

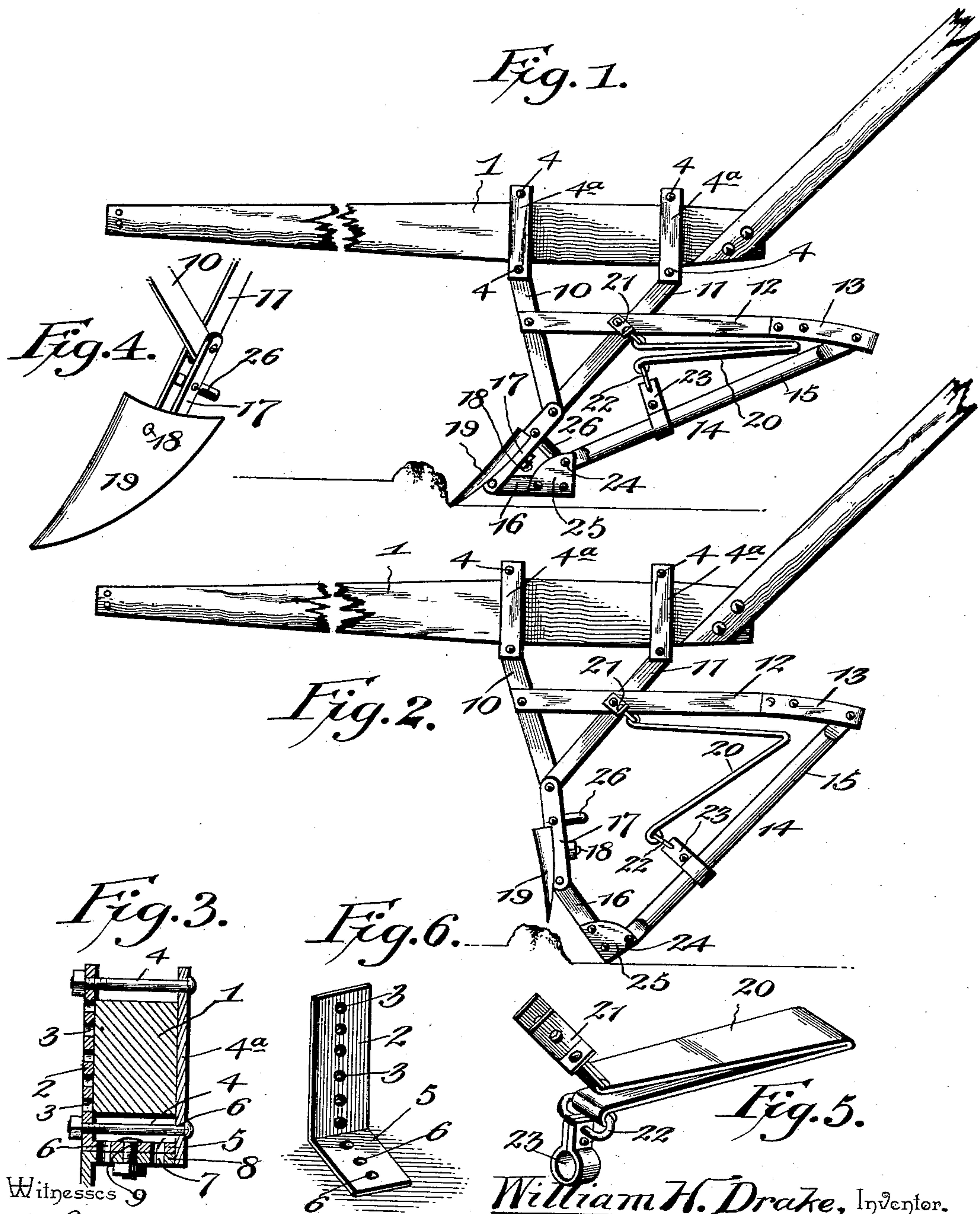
No. 618,070.

Patented Jan. 24, 1899.

W. H. DRAKE.
PLOW FOOT.

(Application filed Oct. 15, 1898.)

(No Model.)



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By his Attorneys.

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UNITED STATES PATENT OFFICE.

WILLIAM H. DRAKE, OF WINTHROP, ARKANSAS.

PLOW-FOOT.

SPECIFICATION forming part of Letters Patent No. 618,070, dated January 24, 1899.

