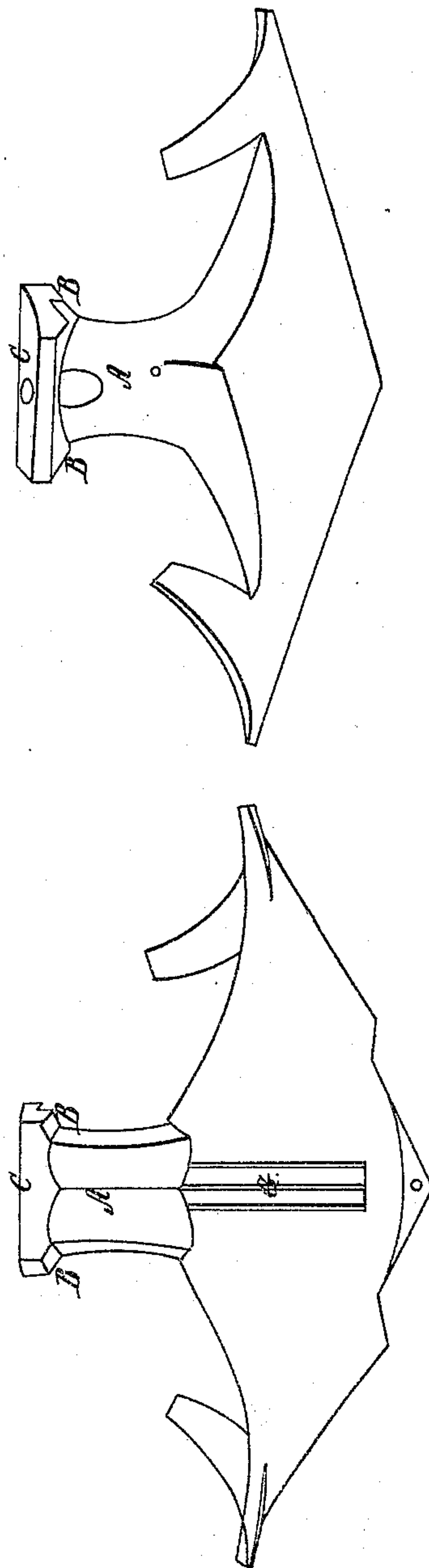


Side-Hill Plow.

Patented Aug. 16, 1853.



UNITED STATES PATENT OFFICE.

WM. H. BABBIT, OF WAYNESBURG, PENNSYLVANIA.

IMPROVEMENT IN HILLSIDE-PLOWS.

Specification forming part of Letters Patent No. 9,944, dated August 16, 18 3.

To all whom it may concern:

Be it known that I, WILLIAM HARRISON BABBIT, of Waynesburg, in the county of Greene and State of Pennsylvania, have invented a new and useful Improvement on Hillside or Right and Left Plows, which is constructed with two points and mold-boards, one right and the other left, the heels of which are joined, a swinging section to the mold-boards, and beam that swings half-way round; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 presents a view of the points, stationary part of the mold-boards, and upright shaft; Fig. 3, of the points, landside, and upright shaft; Fig. 4, of the swinging part of the mold-board; Fig. 5, of the two bolts which attach the beam of the plow with the head of the upright shaft; Fig. 6, of the lever.

The points of the plow and stationary parts of the mold-board are of the usual form back to the heels, where they are so joined as to form an angle by their bases of about one hundred and forty degrees. This angle elevates the base of one point forty degrees, when the other is horizontal. From the vertex of this angle and with the line of junction rises an upright shaft, (marked A,) which is solid cast-iron, about one inch and a fourth thick, and six inches in width up to within one inch of head C, where it is extended, forming a projection of an inch on each side, (marked B B,) making the width equal to the length of said head. This head C is cast solid with and forms the top of said upright. Said head is about eight inches in length, three and a half in width, and one inch and a half deep, with the ends so rounded as to adapt them to a circle of eight inches in diameter. The top of said head is a plane at right angles to said upright, with a round tapering hole down through the center, about one inch and a fourth at the top and one inch at the lower side. Said head is projected over said upright A, next the landside, so said side of said upright is tangent to said round hole in the center of said head. The under side of said head and the aforesaid side of said upright form an acute angle of

