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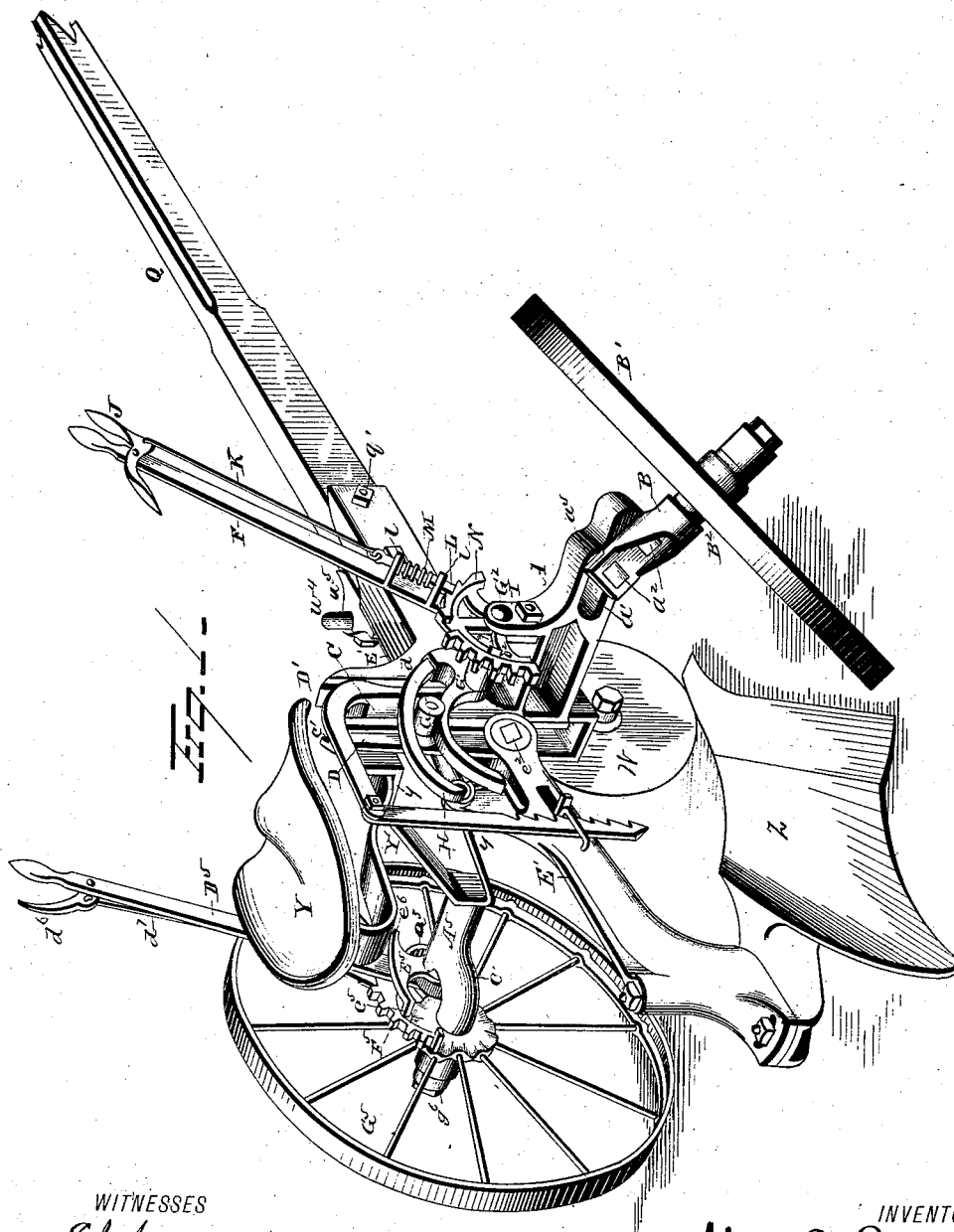
W. L. CASADAY.

5 Sheets—Sheet 1.

SULKY PLOW.

No. 260,534.

