

W. I. HALL.
 ROTARY CULTIVATOR.
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983,893.

Patented Feb. 14, 1911.

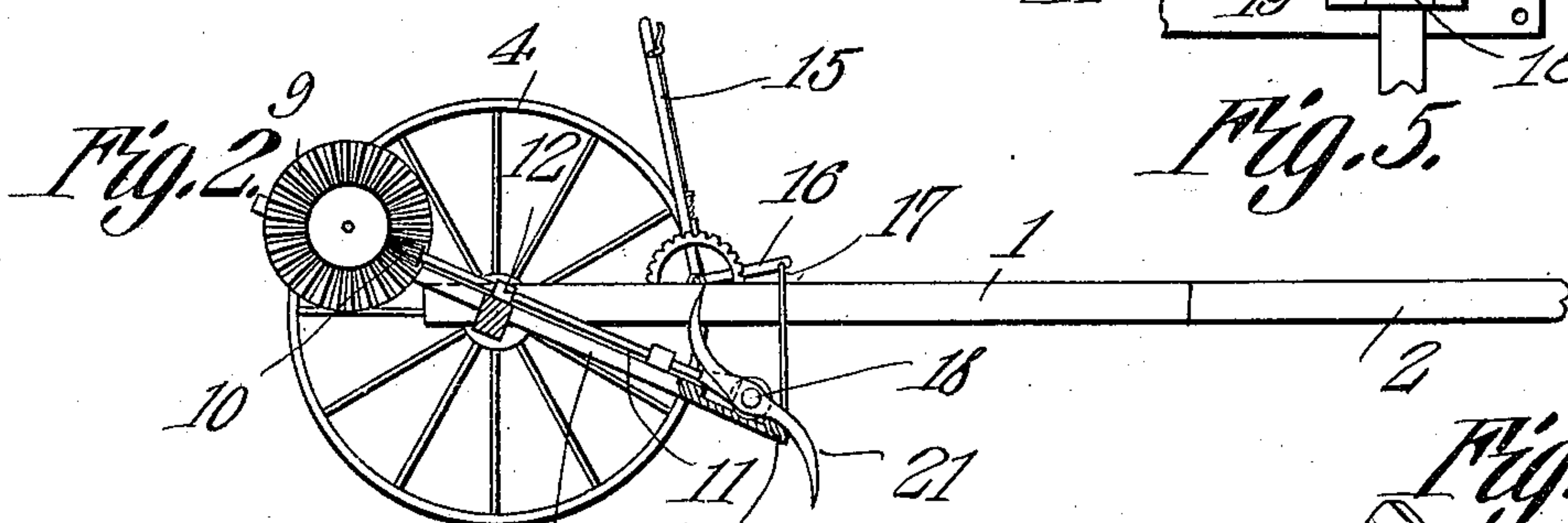
