(No Model.) 2 Sheets—Sheet 1.

P. B. BRAZEL.

SNOW PLOW.

No. 346,637. Patented Aug. 3, 1886.

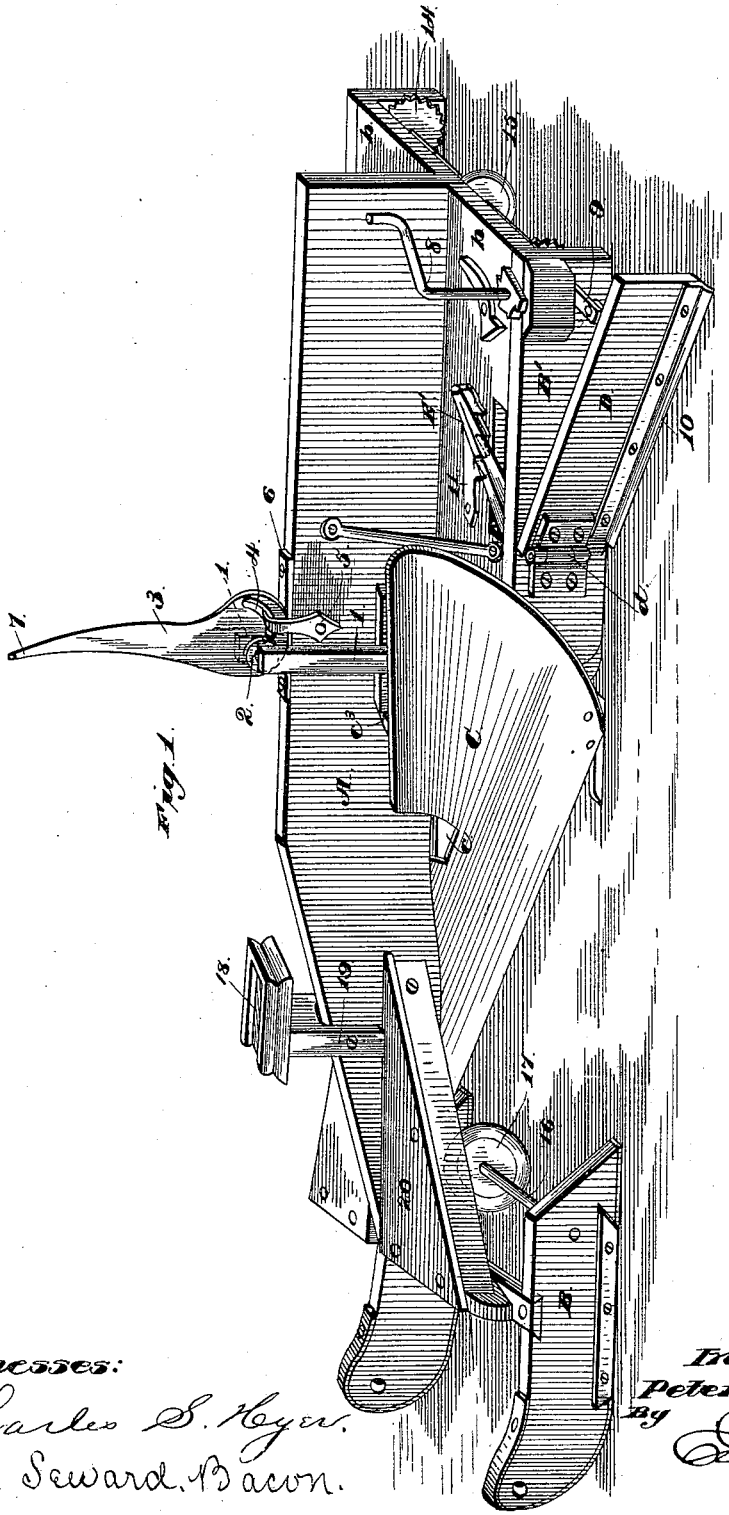

Fig. 1.

Witnesses:
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L Seward. Bacon.

Inventor:
Peter B. Brazel.
By Dunnable
Atty.

(No Model.) 2 Sheets—Sheet 2.

