No. 780,647. PATENTED JAN. 24, 1905.

A. A. FINNEY.

RIDING PLANTER.

APPLICATION FILED SEPT. 17, 1903.

5 SHEETS—SHEET 1.

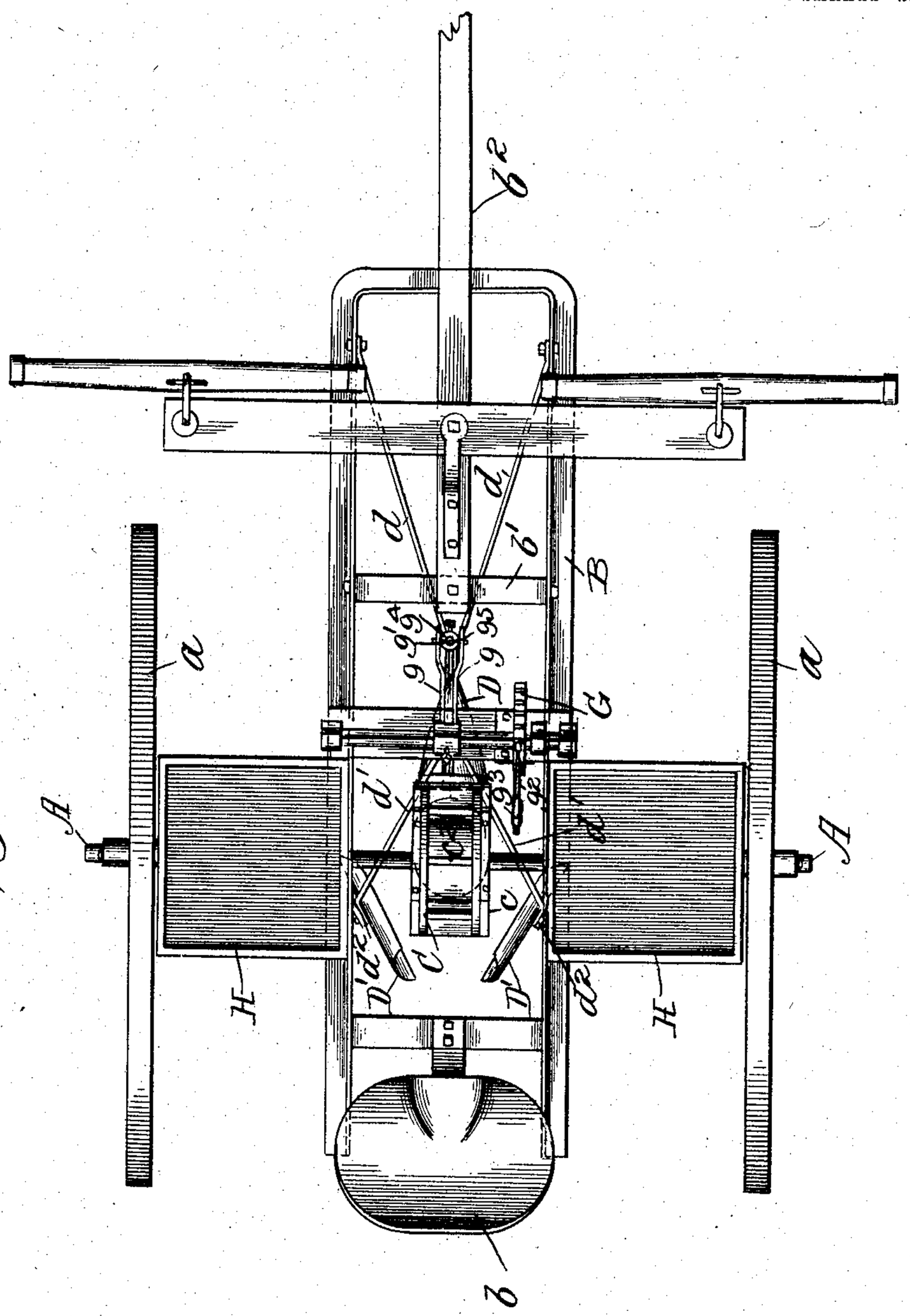

Fig. 1.

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5 SHEETS—SHEET 2.

Fig. 2.