Patented July 4, 1882



WITNESSES

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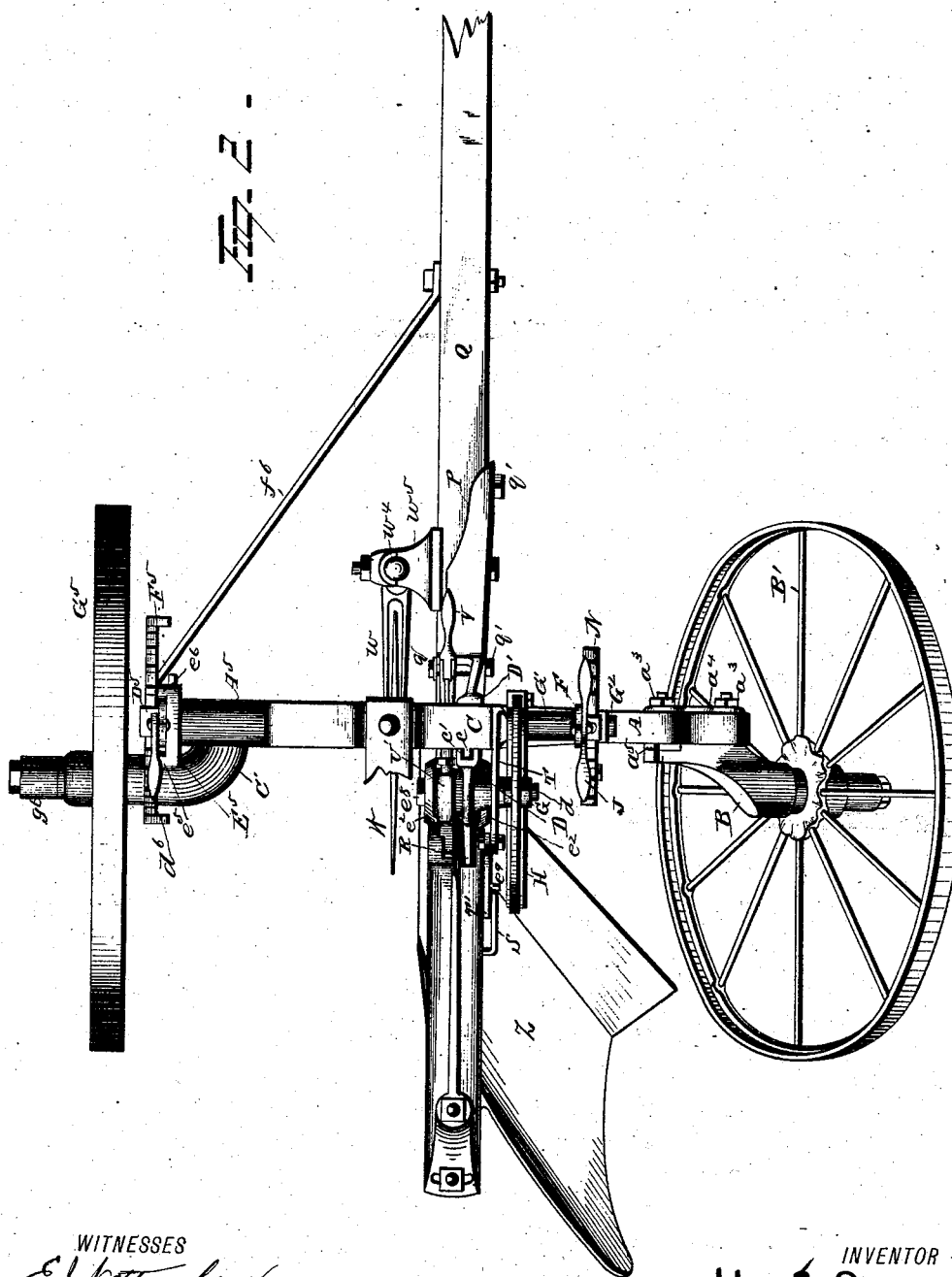
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