R. J. ALTGELT.

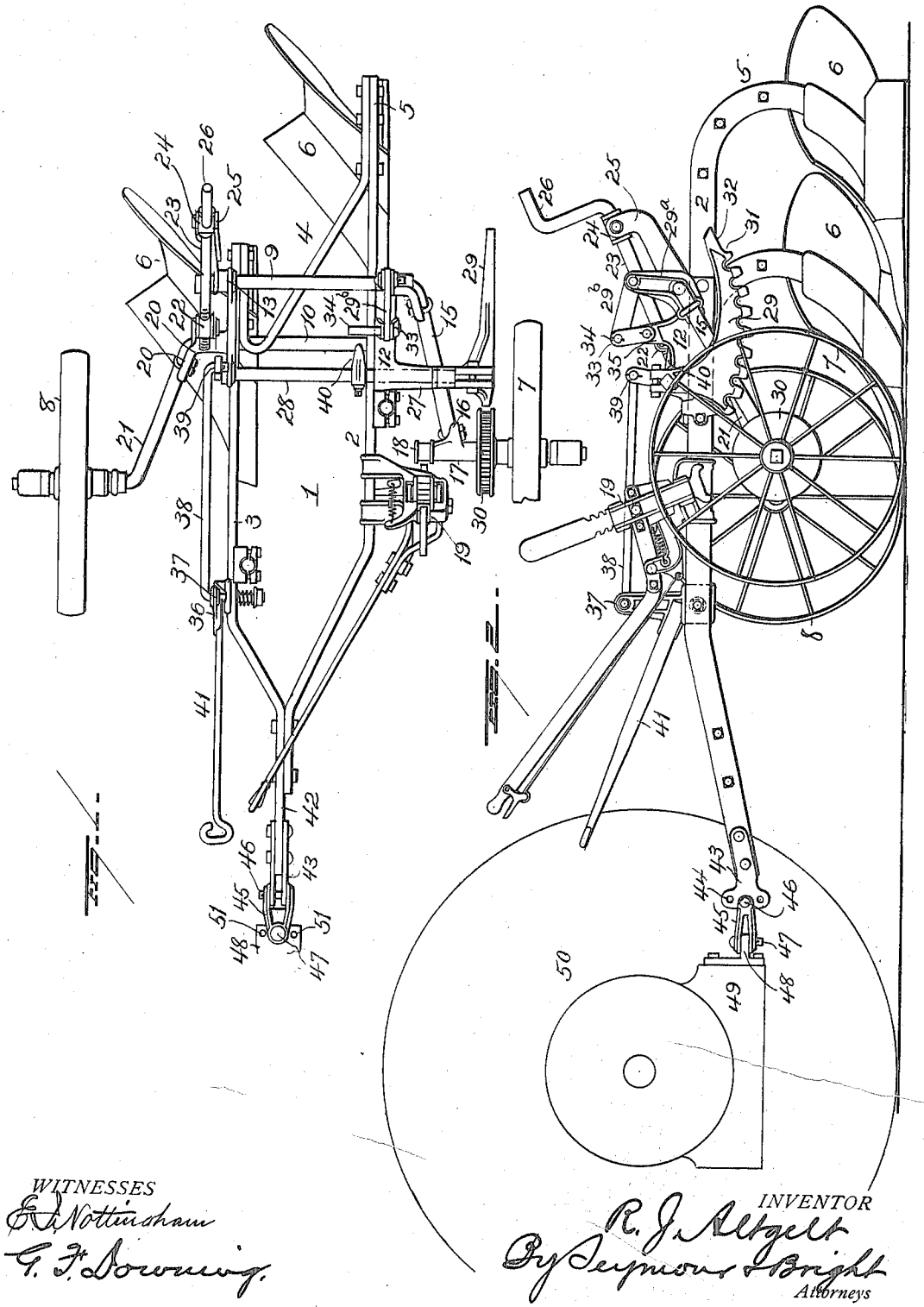
PLOW STRUCTURE.

APPLICATION FILED SEPT. 29, 1917.

1,266,753.

Patented May 21, 1918.

