United States Patent [19]

Burke

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[54] **SNOW BROOM**

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[52] **U.S. Cl.**..... **294/54,** 56/400.18, 56/400.21, 294/51

[51] **Int. Cl.**..... **A01b 1/02,** E01h 5/02

[58] **Field of Search**..... 294/49, 51, 52, 54, 55.5; 15/159 R; 37/53; 56/400.04, 400.05, 400.07, 400.17, 400.18, 400.19, 400.2, 400.21

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[57] **ABSTRACT**

A snow broom including a handle carrying a transversely extending base member to which are affixed a plurality of overlapping flexible metal tines. The stiffness of the tines can be adjusted by means of a sliding restraining member which restricts the freedom of flexure of the tines, and which when fully extended converts the broom into a shovel.

3 Claims, 6 Drawing Figures

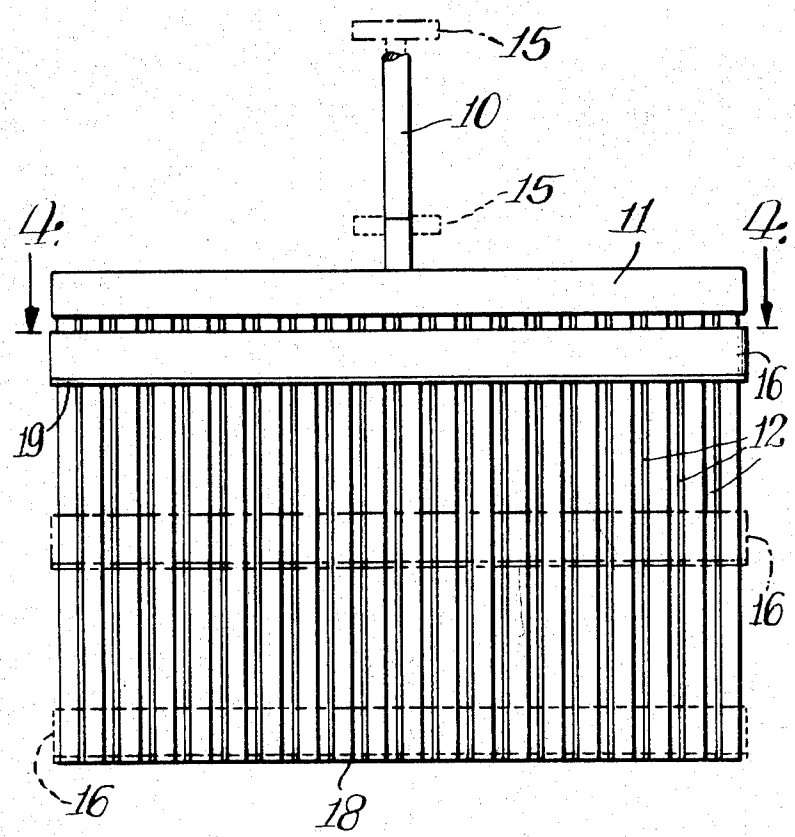


Fig. 1.