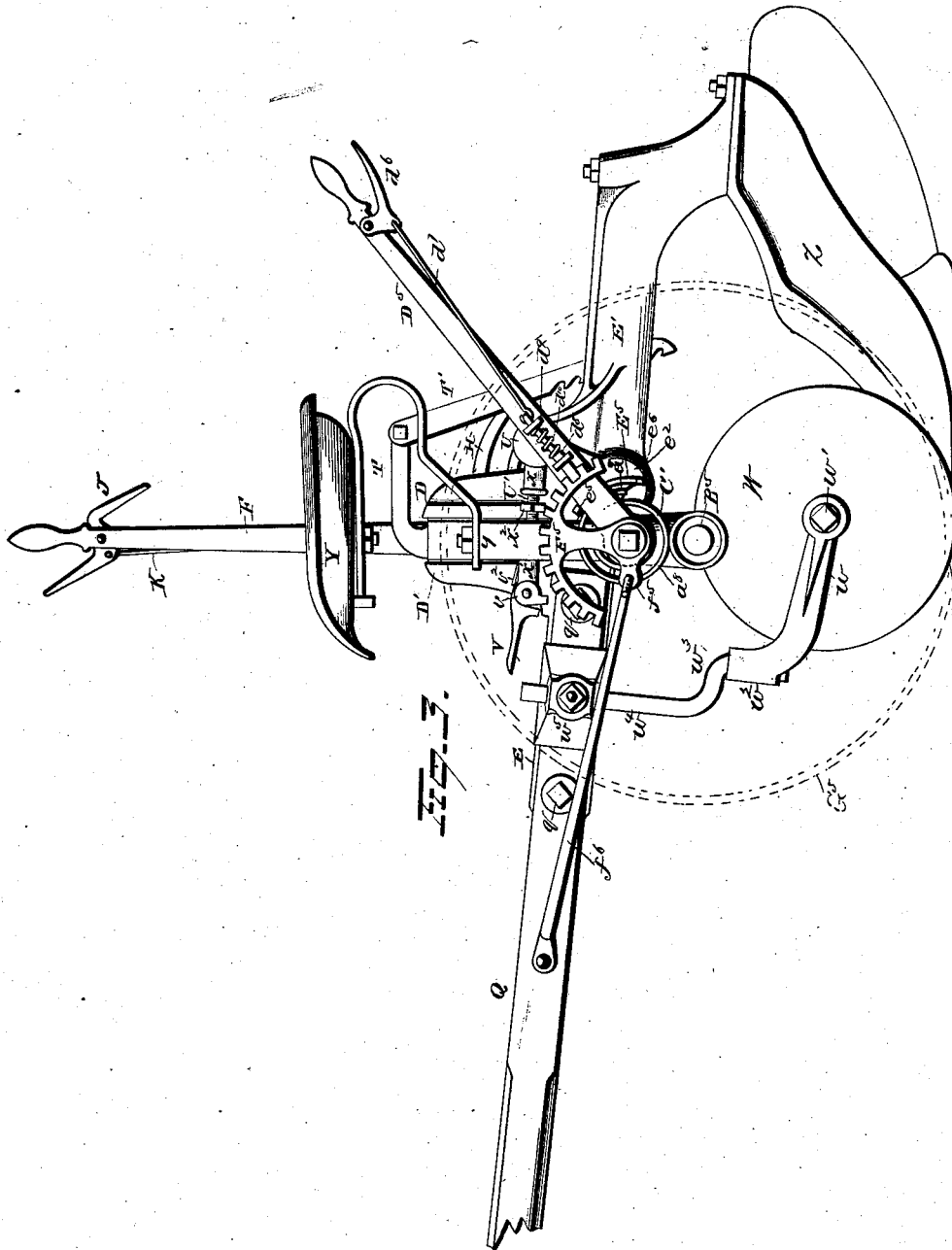
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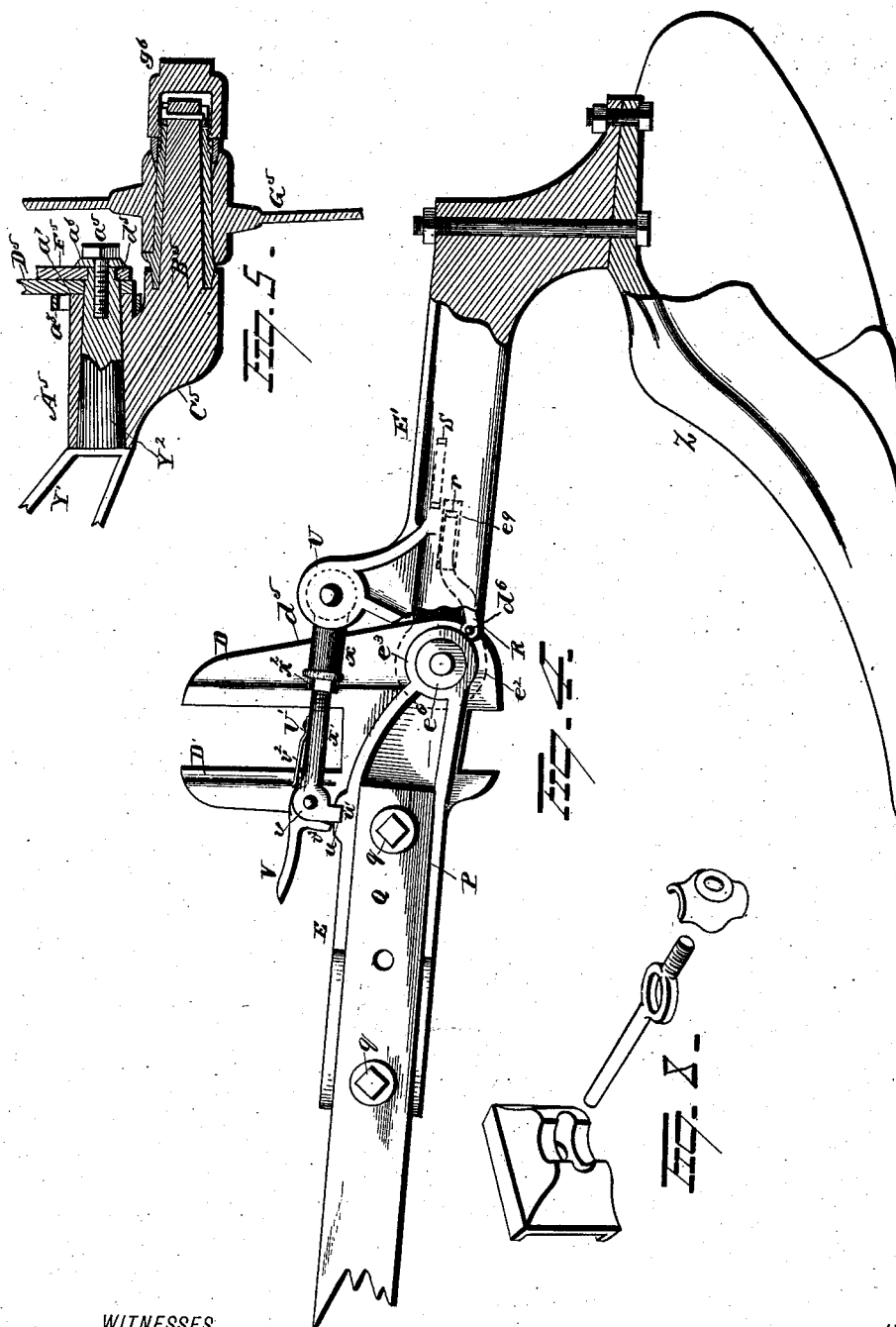