about eighty degrees. The purpose for which said angle is made acute is so that resistance against the plow when in use will tend to draw and hold the lower end of bolt M (hereinafter described) in the vertex of said angle, one side of said angle being parallel with said bolt. The top of the aforesaid upright shaft is inclined toward the mold-board side about one-third of the width of the base of the plow for the purpose of giving the plow land with the beam parallel with the landside, and to place the handles of the plow, which are equally sprung, in a right position for the plowman to walk in the furrow.

The swinging section of the mold-board, Fig. 4, is made of iron and wood. About three inches and a half of the lower side is cast-iron, with a groove in the form of a V in the upper edge. The upper part is made of wood, the lower edge of which is adapted to and joined with the cast-iron in the aforesaid groove. The wood is firmly fastened to the cast-iron by means of two iron bolts with a screw on the upper end of each. Flange D serves to keep the swinging and stationary parts of the mold-board even at their junction. Through the swinging part of the mold-board, from E to F, passes a half-inch iron bolt, on which it swings in aperture G, between the stationary parts of the mold-board.

The lever, Fig. 6, (marked O,) is made of iron. It is about one inch and a half by one inch at the fulcrum-pin hole, (shown at H,) and slightly tapered each way. The back end of said lever may be made of wood.

The beam of the plow is of the usual size, tapering to the front end, with the top straight. The under side is also straight about three feet and a half back to a notch which extends across said beam, and eight inches back, where it forms a right angle. The back end of said notch is two inches deep, and forms an arc of a circle which extends across said beam, adapted to the ends of head C. The front end of this notch is sloped in fifteen degrees from the lower side of said beam two inches and a half back, where the slope is increased to twenty-one degrees, which is continued to the back end of said notch. Each of these slopes is a plane, and at their junctions form an angle of one hundred and seventy-three degrees. Those planes are plated with iron, to prevent

wear as the beam turns on head C. In the under side of said beam, at the back end, is a groove (not shown in the drawings) extending from said back end to the aforesaid notch. Said groove is equidistant from the sides of said beam, one inch wide, for inches deep at the back end, and sloped up to one inch deep at the front end; and over said groove is a forked cast-iron plate, the front end of which extends to and forms a part of the back end of the above-described notch, and said fork is adapted to and forms a part of said groove. Said plate is about three-fourths of an inch thick, extends across the under side of said beam, and is firmly fastened thereto by means of two iron bolts passing up through said beam, with a screw on the upper end of each.

The handles of the plow are equally sprung and fastened on the sides of the beam above the aforesaid notch by means of two iron bolts, which pass through said handles and beam, with a screw on each end. The above-described notch in the back end of the beam is adapted to and works on head C, and said notch and head are the principal sides of a hinge upon which the beam of the plow turns from one point of the plow to the other. The back plane in said notch rests on the back end of head C and forms the middle one of three bearings against said head in said hinge, which prevent the beam of the plow from vibrating up and down when said hinge is locked. The front plane in said notch is elevated for the purpose of letting the front end of the beam fall thereon, so as to detach the lower end of bolt M from the aforesaid acute angle under head C, so as to let the beam turn to the right and left, as required to reverse the plow.

