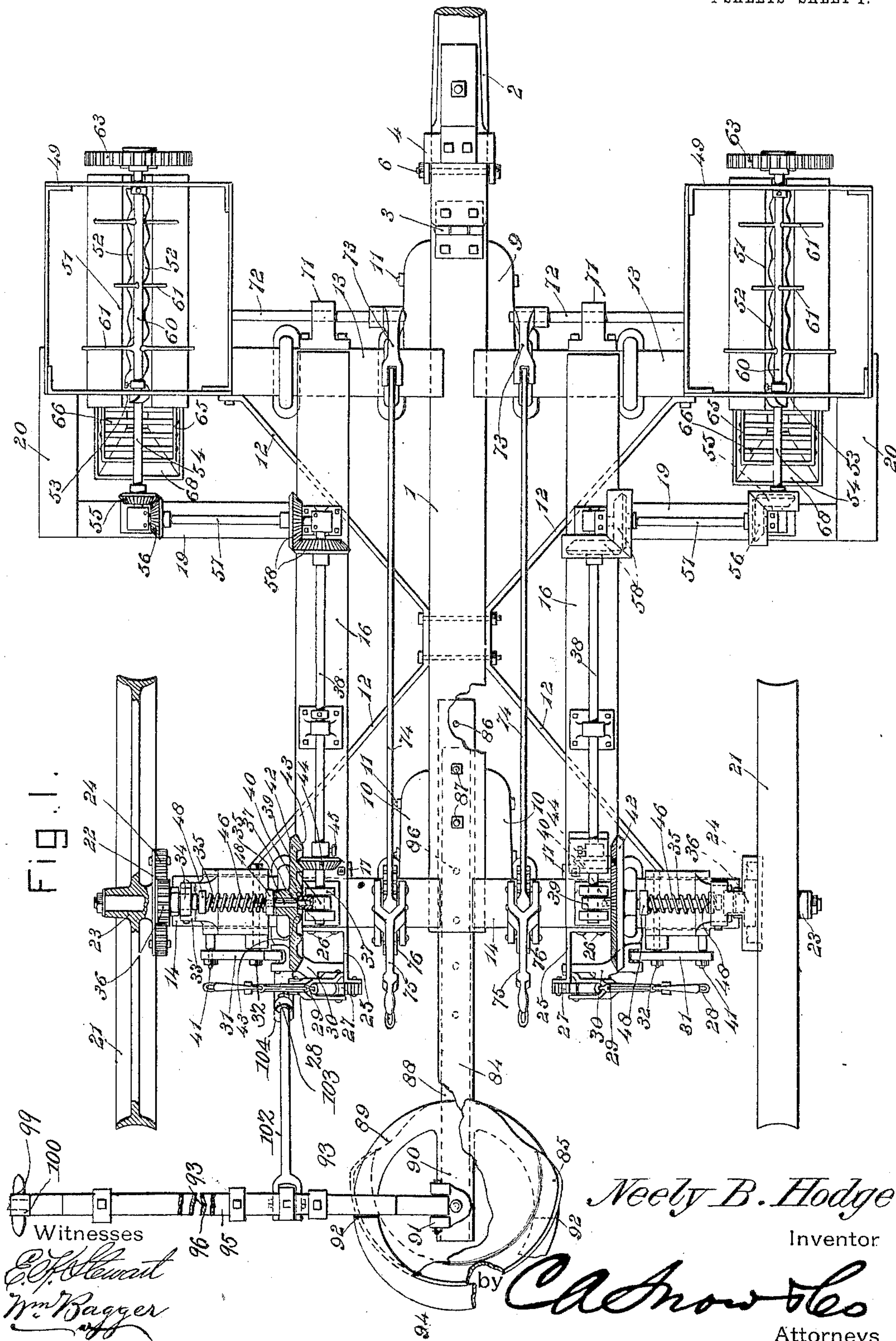


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SEED PLANTER.

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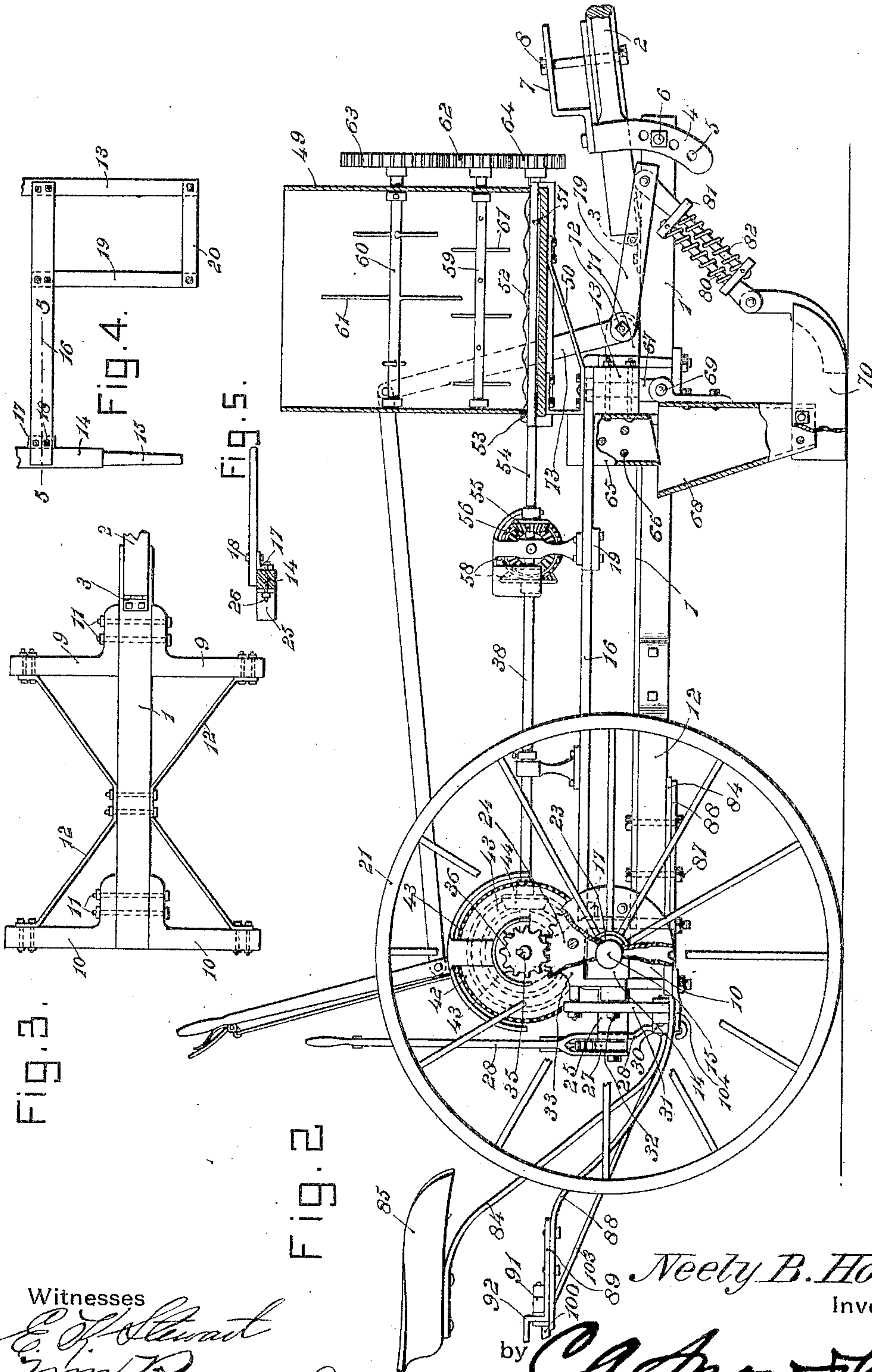
4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.



