

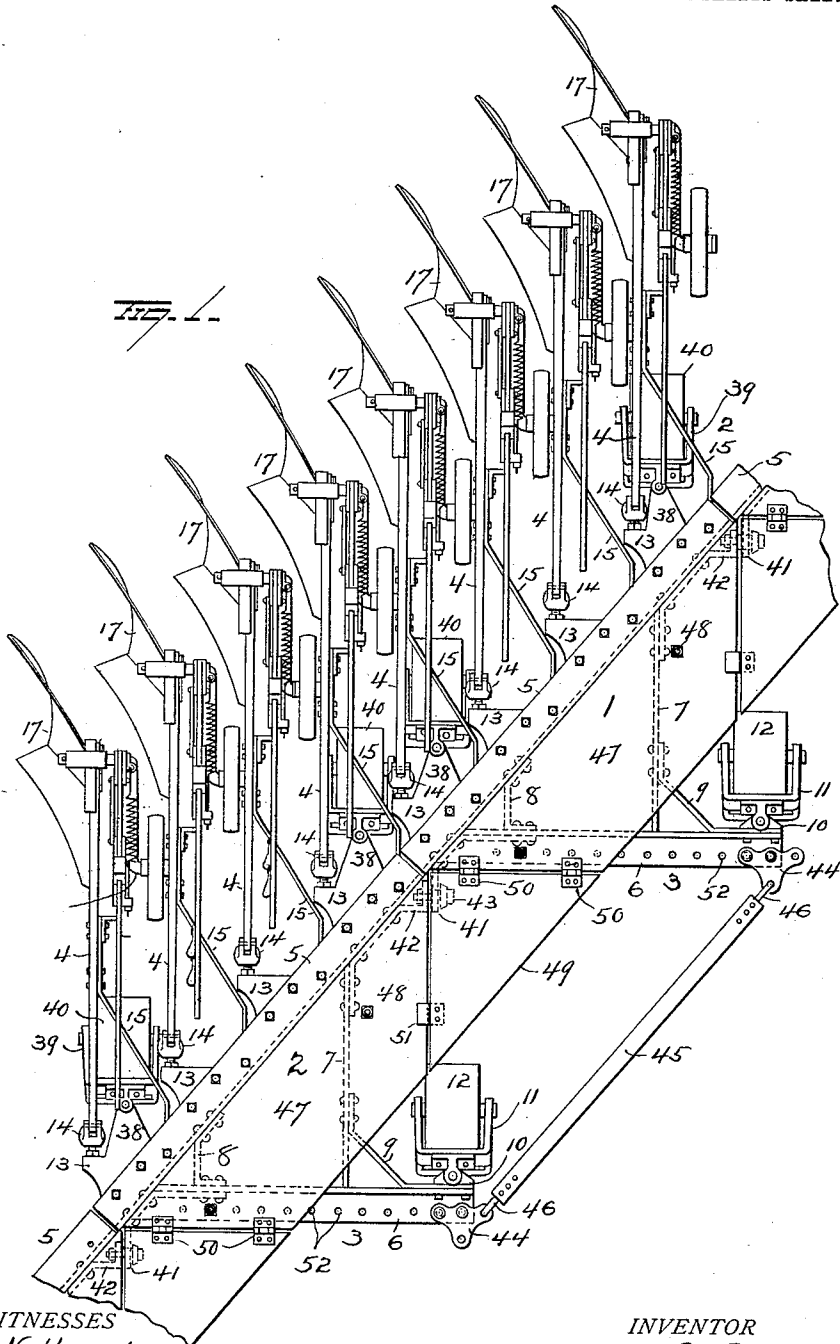
W. L. PAUL.
PLOW.

APPLICATION FILED JULY 12, 1910.

1,053,863.

Patented Feb. 18, 1913.