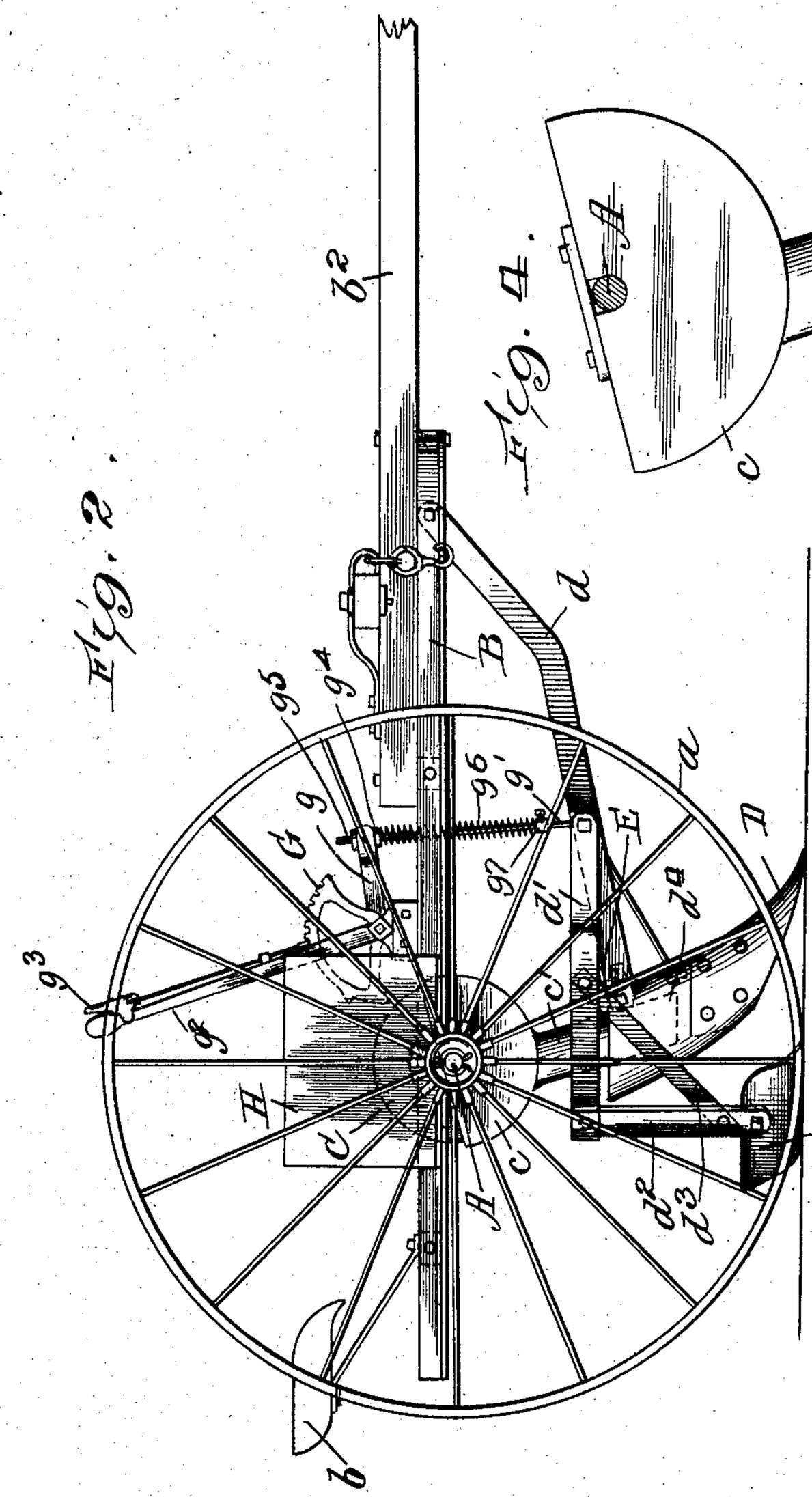
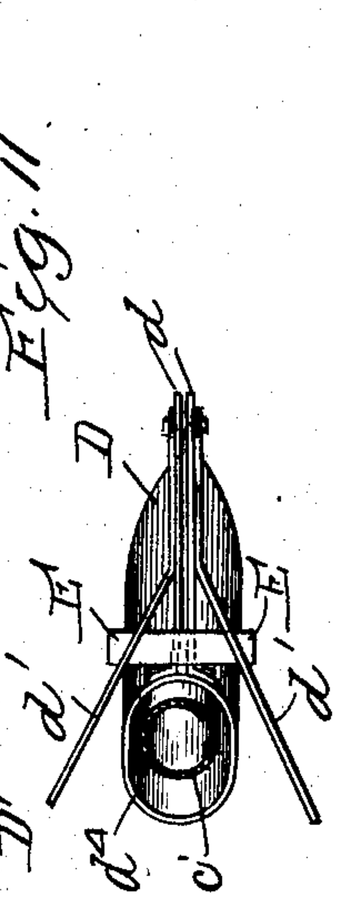


Fig. 4.

Fig. 11.



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5 SHEETS—SHEET 3.

Fig. 3.