Witnesses

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4 SHEETS—SHEET 3.

Fig. 6.

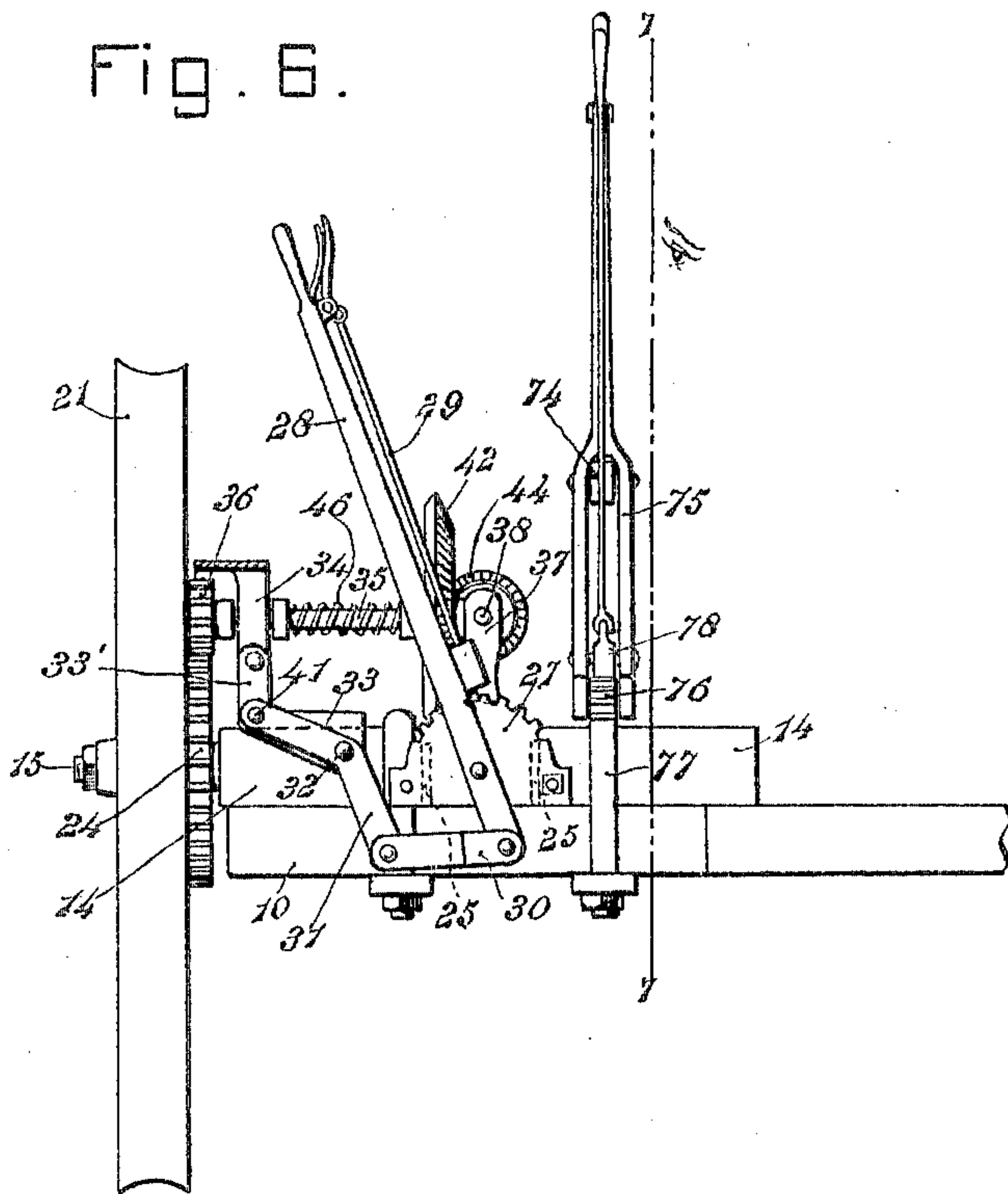


Fig. 7.