Application filed October 15, 1898. Serial No. 693,617. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DRAKE, a citizen of the United States, residing at Winthrop, in the county of Little River and State of Arkansas, have invented a new and useful Plow-Foot, of which the following is a specification.

My invention relates to a plow-foot of that class wherein mechanism is provided for allowing the plow-shovel or cultivator-blade to yield when it comes in contact with an immovable or strongly-resistant obstacle to avoid the straining or fracture of the parts of the device; and the object in view is to provide such a construction and arrangement of parts in a device of this class as to insure the elevation of the plow-shovel over the obstacle and the prompt return of the shovel to its operative position after passing the obstacle.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side view, in its operative position, of a plow-foot constructed in accordance with my invention, the same being shown attached to a plow-beam. Fig. 2 is a similar view showing the relative positions of the parts after the plow-shovel has encountered an obstacle and indicating the elevation of said plow-shovel by the contact of the shoe with the surface of the soil. Fig. 3 is a detail transverse section showing a construction of clamp for attaching the improved plow-foot to a beam. Fig. 4 is a detail view in perspective of the lower portion of the plow-foot, showing a cultivator-shovel attached thereto. Fig. 5 is a detail view in perspective of one form of spring employed for yieldingly holding the parts of the plow-foot in their normal positions. Fig. 6 is a detail view in perspective of a clamp-plate.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The attachment embodying my invention is applied to a plow-beam 1, as illustrated in the drawings, although in practice it may be applied in a similar position to the frame of any other suitable form of cultivator or agricultural machine—such as that of a harrow,

steam-plow, or the like—the means of attachment consisting of suitable clamps which obviously must be adapted to the cross-sectional shape of the beam. In the construction illustrated these clamps consist of angle-plates 2, each having a plurality of openings 3 for the reception of tie-bolts 4, which extend transversely of the beam from an opposite plate 4. Each clamp-plate 2 is provided with a transverse or horizontal arm 5, also provided with a plurality of bolt-openings 6, one of which is adapted to register with one of a plurality of similar openings 7 in a transverse ear 8 at the upper end of one of the frame-bars of the plow-foot, said registering openings of the arm 5 and ear 8 being engaged by a fastening-bolt 9 to lock the frame of the plow-foot at the desired transverse adjustment with relation to the plow-beam 1.

In the construction illustrated the frame of the plow-foot consists of front and rear bars 10 and 11, extending downwardly from the clamps and united at their lower extremities to form a V, together with a rearwardly-extending supporting-arm 12, which intersects both of said braces or bars 10 and 11 and is suitably bolted thereto. The supporting-arm 12 terminates at its rear end in a loop 13, in which is fulcrumed at its upper rear end a jointed plow-standard brace 14, having a rear section or member 15 and a pivotally-connected front section or member 16, which is connected at its front extremity with the lower end of the movable plow-standard section 17. The movable plow-standard section 17 when in its normal position forms a continuation of or is located substantially in alinement with the rear bar 11, hereinbefore described, and said bar 11 and section 17 constitute the plow-standard, of which the front bar 10 constitutes a front brace, said front brace being arranged to intersect the plow-standard at the joint between the stationary plow-standard section 11 and the movable plow-standard section or member 17. In practice I prefer to construct the movable plow-standard section 17 to form a loop or with parallel checks or bars with an intervening slot or space through which the securing-bolt 18 of a plow-shovel 19 may extend.

The front and rear pivotally-connected sections or members of the plow-standard brace