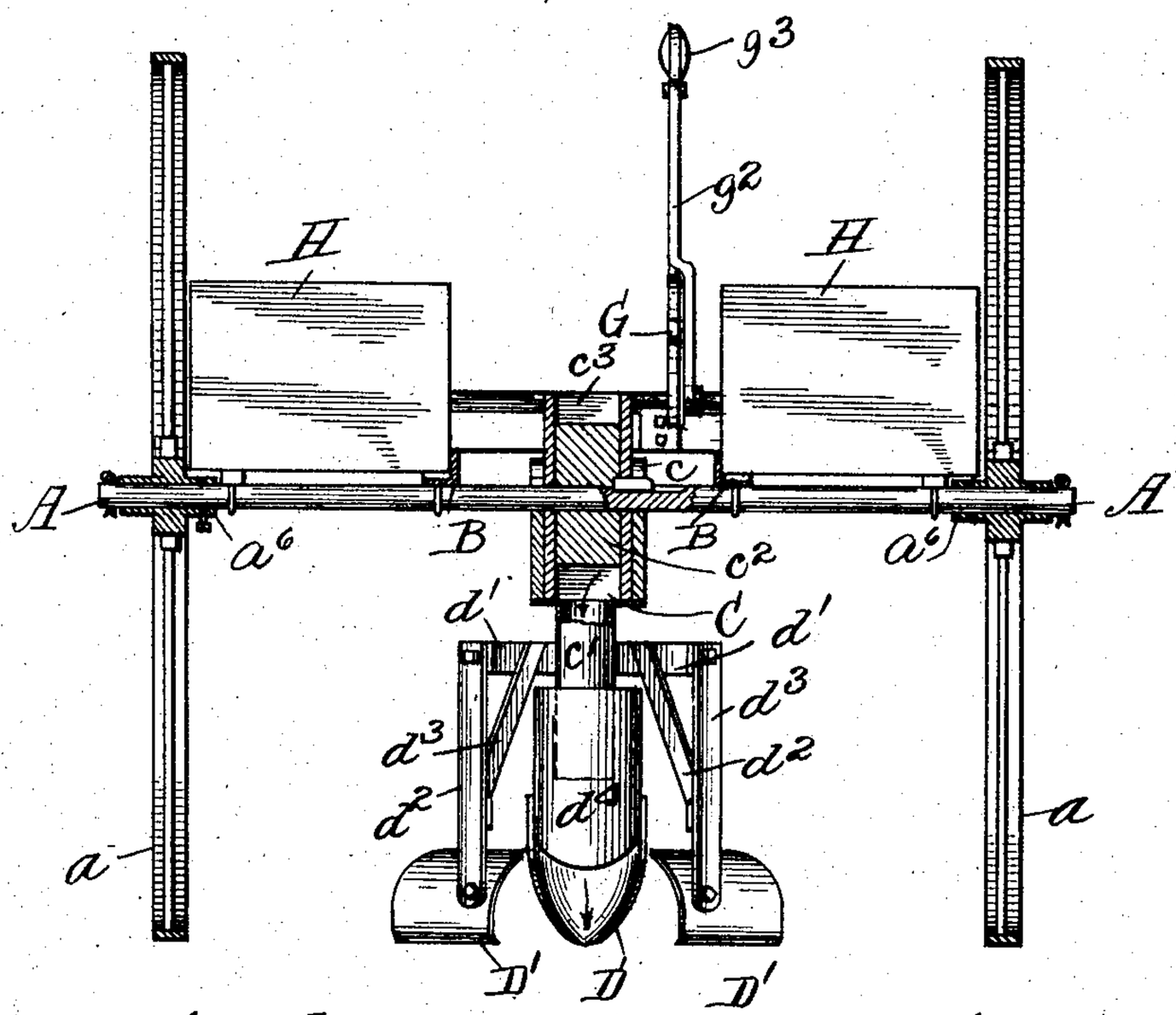


Fig. 5.

