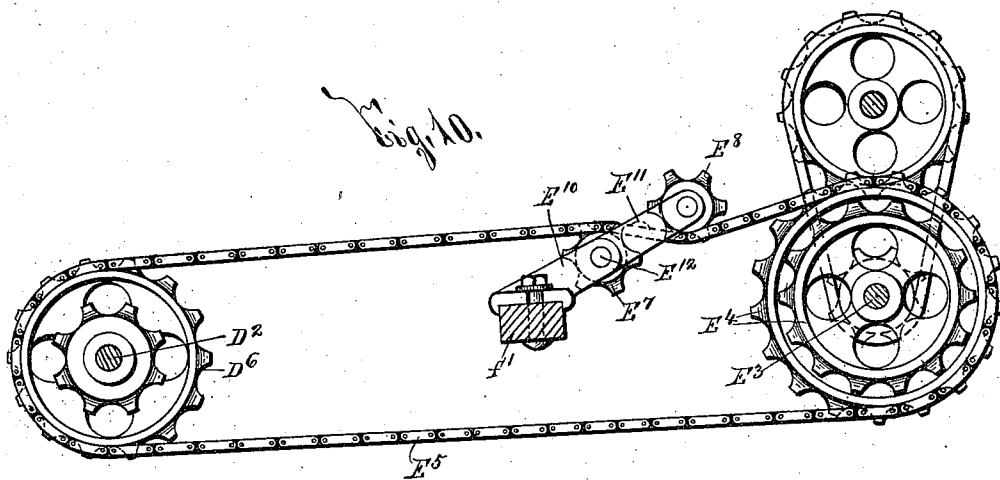
(No Model.)

6 Sheets—Sheet 6.

M. D. BREEN & W. H. BRACE.
PLANTER.

No. 575,101.

Patented Jan. 12, 1897.



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UNITED STATES PATENT OFFICE.

MICHAEL D. BREEN AND WILLIAM H. BRACE, OF AVON, NEW YORK; SAID
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PLANTER.

SPECIFICATION forming part of Letters Patent No. 575,101, dated January 12, 1897.

Application filed September 21, 1895. Serial No. 563,186. (No model.)

To all whom it may concern:

Be it known that we, MICHAEL D. BREEN and WILLIAM H. BRACE, of Avon, in the county of Livingston, in the State of New York, have invented new and useful Improvements in Planters, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to improvements in planters, particularly applicable for planting beans and similar seeds, and has for its object the production of a device which is highly effective and durable in operation; and to this end it consists, essentially, in the general construction and arrangement of the component parts of the planter, all as hereinafter fully described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figures 1 and 2 are respectively top plan and side elevations, partly in section, of our improved planter. Fig. 3 is a longitudinal vertical section taken on line 3 3, Fig. 1. Fig. 4 is a detail horizontal section taken on line 4 4, Fig. 3, the receptacle for the seed being removed and portions of the movable frame for supporting said receptacle being shown by dotted lines. Fig. 5 is an elevation, partly in section and partly broken away, of the parts illustrated at Fig. 4. Figs. 6 and 7 are detail sections taken, respectively, on lines 6 6 and 7 7, Figs. 3 and 2. Fig. 8 is a transverse detail section taken on line 8 8, Fig. 1, portions of the shafts connected to the agitator and feeding-head for the fertilizer being broken away. Fig. 9 is an inverted plan, partly broken away, of the detached chamber for receiving the fertilizer, the feeding-head, and the adjacent portion of the shaft for revolving said head. Fig. 10 is a section looking forwardly, taken on line 10 10, Fig. 1, the chain for driving the fertilizer-feeding heads being engaged with the toothed wheels of larger diameter; and Figs. 11 and 12 are isometric views of the detached feed-

ing-head for the fertilizer and the split ring around which said head is movable.

A is the main supporting-frame, which may be of suitable form, size, and construction, although it preferably consists of side bars a , front and rear cross-bars a^2 a^3 , a lengthwise top bar a^4 , and connecting-pieces a^5 a^6 for uniting the adjacent ends of the side and cross bars and securing the top bar to the intermediate portions of the cross-bars. A suitable pole or other draft device A' is secured to the top frame-bar a^4 , and wheels A^2 are arranged outside of the side bars a , and revolve on spindles A^3 , suitably secured to said side bars and projecting beyond their outer faces.

