SNOW REMOVAL DEVICE

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Appl. No.: 13/772,588
Filed: Feb. 21, 2013

Related U.S. Application Data
Provisional application No. 61/601,851, filed on Feb. 22, 2012.

Publication Classification
Int. Cl.
E01H 5/06 (2006.01)

U.S. Cl.
CPC ........................................... E01H 5/061 (2013.01)
USPC .......................................... 37/268; 37/270

ABSTRACT

A manual snow moving device designed for pulling along a surface to remove accumulated snow. The preferred device includes a substantially vertical blade having a curved surface, a pair of wheels, and a handle. The handle is preferably attached to a concave surface of the vertical blade to allow pulling the blade through, e.g., a snow pile. The handle may be pivotable, allowing it to be attached to either the front or back of the blade. The wheels, which may pivot about a vertical axis, are mounted to the convex surface of the vertical blade, via a bracket or other suitable connector, to facilitate movement of the device along a surface.
SNOW REMOVAL DEVICE

RELATED APPLICATIONS

[0001] This application claims the filing priority of U.S. Provisional Application No. 61/601,851 titled “Snow Removal Device” and filed on Feb. 22, 2012.

TECHNICAL FIELD OF THE INVENTION

[0002] The present invention relates to snow removal devices. Particularly, the snow removal device relates to a device for removing snow from a surface, such as a driveway, sidewalk, play area, and the like.

BACKGROUND OF THE INVENTION

[0003] Snow shoveling is a primary cause in countless physical injuries and fatalities every year in the U.S. Particularly, the heavy lifting required to clear even a small layer of snow causes many individuals to lift improperly, lose balance or just generally over-exert themselves, bringing about falls, upper and lower back injuries and, in some cases, heart attack. Combined with the cold that usually accompanies such snow conditions, and even the healthiest of individuals can find themselves headed for a local hospital.

[0004] Typical snow shovels are not self-limiting. Accordingly, people tend to attempt using the entire shovel area to scoop and lift snow. Even a small amount of water-laden snow at the end of a shovel can amount to great strain on a user. As mentioned, shoveling can be a dangerous undertaking for many individuals. Snow blowing is far safer, but the relatively high-cost of a dependable snow-blowing machine restricts use to those with the financial means.

[0005] These and other problems in the art are identified and resolved by the invention of the present application.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] For the purpose of facilitating an understanding of the subject matter sought to be protected, there are illustrated in the accompanying drawings embodiments thereof, from an inspection of which, when considered in connection with the following description, the subject matter sought to be protected, its construction and operation, and many of its advantages should be readily understood and appreciated.

[0007] FIG. 1 is a perspective view of one embodiment of the present shovel device;

[0008] FIG. 2 is a top view of the embodiment of FIG. 1;

[0009] FIG. 3 is a side view of the embodiment of FIG. 1;

[0010] FIG. 4 is a side view of another embodiment of the present shovel device;

[0011] FIG. 5 is a perspective view of the embodiment of FIG. 4;

[0012] FIG. 6 is a rear view of the embodiment of FIG. 4;

[0013] FIG. 7 is a front view of the embodiment of FIG. 4;

[0014] FIG. 8 is a front perspective view of another embodiment of the present shovel device with a pivoting handle;

[0015] FIG. 9 is a rear perspective view of the embodiment of FIG. 8; and

[0016] FIG. 10 is a front view of still another embodiment of the present shovel device with a pivoting handle.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0017] While this invention is susceptible of embodiments in many different forms, there is shown in the drawings and will herein be described in detail a preferred embodiment of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the broad aspect of the invention to embodiments illustrated.

[0018] Referring to FIGS. 1-10, there are illustrated several embodiments of a snow moving device, generally designated by the numerals 10 and 110. Generally speaking, the shovel device 10 has a substantially vertical blade 12, a handle 14, and a set of wheels 16. The blade 12 may be curved about a vertical axis (FIGS. 1-3), a horizontal axis (FIGS. 4-7) or both axes in a hemispherical shape (not shown). The blade 12 is not necessarily curved to create a lifting scoop, but rather to create a boundary for moving snow without the need for lifting. As a result, the curved blade 12 has a concave (front) surface and a convex (rear) surface. Preferably, the blade 12 is made from a coated metal to diminish adherence of snow. Plastic, fiberglass or other composite materials may also be used and may include ribs 21 (FIG. 5) to impart strength and rigidity to the blade.

[0019] With reference to the embodiment of FIG. 2, in order to be pulled, the handle 14, which is preferably made of plastic, wood or metal, is attached to the concave surface of the blade 12. A bracket 18 secured to the handle 14 and then attached to the blade 12 provides stability to the handle 14 and the blade 12. A bolt, or similar fastener, passing through the blade 12 and directly into the handle 14, coupled to an appropriate nut, may also be used to secure the handle 14. The attachment of the handle 14 could provide for folding of the handle 14 as well, for storage, transport or the like.