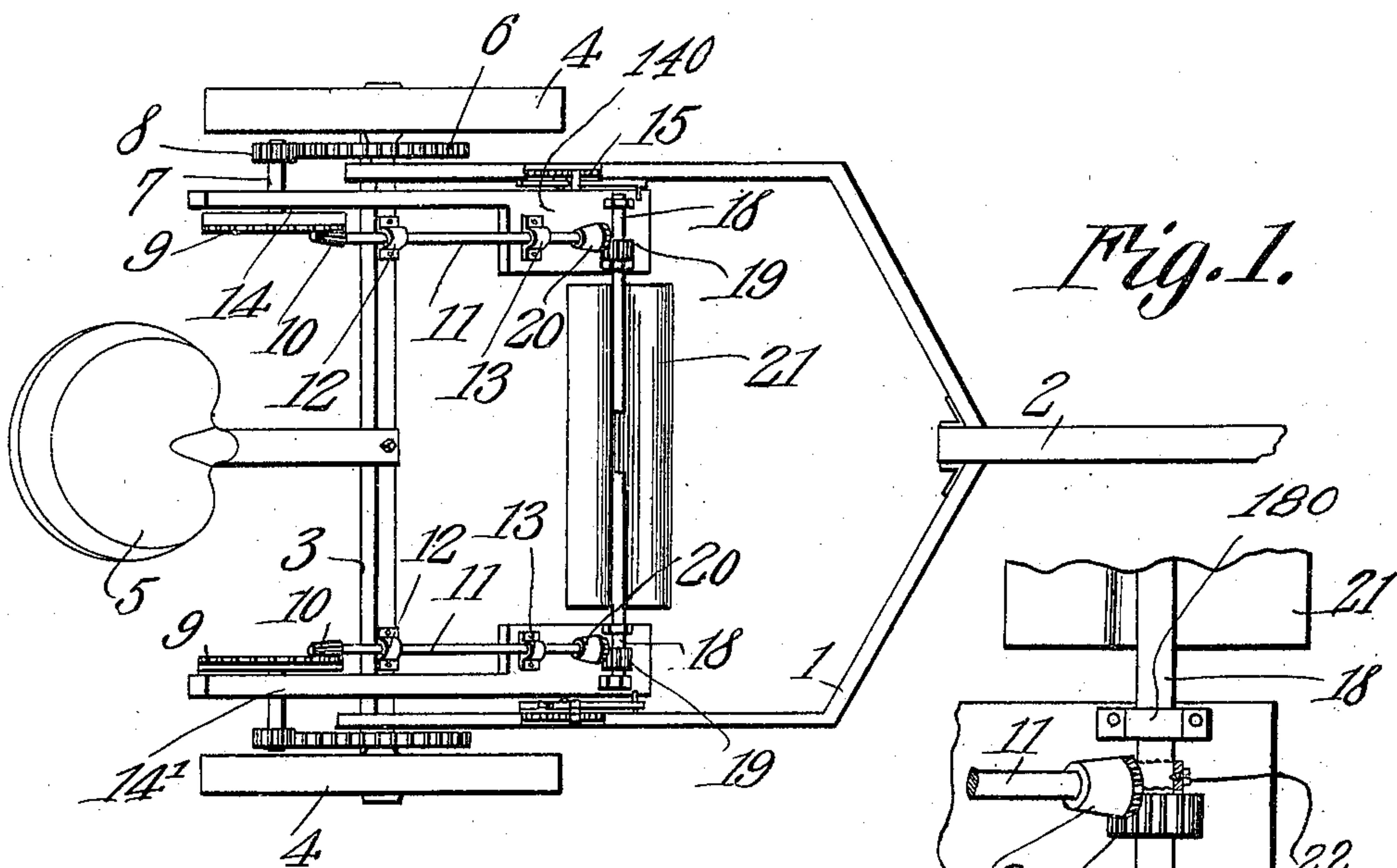
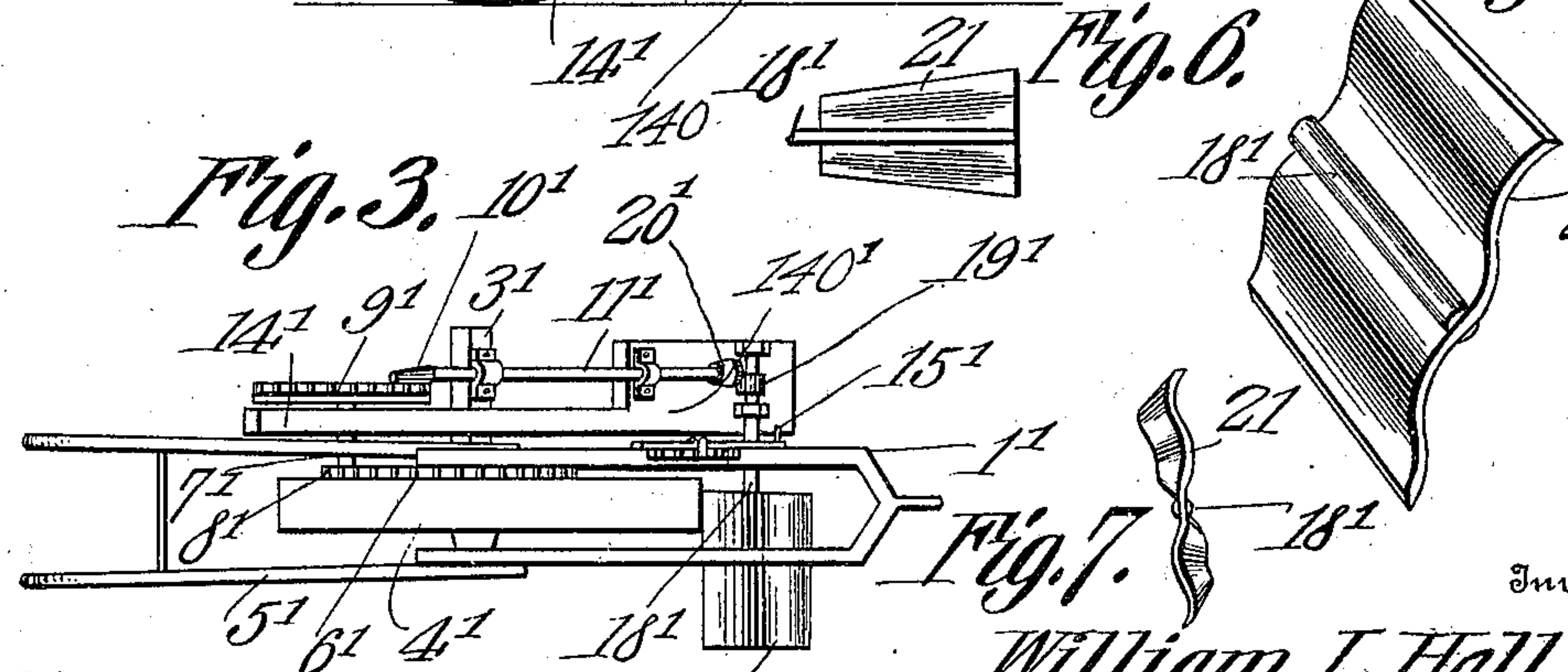
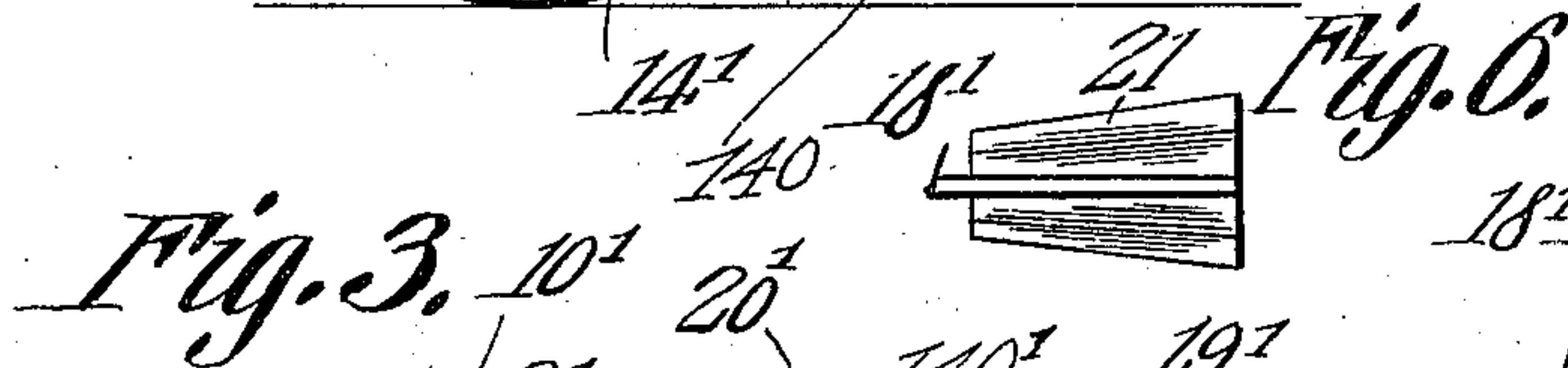


