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F. J. EIFEL

2,908,090

SNOW PLOW

Filed Jan. 17, 1958

2 Sheets-Sheet 1

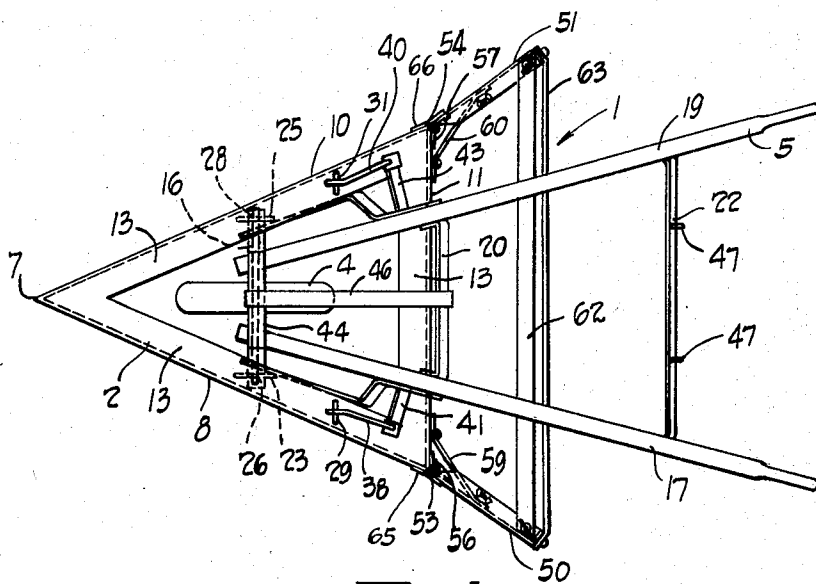


FIG. 1

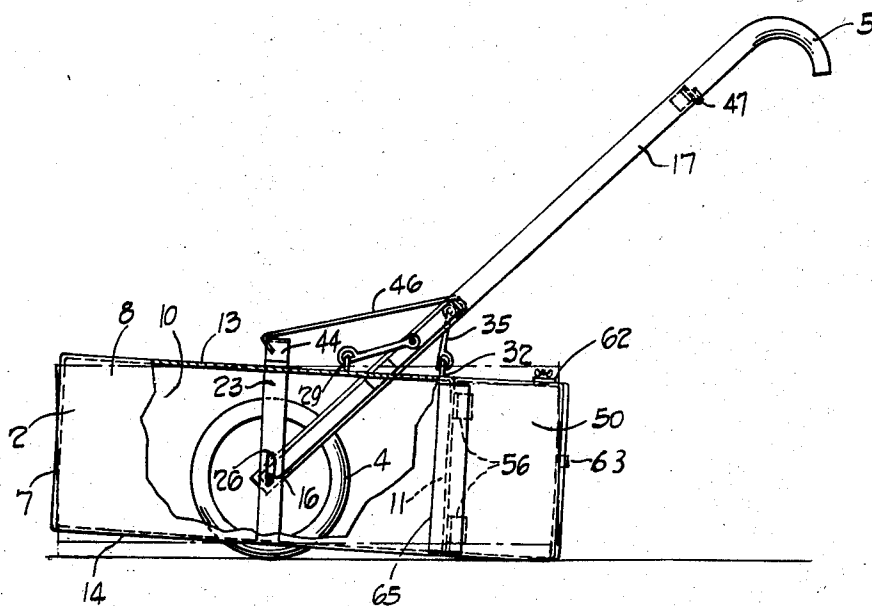


FIG. 2

INVENTOR.
FRANCIS J. EIFEL
BY *Bosworth, Sessions*
Herrstrom & Knowles
ATTORNEYS

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F. J. EIFEL

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2 Sheets-Sheet 2

FIG. 3

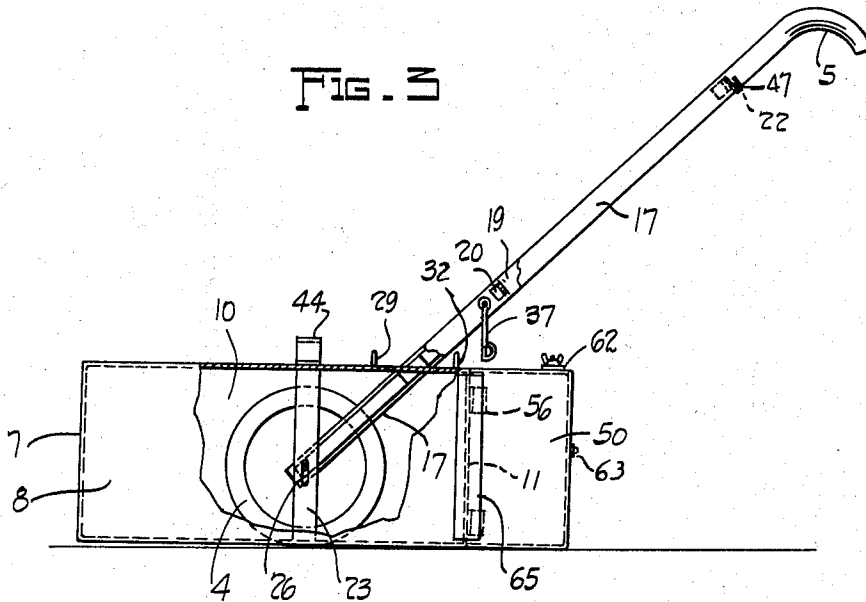
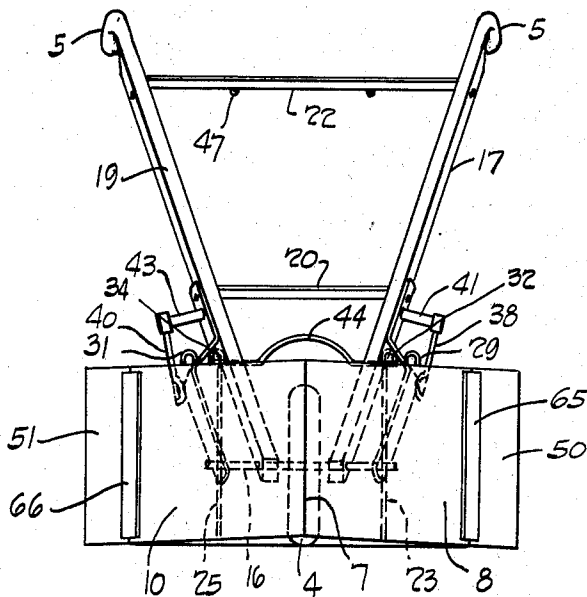


FIG. 4

INVENTOR.
FRANCIS J. EIFEL
BY *Bosworth, Sessions,
Herrstrom & Knowles*
ATTORNEYS

1

2,908,090

SNOW PLOW

Francis J. Eifel, Lakewood, Ohio

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6 Claims. (Cl. 37—53)

This invention relates to snow plows and more particularly to snow plows particularly suitable for use about homes and residences.

Many attempts have been made to provide an efficient and effective snow plow which is practicable for use for clearing sidewalks, driveways, paths, and the like about homes, residences, and similar locations. Difficulty has been experienced, however, in providing such a plow which is both sturdy and easy to manipulate and may be used with equal facility on both smooth solid surfaces such as concrete or macadam sidewalks and driveways and over rough or soft surfaces such as lawns, dirt surfaces and gravel, cinder or stone driveways and the like, and which is useful for clearing immediately adjacent buildings, walls, fences and similar obstructions.

It is therefore a general object of my invention to provide an improved, more effective and efficient self contained, wheeled snow plow. Another object of my invention is to provide a snow plow which is particularly adapted for use in clearing snow from sidewalks, driveways and pathways around and about homes, residences and the like and is particularly adapted to be effectively and efficiently operated by a single operator.

A still further object of my invention is the provision of a snow plow which is particularly adapted for one-man operation and is readily adjusted so as to be useful for clearing both smooth and solid and rough and/or soft surfaces.