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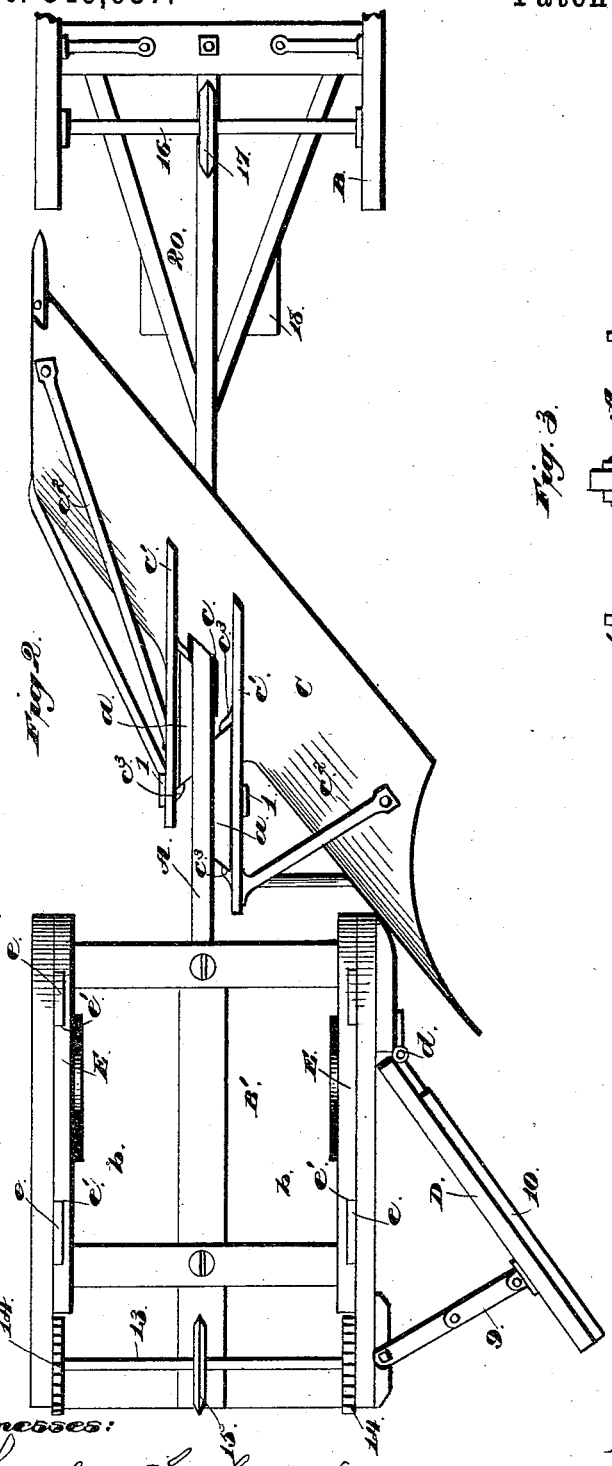

Fig. 2.

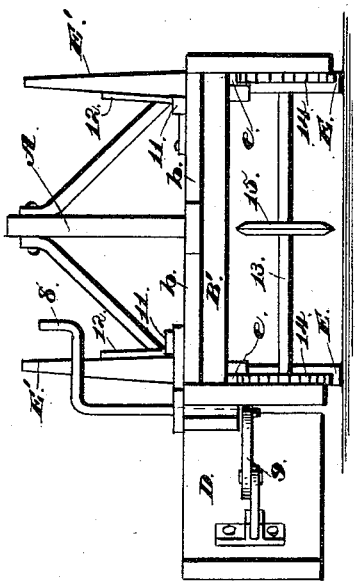

Fig. 3.

Witnesses:
Charles S. Hayes.
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UNITED STATES PATENT OFFICE.

PETER B. BRAZEL, OF CHEBOYGAN, MICHIGAN.

SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 346,637, dated August 3, 1886.

Application filed April 9, 1886. Serial No. 198,364. (No model.)

To all whom it may concern:

Be it known that I, PETER B. BRAZEL, a citizen of the United States, residing at Cheboygan, in the county of Cheboygan and State of Michigan, have invented certain new and useful Improvements in Snow-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.

My invention relates to an improved snow and ice plow; and it consists in the construction and arrangement of the parts, which will be more fully hereinafter described, and pointed out in the claims.

One object of my invention is to provide means whereby the parts of the plow may be readily raised or lowered from and to the ground by suitable levers and cranks, the whole being readily operated, easily handled and transported.

A further object of my invention is to so construct the plow that it shall be adapted for use upon sidewalks, street-railways, race-courses, and driving-parks, the parts of the plow being so arranged that the snow or ice will be pushed or thrown to one side of the walk, both by the main plow and a supplementary scraping-plow in the form of a wing.

A still further object of my invention is to construct and arrange the main plow upon a single central beam, with bob-sleds secured to each end thereof, said bob-sleds being provided with suitable mechanism for preventing the sled from slipping from its true line of draft.

I attain these objects by the construction of plow illustrated in the accompanying drawings, wherein like letters of reference indicate similar parts in the several views, and in which—

Figure 1 is a perspective view of my improved snow-plow. Fig. 2 is a bottom plan view of the plow. Fig. 3 is an end elevation of the rear bob-sled.