The frame A is provided with a seat B of any desirable construction, movable laterally toward and away from the opposite sides of the planter for permitting the driver to observe the track made by its previous passage, and thus maintain uniformity of separation of the furrows. To facilitate this movement of the seat B, a suitable clip-plate b , Fig. 2, is secured to its under face, and the top face of said clip-plate is formed with a groove b' , which receives a cross-bar B' , arranged above the top frame-bar a^4 , and having its opposite extremities supported by rearwardly-extending spring-standards B^2 , mounted on the side bars a .

The main supporting-frame A is also provided with suitable means for controlling the elevation of movable frames, presently described, for supporting seed-receptacles, and fertilizer-chambers, and teeth and shoes for forming and closing the furrows in which the seed is planted. This means may also be of any desirable form, size, and construction; but it preferably consists of a toothed segment C, fixed to the top frame-bar a^4 , a lever c , pivoted at c' to said segment and extending upwardly above the same, and a dog or stop c^2 , carried by the lever c and engaged with the teeth of the segment. The upper end of the lever c is provided with a hand-engaging portion c^3 , and its opposite end is formed with a rearwardly-extending arm c^4 , which is engaged with a chain connection J, presently described. The dog or stop c^2 is of any de-

sirable construction, and is usually actuated by a suitable spring c^5 and an operating-lever c^6 , connected to said dog by a link c^7 .

D D are the receptacles for receiving the
5 seed, E E the chambers for the fertilizer, and
F a movable frame for supporting said receptacles and chambers; and it is obvious that these parts D, E, and F may be of any suitable form, size, and construction. Each
10 receptacle D, Fig. 3, is preferably provided with a movable cover and an upwardly-flaring removable lower section d , formed with an outlet d' in its base for receiving a feeding-head D', presently described. The chambers
15 E are arranged in front of the chambers D, and each is preferably provided with a movable cover, an upwardly-flaring removable guide-section e , arranged at its lower end and formed with an outlet e' , a flexible discharge-chute e^2 , and a feeding-head E', presently described, movable in said outlet and the upper end of the discharge-chute.

The frame F preferably consists of longitudinal and cross bars $f f'$, and its forward
25 end is free to move vertically and is pivotally connected to the main supporting-frame A. To facilitate the desired connection of the frame F, the opposite ends of the front cross-bar f' are provided with laterally-adjustable
30 connecting-pieces f^2 , having the lower faces of their rear ends formed with grooves f^3 , Fig. 3, for receiving the adjacent portions of said bar f' . The opposite ends of the connecting-pieces f^2 are extended beyond the
35 front face of the bar f' , and are provided with transverse eyes f^4 for receiving suitable pivots f^5 , passed through apertures f^6 , arranged one above the other in depending arms f^7 , having their upper ends secured to the cross-bar a^2 and adjustable lengthwise thereof.

G is a tooth-carrying frame arranged above the movable frame F, and consisting, preferably, of longitudinal spring-bars g and cross-bars, presently described. The front ends
45 of the frame-bars g are pivotally connected to the front cross-bar f' of the frame F by connecting-pieces g' , which are adjustable laterally along said bar f' . The front ends of the connecting-pieces g' are formed with
50 grooves g^2 in their lower faces, Fig. 2, for receiving the adjacent portions of the bar f' , and their opposite ends project beyond the rear face of said bar f' , and are provided with transverse eyes g^3 for receiving pivotal bolts
55 g^4 , passed through transverse eyes in the front ends of the frame-bars g .

H H I I are digging-teeth and shoes for forming and closing furrows for the reception of the seed, and consequently said teeth and
60 shoes are arranged, respectively, between the outlets of the receptacles and chambers D E and at the rear of the chambers D. The teeth and shoes H I may be of any desirable form, size, and construction, but said teeth are preferably formed at their upper ends with rearwardly-inclined or curved laterally-extending
65 arms or fenders h , which arrange stones

and lumps at either side of the furrows produced by said teeth.