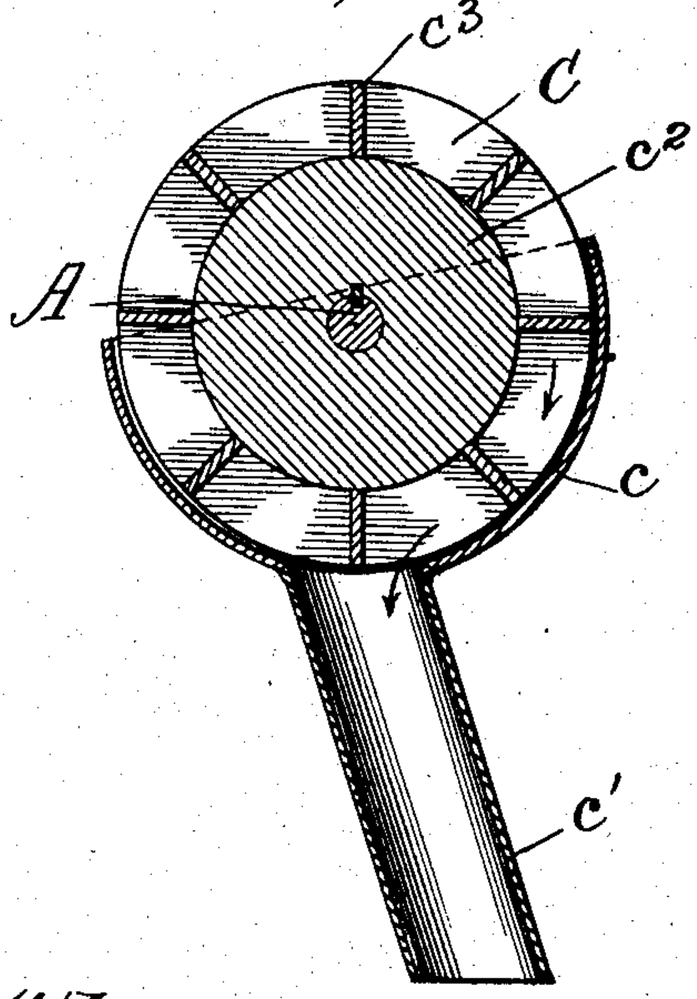
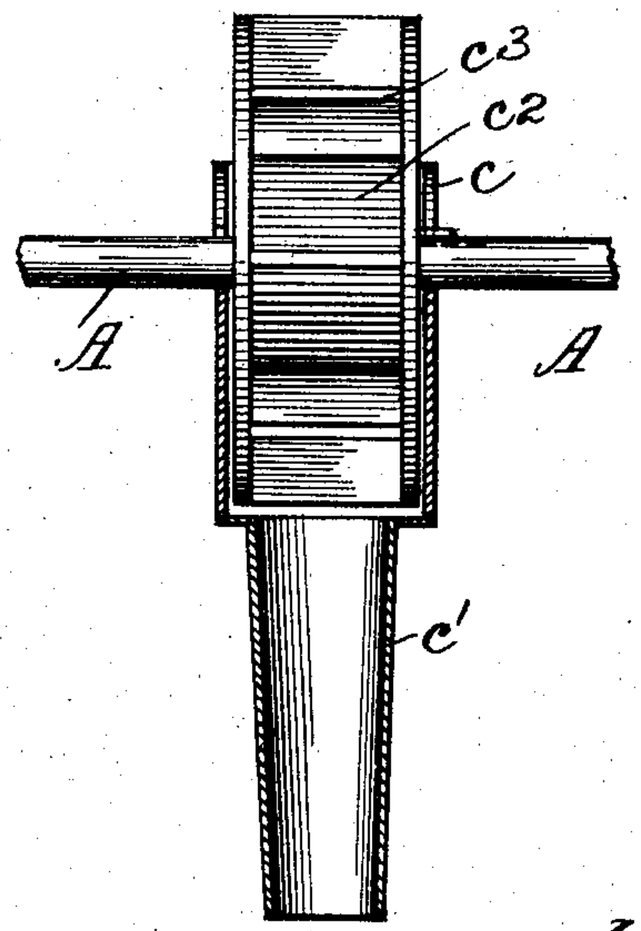


Fig. 6.