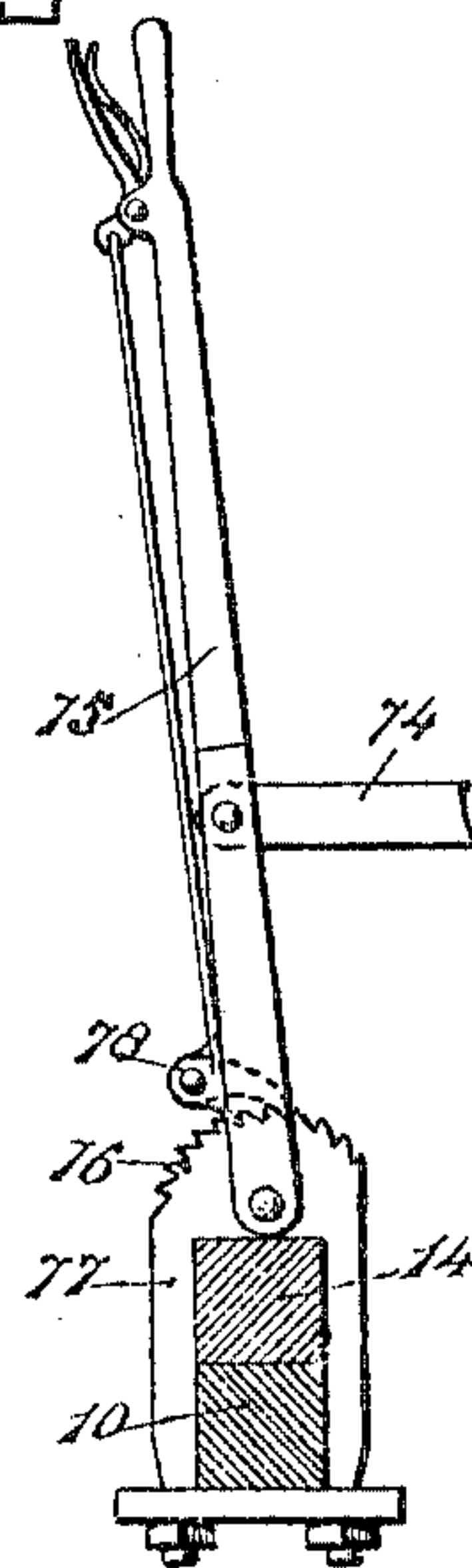


Fig. 4.

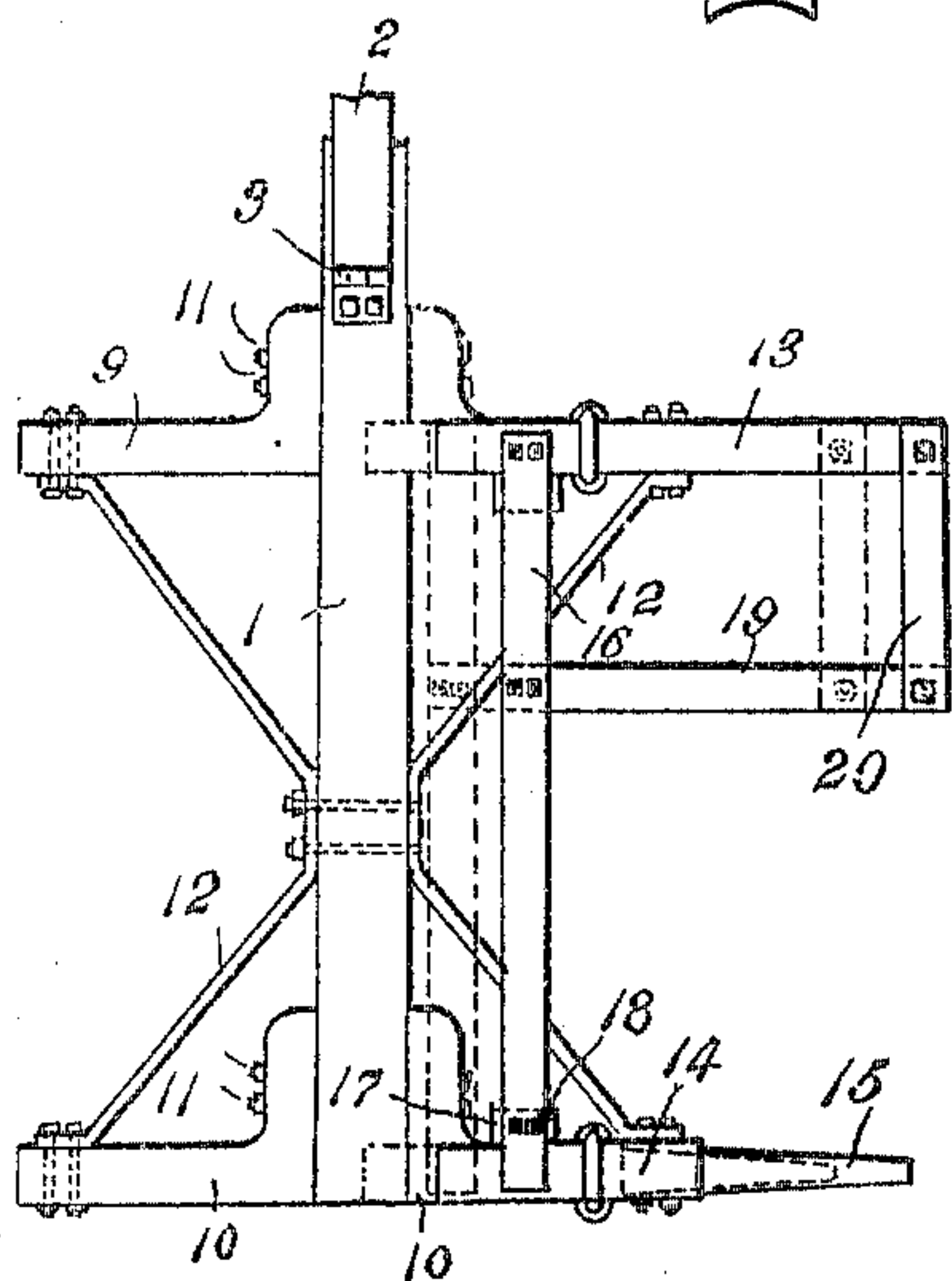


Fig. 9.