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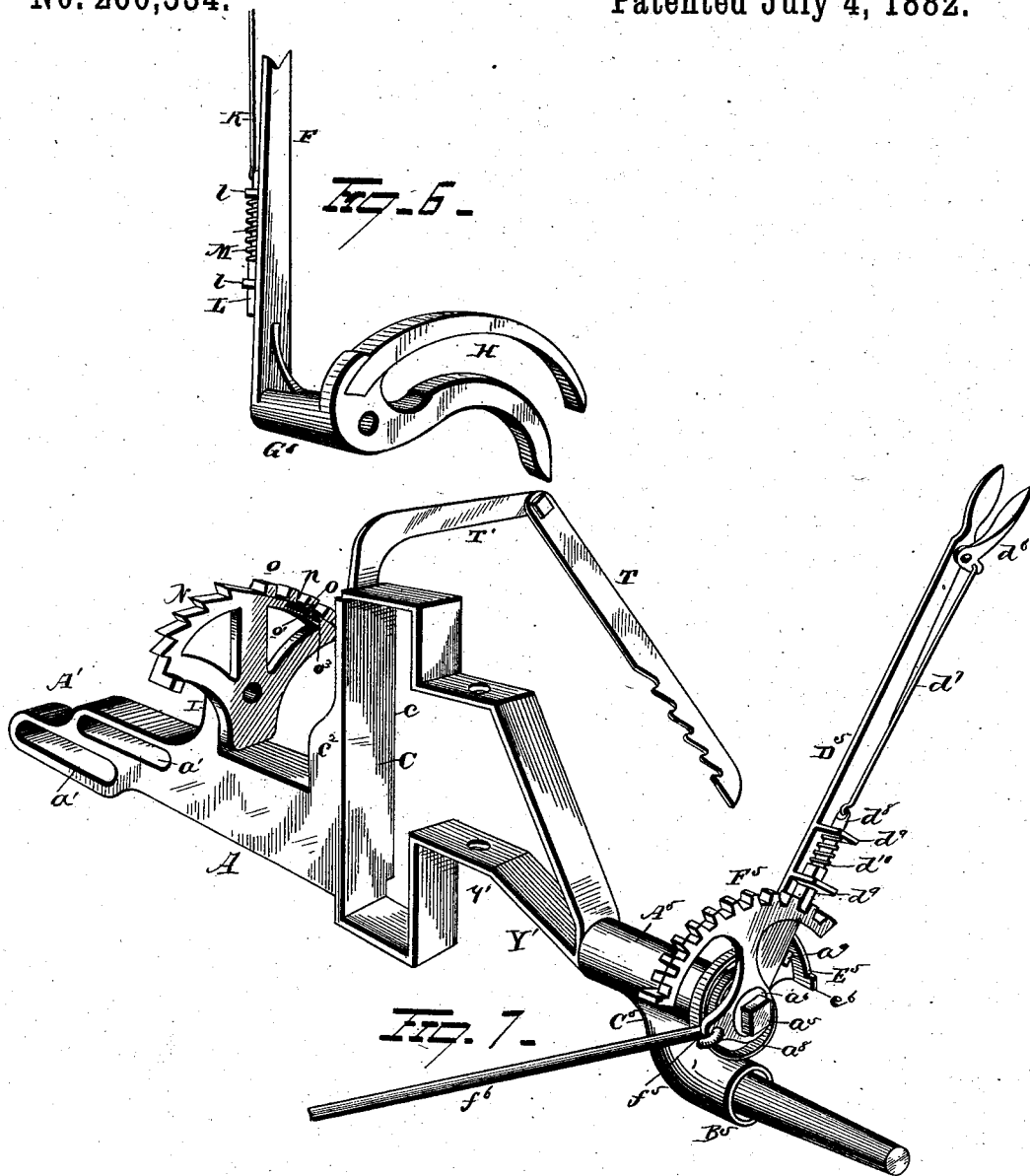
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UNITED STATES PATENT OFFICE.