Still another object of my invention is the provision of a snow plow having a plowing action in one direction which is particularly adapted to clear and collect snow from adjacent buildings, walls, fences and similar obstructions.

Other objects of my invention are the provision of a snow plow for use around homes, residences and the like which is fixedly adjustable so as to closely clear snow from smooth, solid surfaces on the one hand, and so as to raise the leading edge of the plow in order to avoid gouging rough or soft surfaces, which is strong and rigid in construction and relatively economically manufactured, which is wheeled; which effectively removes snow and the like from immediately adjacent walls, buildings, fences and similar obstructions without piling the snow against the same; which is foolproof in use and construction, and which although useful for manual operation is adapted to be provided with motor means to aid and facilitate the movement thereof, and/or which has and obtains one or more of the above objects and advantages.

These and other objects and advantages of my invention will appear from the following description of a preferred form thereof, reference being had to the accompanying drawings in which:

Figure 1 is a plan view embodying a preferred form of my invention, showing the same in a raised position particularly adapted for use with soft or rough surfaces.

Figure 2 is an elevation of the plow shown in Figure

2

1 with certain parts broken away to better show the structure thereof.

Figure 3 is an elevation similar to Figure 2 but with the plow in a lowered position for clearing smooth or hard surfaces.

Figure 4 is a front view of the plow shown in Figure 3.

In the past, difficulty has been experienced in providing a hand operated snow plow particularly adapted for one man operation and use about homes, residences, and the like which is readily usable on smooth or hard surfaces, gravel, stone or cinder surfaces, and/or lawns or dirt surfaces, because of the tendency of the plows to gouge and dig into the rough and soft surfaces, and/or to inefficiently clean the smooth and hard surfaces.

My invention provides a rugged, efficient snow plow which is readily adjusted, by the operator, so as to have direct control with and efficiently and closely clean smooth and flat areas and so as to raise the plow prow relative to the surface being cleaned so as to avoid gouging or digging into rough or soft areas. Further, a snow plow embodying my invention is particularly adapted for cleaning and removing snow from immediately adjacent walls, buildings, fences and the like.

I prefer that a snow plow embodying my invention be powered by the operator and for convenience will so describe my plow, however it is to be understood that snow plows embodying my invention may be provided with motor means for driving the same. Further, I prefer that a plow embodying my invention have only a single wheel as will hereinafter more fully appear, albeit runners or a plurality of wheels may be provided in lieu thereof if desired.

Referring now more particularly to the drawings, a plow embodying the preferred form of my invention is indicated generally at 1 and comprises a body 2 having a generally triangular shape when viewed from above, a wheel 4 and a handle 5. Body 2 is formed of any suitable material such as sheet steel and is disposed so that the apex of the triangle is at the forward end of the plow and forms the prow 7 thereof. The sides 8 and 10 respectively of the triangle and plow extend rearwardly and outwardly therefrom and the base of the triangle forms the back 11 of the plow. The sides 8 and 10 and back 11 are preferably and conveniently flat and perpendicular, albeit it is not without the scope of my invention to curve the prow 7 and the sides 8 and 10 in order to induce a rolling action to the snow as the plow is advanced should this be desired. Sides 8 and 10 and back 11 are preferably provided with upper and lower flanges 13 and 14 in order to provide additional strength and rigidity thereto.

Wheel 4 is mounted on transverse axle 16 and preferably is disposed along the longitudinal centerline of the plow just behind prow 7. Handle 5 preferably comprises spaced parallel side rails 17 and 19, respectively, which are rotatably supported on axle 16 on either side of wheel 4 and extend upwardly, outwardly and rearwardly therefrom. Handle 5 also preferably includes a plurality of braces 20 and 22, for example, which strengthen the handle and extend transversely between, are secured to, and interconnect rails 17 and 19.