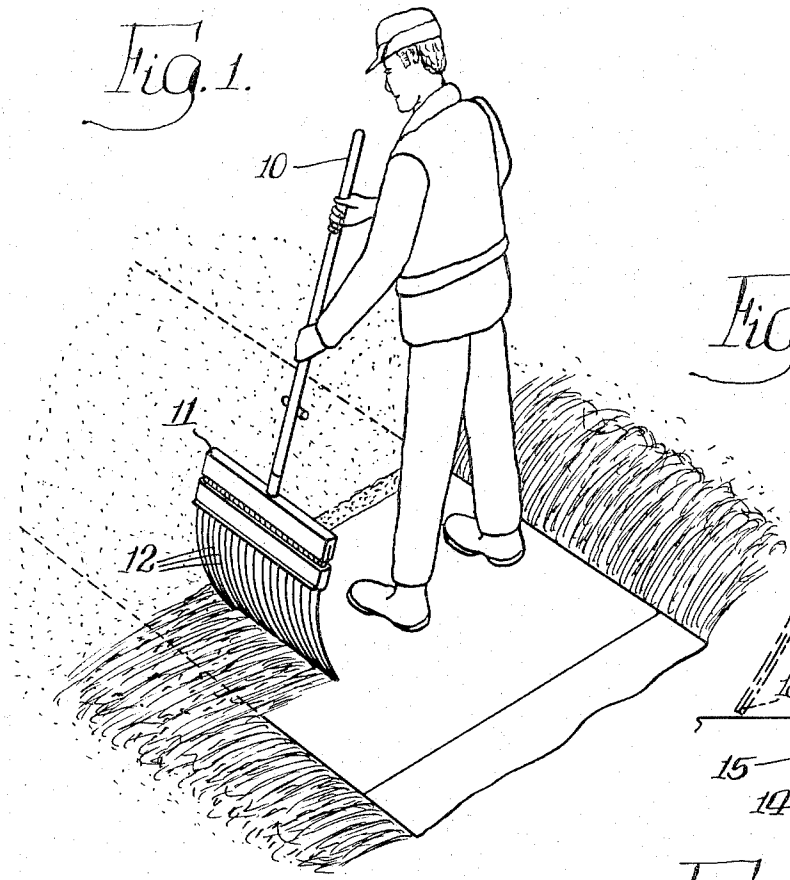


Fig. 5.

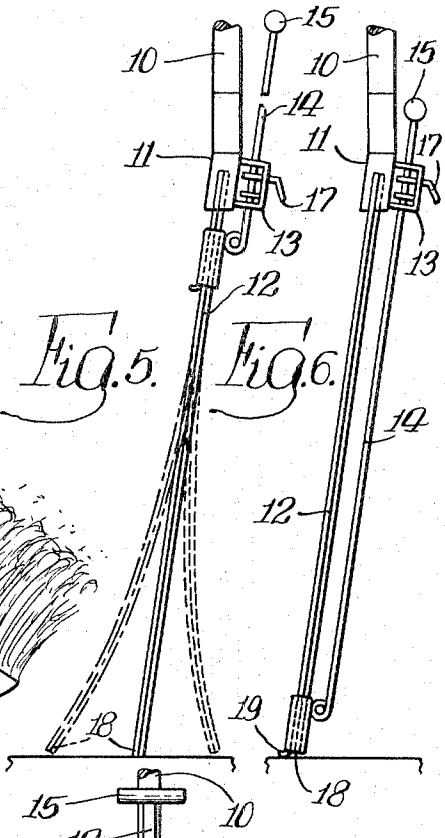


Fig. 6.

Fig. 3.

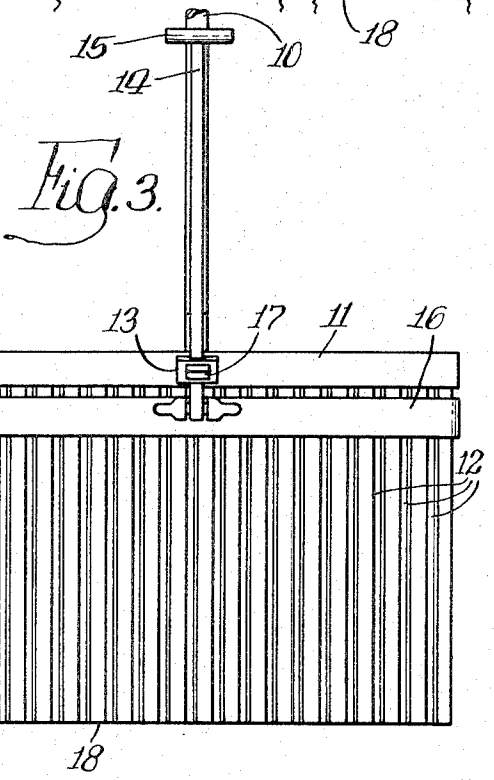


Fig. 2.