2 SHEETS—SHEET 1.



WITNESSES

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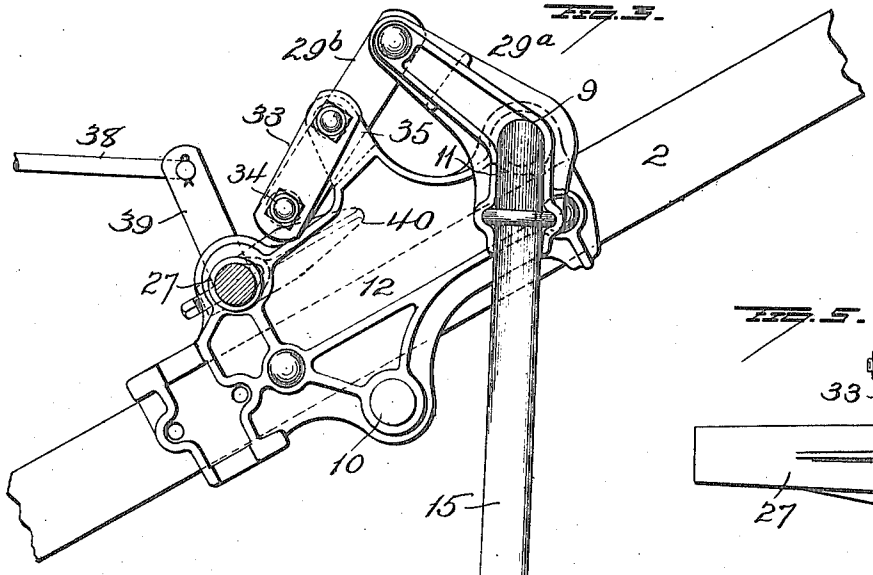


FIG. 3.

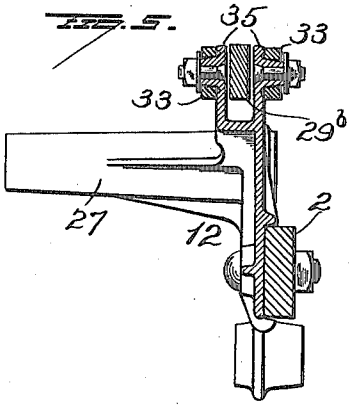


FIG. 5.

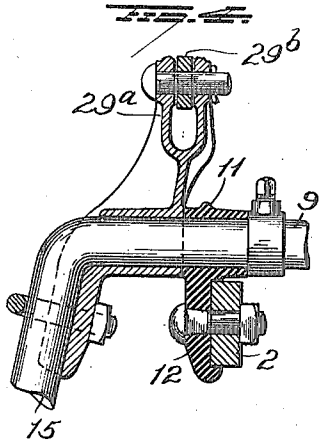


FIG. 4.

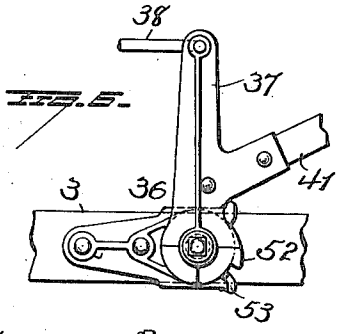


FIG. 6.

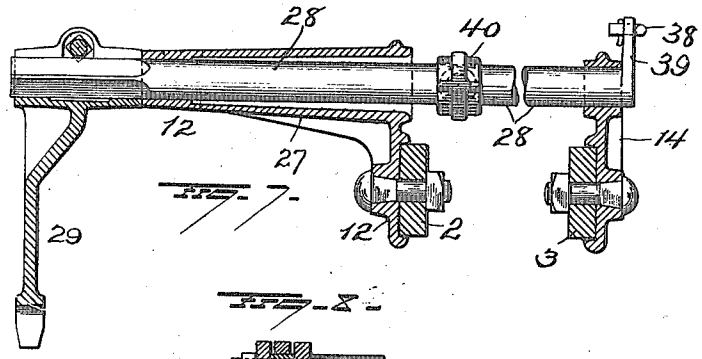


FIG. 7.

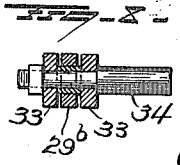


FIG. 8.