[0020] The wheels 16 are preferably provided in a single pair or multiple pairs, but the device 10 may use only a single wheel attached approximate a mid-line of the blade 12. The wheels 16 can be standard wheels, but are preferably about the size of typical push lawn mower wheels, for example. As the device 10 is predominately used on slick surfaces, significant tire tread will help grip such surfaces during use. A bracket 19 may be used to attach the wheel axle to the concave surface of the blade 12. A caster like swivel attachment (not shown) for wheels (or wheel pairs) may be used to connect to the bracket 19 to facilitate turning of the shovel device 10 during use.

[0021] To provide balance and stability to the device 10 in use, the handle 14 is preferably attached to the blade 12 approximate the center of gravity, while the wheels 16 are also preferably attached approximate the center of gravity. Attaching weighted structures to the blade 12 to lower the center of gravity and also increase the overall weight of the device 10 may also assist in overall stability. The preferred handle attachment configuration prevents the handle 14 from pulling the blade 12 downward at the top (i.e., tipping the blade 12), which would allow snow to pass under the blade. The wheels 16 counteract, to some extent, upward pull of the handle 14 on the blade 12 as well.

[0022] In use, the device 10 can be positioned at one end of a snow covered surface and pulled by the handle 14 toward an opposite side of the surface, thereby dragging the blade 12 across the surface to remove the snow. Reversing the motion deposits the accumulated snow. The motion can be repeated for the length of the surface to move all snow to one side, as
desired, without ever having to lift the snow from the surface. The user can even stand to the side of the device 10 to move it along the surface and remove snow—similar to the motion of sweeping. This will prevent the snow from being packed down under the walking pressure of the user.

[0023] With reference to the embodiments of FIGS. 8-10, the shovel device 110 may have a pivoting handle 114 to allow both pushing and pulling of the shovel device through snow. A heavy-duty version, FIGS. 8 and 9, preferably includes a reinforced blade 112 using a support 118 with the handle 114 attached to a pivoting member at each end. A locking feature (not shown), such as a pin, clip, latch or similar mechanism, may be used to hold the handle 114 in one direction or the other, if desired.

[0024] The shovel device 110 of FIG. 10 also includes a pivoting handle 114. A small cut-out section of the blade 112 allows the handle 114 to be pivoted to either side of the blade 112. Again, the use of a locking mechanism would allow the handle 114 to be locked in place during use.

[0025] The matter set forth in the foregoing description and accompanying drawings is offered by way of illustration only and not as a limitation. While particular embodiments have been shown and described, it will be apparent to those skilled in the art that changes and modifications may be made without departing from the broader aspects of applicants’ contribution. The actual scope of the protection sought is intended to be defined in the following claims when viewed in their proper perspective based on the prior art.

What is claimed is:
1. A manual snow moving device comprising:
a curved blade having a top and bottom edge;
a handle fixed to a concave surface of the curved blade; and
at least one wheel affixed to a convex surface of the blade.
2. The manual snow moving device of claim 1, wherein the handle attaches to the blade along a centerline.
3. The manual snow moving device of claim 1, further comprising a bracket attaching the handle to the concave surface of the blade.
4. The manual snow moving device of claim 1, wherein at least one wheel is mounted above a center of gravity for the blade.
5. The manual snow moving device of claim 4, wherein the handle is mounted below a center of gravity of the blade.
6. The manual snow moving device of claim 1, wherein the device is configured to be pulled to move snow.
7. The manual snow moving device of claim 1, wherein the blade is curved about a horizontal axis.
8. The manual snow moving device of claim 1, wherein the blade is curved about a vertical axis.
9. The manual snow moving device of claim 1, wherein the blade is curved about both a vertical axis and a horizontal axis.
10. The manual snow moving device of claim 1, comprising a pair of wheels.
11. The manual snow moving device of claim 10, wherein the pair of wheels are pivotable about a vertical axis.
12. The manual snow moving device of claim 1, wherein the handle pivots about a horizontal axis to orient from either side of the curved blade.
13. A manual snow moving device comprising:
a blade having a top edge and a bottom edge and curved about a vertical axis;
a pivoting handle assembly attached to a surface of the blade; and
at least one wheel assembly affixed to the convex surface of the blade.
14. The manual snow moving device of claim 13, wherein the handle assembly comprises a bracket secured to the blade and a handle connected to the bracket.
15. The manual snow moving device of claim 14, wherein the bracket comprises a pivotable connector to allow the handle to change an angle relative to the blade.
16. The manual snow moving device of claim 14, wherein the bracket comprises a pivotable connector to allow the handle to move between two opposing sides of the blade.
17. The manual snow moving device of claim 13, wherein at least one wheel assembly comprises a pair of wheels pivotable about a vertical axis.

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