WILLIAM L. CASADAY, OF NEW CARLISLE, INDIANA.

SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 260,534, dated July 4, 1882.

Application filed February 18, 1882. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM L. CASADAY, of New Carlisle, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Sulky-Plows; 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 pertains to make and use the same.

My invention relates to sulky-plows, the object being to provide a plow of such construction that the plow-point may be quickly and easily turned up to ride over obstructions in the ground and automatically righted or restored to its working position and locked therein.

A further object of my invention is to improve the construction of the plow frame and beam, the lifting-sector, land-spindle, and land-sector, whereby such parts may be lighter and stronger and better adapted for use, and so arranged relatively that the manipulation and adjustment of the plow will be facilitated.

With these ends in view the invention consists in the parts and combinations of parts hereinafter set forth, and pointed out in the claims.

In the drawings, Figure 1 represents a perspective view of a sulky-plow embodying my improvements. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation with wheels removed. Fig. 4 is a detached view of the plow-beam, partly in section, with its locking-brace. Fig. 5 is a detached sectional view of the land-spindle and its sleeve mounted upon the axle-spindle. Fig. 6 is an enlarged detached view of the lifting-lever and crow-bill. Fig. 7 is a detached view illustrating the peculiar form of the plow-frame, and Fig. 8 illustrates the devices for securing the rolling colter to the plow.

A represents the frame of the plow, one side of which forms a bearing, A', and is provided with two parallel elongated slots, a', adapted to receive the axle B of the spindle of the furrow-wheel B', said axle being held in position by bolts a² passing through slots in the axle and the slots a' of the frame, and by nuts a³.

A plate, a⁴, provided with perforations for the passage of the bolts a², is interposed between the frame and the nuts a³, to hold the axle B firmly in connection with the frame. The

inner end of the axle B is cut away or recessed and serrated on its front side, and adapted to engage with a serrated plate, a⁵, interposed between said inner end of the axle and the bearing A'. The furrow-wheel B' is mounted on the spindle B², projecting from the axle B, and is arranged at an angle to adapt it to run in the furrow to resist the tendency of the plow to deviate from the line of the draft, caused by the resistance of the land upturned and the absence of the landside, which in plows of the ordinary construction operates to overcome in great measure this tendency.