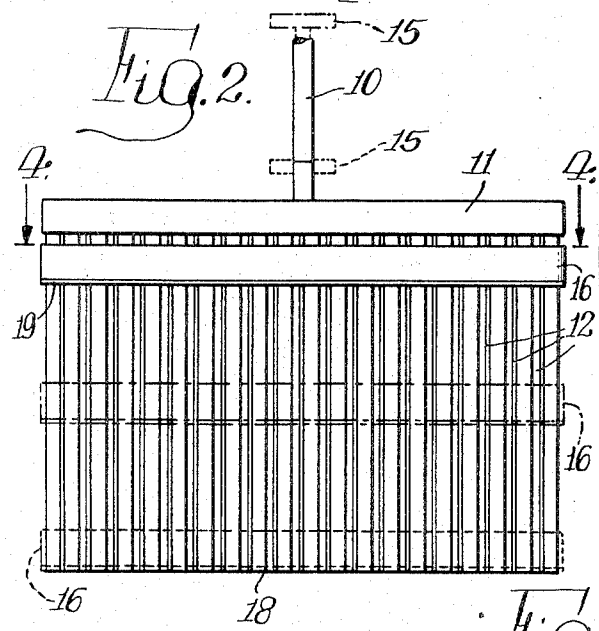
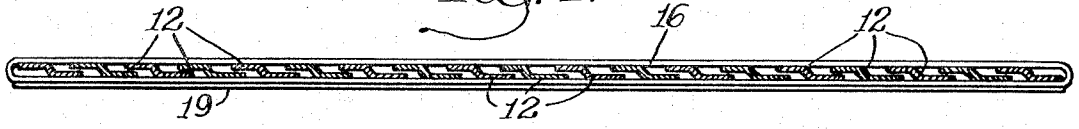


Fig. 4.



SNOW BROOM

BACKGROUND OF THE INVENTION

Manually operated implements for the removal of snow and other loose material have been used for many years. As is well known, a wet or heavy snow is usually removed by means of a snow shovel which requires a lifting action for each shovelful of snow. A light, powdery snow, on the other hand, may often be removed by means of a simple straw broom, the difficulty with the latter implement being that it often becomes clogged with snow and loses its resilience, or springiness, while at the same time substantially increasing its weight. Other devices such as snow plows designed to be pushed by hand have also been employed. However, if the snow has substantial weight or is relatively deep, a hand-pushed snow plow becomes impossible to use.

Accordingly, there has arisen the need for a snow removal implement that can produce a sweeping action somewhat similar to a straw broom but with increased efficiency and without the drawbacks of a straw broom, while also being capable of being used as a shovel.

SUMMARY OF THE INVENTION

According to the present invention, there is provided a snow broom which can be utilized either with a broom-like sweeping action, or readily converted to a snow shovel. In addition, the implement of the present invention can be adjusted so as to provide different degrees of resilience to the tines, thereby to provide a sweeping action proper for the particular type and weight of snow (or other loose material) being handled.

In the present invention there is provided a handle carrying a crossbar or base member at one end to which are affixed a plurality of overlapping metal spring tines. For light snow, the implement may be used as just described as a broom to sweep the snow from walks or other areas. If the snow is somewhat heavier, the stiffness of the tines can be increased by means of a restraining member which limits the extend to which the tines can be bent, and if snow too heavy to sweep is encountered, the restraining member can be extended all the way to the free ends of the tines to convert the assembly to a snow shovel usable in the normal fashion.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an elevational view illustrating the device of the present invention in use;

FIG. **2** is a front elevation of the lower portion of an implement embodying the present invention;

FIG. **3** is a rear view of the device shown in FIG. **2**;