A indicates the central supporting-beam, to the front end of which is attached a bob-sled, B, which is pivotally connected to the said central beam, A. To the rear of the beam A another bob-sled is connected, which has a top platform, *b b*, on each side of the said beam.

In the central part of the device a metallic plow, C, is mounted, projecting on each side of the central beam, A, and whose upper portion is formed on an incline. This plow C is in the form of a mold-board, and is constructed of sheet metal of suitable thickness to resist the strain thereon. It is slotted, as at *c*, so that the central beam can fit therein, and two angular extensions, *c' c'*, are formed with the said mold-board, on the rear side, extending from near the bottom up to the top portion thereof, and thence back on each side of the central beam, A, and secured thereto. Thus the plow is strengthened, and is further re-enforced by brace-rods c^2 c^2, connected to the outer sides, and to the angular extensions *c'*. These extensions *c'* have small flanges c^3 c^3 inclined inward, which engage with relatively-beveled strips *a a*, secured to the central beam, forming therewith a dovetailed slide, for purposes which will be more fully hereinafter described.

To the angular extensions *c'* are two standards, 1 1, which extend above the upper edge of the central beam, A, and are connected at their upper parts by a cross-rod, 2. Eccentrically mounted on this cross-rod 2 is a lever, 3, adapted to raise and lower the plow C, through the medium of the extensions *c'*. In the end of the lever 3, below where it is mounted on the cross-rod 2, a cam-slot, 4, is formed, which is engaged by a link, 5, which embraces the upper part of the beam A, and is pivoted thereto. The end of the lever 3, where it is slotted, is somewhat enlarged and circular in form, and continually bears upon a metallic plate, 6, mounted on the top edge of the central beam, the other end of the said lever being formed as an operating-handle, 7. When the handle 7 is depressed, the end of the lever 3 turns on cross-rod 2, and the link 5 rides down to the lowest point of the cam-slot 4, and the two standards 1 1 are raised, which in turn draw on the extension *c'*, connected to the plow C, and clear it from the ground. When the standards are operated through the means just described, they slide upwardly and downwardly on the blocks *a a*, connected to the beam A, being in continual engagement therewith. When it is desired to depress the mold-board C and put it in a position to operate, the handle 7 is raised, the link 5 rides easily in the cam-slot 4, and the mold-board is depressed,

On one side of the rear bob-sled, B′, a wing, D, is hinged at the point *d*. On the platform of the bob-sled B′, and near the rear side portion thereof, a crank, 8, is mounted, having a ratchet and pawl in connection therewith, said crank 8 operating a toggle-lever, 9, connected to the wing D, and adapted to open and close the same through the medium of the crank 8. The outside lowermost portion of the wing D has a metallic scraper, 10, secured thereto, which is constructed in the form of an angular plate.

On the inside of the runners of the rear bob-sled, B′, supplementary runners E E are mounted. (See Figs. 2 and 3.) The inside of the outer runners are provided with projections *e e*, which engage with slots *e′ e′* in the supplementary runners E E, and on which the said runners E have free vertical movement.

When it is desired to raise the rear sled and its operating parts from the ground during the transportation of the plow from one place to another, the supplementary runners E are forced down by means of levers E′ E′, mounted in the platform of the bob-sled B′ on each side of the central beam, said levers engaging the tops of the runners E. When the runners E are depressed, they are held in a lowered position by the ratchet-strips 11, pivoted to the platform, engaging with the metal strips 12 on the said levers. The lower ends of the levers E′ are rounded, so as to give an easy motion thereto in the operation of depressing the runners E. When it is desired to allow the runners E to be forced back in order to operate the plow, the ratchets 11 are disengaged from the levers E′, and the pressure of the plow forces the said runners back into a position on a level with the runners of the bob-sled B′.

In the rear inner side of the bob-sled B′ a cross-rod, 13, is mounted, which has two ratchet-wheels, 14 14, mounted on each side thereof adjacent to the runners of the said bob-sled. In the central portion of this cross-rod a plain beveled-edged wheel, 15, is mounted, having the largest plane or resisting surface against the pressure of the snow. These wheels prevent any tendency on the part of the plow to depart from its true line of draft by the wheel 15 cutting into the snow or ice, and the toothed wheels 14 14 acting as creepers. The bob-sled B is in like manner provided with a cross-rod, 16, but has only one plain central wheel, 17, mounted thereon, similar to the wheel 15. This cross-rod 16 and its wheel 17 are mounted above the lower surface of the runners of said bob sled, for the reason that the snow which has not at that point been cleaned away by the plow is deeper, and as the runners of the bob-sled B sink therein the wheel 17 also is partially embedded, and prevents the plow from turning to one side or the other when not desired.