2 SHEETS-SHEET 1.



WITNESSES
E. Nottingham
C. F. Downing

INVENTOR
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By A. A. Seymour
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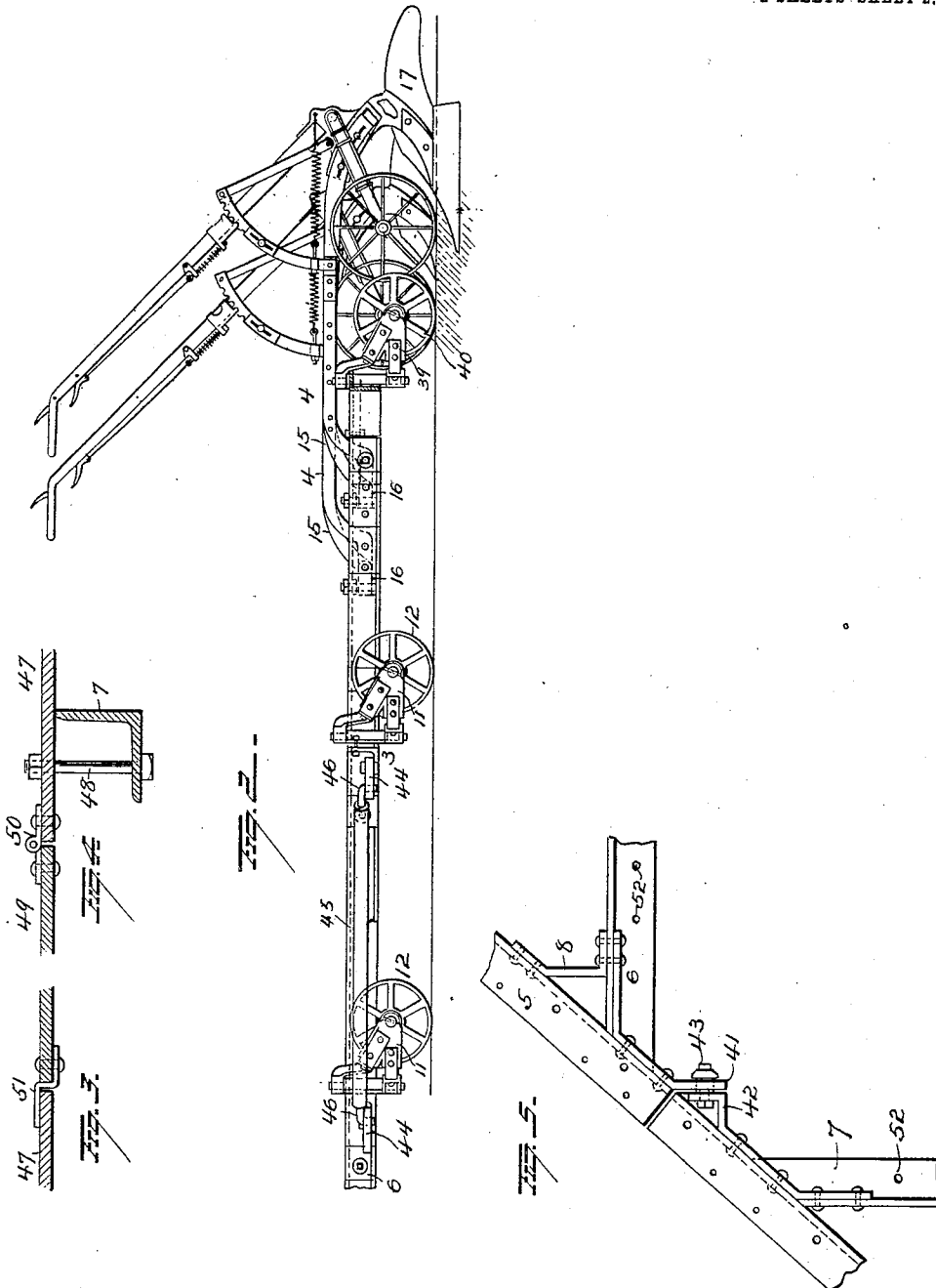
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UNITED STATES PATENT OFFICE.

WILLIAM L. PAUL, OF SOUTH BEND, INDIANA, ASSIGNOR TO OLIVER CHILLED PLOW WORKS, OF SOUTH BEND, INDIANA.

