

UNITED STATES PATENT OFFICE.

ALBERT B. BLACK, OF CONCORD, MASSACHUSETTS.

SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 482,720, dated September 20, 1892.

Application filed April 13, 1892. Serial No. 428,939. (No model.)

To all whom it may concern:

Be it known that I, ALBERT B. BLACK, of Concord, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Snow-Plows, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of this invention is to furnish an improved snow-plow especially adapted to the removal of snow from sidewalks and gutters; and my improvements embrace certain detail features illustrated in the drawings and hereinafter fully described and claimed.

The point is peculiar in that on the land-side there is a recess for the front end of the side wall to fit into, with a rigid upright portion to firmly bolt such front end to, so that no direct thrust comes upon the side wall, it being protected by the recess in the rear portion of the point. The adjustable wing is so hinged to the point that it swings out horizontally to the extent required. This hinge is peculiar in its construction and of great importance. Three cross-bars are cast with the point and extend horizontally from the vertical landside to the concave side across the rear of the point, and to these cross-bars the front end of the adjustable wing is hinged by means of a vertical rod running down through the three cross-bars and three projecting lugs at the front of the wing. The outer face of the wing is beveled off at its front end to fit approximately to the rear portion of the concave side of the point. The entire point is cast in one solid piece and very strong.

The device for adjusting and holding fast the wing in its various positions is of novel construction and special utility. It consists of a ratchet-bar held in place by a cam-lever mounted on the platform fixed to the land-side, the bar being bent back above the cam so that both its ends are hinged one above the other to the inner face of the wing and move with it. The upper hinge is a plain vertical one. The lower one is preferably a ball-and-socket joint. By this construction the wing is supported against the pressure of the snow at two different heights by a single fastening device. The wing is furnished with a handle fixed to its inner face by which it may be manipulated by the operator—as, for in-

stance, when necessary to raise it to avoid or pass over any obstacle.

The front of the plow also presents novel features. The forward end of the beam has a fender consisting of a curved or inclined bar bolted to the beam to prevent striking trees or posts. The beam also has a roller-fender at a suitable point to prevent contact of the side of the plow with fences or buildings. The plow-point is furnished with a curved upturned steel or iron guard secured firmly to both faces of the point along the lower edges, then joined or welded together, and curved upwardly like a sleigh-runner to surmount obstructions, the upper end of this guard being bolted to the front part of the beam and extended to one side to strengthen the support for the oblique draft-rod.

In the drawings, Figure 1 is a perspective view of my improved plow seen from the land-side and rear. Fig. 2 is a similar view of the point and of a portion of the wing disconnected therefrom, and Fig. 3 is a rear view of the machine.

A is the point of the plow, having the vertical or land side and the diverging or concave side with the cross-bars B B all cast in one. The vertical recess *a* (seen in Fig. 2) serves to receive the forward end of the side wall C of the plow, which fits in flush and may there be bolted to the point, the beam D then extending along the face of the point and side wall and secured to both.

The adjustable wing E, which regulates the width of path cleared by the plow, has at its front end projecting lugs F, fitting upon and between the cross-bars B of the point A, and both are perforated, as shown in Fig. 2, to receive a vertical pin or pins G, Fig. 1, which completes a hinge upon which the wing swings horizontally or by which the front end of the wing is secured. The upper and lower lugs come between the upper and lower cross-bars of the point, so that the wing cannot become detached by lifting it up. The rear end of the wing is adjustably braced and firmly supported against the snow-pressure when in use by a device peculiar to my invention. A double brace H, bent about the middle and pivoted at both ends to the inner wall of the wing, extends toward the vertical side wall C of the plow. The lower member of

this bent brace is a ratchet-bar having a series of notches I in its upper edge engaging with a pawl or cam on a pivoted lever L, mounted in a bracket K, fixed on the step or platform M. The weight of the lever-arm tends to keep its cam engaged with the ratchet-bar and the pressure of the snow increases this tendency. The lower hinge of the brace is preferably a ball-and-socket joint.

10 A handle N is secured to the wing for manipulating it when required. The plow proper has, in addition, two handles O.

At the front end of the plow I provide an offset fender P, secured to the beam and bent 15 aside, as in Fig. 1, to prevent the end of the beam striking against obstructions nearly in the line or draft. A roller-fender Q is also provided to keep the side of the plow from contact with fences or buildings.

20 R represents a steel or iron guard serving as a runner and cutter to enable the plow to easily ride over roots, stones, or other obstructions of a rigid character, and to cut through hard frozen snow. This device curves upwardly from the plow-point, to which it is secured at either or both sides along the lower 25 edge, and its upper end is made fast to the beam, and may extend thence beneath the lateral arm S, which supports the front end of the draft-rod T. The operation of the plow 30 will be obvious without further description.

I claim as my invention—

1. In a snow-plow, a point having the land- 35 side and diverging share with cross-bars uniting their rearward portions all cast integral and formed with a vertical recess to receive, flush with the landside, the forward end of the side wall of the plow, in combination with the adjustable wing having projecting lugs 40 at its forward end and with a vertical rod

through said lugs and the cross-bars of the point constituting hinges on which the wing swings horizontally, substantially as set forth.

2. In a snow-plow, a rigid point and landside and an adjustable wing hinged vertically 45 to swing horizontally from said point, in combination with a double brace hinged at the ends to the adjustable wing and with an intermediate ratchet on said brace and a pivoted cam-lever engaging therewith, substan- 50 tially as set forth.

3. In a snow-plow, the point and landside and the adjustable wing hinged vertically in rear of the point, in combination with the adjusting-brace hinged to the wing at two 55 points, one above the other, a single ratchet-fastening applied to said brace at a point intermediate between its hinges, and with a handle whereby said wing may be manipulated independently, substantially as set forth. 60

4. In a snow-plow, the combination, with the body of the plow, of the offset fender P, applied to the front of the beam, and the roller-fender Q, adapted to protect the land- 65 side of the plow, substantially as set forth.

5. In a snow-plow, the combination, with the rigid point and adjustable wing, of the curved upturned guard secured to the lower edges of the point and at its upper end bolted 70 to the beam, whereby it serves as a cutter and as a guard in surmounting obstacles, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 15th day 75 of February, A. D. 1892.

ALBERT B. BLACK.

Witnesses:

A. H. SPENCER,

GEORGE S. LITTLEFIELD.