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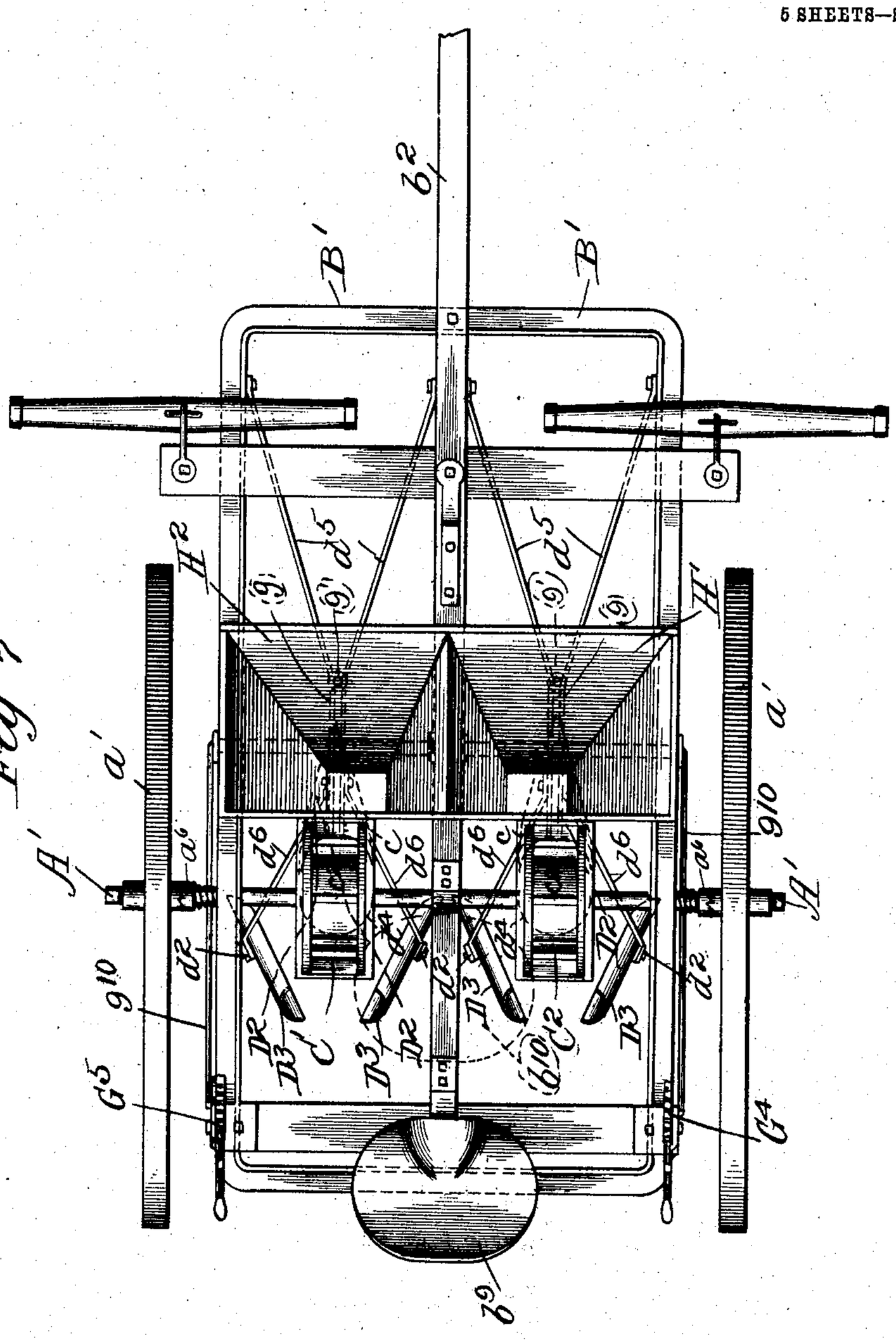
5 SHEETS—SHEET 4.

Fig 7



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RIDING PLANTER.

APPLICATION FILED SEPT. 17, 1903.

5 SHEETS—SHEET 5.

Fig. 8.