PLOW.

1,053,863.

Specification of Letters Patent.

Patented Feb. 18, 1913.

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To all whom it may concern:

Be it known that I, WILLIAM L. PAUL, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in 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 appertains to make and use the same.

This invention relates to improvement in plows and more particularly to that type known in the trade as engine gang plows.

One object of the invention is to provide a plow structure comprising a plurality of units, each embodying a truck frame and a plurality of plows, and to so construct such units that they shall be capable of separate use or so that they can be readily connected and operated in any desired manner.

A further object is to so construct an engine gang plow structure comprising a plurality of connected units or sections, that the sectional framework embodying such units or sections shall be capable of flexing in two directions at substantially right angles to each other to permit the plow structure to adapt itself to the conformation of the ground.

A further object is to so connect two or more units or sections of a plow structure, that said units or sections shall be capable of pivotal movement in two directions relatively to each other.

With these 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 invention. Fig. 2 is a side elevation of the same showing only two plow beams and the devices which cooperate therewith, and Figs. 3, 4, and 5 are detail views.

My improved plow structure comprises a plurality of units, two of such units, 1 and 2 being shown in Fig. 1 of the drawing although it is apparent that any desired number of such units may be employed and each of said units is the same in construction. Each unit comprises a truck frame or section 3 and a series of plows having their beams 4 connected with said truck frame.

Each truck frame has a general triangular shape and comprises an angle iron member 5 to be disposed at an angle of 45 degrees more or less to the direction of travel of the plow; an angle iron member 6 secured at one end to the member 5 near the end of the latter and projecting laterally therefrom so as to be disposed at right angles to the direction of travel or line of draft of the machine, and an angle iron member 7 secured at one end to an intermediate portion of the member 6 and at its other end to the diagonal member 5 near the end thereof opposite to that to which the member 6 is secured. A brace 8 extends from the member 5 to the member 6 and a similar brace 9 extends from the free end of the member 6 to an intermediate point on the member 7. At the free end of the member 6 of the truck frame (which in effect constitutes the apex of the triangular truck frame) a bracket 10 is secured for the accommodation of the swiveled frame 11 of a truck wheel 12.

A series of brackets 13, located at intervals on the diagonal member 5 of the truck frame unit, project rearwardly from said member 5 and to each of these brackets, a longitudinally adjustable knuckle 14 is secured and adapted for pivotal connection of a plow beam 4 therewith. Each plow beam 4 is disposed parallel with the line of travel of the machine and all of the plow beams are disposed parallel with each other but by reason of the diagonal disposition of the truck frame member 5, the connections of the beams with the truck frame are advanced progressively from one end of the series of plow beams to the other. A laterally projecting brace 15 is secured to an intermediate portion of each plow beam and at its forward end, each brace 15 is connected with the angle member 5 of the truck frame unit by means of a vertically adjustable knuckle 16. A soil engaging member 17 is located at the rear end of each plow beam. By connecting the forward end of the plow beam with the truck frame unit through the medium of the longitudinally adjustable knuckle 14, I am enabled to regulate the angular relation of the plow to the truck frame unit, thereby changing or adjusting the distance between various plows. With the use of the vertically adjustable knuckle 16 with which the brace 15 is connected, I am en-

abled to level a plow relatively to the frame and to the other plows of the series.

The end brackets 13 on each truck frame unit are provided with rearwardly projecting members 38 with which frames 39 are pivotally connected and these frames carry gage wheels 40. These gage wheels are thus located rearwardly of the pivotal connections of the adjacent plow beams with the truck frame unit and serve to gage the height of the forward ends of all the plow beams of the series and serve to give more uniform plowing than if said gage wheels were placed forwardly under the truck frame at some distance ahead of the point of the plow.

