Dec. 4, 1956 P. N. HNASTCHENKO 2,772,490

SNOW SHOVEL

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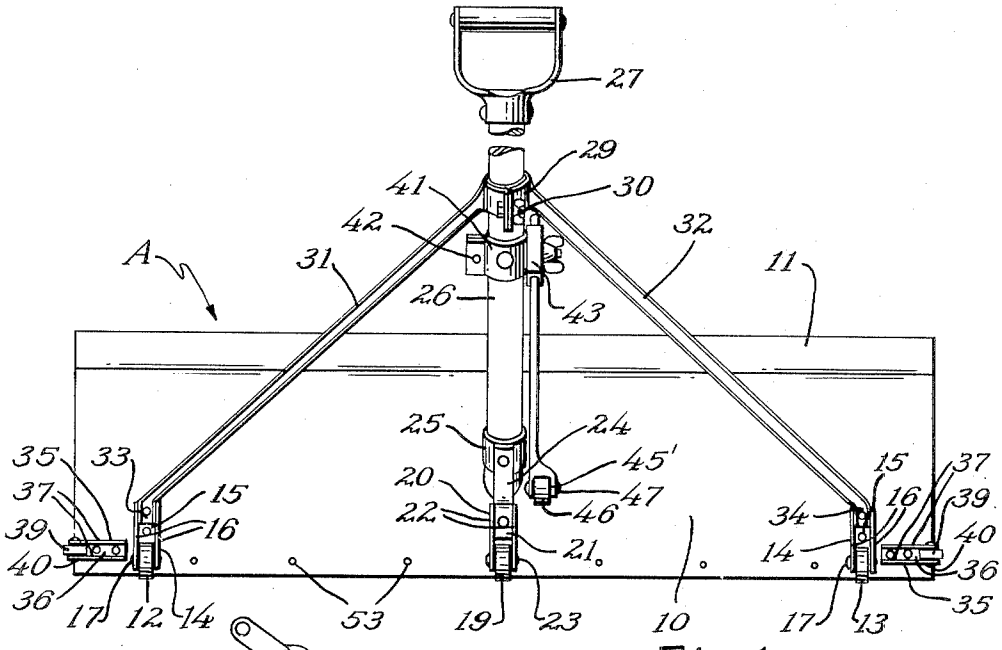


Fig. 1

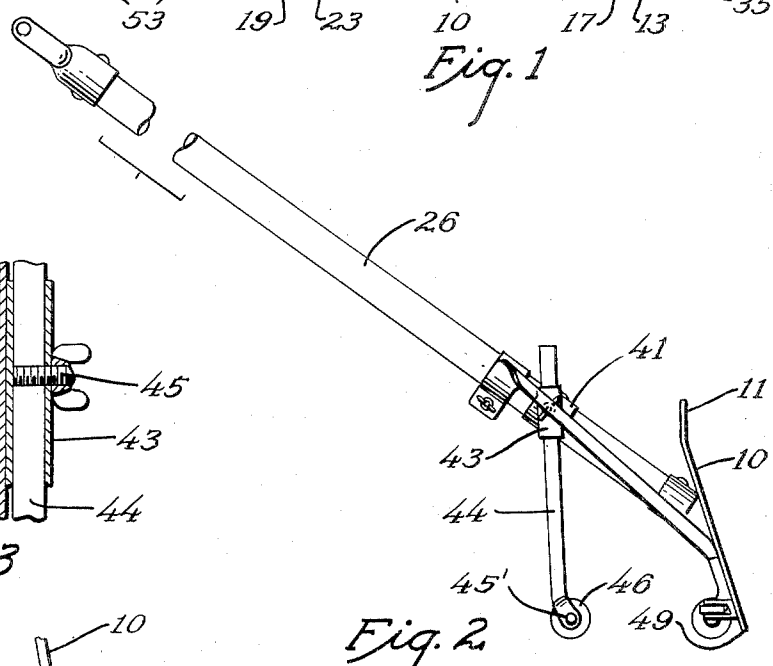


Fig. 2

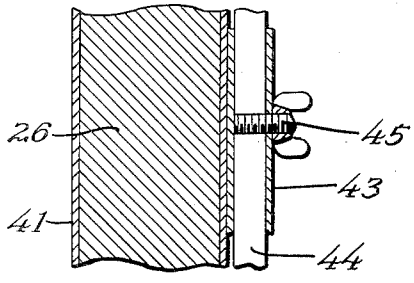


Fig. 3

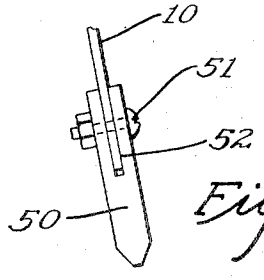


Fig. 4

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SNOW SHOVEL

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4 Claims. (Cl. 37—53)

My invention relates to an improvement in snow shovel and deals particularly with a device capable of pushing snow from a side walk, drive way, or the like.