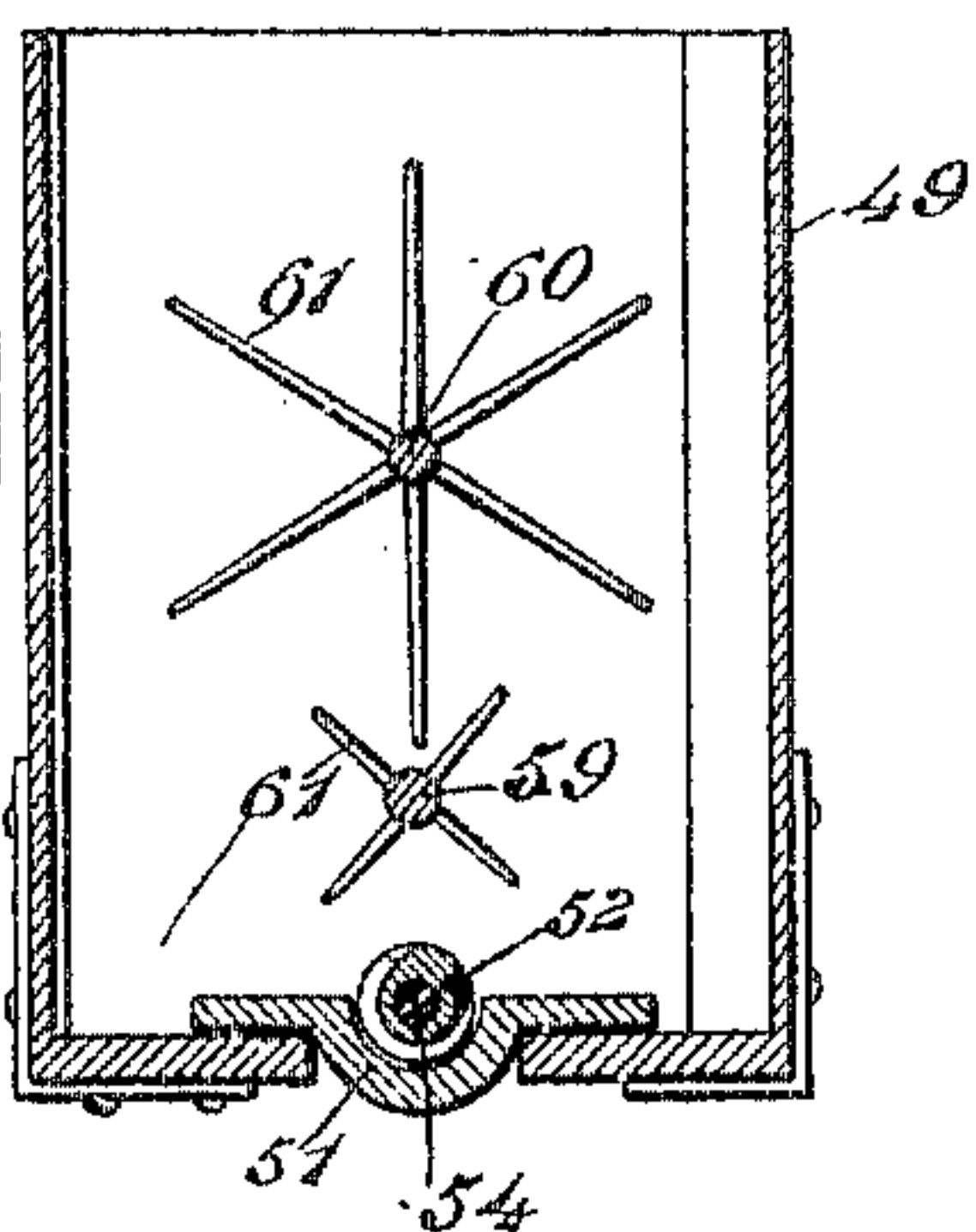
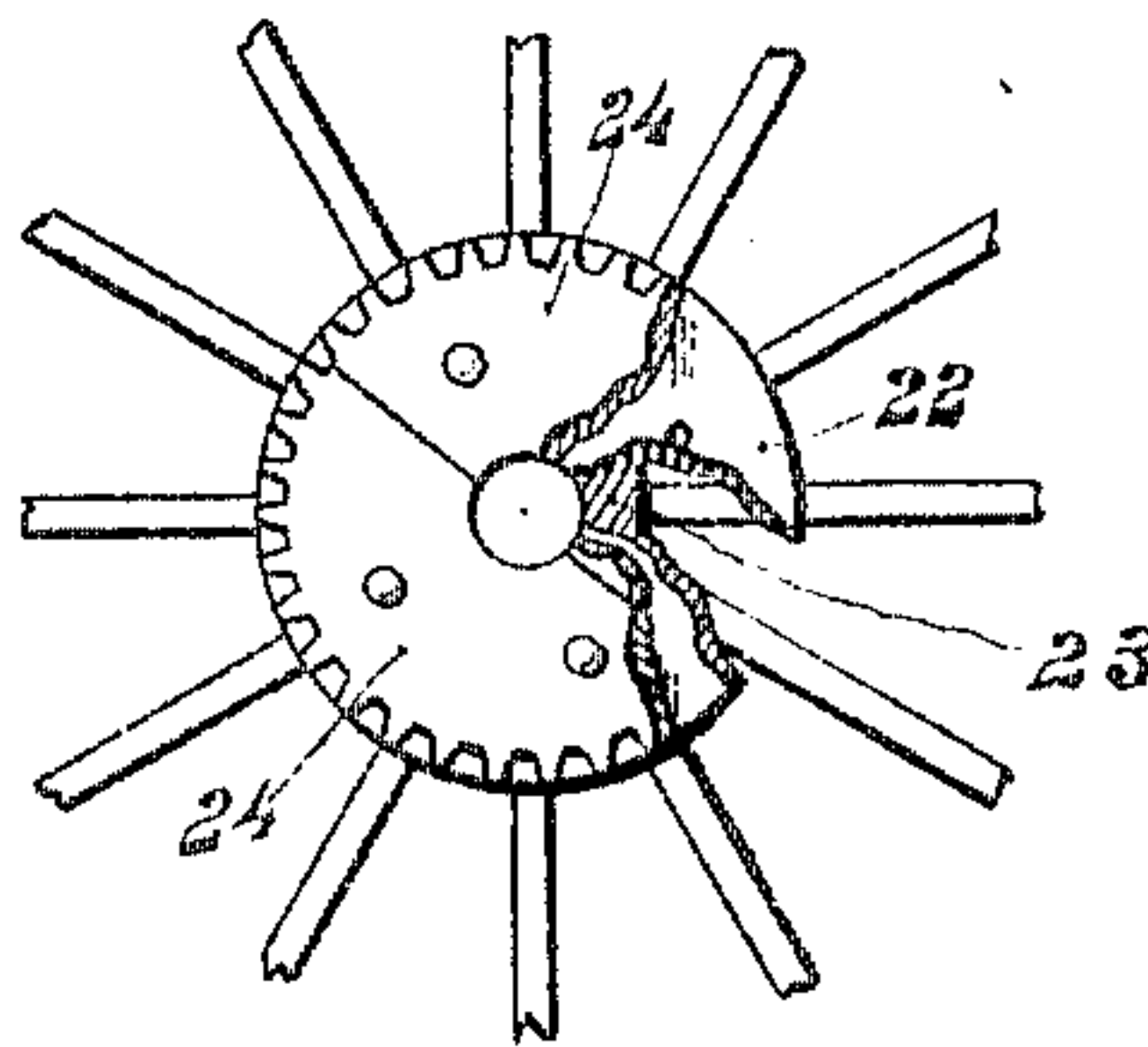