Each truck frame unit is provided at one end with a forwardly projecting arm 41 and at the other end with an L-shaped arm 42,—said arms being located at respective ends of the member 5 of the truck frame unit. Two units are placed together so that their members 5 will be in alinement with each other as shown in Fig. 1 and the arm 41 of one unit disposed parallel with the free member of the L-shaped arm 42 of the adjacent member. The arms 41 and 42 of adjacent members are loosely connected together by means of a bolt 43, the connection being sufficiently loose and permitting sufficient play to allow the plow units or sections to flex relatively to each other in two directions substantially at right angles to each other and thus permit the plow structure to readily adapt itself to the contour of the ground over which the plow is working.

To the free end of the member 6 of each truck frame unit, a bracket 44 is secured and the bracket 44 of one truck frame unit is connected with the bracket 44 of the adjacent truck frame unit by means of a rod or link 45 the respective ends of which are provided with hooks 46 to loosely engage in holes in the brackets 44 of the respective truck frame units.

A platform member 47 is located on each truck frame unit and secured thereto by means of bolts 48. The respective ends of each platform member 47 are beveled and the triangular space between the platform members on adjacent truck frame units is closed by a triangular platform member 49 which is connected at one edge by means of hinges 50 with the platform member on one truck frame unit and supported at its opposite edge by means of a hanger 51 which engages the platform member 47 on the adjacent truck frame member. Thus a continuous platform is provided from end to end of the plow structure and is so constructed as not to interfere with the flexing of the plow unit.

The members 6 of the truck frame unit are provided with perforations as shown at 52 to facilitate the attachment of chains or

other draft devices by means of which the plow structure can be connected with a traction engine.

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

1. A gang plow structure, comprising a plurality of plow units, means connecting said plow units in a manner to permit them to flex vertically with relation to each other in directions about axes respectively approximately parallel with and at right angles to the line of draft and means connecting said units and preventing appreciable horizontal relative movement.

2. A gang plow structure, comprising a plurality of plow units, means connecting said plow units in a manner to permit them to flex vertically with relation to each other in two directions about horizontal axes, respectively, approximately parallel with and at right angles to the line of draft and means connecting the forward portions of said units and preventing appreciable horizontal relative movement.

3. A gang plow structure, comprising a plurality of units, each unit comprising a truck frame and a plurality of plows connected therewith, means connecting the truck frames of adjacent units in a manner to permit the units to flex vertically in directions about axes, respectively, approximately parallel with and at right angles to the line of draft and a rigid bar connecting the forward portions of said units.

4. A gang plow structure, comprising a plurality of units, each unit comprising a truck frame and a plurality of plows connected therewith, said units being so disposed that the portions of the truck frames with which the plows are connected will be disposed in alinement with each other, means loosely connecting adjacent ends of the alined portions of the truck frames, and means loosely connecting the forward portions of adjacent truck frames, whereby said units can flex vertically with relation to each other in directions about axes, respectively, approximately parallel with and at right angles to the line of draft.

5. A gang plow structure, comprising a plurality of units, each unit comprising a substantially triangular truck frame and a plurality of plows connected therewith, means loosely connecting the triangular truck frames with each other so as to dispose their hypotenuses in an approximately straight line, and means loosely connected at respective ends with the forward portions of adjacent truck frames.

6. In a gang plow structure, the combination of a plurality of units, each comprising a triangular truck frame and a plurality of plows connected therewith, means loosely connecting the triangular truck

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frame units so as to dispose their hypotenuses in a substantially straight line, means loosely connecting forward portions of adjacent truck frame units, and supporting
5 wheels for the forward portions of said truck frame units, of a platform member secured upon each truck frame unit and an intermediate platform member hinged to
10 the platform member on one truck frame unit and loosely supported by the platform member on the adjacent truck frame unit.

7. A gang plow structure, comprising a plurality of successive units, each unit comprising a truck frame and a plurality of
15 plows connected therewith, means loosely

connecting the adjacent ends of adjacent frames, and means loosely connecting the forward portions of adjacent frames, whereby said units can flex vertically relatively
to each other, about axes respectively approximately parallel with and at right angles
20 to the line of draft.

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

WILLIAM L. PAUL.

Witnesses:

THOMAS A. TIERMAN,
DONALD A. HIMES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents.
Washington, D. C."