A more detailed description of the construction and operation of the furrow-side wheel and its connections is deemed unnecessary, since they constitute no part of the present invention, but are fully described and claimed in Letter Patent No. 246,598, granted to me September 6, 1881.

The central part of the plow-frame consists of a vertical guide-bar, C, provided at its rear side with a rib, c, adapted to fit within a corresponding groove, c', formed in the rear vertical jaw, D, of the front section, E, of the plow-beam, while the front side, c², of said guide-bar C is made plain to adapt it to bear against a correspondingly-plain edge of the front vertical jaw, D', of the front section of the plow-beam.

Upon a stud, d, projecting outwardly from the jaw D, is journaled a roller, G, upon the opposite side of which the curved arms of the crow-bill H bear as the jaw D is raised and lowered.

A lifting-lever, F, and the crow-bill H are made integral with or rigidly secured to a sleeve or hub, G', which is journaled on a rod or bearing, G², supported at one end by the guide-bar C and at its opposite end in a post, I. The lever F is provided at its upper extremity with a hand-lever, J, connected by a wire, K, or other suitable connection to a dog, L, journaled in two lugs, l, projecting from the outer face of the lifting-lever, and encircled by a spring, M, interposed between the said lugs and exerting a constant effort to keep the dog L in engagement with one of the teeth formed on the peripheral edge of a sector, N, made integral with or attached to post I.

The right-hand half of the sector N is provided with inclined teeth adapted by their

configuration to raise the dog L without manipulating the hand-lever J, and enabling the operator to lift the plow through a distance represented by half of the sector by simply pushing the lever F forward. However, in returning it to lower the plow, the dog L must be elevated. The left-hand half of the sector N is provided with an elongated slot, n , which admits of the attachment of a segment, O, provided with cog-teeth o . The segment is held in place by a bolt, o' , passing through a slot, o^2 , of the segment and through the slot n of the sector, and provided with a nut, o^3 . By thus constructing the sector N of two parts a greater range of movement is given the lifting-lever, and the depth of furrow can be better regulated, as the cogged segment may be adjusted relative to the sector by loosening the nut o^3 .

E represents the front section of the plow-beam, and E' the rear section of the same. The latter is provided with two perforated arms or ears, e^2 , between which is secured the rear perforated end, e^3 , of the front section, E, by gudgeon e^5 passing through one of the ears, e^2 , and the perforated end e^3 of the front section, and a bolt, e^6 , provided at one end with a head, e^7 , and adapted to pass through the ears and the gudgeon and be held by a nut, e^8 . By this connection of the two plow-beam sections the rear section is allowed a full pivotal movement, and any wear of the parts may be compensated for by tightening the nut e^8 , and thus preventing the rear section from lateral motion.

Within a recess, P, of the front section of the plow-beam is held the rear end of the tongue Q by bolts q and nuts q' .

D D' represent vertical jaws formed integral with the front section, E, of the plow-beam, and constructed, as above described, to slide on the guide-bar C of the plow-frame. The rear section, E', of the plow-beam is hollowed out or recessed, as shown, and provided with a slot, e^9 , to receive a plunger, R, pivoted to the lower end of the web d^3 of the rear jaw, D, by a pivot, d^6 . This plunger R extends rearwardly into the recessed portion of the section E' of the plow-beam, and is provided with a lateral stud, r , projecting through the elongated slot e^9 , formed in the side of the section E'.

A loop or catch, S, is formed upon or secured to the section E', adjacent to the slot e^9 , and said catch is adapted to engage a depending notched bar, T, pivoted at its upper end to a rearwardly-projecting bracket, T', secured rigidly to one side of the guide-bar C of the frame.

U represents a bracket cast upon or secured to one side of the front end of the section E' of the plow-beam. To this bracket U is pivoted a two-part locking-brace, U', the opposite end of the latter being provided with a depending lip, u , adapted to engage a catch, u' , formed upon the front section, E, of the beam adjacent to the jaw D'. The forward end of this locking-brace is provided with two up-

wardly-projecting perforated lugs, v , between which is pivoted by a pivot, v' , a lever, V, the rear end of which impinges against one end of a spring, v^2 , the opposite end of which is secured to the brace U'. The lever V is provided with a downwardly-projecting lip, v^3 , adapted to bear against the forward end of the locking-brace U', and with the aid of the spring v^2 to disengage said brace from the notch or catch u' . A further object of the lever V is to weight the front end of the brace to assist the latter to engage with its catch u' by gravity.