Fig. 10.



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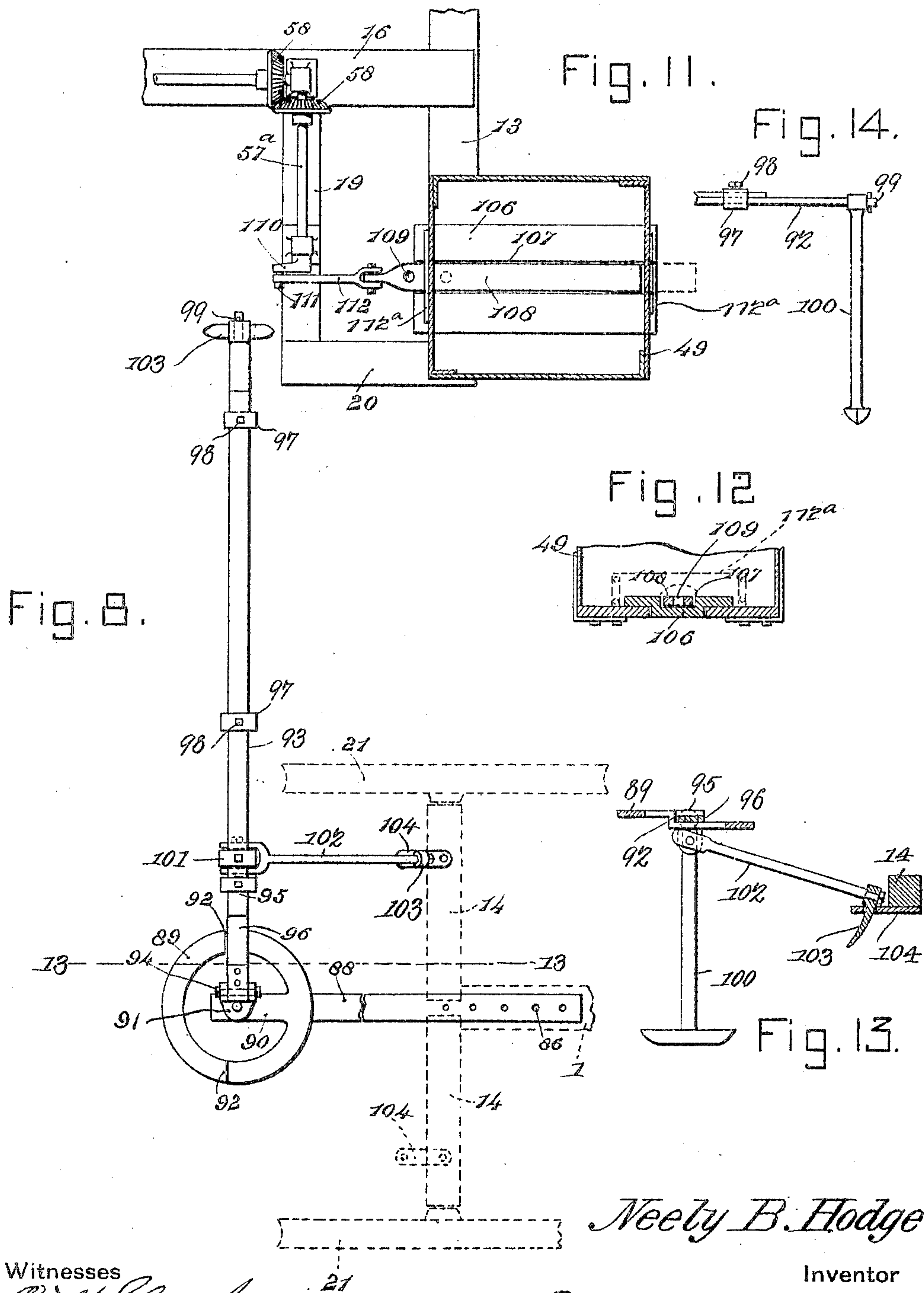
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APPLICATION FILED SEPT. 15, 1905.