WITNESSES

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UNITED STATES PATENT OFFICE.

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PLOW STRUCTURE.

1,266,753. Specification of Letters Patent. Patented May 21, 1918.

Application filed September 29, 1917. Serial No. 193,969.

To all whom it may concern:

Be it known that I, RUDOLPH J. ALTGELT, a citizen of the United States, and a resident of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Plow Structures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in plow structures and more particularly of the engine gang type,—the object of the present invention being to provide simple and efficient means for automatically locking the plow structure in elevated position when the same has been raised by lifting mechanism and to release the locking means when it is desired to lower the plow structure to working position.

With this and other objects in view, the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings; Figure 1 is a plan view of an engine gang plow structure embodying my improvements; Fig. 2 is a side elevation, and Figs. 3, 4, 5, 6, 7 and 8 are detail views.

1 represents a plow frame comprising a plurality of plow-beams 2, 3 (two such beams being shown in the drawing, although a greater number may be employed) connected and held properly spaced apart by a diagonal brace 4. The plow beams are provided at their rear ends with standards 5 to which plow bases 6 are secured. The beams 2, 3 with the standards 5 and bases 6 thus constitute a plow structure, and its rear portion is supported by land and furrow wheels 7 and 8 through the medium of crank axles 9 and 10.

The crank axle 9 is mounted in a bearing 11 on a bracket 12 secured to the beam 2 and in a bearing 13 on a bracket 14 secured to the beam 3 while the axle 10 is mounted in the bracket 14 and also in the bracket 12. The crank 15 of the axle 9 is secured to an arm 16 on a sleeve or sand band 17 in which the spindle of the land wheel 7 is mounted. The inner end of the sleeve or sand band is provided with annular flanges whereby a head 18 is formed and this head is in position to be engaged by a member of a manually operable mechanism 19 for raising the plow and adjusting the same for depth of plowing.

A bracket 20 is secured to the axle 10 at the juncture of its crank 21 therewith and is provided with a threaded member 22 through which the threaded portion of a shaft 23 passes,—said shaft also passing through a sleeve 24 pivotally mounted in the bifurcated end of an arm 25 secured to the end of the axle 9. The shaft 23 is provided with a crank or handle 26 for turning the same to effect adjustment of the plow-structure for leveling the same.

The bracket 12 is provided with a sleeve 27 which constitutes a bearing for one end portion of a transverse shaft 28,—the other end of said shaft having a bearing in the bracket 14 secured to the beam 3. The shaft 28 projects beyond its bearing in the bracket 12 and has secured thereto, one end of a curved or segmental rack 29 which is adapted to be moved into mesh with a gear 30 rotatable with the carrying wheel 7 for raising the plow structure. The rack 29 is provided near its free end with a shallow notch 31 and a beveled face 32 which operate to cause the rack to move out of mesh with the teeth of the gear when said rack shall have completed its throw to effect the lifting of the plow structure.

A bracket 29^a is secured to and moves with the crank axle 9 adjacent to the mounting of the latter on the bracket 12. This bracket projects upwardly and in its bifurcated upper end, one end of a bar 29^b is pivotally connected. The forward end of this bar is pivotally connected with and between the upper ends of links 33 by means of a pin 34, one end of which projects laterally beyond one of said links, and the lower ends of the latter are pivotally attached to spaced lugs 35 which project upwardly from an intermediate portion of the bracket 12.

When the plows are in working position, the segmental rack will be held in raised position by means of a spring-pressed cam device 36 mounted on the beam 3. This cam latch device includes a pivotally mounted arm 37, to which one end of a rod 38 is connected,—the other end of said rod being pivotally attached to an arm 39 secured to the transverse shaft 28, and to the

latter, a trip arm 40 is secured. A hand lever 41 is secured to the pivoted arm 37 of the latch device.