The brace U' serves to hold the two sections of the beam in rigid connection, and it will be obvious that upon disengaging the brace from the catch u' the rear section, E', to which the plow Z is connected, will fall, thus forcing the plow-point up from the soil.

In order to adapt the rear section, E', to different adjustments to vary the pitch or suction of the plow, I construct the locking-brace U' in two parts, x and x' . The rear and pivoted part, x , consists of an interiorly-screw-threaded sleeve adapted to receive the screw-threaded end of the part x' . The latter is provided with a nut, x^2 , interiorly threaded and adapted to be turned to lengthen or shorten the brace U', and thus vary the pitch or suction of the plow.

Y represents the driver's seat, secured by a suitable support to the seat-frame y , and so arranged relative to the brace U' that the latter will be within easy reach of the driver.

The operation of the plow as thus far described is as follows: Suppose the plow to be in working position, as illustrated in Fig. 1, the two beam sections being held in rigid connection by the locking-brace U', and it becomes necessary to pass an obstruction. The driver will depress the lever V, which will at once disengage the brace U' from its catch. The rear section, E', of the beam will then fall, thus tipping up the point of the plow, which will then pass over the obstruction. As the plow passes over the obstruction and the point begins to fall, the pendent notched bar T will engage with loop or catch S on the section E' of the beam, and the beam and plow will be suspended by said bar, and as the beam resumes its working position the plunger R, by means of its stud r , will disengage the notched bar from its catch S, the locking-brace U' will fall and engage with its notch u' , the plow being let down by the lifting-lever F. In the same way, when it is necessary to lift the plow out of the ground, the locking-brace is tripped, allowing the plow-point to tip up out of the ground, the notched bar T engaging the catch and holding the plow up until the lifting-lever engages its sector N and lifts the plow clear of the ground.

It is necessary that the dog of the lifting-lever should engage the first or lowest inclined tooth of the lifting-sector in order to utilize the automatic lift.

W represents a rolling colter, pivoted be-

tween the arms w by a pivot-bolt, w' . The arms w are provided at their point of union with a socket, w^2 , within which is pivotally secured the bent end w^3 of a standard, w^4 , which latter is adapted to be clamped in any suitable manner to a bracket, w^5 , secured to the land-wheel side of the tongue. The colter W is adapted to extend under the lower brace, Y' , of the frame. This brace is bent upwardly to form an arch, y' . This construction allows the colter to work freely without contact with the frame.

Upon the axle Y^2 of the frame is mounted the sleeve A^5 of the land-spindle B^5 . Said spindle and sleeve are arranged parallel, but diagonally opposite each other, and are connected by a curved brace, C^5 , made integral therewith. The sleeve is held in position by a threaded bolt, a^5 , and a washer, a^6 .

Surrounding the outer end, a^7 , of the sleeve A^5 is a coil-spring, a^8 , one end of which is secured to the sleeve, while the opposite end, a^9 , is bent, to adapt it to bear against the land-lever D^5 . The latter is perforated at its lower end, to adapt it to fit the outer projecting end, d^5 , of the axle Y^2 . This lever D^5 is provided at its outer end with a hand-lever, d^6 , connected by a wire, d^7 , to a dog, d^8 , the latter being supported in perforated lugs d^9 on the lever D^5 , and surrounded by a spiral spring, d^{10} , the ends of which respectively bear against said lugs. A bracket or shield, E^5 , projects, is secured to the upper side of the sleeve A^5 , and provided with stops e^5 e^6 , which limit the movement of the land-lever, and thus protect the spring a^8 from overstrain. A land-sector, F^5 , is secured to the outer end of the axle Y^2 in such position relative to the land-lever that the dog d^8 of the latter may engage with the teeth of the sector to raise and lower the land-wheel.

The sector F^5 is provided at a point adjacent to its pivotal point with a perforated lug, f^5 , to which is secured one end of a brace, f^6 , the opposite end of the latter being secured to the adjacent side of the tongue of the plow to firmly brace the parts together.

The land-wheel G^5 is mounted on the spindle B^5 , which is screw-threaded to receive an interiorly-threaded retaining-cap, g^6 , suitable washers being interposed between the wheel and cap to insure free movement of the wheel and prevent undue friction.