4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

NEELY B. HODGE, OF DALLAS, TEXAS.

SEED-PLANTER.

No. 804,537.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed September 15, 1905. Serial No. 278,639.

To all whom it may concern:

Be it known that I, NEELY B. HODGE, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented a new and useful Seed-Planter, of which the following is a specification.

This invention relates to seed-planters; and the objects of the invention are to simplify and improve the construction and operation of this class of devices.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in certain improvements in the construction of the frame whereby the position of various parts of the machine may be readily changed, so as to enable the rows to be planted various distances apart.

The invention further consists in certain improvements in the operative parts of the device.

The invention further consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations, and modifications within the scope of the invention may be made when desired.

In said drawings, Figure 1 is a top plan view, partly in section, of a seed-planter constructed in accordance with the principles of the invention. Fig. 2 is a sectional side elevation. Fig. 3 is a detail plan view of the main or supporting frame. Fig. 4 is a detail plan view of one of the adjustable seedbox and wheel-carrying frames. Fig. 4^a is a detail plan view showing one of the adjustable seedbox and wheel-carrying frames mounted upon the supporting-frame. Fig. 5 is a sectional detail view taken on the line 5 5 in Fig. 4. Fig. 6 is a detail rear elevation of one side of the machine, partly in section. Fig. 7 is a sectional detail view taken on the plane indicated by the line 7 7 in Fig. 6. Fig. 8 is a detail plan view of the land-marker. Fig. 9 is a transverse sectional detail view of one of the seed-hoppers. Fig. 10 is a detail elevation of one of the carrying-wheels. Figs. 11 and 12 are detail views illustrating a modified form of seed-dropping mechanism. Fig.

13 is a sectional detail view taken on the line 13 13 in Fig. 8, and Fig. 14 is a detail view of a part of the marker.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

The frame of the improved machine is composed mainly of a longitudinal bar 1, at the front end of which the tongue 2, which may be said to form a part of said bar, is connected by means of a hinge 3, enabling said tongue to be connected adjustably with said frame-bar 1 by means of arcuate brackets 4, provided with a plurality of perforations 5 for the passage of a securing-bolt 6, the tongue being provided with a hammer-strap 7 and bolt 8 for the attachment of an equalizer or other draft means.

To the sides of the longitudinal bar 1, near the front and rear ends of the latter, are secured pairs of L-shaped brackets 9 and 10, said brackets being secured to the frame-bar by means of transverse bolts 11. Diagonal braces 12, which are preferably made of metal, such as steel, are secured to the sides of the bar 1 about midway of the latter, the ends of said braces being bolted or otherwise secured near the extremities of the brackets 9 and 10. These several parts cooperate to form a very rigid, substantial, and durable frame structure.

Upon the main frame structure which has been just described are mounted a pair of auxiliary seedbox and wheel-carrying frames, each including a front bar 13, constituting a seedbox-support, a rear bar 14 having a wheel-carrying spindle 15, and a longitudinal connecting-bar 16, which is secured upon the upper sides of the bars 13 and 14 near the inner ends of the latter. In order to insure the necessary rigidity and durability, L-shaped metallic brackets, as 17, are bolted upon the members 13 and 14 and serve to receive the connecting-bolts 18, whereby the longitudinal bar 16 is secured in position. Extending laterally in an outward direction from each of the bars 16 is an arm 19, the outer end of which is connected with the outer extremity of the bar 13 by means of a strip 20. These auxiliary frames are supported, as shown, mainly upon the outwardly-extending arms of the L-shaped brackets 9 and 10 of the main frame and are secured adjustably upon said arms or brackets by means of clips, whereby the frames are strongly and durably connected, although in such a manner as to

permit the auxiliary frames to be readily adjusted transversely for the purpose of adjusting the gage of the machine, as will be readily understood.

5 The transporting or carrying wheels 21 are preferably constructed wholly of cast-iron, including the hubs, spokes, and rims, which latter are preferably made concave in the usual manner, so as to serve for the purpose of cover-
 10 ing the seed. Each of the wheels has an integral plate 22 surrounding the hub 23, said plate serving to support a spur-wheel 24, which is made up of two halves or sections securely bolted upon said supporting-plate, as will be
 15 best seen in Fig. 10 of the drawings, this construction admitting of the spur-wheel being readily renewed in case of breakage without necessity for installing a new carrying-wheel. The latter, however, is actually strengthened
 20 by the construction described, so that there is little liability of breakage. The wheels are journaled upon the spindles 15, so that when the auxiliary frames are adjusted the wheels will be moved therewith.
 25 Bolted upon the rear side of each of the axle members is a bracket 25, said bracket being mounted upon the bolts 26, whereby the L-shaped bracket members 17 are secured upon the axle members 14. The brackets 25 sup-
 30 port each a rack-segment 27, upon which is fulcrumed a lever 28, having a catch member 29, which is spring-actuated in the usual manner to engage the rack-segment. The upper extremity of each lever 28 forms a handle,
 35 and its lower extremity is connected, by means of a link 30, with the lower end of a lever 31, fulcrumed upon a pin 32, which extends through the axle member and through a cap 33, which is likewise pivoted upon the pin 32.
 40 The cap 33 has an upwardly-extending post 33' supporting a pivoted lug 34, which constitutes a bearing for the outer end of a shaft 35, carrying a pinion 36, meshing with the spur-wheel 24 of the adjacent carrying-wheel.
 45 Each axle member also supports a post or bearing 37 for the rear end of a longitudinal shaft 38, each of said shafts having pivoted thereon a lug 39, provided with a socket 40, affording a bearing for the inner end of the shaft 35.
 50 It will be seen that the upper end of each of the posts or bearings 37 terminates in a bifurcation forming a pair of ears in which the shaft 38 is journaled, the pivoted lug 39 being disposed between said ears so as to prevent
 55 displacement thereof.