In removing snow from a side walk, drive way, or the like, considerable difficulty is experienced if the snow is located between two walls or buildings. In such an event the snow must be lifted in a shovel, or similar implement and carried for a considerable distance. The common alternative is to shovel the snow forwardly along the surface to be cleaned, the snow piling deeper and deeper until it may be shoveled to one side or the other. Either method is extremely tiring and time consuming.

An object of the present invention lies in the provision of an implement by means of which snow may be pushed along a surface to a point where it may be removed or thrown to one side or the other. This implement includes a wide blade supported on an upright plane and mounted upon suitable rollers or casters. By use of this implement snow or other material may be pushed considerable distances with relatively little effort and in a relatively short period of time. I have found that with this implement snow may be removed from between walls or buildings in a fraction of the time normally required for this work.

A feature of the present invention lies in the provision of a snow pushing implement supported by a pair of spaced wheels and including a third wheel or roller spaced rearwardly from the blade and acting to hold the blade at a proper angle relative to the surface being cleaned. These wheels or rollers thus form a triangular wheeled support for the implement which permit the implement to travel over the surface to be cleaned with a minimum of effort and at all times to hold the blade in proper relation to the ground.

A feature of the present invention lies in the provision of a snow pushing implement including an upright blade having a pair of rollers or similar guide wheels extending laterally beyond the side edges of the blade. These rollers are designed to engage against a wall or fence located directly adjacent the surface to be cleaned and prevents the blade from scraping against such a wall.

A further feature of the present invention lies in the provision of a means for adjusting the angle of the blade as well as the elevation thereof. The wheels or casters supporting the blade are positioned rearwardly of the blade and in close proximity thereto. The third wheel or roller is supported by an arm extending downwardly from the handle at a point rearwardly from the blade. This arm is adjustably connected to the implement handle and by adjusting the length of the arm, the angle of the blade may be adjusted. Simultaneously the proximity of the blade to the surface being cleaned may also be adjusted.

An added feature of the present invention lies in the provision of a pushing implement having an elongated blade to which a flexible blade may be attached. This flexible blade may be made of rubber or other suitable material and be secured to the pushing device along the lower edge thereof. This flexible blade may act as a squeegee to push water or some other liquid along the flat surface. As a result my device may be used for many purposes and is not merely a snow pushing implement.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of my specification:

Figure 1 is a rear elevational view of my pushing implement showing the arrangement of the parts thereupon.

Figure 2 is a side elevational view of the apparatus showing the construction thereof.

Figure 3 is a sectional view through a portion of the apparatus showing the construction thereof.

Figure 4 is a sectional view through the lower edge of the apparatus and showing a flexible and resilient blade removably connected thereto.

The pushing device is indicated in general by the letter A. This device includes a relatively wide blade which is flat throughout most of its area. The blade 10 includes a flat lower portion and preferably includes a forwardly bent flange 11 along its upper edge as best illustrated in Figures 1 and 2 of the drawings.

A pair of caster wheels or rollers 12 and 13 are supported upon the blade 10 near opposite side edges thereof. These caster wheels are supported in channel shaped brackets 14 which include a base 15 which is secured in surface contact with the rear side of the blade 10 and a pair of parallel spaced channel sides 16 on opposite sides of the rollers and partially enclosing the same. Pivots 17 extend through the channel sides 16 and through the respective rollers 12 or 13 so as to pivotally support these rollers to the blade.

A center roller 19 is also secured to the rear surface of the blade 10 by means of a similar channel shaped bracket 20. The bracket 20 includes a channel bottom 21 which is secured in surface contact with the rear surface of the blade 10 and includes a pair of generally parallel channel sides 22 which partially straddle the roller 19. A pivot 23 extends through the channel sides 22 and through the roller 19 to pivotally connect this roller to the blade 10.

An angularly bent arm 24 is secured to the channel base 21 between the channel sides 22 and extends upwardly and rearwardly from the blade 10. This angle strip 24 is connected to a cylindrical socket 25 which is welded or otherwise connected to the blade 10. The socket 25 is designed to detachably anchor the lower end of a handle 26. The handle 26 is generally cylindrical in form and is provided with a handle 27 of suitable design at its upper end.