It will be apparent that many slight changes in the details of construction of my improvement may be resorted to without departing from the spirit of my invention. Hence I would have it understood that I do not limit myself to the exact construction shown and described, but reserve to myself the right to make such alterations of form and construction as may properly fall within the scope of my invention.

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

1. A plow-beam consisting of a forward section provided with vertical jaws adapted to slide upon a guide-bar of the plow-frame, and a rear section pivotally connected to said forward section and adapted to be adjusted vertically, substantially as described.

2. In a plow, the combination, with the frame, of a plow-beam consisting of a forward section provided with jaws adapted to slide on a guide-bar of the frame, and a rear section hinged to said forward section and adapted to be freely turned upward from its rear end, substantially as described.

3. In a plow provided with a jointed beam, the rear section of the plow-beam, provided with a bracket extending above the beam and adapted to receive a locking arm or brace which is pivoted thereto, and arranged to lock the two parts of the beam together, as and for the purpose set forth.

4. The combination, with a plow-beam consisting of two hinged sections, of a locking arm or brace pivoted at one end to a bracket on one of said sections, while its opposite end is adapted to engage with a notch on the other section, substantially as set forth.

5. The combination, with the rear section of the plow-beam, provided with an upwardly-projecting bracket, and the forward section provided with a notch or catch, of a locking-brace pivoted at its rear end to said bracket, while its opposite end is adapted to engage with said notch and provided with a spring-pressed lever, substantially as set forth.

6. The combination, with the plow-beam consisting of hinged sections, of a two-part locking-brace, one of said parts being pivoted to a bracket of one of the plow-beam sections, while the other part is screwed to said pivoted part and adapted to engage with a notch on the other plow-beam section, substantially as set forth.

7. The combination, with the sections of the plow-beam, of a locking-brace consisting of two independent parts connected so that the brace may be lengthened or shortened to vary the pitch or suction of the plow, substantially as set forth.

8. The combination, with the two sections of a hinged plow-beam, of a pivoted locking-brace provided at its free end with a spring-actuated catch-lever constructed to engage with the plow-beam when depressed and unlatch the main portion of the locking-brace, substantially as set forth.

9. The combination of two plow-beam sections, one of which is provided with two perforated ears or arms, while the other section is provided with a perforated end adapted to fit between said ears, and be held therein pivotally by a gudgeon, a bolt, and nut, which latter may be turned to compensate for friction and wear, as set forth.

10. The combination, with the frame of the plow and the plow-beam, of a rearwardly-projecting bracket rigidly secured to said frame,

and supporting pivotally a depending notched bar or latch adapted to engage with a catch on the plow-beam, substantially as set forth.

11. The combination, with the frame of the
5 plow and the plow-beam consisting of a forward section and a recessed and slotted rear section, of a rearwardly-projecting bracket secured to said frame and supporting pivotally
10 a depending notched bar, a loop or catch formed on one side of said rear section, and a plunger pivoted to the forward section of the plow-beam and extending rearwardly within the recess of the rear section of the beam, and provided with a laterally-projecting stud adapted
15 to move within the slot of said rear section and disengage said notched bar and catch, as and for the purpose set forth.

12. The combination, with the frame and two-part plow-beam, of the locking-brace for
20 holding the sections of the plow-beam rigidly together, a bracket secured to the frame and supporting a depending notched bar, a catch formed on or secured to the side of the rear section of the plow-beam, and a plunger pivoted to the forward section of the plow-beam
25 and working within a recess of the rear sec-

tion, and provided with a laterally-projecting stud extending through an elongated slot in said rear section and adapted to disengage said notched bar and catch, substantially as
30 set forth.

13. The combination, with the lifting-lever sector having inclined teeth cast solid there-with and provided with an elongated slot, of
35 an auxiliary sector-piece provided with cog-teeth and adapted to be adjustably secured to the sector, substantially as set forth.

14. The combination, with the sleeve of the land-spindle and its coil-spring and lever, of a
40 bracket secured to the axle-projection of the frame, and having outwardly-projecting lugs adapted to limit the movement of the spring, and thus protect the latter from undue strain, substantially as set forth.

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

WILLIAM L. CASADAY.

Witnesses:

F. C. NIPPOLD,
C. R. STICKNEY.