It will be seen from the foregoing that by manipulation of the hand-lever 28 the lever 31 will be rocked, thus rocking the cap 33 upon the pin 32, the upper end of the lever 31
 60 being connected, as by a bolt 41, with the bearing-post rising from said cap. The outer end of the shaft 35 will thus be elevated sufficiently to throw the pinion 36 out of mesh with the spur-wheel 24, this movement being
 65 made possible by the fact that the inner end

of the shaft 35 is journaled in the socket 40 of the pivoted lug 39.

Each of the shafts 35 carries at its inner end a bevel-gear 42, provided with a plurality of annular series of teeth 43, any one of which
 70 series may be engaged by a bevel-pinion 44, adjustable upon the shaft 38 by means of a set-screw 45. It will be seen that by properly adjusting the bevel-pinion 44 upon the shaft 38 it may be made to mesh with any one of the annu-
 75 lar series of teeth 43 upon the bevel-gear 42, thus regulating the speed of rotation of the shaft 38. The bevel-gear 42 is supported slidably upon the shaft 35 against the tension of a
 80 spring 46, which normally holds it in mesh with the pinion 45, but which enables it to be withdrawn when necessary for the purpose of enabling adjustment of the pinion to take
 place. For the purpose of causing the bevel-gear to rotate with the shaft 35 the end of
 85 the latter, carrying said bevel-gear, may be made non-circular, as seen in Fig. 1. It is preferred that the spring 46 be arranged between a pair of slidable collars or washers 48.

Each of the front members 13 of the ad-
 90 justable frames carries a seedbox or hopper 49, which is preferably supported above the member 13, as by means of brackets 50. In the main views of the drawings, where the in-
 95 vention has been shown in its application to a machine adapted particularly for the planting of cotton-seed and the like, each of the hoppers is provided with a detachable longitudinally-grooved bottom member 51, (see
 Fig. 9,) bearings being provided at the front
 100 and rear ends of the box or hopper for a longitudinal shaft carrying a spiral conveyer 52, adapted to deliver through an opening 53 in the rear end of the hopper. The conveyer-
 105 carrying shafts 54 are provided at their rear ends with bevel-pinions 55, meshing with bevel-pinions 56 upon transversely-disposed shafts 57, the inner ends of which are connected by miter-gearing 58 with the longitu-
 110 dinal driven shafts 38, from which motion is thus transmitted to the seed-dropping mechanism. Each of the hoppers has mounted therein for rotation a pair of longitudinally-disposed shafts 59 and 60, each carrying suit-
 115 ably-disposed fingers or agitators 61, and each provided at its front end, which projects upon the front side of the box, with a spur-wheel, as 62 63, said spur-wheels intermeshing, as shown, and one of them, 62, being in mesh
 120 with a pinion 64 upon the front end of the shaft 54, from which the agitator-shafts are thus driven.

Upon the rear side of each of the members 13 is secured a chute 65, adapted to receive
 125 the material discharged from the hopper and provided with cross-bars 66 for the purpose of breaking up such material, whether it be seed or fertilizing material, which latter may be conveniently distributed by this improved
 130 machine. Each member 13 is likewise pro-

vided with hangers 67, upon which the seed-tubes 68 are hingedly mounted upon bolts 69. The upper ends of the seed-tubes are of much larger cross-sectional area than the chutes 65, so that the seed-tubes will receive the material discharged from said chutes in any position that may be occupied by said seed-tubes. The lower ends of the latter are suitably connected with the furrow openers or runners 70.

Bearings, as 71, are provided upon the front side of each of the members 13, in which are journaled shafts 72, each of which is provided at its inner end with an upwardly-extending arm or crank 73, the upper end of which is connected by a link 74 with a hand-lever 75. The hand-levers 75 are bifurcated and are fulcrumed upon segment-racks 76, formed at the upper ends of special clips 77, (see Fig. 7.) which serve to connect the axle member 14 with the bracketmembers 10 of the main supporting-frame. Said hand-levers are provided with spring-actuated stop members 78, engaging the racks 77, thereby serving to retain the hand-levers and the parts operated thereby at various adjustments.

The shafts 72 are provided at their outer ends with arms or connecting-rods 79, which are connected with the front ends of the runners 70 by means including link-rods 80, arranged in pairs, as shown, and each provided at its outer extremity with a collar-plate 81, apertured for slidable engagement with the other link-rod, both of said link-rods having springs 82 coiled thereon, so as to space the said collar-plates apart. These springs should be sufficiently stout to hold the runners to their work in the ground when properly adjusted and at the same time sufficiently yieldable to permit the runners to yield and to swing rearwardly when obstructions are encountered, thus avoiding danger of breakage. It is obvious that by means of the hand-levers 75 the position of the runners may be independently regulated and that said runners may be manipulated when desired to elevate them from the ground to an inoperative position.

Upon the under side of the frame member 1 is bolted a rearwardly and upwardly extending spring-bar 84, constituting a support for the driver's or operator's seat 85, said spring-bar being provided with auxiliary perforations 86 for the passage of the securing members 87, so as to enable the seat to be adjusted longitudinally. The bolts which serve to secure the seat-bar also serve for the attachment of a rearwardly-extending bar 88, upon which latter near its rear extremity is mounted an annulus 89, having a radial member 90, upon which is pivoted a hinge member 91. The annulus 89 is provided at opposite sides thereof with shoulders 92, forming supports for the land-marker staff 93, which latter is hingedly connected, as by means of a bolt 94, with the pivoted hinge member 91. The land-marker

staff 93 is composed of two superposed bars or members 95 and 96, which are slidably connected, as by means of collars 97, having set-screws 98. Upon the outer end of the marker-staff is pivoted an earth-engaging marker 100. Said staff also has a sleeve 101, with which is connected a pivoted rod 102, having a reversible hook member 103, adapted to engage the perforated brackets 104, extending rearwardly from either frame member 10 and serving to reinforce the member when it is in position for operation. As will be readily observed, the marker may be readily shifted from one side of the machine to the other by simply lifting it until disengaged from the shoulder 92, the hook member 103 having been previously disconnected, and then swinging the marker around upon the pivot of the hinge member 91 to a reversed position. The marker is then again in position for operation upon the opposite side of the planter and may be secured against displacement by the hook member 103, which may be shifted from one to the other of the brackets 104.