A second clamp 29 encircles the handle 26 at a point spaced between its ends. The clamp 29 is split and is held together by a clamping bolt 30 or other suitable clamping means. A pair of braces 31 and 32 are connected at their upper ends to the clamp 29 by welding or other suitable means. The braces 31 and 32 are preferably channel shaped in cross section and are provided with angularly bent lower extremities 33 and 34 respectively, which are designed to anchor between the spaced sides 16 of the channels 14. Thus the handle is firmly anchored to the blade not only by a direct connection at its lower end, but also through the braces 31 and 32.

A channel 35 is secured to the blade 10 near each edge thereof. The channels 35 include a channel base 36 which is anchored in surface contact with the rear surface of the blade 10. The channels 35 also include spaced sides 37 which partially straddle rollers 39.

Pivots 40 extend through the channel sides 37 and through the rollers 39 to pivotally support these rollers. As indicated in Figure 1 of the drawings these rollers 39 project laterally beyond the vertical edges of the blade 10 so as to contact a wall or similar surface and to hold the edge of the blade spaced therefrom.

A clamp 41 encircles the handle 26 between the clamp 29 and the lower end of the handle. The clamp 41 is preferably split and clamped upon the handle by means of a clamping bolt 42. An elongated bearing 43 is secured to the clamp 41. An elongated channel shaped arm 44 is slidably supported in the bearing 43. A set screw 45 is threadably supported by the bearing 43 and is engageable against the arm 44 to hold the same in adjusted position.

A channel shaped extension 45' is supported on the lower end of the arm 44. This extension acts to support a roller 46. A pivot 47 extends through the sides of the channel shaped extension 45' and through the roller 46 to pivotally support this roller. The operation of the device is believed obvious from the foregoing description. The blade 10 is supported in an upright position and the angle of the blade may be adjusted by varying the length of the arm 44. This adjustment also swings the lower edge 49 of the blade 10 nearer to or farther from the surface being cleaned.

If it is desired to clean water, or finely divided material from the flat surface, a flexible resilient blade such as 50 may be secured to the lower edge of the blade 10 by any suitable means such as by clamping bolts 51. In the form of construction illustrated the flexible blade 50 is slotted as indicated at 52 to accommodate the lower edge of the blade 10. The clamping bolts 51 extend through suitable apertures 53 in the blade 10. This blade 50 may be attached or removed at will.

In accordance with the patent statutes, I have described the principles of construction and operation of my snow shovel and while I have endeavored to set forth the best embodiments thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A pushing device including an elongated blade, rollers secured to said blade and extending below the level thereof and closely adjacent the rear thereof to support the same, the axes of said rollers being substantially parallel to the plane of the blade, a handle secured to said blade and extending upwardly and rearwardly therefrom, a pair of braces secured to said blade near opposite ends thereof and connected to said handle at a point spaced from the point of connection between said handle and the blade, a roller spaced to the rear of said blade and adjustable means carried by said handle for supporting said last named roller at a selected elevation.

2. A pushing device including an elongated blade, roller means secured to said blade and extending below the level thereof and closely adjacent the rear thereof, said roller means including a plurality of rollers having

axes extending substantially parallel to the plane of the blade and in substantial alignment with each other, a socket secured to said blade, a handle supported in said socket and extending upwardly and rearwardly from said blade, a pair of braces extending from said handle to said blade near opposite ends thereof, an arm adjustably secured to said handle and moveable therealong and extending downwardly therefrom, a roller supported by said arm at the lower end thereof, said last mentioned roller being positioned substantially rearwardly of said plurality of rollers.

3. A material pushing device comprising in combination a pushing blade, a pair of roller means connected to said blade and extending below the level and closely adjacent the rear thereof for supporting said blade, a handle secured to said blade and extending rearwardly therefrom, said handle and blade forming a generally T-shaped structure, a roller, and means connected to said structure supporting said last named roller at a point substantially spaced to the rear of said blade and rearwardly of said pair of rollers for holding said blade in an upright position, said last named means being adjustable both in a horizontal and a vertical direction with respect to the blade.

4. A material pushing device comprising in combination a pushing blade, a pair of roller means connected to said blade and extending below the level and closely adjacent the rear thereof for supporting said blade, a handle secured to said blade and extending rearwardly therefrom, said handle and blade forming a generally T-shaped structure, a roller, and means connected to said structure supporting said last named roller at a point substantially spaced to the rear of said blade and rearwardly of said pair of rollers for holding said blade in an upright position, said last named means comprising a clamp embracing a portion of the handle and a substantially vertical arm extending from said clamp to said last named roller for supporting the same.

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