The shoes I are secured to suitable shanks, 70 which preferably consist of the downturned ends of the spring frame-bars g , and the teeth H are secured to independently vertically adjustable shanks h' , supported by cross-bars G' , having their opposite ends fixed to the
75 frame-bars g and their intermediate portions provided with upturned arms G^2 , formed with shoulders G^3 , extending lengthwise of the shanks h' and engaged with their side edges. The upper ends of the shanks h' are provided
80 with perforations arranged one above the other, and suitable bolts h^2 , Fig. 3, are passed through said perforations and the arms G^2 for securing said shanks in their adjusted position. The cross-bars G' are preferably
85 arranged above the tooth-carrying bars g , and their inner ends are usually extended beyond the inner bars g and are provided with foot-engaging portions G^7 for enabling the rider to force the tooth-carrying frame downwardly. 90

The tooth-carrying bars g are held apart by the cross-bars G' , and this result is also effected by an additional cross-bar arranged beneath the bars g and preferably consisting of upper and lower sections or divisions G^4 95 G^5 . The upper section G^4 of this additional cross-bar is of greater length than the lower section G^5 and is secured to the outer tooth-carrying bars g , and the intermediate portions of said sections G^4 G^5 are separated a
100 greater distance than their extremities for increasing the rigidity of said additional cross-bar. One end of a suitable chain connection J, capable of vertical adjustment, is secured to the rearwardly-extending arm c^4 of the lever c , previously described, and its opposite
105 end is secured to the cross-bar sections or divisions G^4 G^5 , and it will thus be obvious that as the lever c is rocked on its pivot the tooth-carrying frame is raised or lowered for
110 regulating the action of the teeth and shoes H I.

K K are suitable connections which connect the frames F G, and are preferably formed of sufficient length to permit a considerable
115 vertical elevation of the teeth and shoes H I before the frame F is elevated. The lower ends of the connections K are secured to the rear cross-bar f' , and their opposite ends are adjustably connected to the forwardly-extending ends of engaging arms k , having their
120 rear ends arranged in sockets G^6 , Figs. 1 and 3, formed in the upper faces of the short cross-bars G' . To one skilled in the art it will be evident that by the vertical adjustment of the
125 front end of the frame F and the vertical adjustment of the digging-teeth H and the rear ends of the frames F G the depth of the furrows and the amount of earth placed above the seed may be regulated at will. 130

The feeding-heads D', previously mentioned, are mounted upon a shaft D², which is provided with a central driving-wheel D³, engaged with the earth and frictionally

driven by contact therewith as the planter traverses the field. The outer peripheral face of each head is preferably provided with transverse slots D^1 , Fig. 4, for receiving the seed, and slides or arms D^5 are movable in said slots for varying their capacity and regulating the feed of the seed. The slides or arms D^5 are preferably secured to adjusting heads or collars D^6 , which are moved lengthwise of the shaft D^2 by any suitable means, as levers D^7 , pivoted at D^8 to the frame F . The levers D^7 are provided with rearwardly-extending arms loosely connected to the heads or collars D^6 and laterally-extending front arms having their adjacent ends overlapped and adjustably secured by a bolt D^9 to a stationary supporting-arm D^{10} . The front end of the arm D^{10} is secured to the rear cross-bar f' of the frame F , and its rear end is provided with a lengthwise slot in which the bolt D^9 is movable, and the overlapped ends of the front arms of the levers D^7 are provided with lengthwise slots for receiving said bolt. By adjusting the overlapped ends of the levers D^7 the feed of both heads D^1 may be simultaneously regulated as desired.

The heads D^1 form a particularly effective means of feeding the seed, but in order to prevent injury to the seed we preferably arrange a brush d^2 , Fig. 3, within each chamber D , so that its lower end bears against the upper front portion of the peripheral face of the adjacent head D^1 and the adjacent portion of the lower section d . The upper end of said brush is mounted in a socket d^3 , formed in the lower end of a brush-holder d^4 , having its upper end provided with a lengthwise slot d^5 for receiving a bolt d^6 , which projects from the inner face of the front wall of the corresponding receptacle D and adjustably secures the brush-holder in position.

The heads E^1 for feeding the fertilizer from the chambers E into the flexible discharge-chutes e^2 encircle stationary split rings E^2 and are revolved by a shaft E^3 , which is provided with toothed wheels E^4 , Figs. 1 and 10. A suitable chain E^5 may be passed over either of the wheels E^4 and corresponding toothed wheels D^6 upon the shaft D^2 , and the necessary adjustment of the chain E^5 is effected by idlers E^7 , E^8 , Fig. 10, arranged, respectively, beneath and above the upper portion of the chain E^5 . The idler E^7 is journaled in a support or arm E^{10} , fixed to the rear frame-bar f' , and the idler E^8 is journaled in the upper end of a movable support or arm E^{11} , adjustably secured to the upper end of the support E^{10} by a suitable bolt E^{12} .