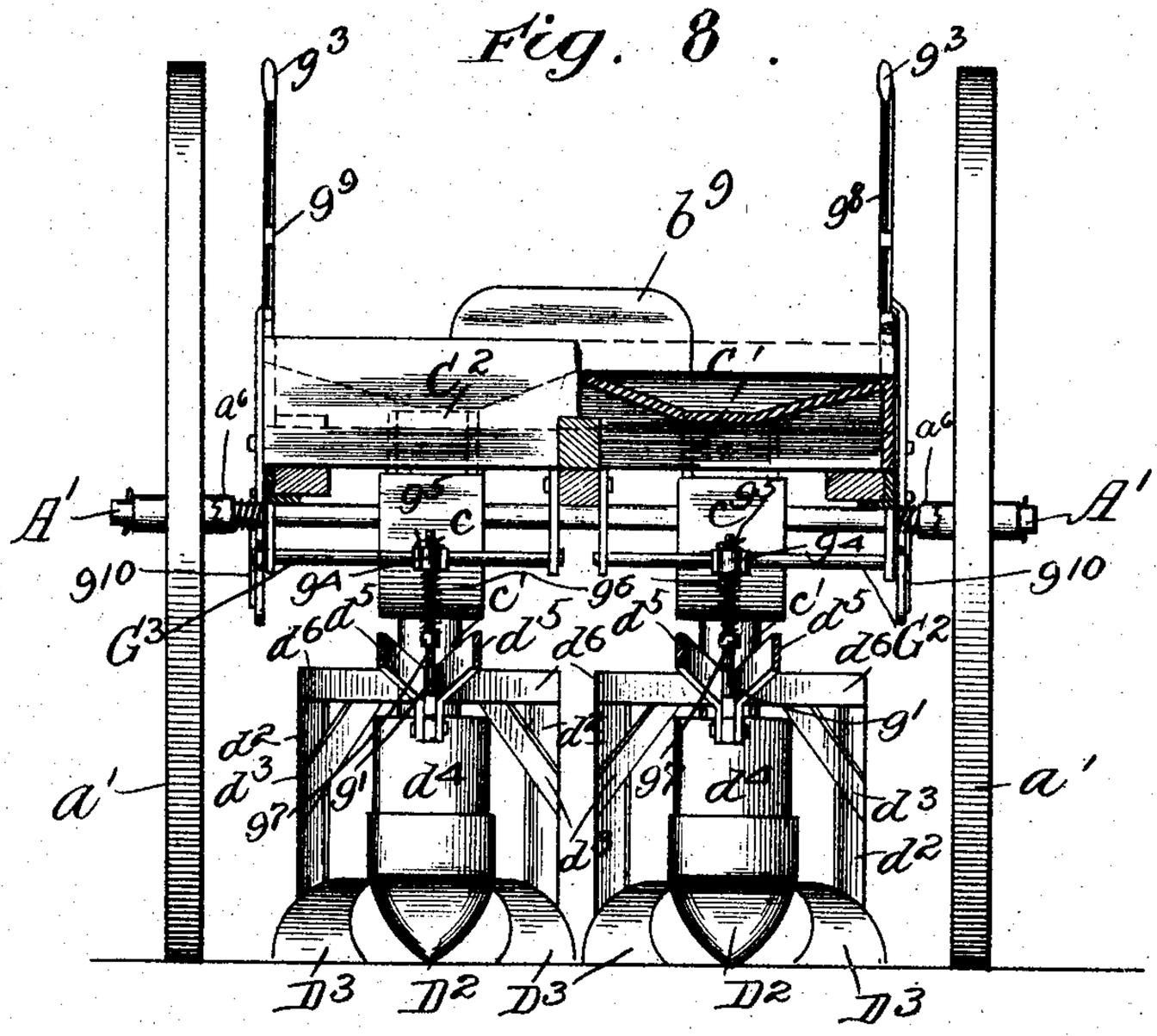


Fig. 9.

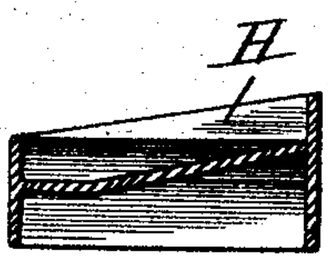
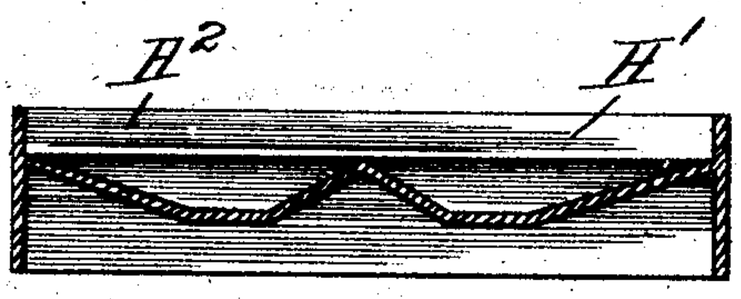


Fig. 10.



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No. 780,647. Patented January 24, 1905.

UNITED STATES PATENT OFFICE.

ARTHUR A. FINNEY, OF VALPARAISO, INDIANA.

RIDING-PLANTER.

SPECIFICATION forming part of Letters Patent No. 780,647, dated January 24, 1905.

Application filed September 17, 1903. Serial No. 173,555.

To all whom it may concern:

Be it known that I, ARTHUR A. FINNEY, a citizen of the United States, and a resident of Valparaiso, county of Porter, and State of Indiana, have invented certain new and useful Improvements in Riding-Planters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to riding-planters, and more particularly to a riding potato-planter.

Heretofore potato-planters have been so devised as to drop cuttings automatically by means of self-feeding devices; but owing to the irregularity of the size and shape of the cuttings or potatoes there is a great tendency for them to clog in the feeding mechanism, and it has been difficult to insure an even distribution of the seed.

The object of this invention is to provide a construction by means of which one or more rows of potatoes may be planted simultaneously and with such regularity as to insure the best and most desirable results in each hill.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a top plan view of a device embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical transverse section taken at the rear of the axle. Fig. 4 is a side elevation of the hopper. Fig. 5 is a vertical longitudinal section thereof, showing the dropping-wheel in section. Fig. 6 is a vertical transverse section of the same. Fig. 7 is a top plan view of a machine embodying my invention, constructed to drop two rows simultaneously. Fig. 8 is a vertical transverse section. Fig. 9 is a longitudinal section of one of the seed-boxes. Fig. 10 is a transverse section taken through both seedboxes. Fig. 11 is a detail view of one method of supporting the side shovels.

As shown in said drawings, referring first to the machine constructed to plant but a single row at a time, A indicates a rotative axle on which are secured the driving-wheels *a a*, which may be either rigidly secured to the axle or by means of clutches a^6 in a familiar manner and which permit the machine to be more readily turned at the ends of the furrows. Supported upon the axle A is the frame B of structural metal, such as angle-iron or steel or other suitable material, and which carries a part of the operative mechanism of the machine and also affords a support for the driver's seat *b*.