Fig. 5.



Witnesses

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ROTARY CULTIVATOR.

983,893.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM I. HALL, a citizen of the United States, residing at Rosehill, in the county of Duplin and State of North Carolina, have invented a new and useful Rotary Cultivator, of which the following is a specification.

This invention relates to rotary cultivators and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide a rotary cultivator with a blade of peculiar configuration and arrangement which may be adjusted and which is adapted to engage soil at the side of a row of standing plants and chop and agitate the same.

In the accompanying drawings,—Figure 1 is a top plan view of my invention in the form of a sulky which may be transformed into a straddle-row implement. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a top plan view of my invention applied to what is generally known as a walking implement. Fig. 4 is a detail perspective view of a blade used in the cultivator. Fig. 5 is a detail view of means for adjusting a shaft used upon the implement. Fig. 6 is a side elevation of another form of blade. Fig. 7 is an end view of still another form of blade.

In the form of the invention as illustrated in Figs. 1 and 2 of the drawings, the cultivator consists of a frame 1 to the forward end of which is attached a tongue 2 and which is pivotally supported at its rear end upon an axle 3. Traction wheels 4 are journaled for rotation at the ends of the axle 3 and an operator's seat 5 is fixed upon and extends to the rear of said axle. As the mechanisms located at the opposite sides of the implement are of the same construction and arrangement a description of one of the said mechanisms will answer for both. A gear wheel 6 rotates with the traction wheel 4. A stub shaft 7 is journaled for rotation at the rear end of an arm 14 (presently described) and carries a pinion 8 which meshes with the gear wheel 6. A beveled gear wheel 9 is located upon the shaft 7 and meshes with a beveled pinion 10 carried by the shaft 11 which, in turn, is journaled in a bearing 12 provided upon the axle 3 and a bearing 13 provided upon the arm 14. Said arm is fixed across the axle 3 as shown and stands normally inclined to a horizontal as

seen in Fig. 2, its upper rear end carrying a bearing for the shaft 7 and its lower front end being enlarged into a plate 140 which carries the bearings for the front end of said shaft 11 and for the chopping blades to be described below. Thus it will be seen that the operator's weight on the seat 5 in rear of the axle 3 is utilized to counterbalance the weight of the chopping blades forward of said axle, even when said blades are adjusted higher or lower. For this purpose a lever 15 is fulcrumed upon the frame 1 and is provided with an angularly disposed working end 16 which is connected with the plate 140 of the arm 14 by means of a link 17. A shaft 18 is journaled in bearings 180 on said plate and has its axis at a right angle to the axis of the shaft 11. A pinion 19 is carried by the shaft 18 and meshes with a pinion 20 fixed to the lower forward end of the shaft 11. One end of the shaft 18 projects inwardly from the edge of the plate 140 and is provided with a chopping blade 21.