Each head E^1 is provided with transverse slots or apertures E^{13} for receiving the fertilizer, and suitable guard or cap pieces E^{14} , Figs. 3 and 9, partially encircle or cover the lower portion of said heads for preventing undue discharge of the fertilizer. As best seen at Fig. 9, the lower end edge of the front cap-piece E^{14} is arranged at an angle with the side edges of the slots or apertures

E^{13} for effecting gradual discharge of the fertilizer. A suitable agitator M , Fig. 8, is movable in each of the chambers E , and is supported upon the adjacent end of a shaft m , connected by toothed wheels m' and a chain m^2 to the shaft E^3 . The opposite ends of the shaft m are passed through elongated apertures e^3 in the adjacent walls of the chambers E , and are supported by vertically-adjustable brackets m^3 , provided with projecting arms secured by bolts m^4 to said walls of the receptacles E .

The operation of this invention will be readily understood upon reference to the foregoing description and the accompanying drawings, and it will be particularly noted that the feed of the seed and fertilizer is positive and effective; that any desired adjustment of the depth of the furrows and the amount of covering for the seed may be effected, and that the planter is highly effective and durable in operation. It is obvious, however, that the exact detail construction and arrangement of the parts of our planter may be considerably varied without departing from the spirit of this invention, and consequently we do not herein specifically limit ourselves to such exact detail construction and arrangement.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a planter, the combination of a receptacle for the seed to be planted, a frame for supporting the receptacle, a movable frame secured to the former frame, a shoe secured to the movable frame for covering the seed, a digging-tooth secured to the movable frame for forming a furrow for the reception of the seed, said tooth being adjustable vertically on the movable frame and independently of the shoe, substantially as and for the purpose set forth.

2. In a planter, the combination of a receptacle for the seed to be planted, a bar having a downturned end provided with a shoe for covering the seed, a cross-bar secured to the former bar above the shoe, and a digging-tooth arranged at one side of the shoe and having its shank secured to the cross-bar and adjustable transversely thereof, substantially as and for the purpose described.

3. In a planter, the combination of a receptacle for the seed to be planted, a pair of spring-bars having downturned ends provided with shoes for covering the seed, a cross-bar arranged above the shoes and having its opposite ends secured to the former bars and its intermediate portion provided with an upwardly-extending arm formed with lengthwise engaging shoulders, a digging-tooth interposed between the shoes and having its shank provided with a series of perforations arranged one above the other, said shank being engaged with the shoulders and movable lengthwise thereof, and a bolt for securing the shank of the digging-tooth to the up-

wardly-projecting arm of the cross-bar, substantially as described.

4. In a planter, the combination of a main supporting-frame provided with a laterally-movable seat, a pair of tooth-carrying bars arranged at one side of the seat and having their front extremities pivotally connected to the frame, and a cross-bar fixed to the former bars for holding the same apart said cross-bar having its end nearest the seat extending beyond the adjacent tooth-carrying bar and provided with a foot-engaging portion, substantially as and for the purpose specified.

5. In a planter, the combination of a receptacle for the seed to be planted, a movable frame for supporting the receptacle, a pair of movable tooth-carrying bars, a cross-bar fixed to the former bars for holding the same apart, said cross-bar being provided with a socket and a foot-engaging portion, an engaging arm having one end removably fixed in the socket, and a lifting-chain between the movable frame and the free end of said arm, substantially as and for the purpose described.

6. In a planter, the combination of a main supporting-frame provided with a seat, tooth-carrying bars arranged in pairs on opposite sides of the seat and having their front extremities pivotally connected to the frame, a cross-bar for connecting the pairs of tooth-carrying bars said cross-bar consisting of separate sections or divisions arranged one above the other and having their central portions separated from each other a greater distance than their extremities, a lever carried by the frame for elevating the tooth-carrying bars, and a chain connection between the central portion of the cross-bar and said lever, substantially as and for the purpose set forth.

7. In a planter, the combination of a main supporting-frame provided with a seat, a receptacle for the seed to be planted, a second frame for supporting the receptacle pivotally connected to the former frame, tooth-carrying bars arranged in pairs above the second frame on opposite sides of the seat, and having their front extremities pivotally connected to the supporting-frame and their rear extremities provided with teeth normally arranged beneath the second frame, cross-bars arranged upon the top faces of the tooth-carrying bars said cross-bars having their adjacent ends extended beyond the inner tooth-carrying bars, a cross-bar arranged beneath the tooth-carrying bars and consisting of upper and lower sections or divisions having their central portions separated from each other a greater distance than their extremities and the ends of the upper division or section extended beyond the ends of the lower section or division and secured to the outer tooth-carrying bars, thereby connecting all the tooth-carrying bars engaging arms having corresponding ends secured to the central portions of the upper cross-bars, connections between the second frame and the opposite ends of the engaging arms, a lever carried by the

supporting-frame for elevating the tooth-carrying bars, and a chain connection between the central portion of the lower cross-bar and said lever, substantially as and for the purpose described.