FIG. **4** is a sectional view taken along the line **4—4** of FIG. **3**;

FIG. **5** is a side elevational view of the implement of FIG. **1** with the restraining member in its uppermost position and illustrating in dashed lines the flexure of the tines which occurs when the device is used; and

FIG. **6** is a view like FIG. **5** with the restraining member in its lowermost position.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings in more detail, there is shown a snow broom assembly comprising a handle **10** at one end of which is secured a base member in the form of a transverse bar **11** carrying a plurality of tines **12.** The tines are of metal having a thickness of approximately one-tenth or less of their width, and being generally "Z" shaped in transverse cross section so that each tine has a portion lying behind and hence overlapping an adjacent tine. Thus, the forces tending to bend any one or more tines are transferred to the other tines to produce bending in all.

Fixed to the rear side of the base member **11** is a bracket **13** which slidably carries an actuating rod **14** having a handle **15** at one end. The other end of the actuating rod **14** carries a restraining member in the form of a rectangular box-like structure **16** which surrounds the tines and is closely spaced therefrom. By means of the actuating rod **14** and handle **15,** the position of the restraining member **16** may be varied relative to the tines, i.e., may be positioned adjacent the base member as shown in FIG. **6,** or moved to intermediate positions toward the other end **18** of the tines. A pawl **17** is carried by the bracket **13,** which pawl may be depressed by the fingers to permit the actuator **14** to slide in the bracket and when released will hold the actuator in whatever position it has been moved to.

When the restraining member **16** is moved all the way to end somewhat beyond the free end **18** of the tines, the linear edge **19** of the restraining member forms the cutting edge of a shovel.

For sweeping very light snow, the actuator **14** is moved to its uppermost position illustrated in FIG. **5** to give the tines the greatest degree of flexure in sweeping light snow away from walks, drives and the like. If the snow is somewhat heavier, the pawl **17** may be depressed and the actuator moved by means of the handle **15** downwardly to position the restraining member at some intermediate position relative to the ends of the tines. At such intermediate position the tines still possess a degree of flexibility but the amount of their flexure is limited by the restraining member and hence heavier snow can be swept aside. If the snow is too heavy to sweep, the restraining member may be moved to its full position illustrated in FIG. **6,** whereupon the assembly is now converted to a shovel and may be used in the usual fashion for shoveling snow.

I claim:

1. A snow broom assembly comprising:

a. a handle;

b. a base member carried at one end of the handle;

c. a plurality of closely spaced overlapping parallel resiliently flexible tines extending outwardly from the base member; and

d. means for selectively permitting the tines to flex individually in a rake-type action or cause the tines to be maintained in a blade-like array in a shovel-like action, said means being defined by a restraining member carried by the base member and positionable to surround the tines near the base member, said restraining member being movable to the free end of the tines maintain said tines in said blade-like array.

2. A snow broom assembly comprising:

a. a handle;
b. a base member carried at one end of the handle;

c. a plurality of closely spaced overlapping parallel resiliently flexible tines "Z" shaped in transverse cross section extending outwardly from the base member; and
d. means for selectively permitting the tines to flex individually in a rake-type action or cause the tines to be maintained in a blade-like array in a shovel-like action, said means being defined by a restraining member carried by the base member and positionable to surround the tines near the base member, said restraining member being movable to the free end of the tines to maintain said tines in said blade-like array.

3. A snow broom assembly comprising:
a. a handle;

b. a base member carried at one end of the handle;

c. a plurality of closely spaced overlapping parallel resiliently flexible tines extending outwardly from the base member;
d. means for selectively permitting the tines to flex individually in a rake-type action or cause the tines to be maintained in a blade-like array in a shovel-like action, said means being defined by a restraining member carried by the base member and positionable to surround the tines near the base member, said restraining member being movable to the free end of the tines to maintain said tines in said blade-like array; and
e. means carried by said handle for moving said restraining member to said positions.

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