Rigidly secured on the axle A is a dropping-wheel C, and also supported on the axle and incasing the lower half of said dropping-wheel is a hopper *c*, which fits closely thereto and is provided on its under side with a downwardly-extending boot *c'*, through which the cuttings or seeds fall to the ground in position to be covered. Said dropping-wheel, as shown, comprises a central drum or core c^2, on which are rigidly secured equally-spaced radial blades c^3, directed transversely of the machine and affording seed-pockets which in number correspond with the distance apart it is desired to make the hills. Inasmuch as said dropping-wheel C revolves once with each revolution of the supporting-wheels *a*, the distance between hills is readily determined by the number of said pockets in the dropping-wheel, and it is evident that the greater the number of said pockets the closer the hills will be together.

Supported on the front end of the frame B and rigidly secured thereto is a draft-tongue b^2, which extends forwardly and is secured at its rear end on the transverse frame member *b'* and affords means for attaching draft-animals thereto. Pivoted also on the front end of said frame are drag-bars *d*, which extend rearwardly and at their rear end are rigidly secured to a single shovel-plow D, which acts to open the hill and is provided, as shown, with a tubular extension d^4, of sheet metal or other suitable material, which partly surrounds the spout or boot *c'* of the seed-hopper. The elevation of the rear end of said drag-bars acts to lift the plow D out of operative position. Intermediate the ends of said

drag-bars d are pivotally secured two drag-bars d', which extend rearwardly beyond the plow and on each side of the same and carry at their ends the covering-shovels D', which, as shown, are concave and converge at their rear ends into the path of the plow D and act to turn or draw the dirt back into the furrow, covering the dropped cuttings. Said shovels D' are connected with the rear ends of said drag-bars d' by means of the downwardly-extending bars d^2, rigidly bolted to said drag-bars and to said shovels, and also a diagonal brace d^3 is rigidly bolted to the bar d^2 and drag-bar d'. It will be seen that inasmuch as the drag-bars d', carrying said covering-shovels D', are pivoted at their front ends on the drag-bars d, carrying the plow D, the adjustment of the plow to a required depth acts also to adjust said shovels, and the lifting of the plow out of the furrow also lifts said shovels out of action, for the reason that both ends of the bolts connecting the plow D with said drag-bars d project laterally a sufficient distance to engage beneath the drag-bars d', or, if preferred, as shown in Fig. 11, an arm E may be secured on one or both of the drag-bars d in position to engage beneath the drag-bars d' when the plow is lifted, carrying the shovels upwardly therewith. Means are provided for lifting said plow, comprising a bell-crank lever pivoted on a frame, one arm, g, of which extends forwardly and is connected, by means of the rod g', with the drag-bars d at the point where drag-bars d' are pivoted thereon. The other end, g^2, of said bell-crank lever comprises an operating-handle and is provided with a spring-controlled detent g^3 in the usual manner, which engages in a notched segment G and acts to hold said bell-crank lever in any adjusted position either to support the plows in elevated position or in operative position. It is desirable to hold said plow yieldingly in operative position, and for this purpose a collar g^4 is pivoted at the end of the arm g of the bell-crank and the rod g' is permitted to slide freely upwardly therethrough, but is held from downward movement by a cotter-pin g^5, passed through the top of the rod. A spring g^6, carried on said rod, bears at its lower end against a set-collar g^7 and at its upper end bears against the collar g^4. This permits the plows and shovels to rise readily over obstructions by compressing the spring, which acts immediately to return the same to operative position.

Supported on the axle A and the frame B on each side of the dropping-wheel are boxes H, adapted to carry the cuttings or seed-potatoes and which are in convenient position for the operator to drop the same manually into the pockets of the dropping-wheel. Obviously, if preferred, said boxes may be of any desired form or size and may, if preferred, extend across said frame, as shown in Figs. 7 and 8, in which a machine is shown adapted to plant two rows simultaneously and which in this instance is constructed as before described, with the exception that the axle A' is made sufficiently longer to permit the frame B' to be made approximately double the width of the frame B, and two dropping-wheels C' C^2, with the hoppers c therefor, are secured in said frame intermediate the supporting-wheels a'. Said dropping-wheels and hoppers are constructed as before described, and in advance of the spout of each hopper a furrow-opening plow D^2 is supported on drag-bars d^5, two of which are provided on each side of the frame and from each pair of which extend the rearwardly-directed drag-bars d^6, which support the covering-shovels D^3, similar to those which support the shovels D', and adapted to be lifted with the plows, as before described. Means are provided for lifting said plows and shovels and for adjusting the same in operative position, comprising bell-crank levers G^2 G^3, journaled on the frame in advance of the plows, one end of each of which, g, extends forwardly, as shown in dotted lines in Fig. 7, and is connected, by means of the rod g', with the drag-bars d^5 d^6 at their point of connection with the drag-bars d^6 in the manner before described with reference to Figs. 1 and 3. The other end of said bell-crank lever extends upwardly and is connected, by means of the rod g^{10}, with the respective levers g^8 g^9, similar to the lever g^2, and each provided with a detent adapted to engage in the notched segment G^4 and G^5, positioned at the rear end of the frame adjacent the seat b^9 for the operator.