Head C and the beam are attached by means of two iron bolts, L and M, (shown in full by Fig. 5,) with a screw on the upper end of each. Both of said bolts pass down through said beams, equidistant from the sides, and at right angles with the top. Bolt L passes through said beam at the center of said planes in the aforesaid notch, and bolt M at the front end of said notch. The lower ends of said bolts are sprung back at the under edge of said beam, so said lower ends form right angles with the back plane in said notch. The lower end of bolt L is adapted to, passes through, and works in the aforesaid round tapering hole in head C, and is the pivot of the aforesaid hinge upon which the beam turns. When said hinge is locked the said lower end of bolt L rests against the side of said hole opposite the side of the upright, which is tangent to said hole and forms the middle one of three bearings, which prevents the beam from turning to the right or left on said head. Bolt M is turned back at right angles under the front end of head C, the back end of which is perforated and put on the lower end of bolt L, where it is firmly fastened by means of a screw to increase its strength.

Lever O extends from its fastening I between the handles one inch on the under side of the

back end of head C. Said lever passes through the above-described groove in the back end of the beam, where it is hung in range with the lower ends of bolts L and M on a fulcrum-pin shown at K, which is about four inches back of head C. Said lever serves as a lock to fasten said hinge to prevent said beam from moving on head C. When said beam is turned over either point of the plow, by drawing the back end of said lever to its fastening I its front end will be raised against the back end of head C, and the lower end of bolt M will be thereby raised against the front end of head C, thereby forming the outside two of three bearings, which prevent the beam of the plow from vibrating up and down, and when said lever is drawn to its fastening, as aforesaid, the sides of its front end will alternately, as the plow is reversed, rest against the back projected edge (marked B) of the upright, and it thereby forms the back one of three bearings in said hinge, which prevents said beam from turning to the right or left, and as the plow is reversed the sides of the lower end of bolt M will alternately turn against the front projected edge (marked B) of said upright, and thereby form the front one of three bearings in said hinge which prevent said beam from turning to the right and left.

If the above-described three bearings against head C in said hinge, which prevent the beam of the plow from vibrating up and down, should become out of range by wear, shrinkage of the beam, or otherwise, they may be adjusted to any degree of exactness by raising or lowering (as the case may require) the front one of said three bearings (which is bolt M) by the screw on its upper end and the screw on the lower end of bolt L; and if the other three bearings in said hinge, which prevent said beam from turning to the right and left, should become so worn as to work too loose, they may be adjusted by bolt L, the round tapering end of which forms the middle one of the said three bearings, and operates against the other two on the principle of the wedge. Consequently by raising or lowering (as the case may require) said bolt L by the screws on its upper and lower ends the said three bearings may be adjusted to any degree of exactness and made to work fast or loose at pleasure.

Having fully described the construction of the plow, I will explain the action and operation of the hinge upon which the beam of the plow turns.

Suppose the plowman to turn the beam over either of the points, it will be stopped when parallel with the landside by means of the lower end of bolt M coming against the front edge (marked B) of upright A. Then suppose the plowman to draw the lever to its fastening I between the handles, its front end will be raised up by the back edge (marked B) of said upright against the under side of the back end of head C, which will draw the back plane in the aforesaid notch in the beam firmly down on the back end of said head, and will also

raise the lower end of bolt M up in the acute angle against the front end of head C, which will lock the aforesaid hinge and prevent the beam of the plow from vibrating up and down, or turning to the right or left; and resistance against the plow when in use will also tend to lock said hinge more firmly, as the resistance is with and not against the power of the lever. Then suppose the plowman to raise said lever from its fastening I, it will drop its front end below the projection B on the back edge of upright A. Then by giving the handles a slight rise it will balance said beam on the front plane in the aforesaid notch, which shall detach the lower end of bolt M from the aforesaid acute angle under head C, and will leave

the beam free to turn with the team either to the right or left, as desired.

Having fully described my plow with the improvement, what I claim as new, and for which I desire to secure Letters Patent, is—

Constructing and arranging head C in the hinge which connects the beam of the plow with upright A, so as to lock said hinge by means of bolt M before the pivot of said hinge, and by lever O behind said pivot, for the purpose of making the bearings in said hinge adjustable, substantially as herein set forth.

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Witnesses:

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JNO. C. FLENNIKEN.