8. In a planter, the combination of a main supporting-frame provided with a seat, pairs of tooth-carrying bars arranged on opposite sides of the seat and having their front extremities pivotally connected to the frame, a cross-bar for connecting the pairs of tooth-carrying bars said cross-bar consisting of separate sections or divisions arranged one above the other and having their central portions separated from each other a greater distance than their extremities, a lever for elevating the tooth-carrying bars pivoted to the frame and extending upwardly therefrom and having one end provided with an engaging portion and its opposite end extended rearwardly, a chain connection between the central portion of the cross-bar and said lever, a stationary segment fixed to the frame, and a movable dog or stop carried by the lever for engaging the segment, substantially as and for the purpose specified.

9. In a planter, the combination of a main supporting-frame, a receptacle for the seed to be planted, a movable frame for supporting said receptacle, and a connecting-piece having one end fixed to the movable frame and adjustable laterally thereon and its opposite end vertically adjustable on and pivoted to the main frame, substantially as set forth.

10. In a planter, the combination of a main supporting-frame, a depending arm attached at one end to the said frame and laterally adjustable thereon, the said arm provided with holes or perforations arranged longitudinally thereof, a receptacle for the seed to be planted, a movable frame for supporting said receptacle, and a connecting-piece having one end attached to the movable frame and adjustable laterally thereon and the other end pivotally connected to the depending arm and vertically adjustable thereon, substantially as described.

11. In a planter, the combination of a main supporting-frame, a receptacle for the seed to be planted, a movable frame for supporting said receptacle, a connecting-piece having one end fixed to the movable frame and its opposite end movable vertically and pivoted to the main supporting-frame, and a tooth-carrying frame arranged above the movable frame and having its front extremity pivoted thereto and its opposite extremity provided with teeth arranged beneath the second frame, substantially as specified.

12. In a planter, the combination of a main supporting-frame provided with a cross-bar, a depending arm provided with a series of perforations arranged one above the other and having its upper end secured to the cross-bar and movable lengthwise thereof, a receptacle for the seed to be planted, a movable frame for supporting the receptacle provided with

a cross-bar, a laterally-adjustable connecting-piece having its rear end provided with a groove in its lower face for receiving the second cross-bar and its front end extended beyond said cross-bar and provided with a transverse eye, a pivot passed through the eye and one of the perforations of the depending arm, a second laterally-adjustable connecting-piece having its front end provided with a groove in its lower face for receiving the second cross-bar and its rear end extended beyond said cross-bar and provided with a transverse eye, and a tooth-carrying frame arranged above the movable frame and having its front extremity pivoted to the transverse eye of the second connecting-piece and its opposite extremity provided with teeth arranged beneath the movable frame, substantially as described.

13. In a planter, the combination of a main supporting-frame provided with wheels, yielding standards projecting above and to the rear of the main frame and a transversely-extending supporting-bar mounted on the standards; with a seat movable lengthwise of said bar, substantially as set forth.

14. In a planter, the combination with opposite receptacles for the seed, a shaft provided with rotary seed-feeding heads movable in the receptacles and formed with transverse

grooves in their peripheral faces for receiving the seed, and adjusting heads or collars movable lengthwise on the shaft and provided with slides or arms movable in the grooves for regulating the feed of the heads; of a frame for supporting the receptacles provided with a supporting-arm, levers pivoted to the frame and having corresponding ends secured to the adjusting heads or collars, and their opposite ends adjustably secured to said arm, substantially as described.

15. In a planter, the combination of a receptacle for the seed provided with an outlet, and a vertically-adjustable digging-tooth for forming a furrow to receive the seed separated therefrom and having its upper end provided with rearwardly-inclined laterally-extending arms or fenders, substantially as and for the purpose described.

In testimony whereof we have hereunto signed our names, in the presence of two attesting witnesses, at Avon, in the county of Livingston, in the State of New York, this 22d day of August, 1895.

MICHAEL D. BREEN.
WILLIAM H. BRACE.

Witnesses:

J. F. KELLOGG,
E. C. HAWLEY.