Extending across the frame immediately in advance of the dropping-wheels are the boxes H' and H^2, each of which is provided with a hopper-bottom, the bottom part of which is immediately in advance of the wheel to be fed therefrom. The rear side of said boxes are cut away slightly to enable the dropper to more readily lift the pieces therefrom and to facilitate rapid work by the dropper, who rides upon a seat (shown in dotted lines in Fig. 7) between the driver and the dropping-wheels.

The operation is as follows: Referring first to the machine designed to plant but a single row at a time, the driver or operator as the machine moves along drops the cuttings from either box into the pockets of the feed-wheel, from which they are delivered through the chute at the bottom of the hopper to a point immediately behind the plow and are covered to a requisite depth by the covering-shovels following. In the double machine it is desirable to have in addition to the driver a dropper who occupies the seat shown in dotted lines in Fig. 7 and feeds the dropping-wheels with both hands, dropping the pieces

from the boxes thereinto as rapidly as desired or necessary, the contents of the boxes constantly sliding down into convenient position owing to the inclination of the sides of said boxes, which may be of course made of any desired size sufficient to carry the necessary amount of cuttings to plant the rows. It is obviously possible to carry a large quantity of the cuttings in a machine so constructed, owing to the fact that the weight of the two operators having a counterbalancing effect on the rear end of the same.

While I have shown my invention in both forms as adapted to permit the pieces of cuttings to be dropped manually, it is obvious that any mechanical dropper may be substituted to deliver the cuttings or seeds in the required amount in each of the pockets of the dropping-wheel, and many details of construction may be varied without departing from the principles of this invention.

I claim as my invention—

1. In a riding-planter, the combination with a rotative axle of a dropping-wheel rigidly secured thereon and rotative therewith and provided in its periphery with pockets, opening means and covering means carried at the front and at the rear respectively of the dropping-wheel and acting to open and to cover the furrow, means adapted to simultaneously adjust the opening and covering means and a seed-box located adjacent to the dropping-wheel, in position for the operator to deliver the seed normally to the dropping-wheel.

2. The combination with supporting-wheels and a rotative axle driven thereby, of a frame carried thereon, a seat for the operator on the frame, a vertically-adjustable plow pivotally supported on the frame, covering-shovels pivotally connected therewith, a rotative dropping-wheel rigidly engaged on the axle and provided with a plurality of equal peripheral pockets adapted to each receive seeds and to drop their contents into the furrow between the plow and the covering-shovels, means adapted to simultaneously adjust the plow and covering-shovel and a seed-receptacle carried on the frame adjacent to the dropping-wheel and in position for the operator to deliver the contents thereof in any desired quantity into the pockets.

3. The combination with supporting-wheels and a rotative axis driven thereby, of a frame carried thereon, a vertically-adjustable plow pivotally supported on the frame, covering-shovels pivotally connected with the plow and converging at the rear thereof, means carried on the plow adapted to elevate the shovels therewith, a vertically-rotative dropping-wheel carried on the axle, and provided with a plurality of equal peripheral pockets adapted to each receive seed and to drop their contents into the furrow between the plow and the covering-shovels a bell-crank lever pivoted on the frame, a rod slidingly engaged therein and engaged on the plow, means thereon adapted to normally hold the plow in its lowermost position and a seed-receptacle carried on the frame adjacent to the dropping-wheel.

4. The combination with supporting-wheels of a rotative axle therein, a drum rigidly engaged on said axle, a plurality of radial partitions therein forming peripheral pockets, a boot descending from the axle and partly inclosing said drum, a frame carried on the axle, drag-bars pivoted at their forward ends on said frame, an opening-shovel at the rear end of said drag-bars, drag-bars pivoted centrally of the aforesaid drag-bars, covering-shovels thereon, a bell-crank lever pivoted on the frame, a rod slidably engaged therein and engaged on said drag-bars at their connecting-point, a spring carried on said rod normally acting to hold said drag-bars in operating position and means on the first-mentioned drag-bars adapted to engage beneath the drag-bars on the covering-shovels and raise said shovels therewith.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

ARTHUR A. FINNEY.

Witnesses:
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A. L. COLLINS.