The forward ends of the beams 2, 3 are brought together and securely bolted and one of said beams is made with an extension 42, to the forward end of which, two plates forming a clevis 43 are secured,—said clevis plates being each provided with a plurality of holes 44 whereby the rear jaws of a shackle 45 may be adjustably pivoted to the clevis by means of a horizontal pin 46. The forward jaws of the shackle are disposed one above the other and at right angles to the rear jaws of said shackle and are perforated for the accommodation of a vertical pivot pin 47, which serves to pivotally connect said shackle directly to a bracket or projection 48 rigid with the rear axle mounting 49 of a tractor 50. The bracket or projection 48 may be provided with a plurality of perforations 51 in horizontal alinement whereby the connection of the shackle which couples the clevis of the plow structure to the tractor may be adjusted laterally.

By means of the connecting devices above described, the plow structure is so connected directly with the tractor that its rear portion may be raised and lowered and so that it may swing laterally to accurately follow the trail of the tractor.

During the raising of the plow structure by the power lift mechanism, the crank axle 9 will turn in its bearings and the bracket 29^a will move forwardly. As the bracket 29^a thus moves it will cause the bar 29^b to also move forwardly and the links 33 to turn on their pivotal connection with the bracket 12, until said bar becomes disposed in the notch or recess afforded by the lugs 35. The pivot pin 34 which connects the bar 29^b with the links 33 will now have moved beyond a line passing through the pivotal connection of the links 33 to the lugs 35 and the pivotal connection of the bar 29^b with the bracket 29^a, and the plow structure will thus be locked in its raised position.

When the parts are in the locked-up position, the projecting end of the pin 34 will be disposed over the arm 40 on the transverse shaft 28. A short downward movement of the hand lever 41 will now cause a forward movement of the arm 37 (limited by stop lugs 52—53 on the cam device 36,) and motion will be imparted through the rod 38 and arm 39 to the tranverse shaft 28, so as to turn said shaft slightly in a direction to raise the trip arm 40 and cause it to engage the projecting pin 34 and move the same upwardly far enough to break the lock above described. The plow structure may now descend by gravity to the position shown in Fig. 2, with the plow bases ready to enter the ground.

I do not, in this case, claim the means herein shown and described for raising and lowering the plow structure and the connection of the latter with the tractor, the same being embodied in my copending application Serial No. 193,968; nor do I claim in this case, the manually operable mechanism for raising the plow structure and adjusting it for depth of plowing, the same being covered by my copending application Serial No. 193,670.

Various changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to restrict myself to the precise details herein set forth.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. The combination with a plow structure, means for connecting the same with a draft means, crank axles mounted on the plow structure, wheels on said crank axles, and means for raising the plow structure, of an arm independent of the raising means secured to one of said crank axles, a bar pivoted at one end to said arm, and a link pivoted at one end to said bar and at the other end to a part on the plow structure independent of the raising means, whereby when the plow structure has been raised by the raising means, the connection of the link to the bar will pass beyond a line passing through the connection of the link to the plow structure and the pivotal connection of the bar to the arm on the crank axle and lock the plow structure in raised position.

2. The combination with a plow beam, means for connecting the same with a draft means, a bracket secured to the beam, a crank axle mounted in said bracket, and a wheel on the crank axle, of an arm secured to the crank axle, lugs on the bracket forming a recess between them, links pivoted at one end to said lugs, and a bar pivoted at one end to the other ends of said links and at the other end to the arm on the crank axle, said bar adapted to enter the recess between said lugs and move the pivotal connection of the links to the bar, beyond the pivotal connection of the links to said lugs.

3. The combination with a plow structure, means for connecting the forward end of the same to draft means, crank axles mounted on the plow structure, brackets affording bearings for said axles, and wheels on said axles, of an arm on one of said axles, links pivoted to one of said brackets, a bar pivoted at one end to said arm, a pivot pin connecting the other end of said bar to the links and projecting laterally beyond the same, means for raising the plow structure and causing the pivotal connection of the bar to the links to move beyond a line passing through the

pivotal connection of the links to the bracket and the pivotal connection of the bar to the arm on the crank axle to lock the plow structure in raised position, a shaft on the plow structure having an arm disposed under the projecting end of said pivot pin when the plow structure is in raised position, means for holding said shaft in normal position, and means for turning said shaft to rase the arm thereon for raising the links to release the plow structure and permit it to descend.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

RUDOLPH JOSEPH ALTGELT.

Witnesses:
EDWIN NICAR,
CHARLES ADDISON WEBSTER.