The front portion of the plow is provided with a driver's seat, 18, mounted on the top of a post or standard, 19, said plow being also provided at this point with a triangular platform, 20, which rests over the forward bob-sled, B.

When it is desired to use the plow, the mold-board C is forced down by means heretofore described and the wing D forced outward. The snow is turned over by the highest portion of the mold-board formed by the incline, and that portion which may accidentally pass over the top of the mold-board or around the same is taken up by the wing D and the entire pavement cleaned. Only one wing is necessary, owing to the fact that the discharge side of the mold-board is to one side of the plow proper, and the wing is therefore only needed on that side to clean what may be left by the said mold-board.

It is obvious that many changes in the construction and arrangement of the parts could be made and substituted for those shown and described without materially departing from the nature and principle of my invention.

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

1. In a snow-plow, the combination of a single central supporting-beam, a mold-board mounted at about the center thereof, bob-sleds at each end of said central beam, and means for raising and lowering the mold-board and supplemental runners, substantially as described.

2. In a snow-plow, the combination of a single central supporting-beam, a mold-board mounted at or about the center thereof, bob-sleds at the front and rear ends of said central beam, a wing hinged to one side of the rear bob-sled, and means for operating the several parts, substantially as described.

3. In a snow-plow, the combination of a single supporting-beam, a mold-board having an inclined upper side mounted on the said central beam, extensions on the rear side of the mold-board, having inside flanges, blocks on the central beam, with which the said inside flanges engage to form a dovetailed slide, standards connected to said extensions and extending above the upper surface of the central beam, lever eccentrically mounted in said standards and engaging with the top of the beam, a link pivoted to said beam and engaging with the cam-slot in the enlarged end of the lever, and the front and rear bob-sleds, all arranged as shown and described, and for the purposes specified.

4. In a snow-plow, the combination of a central supporting-beam, a mold-board connected to said beam by suitable extensions and brace-rods, front and rear bob-sleds connected to the beam, the front sled being pivoted thereto and the rear sled rigid therewith, a wing hinged to one side of the rear sled, and a toggle-lever operated by a crank having a ratchet-and-pawl attachment for operating the toggle-lever to open and close the wing, substantially as described.

5. In a snow-plow, the combination, with a central supporting-beam having a mold-board

at or about the center of the same, and bob-sleds attached to the front and rear thereof, of supplementary runners engaging with the inside portion of the runners of the rear sled, and means for forcing the said runners below the surface of the runners of the rear sled, substantially as and for the purposes specified.

6. In a snow-plow, the combination, with a central beam having a mold-board connected thereto at or about its central portion, and provided with means for raising and lowering said mold-board, of a front bob-sled pivotally attached to the beam in the front thereof, a rear bob-sled rigidly attached to the said beam, a wing hinged to one side of said rear sled, supplementary runners on the inside thereof, and means, as set forth, for operating the several parts, substantially as described.

7. In a snow-plow, the combination, with a central supporting-beam having a mold-board mounted at or near the center of said beam and provided with suitable means for raising and lowering the same, of a front bob-sled pivotally connected to the front portion of the beam, a rear sled rigidly attached to the beam, a wing hinged to one side of said rear sled, having a metallic scraper on the bottom portion thereof, a toggle-lever operated by crank for opening and closing the said wing, supplementary runners on the inner sides of the runners of the said sled, levers adapted to force the runners down, and ratchet-strips for holding the said levers, substantially as described.

8. In a snow-plow, the combination of a central supporting-beam, a mold-board mounted at or about the center thereof, bob-sleds attached to the front and rear portions of the central beam, cross-rods mounted in the inside rear portions of said bob-sleds, and central and side wheels mounted on said cross-rods adapted to come in contact with the snow or ice and keep the plow in its true line of draft, substantially as described.

9. In a snow-plow, the combination of a central supporting-beam, A, a mold-board, C, mounted at or about the center thereof and in connection therewith, bob-sleds B and B′, attached to the front and rear portions of the central beam, a wing, D, hinged to one side of the rear sled, supplementary runners E, secured to the inner sides of the runners of said rear sled, and means, as set forth, for raising and lowering the several parts, substantially as described.

10. In a snow-plow, the combination of a central beam, A, a mold-board, C, extensions *c′*, connected to said mold-board, standards 1 1, connected to said extensions, a cross-rod, 2, on which an enlarged end of a lever, 3, is eccentrically mounted, a cam-slot, 4, cut in said end of lever 3, engaged by a link, 5, pivoted to beam A, and a metallic bearing-surface, 6, on the upper edge of the beam A, all arranged as set forth, and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

PETER B. BRAZEL.

Witnesses:

EDWIN Z. PERKINS,

OSCAR F. HAYDEN.