When it is desired to transform the machine into a device for planting corn or similar seeds which are to be dropped in hills at suitable distances apart, the bottom members 51 of the seedboxes are removed and in their place are substituted bottoms, as 106, (see Fig. 12,) having grooves 107, in which slides 108 are mounted for reciprocation, said slides being provided with openings or seed-cups, as 109, for the reception of the contents of the hoppers, which by the reciprocation of the slides will be carried to and deposited in the chutes above the seed-tubes. For the purpose of imparting reciprocatory movement to the slides the shafts 57, having the bevel-pinions 56, are removed and in their place are substituted crank-shafts 57^a, the cranks 110 of which are provided with wrist-pins 111, connected, by means of links 112, with the slides 108, which will be thereby reciprocated when the machine is progressing over the field. Closures or stop-plates, as 112^a, are also attached upon the ends of the hoppers to cover the openings previously occupied by the ends of the conveyor-shafts 52.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood. It will be seen how the wheel-carrying and seedbox-supporting frames may be adjusted laterally with relation to the main supporting-frame, motion being transmitted from each of the carrying-wheels to one of the seed-dropping devices. The latter may be thrown into and out of gear independently of each other, and the speed at which the seed-dropping mechanism is operated is capable of regulation in the manner set forth. For transportation the runners or shoes of the device may be elevated

from the ground by manipulating the levers 75. It will be observed that wherever needed wheel guards or casings are made use of to cover the gear-wheels from exposure.

5 The machine as a whole is simple in construction, easily operated, and thoroughly efficient for the purposes for which it is intended.

Having thus described the invention, what 10 is claimed is—

1. In a seed-planter, a main frame comprising a longitudinal bar, and pairs of L-shaped brackets secured upon the sides of said bar and having laterally-extending arms.

15 2. In a seed-planter, a main frame comprising a longitudinal bar having laterally-extending arms, and a tongue hingedly connected with the said bar near its front end.

3. In a seed-planter, a main frame comprising a longitudinal bar having laterally-extending arms near its front and rear ends, and a tongue hingedly connected with the upper side of said bar near the front end of the latter and having arcuate brackets adjustably 25 connected with said bar.

4. In a seed-planter, a main frame comprising a longitudinal bar having laterally-extending arms, and stub-axles supported adjustably upon said arms.

30 5. In a seed-planter, a main frame comprising a longitudinal bar having laterally-extending arms near its front and rear ends, in combination with seedbox-supporting bars adjustable upon the front arms, wheel-bearing axle 35 members supported adjustably upon the rear arms, and a tongue connected with the upper side of the longitudinal bar near the front end of the latter.

6. A main frame having laterally-extending arms, in combination with wheel-carrying and seedbox-supporting frames laterally adjustable upon said arms.

7. A main frame having laterally-extending arms, seedbox-supporting and wheel-carrying frames, laterally adjustable upon said 45 arms, and means connected with each of said frames for transmitting motion from the carrying-wheel to seed-dropping mechanism connected with the seedbox supported by said 50 frame.

8. A main frame comprising a longitudinal bar and laterally-extending arms near the front and rear ends of said bar, seedbox-supporting bars and wheel-carrying axle members supported adjustably upon the front and 55 rear arms respectively, longitudinal frame-bars connecting the axle members with the seedbox-supporting bars and cooperating therewith to constitute independently-movable frame members, seed-dropping mechanism, and means supported upon the independ- 60

ently-movable frame member for transmitting motion from the carrying-wheels to the seed-dropping mechanism.

9. An axle member, a cap mounted thereon 65 and having an upwardly-extending bearing-post, a bifurcated bearing-post supported upon the axle, a longitudinal shaft having one end supported in the latter post, a lug pivoted upon said shaft and having a socket, a shaft 70 having one end supported in said socket and also journaled in the bearing connected with the pivoted cap, a pinion upon the outer end of said shaft, a carrying-wheel having a spur-gear meshing with said pinion, lever means 75 for rocking the pivoted cap, and means for transmitting motion to the longitudinal shaft from the shaft journaled in the socketed lug pivoted upon said longitudinal shaft.

10. An axle member having a bearing-post 80 bifurcated at its upper end, a longitudinal shaft journaled in the ears of said post, a lug pivoted upon said shaft between said ears and having a socket, an adjustably-supported shaft 85 having one end mounted for rotation in said socket, a bevel-gear supported for rotation with said shaft and having a plurality of annular series of teeth, spring means for forcing said gear-wheel in the direction of the socketed lug, and a bevel-pinion adjustable upon 90 the longitudinal shaft for alternate engagement with the series of teeth upon said gear-wheel.

11. In a seed-planter, a seedbox-supporting frame, a chute connected with said frame, a 95 seed-tube hingedly connected with the frame to receive material discharged from the chute, a runner connected with the seed-tube, a rock-shaft supported by the frame and having an arm or crank, spring means connecting said 100 crank with the runner, and means for manipulating the rock-shaft and for securing the same at various adjustments.

12. In a seed-planter, a main supporting-frame, auxiliary frames laterally adjustable 105 upon said main frame and each including a wheel-carrying axle member and a seedbox-supporting bar, seed-dropping mechanism supported independently upon each of the frames, and independent means connected 110 with each frame for opening a furrow, for operating and regulating the speed of the seed-dropping mechanism, for throwing such mechanism into and out of gear, and for adjusting the furrow-opening means. 115

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

NEELY B. HODGE.

Witnesses:

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D. E. ANDREWS.