As shown in Fig. 1 a single blade 21 is attached to both of the shafts 18 and when the parts are so arranged the implement may operate upon the soil between two rows of plants. But by applying a shorter blade 21 as shown in Fig. 4 to each of the shafts 18 the implement may be used as a straddle-row cultivator with the blades operating upon the soil at the opposite sides of a single row of plants. When each shaft 18 is supplied with a separate blade, the blade 21 at one side of the implement may be spaced at its inner end from the inner end of the blade 21 at the opposite side of the implement and it is through this space between said blades that the row of standing plants may pass as the implement is drawn along the ground.

As shown in Fig. 4 of the drawings, it will be seen that the shaft 18' is split and that the blade 21 is inserted between the side portions of the said shaft 18' and when so positioned may be secured therein by means of any securing devices or device.

The form of cultivator illustrated in Fig. 3 of the drawings, as has been heretofore intimated, is of the type generally known as a walking implement and in this instance, it consists of a frame 1' mounted upon the axle 3' which in turn is mounted upon a single supporting traction wheel 4'. Handles 5' are attached at their lower forward

ends to the frame 1' and a wheel 6' is mounted upon the axle 3' and rotates with the traction wheel 4'. A shaft 7' is journaled for rotation on an arm 14' and carries a pinion 8' which meshes the gear wheel 6'. A wheel 9' is carried by the shaft 7' and meshes with a wheel 10' mounted upon the shaft 11' which shaft 11' in turn is journaled in bearings provided upon the axle 3' and plate 140' of arm 14'. A lever 15' is mounted upon the frame 1' and is operatively connected with the plate 140' in a manner similar to that illustrated in Fig. 2 of the drawings in connection with the lever 15 and plate 140. The shaft 18' journaled upon the lower forward end of the arm 14' carries a wheel 19' which meshes with a wheel 20' carried by the shaft 11'. A blade 21' is carried by the shaft 18'.

From the above description it is obvious that as the implement shown in Fig. 3 of the drawings is passed along with the wheel 4' between adjacent rows of plants the blade 21' will be disposed at one side of one row of plants and will project under the overhanging foliage and operate upon the soil in close proximity to the sides of the standing plants.

As illustrated in Fig. 5 means is provided whereby the shaft 18 may be adjusted longitudinally in its bearings 180 and secured in an operative adjusted position. This means consists in providing the hub of the pinion 19 with a set screw 22 so that the shaft 18 may be moved longitudinally and secured whereby when two separate blades are used upon the implement the space between their inner ends may be increased or diminished as desired. In the single form of blade as illustrated in Figs. 6 and 7 their configuration is such to pass the soil toward or away from the row of plants as desired.

The weight of the blade 21' in Fig. 3 is partially counterbalanced by the weight of the handles 5', and the pressure of the operator's hands in guiding the machine by

them will make up for the difference in weight. In the type of machine shown in Fig. 1 the supporting, driving, and adjusting mechanisms at opposite sides of the frame are entirely independent of each other excepting for the connection of each arm 14 with the axle 3. Hence when either lever 15 is operated as for instance to raise one plate 140' with respect to the frame, the tilting of the arm 14 at that side of the machine rocks the axle and causes a simultaneous tilting of the arm 14 at the other side of the machine. Thus it will be seen that whether one blade 21 is employed, or two, the operator can adjust its or their height by the lever at either side of the machine.

Having described the invention what I claim as new and desire to secure by Letters Patent is:—

In a cultivator, the combination with the axle, traction wheels journaled thereon and each having a gear, arms secured across the axle and each having a plate at its front end, the frame pivoted on said axle, levers mounted on the side bars of the frame, and connections between said levers and plates; of alined bearings on the plates, two shafts journaled therein parallel with the axle and split at their inner ends, a blade detachably engaged by said split ends, bearings on the axle, driving shafts journaled in them and in other bearings on said plates, connections between the driving shafts and split shafts, stub shafts journaled through the rear ends of said arms and having pinions engaging the gears on the traction wheels, and connections between the stub shafts and the driving shafts.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM ISAAC HALL.

Witnesses:

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