14 are in their normal positions arranged approximately in alinement, and said sections or members are held yieldingly in their normal positions by means of a spring, which in the construction illustrated is of V shape, as shown at 20, and occupies a position between the rear supporting-arm 12 and the rear brace section or member 15. The extremity of one member of said spring is loosely connected with a pivotal bracket 21, mounted upon the supporting-arm 12 at or near the point of intersection of said arm with the upper plow-standard section 11, and the extremity of the other arm or leaf of the spring 20 is loosely connected, by means of a link 22, with a clip 23, engaging the rear plow-standard brace-section 15. The tendency of this spring is to hold the brace 14 in the position illustrated in Fig. 1, and hence maintain the lower or movable plow-standard section 17 in a position in alinement with the upper section 11 of said standard; but this spring is adapted to yield when the extremity of the plow-shovel comes in contact with an obstacle to buckle the brace 14 downwardly at its joint. The pivotal point of connection 24 of the rear brace-section 15 with the front brace-section 16 is sufficiently out of alinement with said front brace-section to allow this buckling operation to be accomplished. Secured to the brace, however, at the joint between the front and rear sections thereof, is a shoe 25, constructed to ride upon the surface of the soil when the brace 14 is buckled, and arranged in the path of the upward movement of said shoe, to limit the same when the brace is in its normal position, is a stop-pin 26, carried, preferably, by the lower or movable plow-standard section 11. Therefore with the parts in the positions illustrated in Fig. 1 the contact of the plow-shovel with an obstacle, such as a root or rock, will cause the brace 14 to buckle downwardly; but this movement of the brace immediately brings the shoe 25 into contact with the soil, whereby the downward pressure of the shoe causes the elevation of the shovel, and hence the occupation by the parts of the relative positions indicated in Fig. 2, wherein the shovel is raised over the obstacle and is adapted to advance without contact therewith. Thus when the shovel which is supported by a plow-foot constructed in accordance with my invention comes in contact with an obstacle, the supporting-shoe of the foot is depressed into contact with the soil and the shovel is elevated to pass over the obstacle, the return of the shovel to its normal position occurring as soon as the parts are released, or, in other words, as soon as the shovel passes the obstacle. This avoids the extensive forward movement of the cultivator while the plow-shovel is in an inoperative position, while at the same time the unnecessary straining of the parts of the mechanism is prevented.

It will be understood that other forms of

springs may be employed for maintaining the parts yieldingly in their normal or operative positions and that various other changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, I claim—

1. A plow-foot having a pivotal standard-section, in combination with a depressible yieldingly-supported shoe, connected with said standard-section, and adapted to be depressed by the rearward movement of the standard-section from its normal position, substantially as specified.

2. A plow-foot having a pivotal standard-section, in combination with a jointed plow-standard brace, connected at its front end with said standard-section and provided at its joint with a depressible shoe, and yielding means for holding the brace with its elements in their normal positions, substantially as specified.

3. A plow-foot having a pivotal standard-section, a brace for said standard having pivotally-connected front and rear members, yielding means for holding the members of the brace in their normal positions, and a shoe carried by one of the members of the brace adjacent to and in rear of the pivotal standard-section, substantially as specified.

4. A plow-foot having a pivotal standard-section, a jointed brace connected at its front end with said standard-section, and provided with yielding means for holding it in its normal position, a shoe carried by the brace in rear of said standard-section, and a stop for limiting the upward movement of the shoe, substantially as specified.

5. A plow-foot having a pivotal standard-section normally inclined forward toward its lower end, a rearwardly and upwardly inclined plow-standard brace, jointed at an intermediate point, with its front extremity pivotally connected with said standard-section, a return-spring for yieldingly holding the brace in its normal position, and a shoe carried by the brace contiguous to the joint between its sections, and adapted to be depressed by the rearward swinging movement of said standard-section, substantially as specified.

6. A plow-foot having a pivotal standard-section inclined forward toward its lower end, a jointed brace having a front section pivotally connected with and extending rearwardly from the lower end of the said standard-section, and a rear section, pivotally connected with, and out of alinement with, said front section, and having its rear end pivoted to the frame of the plow-foot, and yielding means for holding the rear section of the standard-brace in its normal position, substantially as specified.

7. A plow-foot having a sectional standard including a fixed upper member and a piv-

otal lower member, a fixed front brace extending forwardly from the lower extremity of the fixed member of the standard, a supporting-arm extending rearwardly from said
5 fixed brace and stationary member of the standard, a jointed brace pivotally connected at its lower front extremity to the pivotal member of the standard and at its upper rear end to the rear end of said supporting-arm,
10 said brace being adapted to buckle downwardly at its joint, and a return-spring for yieldingly holding the members of the brace in their normal relative positions, substantially as specified.

15 8. A plow-foot having a pivotal standard member, a jointed brace extending rearwardly and upwardly from the lower extremity of

said standard member, and adapted to be buckled downwardly to elevate a shovel attached to said standard member, a pivotal 20 ear mounted upon the frame of the plow-foot, a double leaf-spring having one of its arms connected with said pivotal ear and a loose connection between the other arm of said spring and one of the members of said jointed 25 brace, substantially as specified.

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

WILLIAM H. DRAKE.

Witnesses:

C. M. SHEPPERSON,

R. T. SESSIONS.