The preferred embodiment of my invention includes means by which the prow 7 of the plow may be selectively lowered or elevated relative to the surface being cleaned. Thus, on the one hand the prow may be elevated so as to provide a clearance between the surface and the prow and prevent the prow from damaging or deleteriously affecting the surface when the same is of such a nature as to be damaged thereby, i.e., when the surface is rough, of broken stones or other small objects, or of dirt or grass. On the other hand, where the surface to be

3

cleaned is smooth and/or hard the plow is lowered so that the body of the plow is in direct contact therewith throughout substantially its entire periphery and a closer clearing thereof is effected.

To this end I provide means whereby axle 16 and therefore wheel 4 is mounted on and carried and supported by plow body 2 so that the axle 16 and body 2 may have vertical movement relative to each other and I also preferably provide means by which the body and axle may be displaced relative to each other and maintained with the axle in a relative lower position and the body in a relative raised position.

The diameter of the wheel 4, the disposition of the raised and lowered positions of the axle 16 and the height of the body 2 relative to said wheel diameter and said positions is such that when the axle is in its raised position (i.e., the body is lowered relative thereto) the body is supported by and rests and rides upon the surface being cleaned but when the axle is in its lower position (i.e., the body is raised relative thereto) the lowermost portion of the wheel 4 extends below the lower flanges 14 of the body and the body is supported by and on the handle and wheel so that the lower flanges 14 are out of contact with the surface being cleaned when the body is held horizontal (as shown by the dotted lines, Figure 2) or the prow is raised even higher from the surface (as shown by the full lines in Figure 2).

To this end I preferably provide a pair of vertically extending transversely spaced parallel braces 23 and 25 supported by the body 2 adjacent the respective sides thereof and having vertical slots 26 and 28 respectively for the reception of the respective ends of axle 16. Slots 26 and 28 are of sufficient width to rotatably receive axle 16 and are of sufficient height to provide for the maximum desired relative vertical movement between the axle and the body of the plow. Because of the relative weights of the body and the axle wheel and handle, the body is normally disposed by gravity in its lower position, i.e., the body rests on the surface to be cleaned and the axle and wheel are displaced upwardly with the wheel just contacting the surface to be cleaned and the axle in an upper position such that the distance between the axle and the surface to be cleaned is substantially equal to the radius of the wheel. In this position, as noted above, the plow is adapted for use in cleaning relatively smooth and hard surfaces.

In order to provide means to raise the body and dispose the axle in a lower position so that the distance between the axle and the lower flange is less than the radius of the wheel by the amount which it is desired to raise the body above the surface to be cleaned, I provide a plurality of hook and eye means carried by the body and handle respectively and adapted when engaged to support the body in a raised position. I preferably provide four such means in order to support the body evenly and with sufficient rigidity. To this end I preferably provide one pair of eyes 29 and 31 respectively on the upper flanges 13 of the respective sides 8 and 10 rearwardly of the axle 16 and equidistant from the vertical centerline of the plow and the other pair of eyes 32 and 34 respectively on the upper flange 13 of the back 11 respectively on either side of and equidistant from the vertical centerline of the plow and preferably in vertical alignment with the vertically adjacent portion of the respective handle rails 17 and 19. Hooks 35 and 37 are pivotally supported on the respective handle rails 17 and 19 and detachably engage the respective eyes 32 and 34. Hooks 38 and 40 detachably engage eyes 29 and 31 respectively. In order to facilitate engaging the same I prefer to pivotally support hooks 38 and 40 on suitable supports 41 and 43 respectively, which are in turn respectively mounted on handle rails 17 and 19 and extend outwardly therefrom. The respective lengths of the hooks 35, 37, 38 and 40 are such that when the hooks

4

are engaged in the respective eyes the body 2 is supported on the handle and is raised from the surface to be cleaned.

In order to more rigidly support the body in the raised position I preferably also provide an arched brace 44 extending transversely between and secured to the upper flanges 13 of the respective sides of the body 2, substantially in vertical alignment with the axle 16 and detachably interconnect the same with the handle as by means of a flat brace 46 detachably engaging braces 44 and 20. Brace 46 is of such a length as to be placed in tension by and support a part of the weight of the body 2 when the same is supported by the hooks 35, 37, 38 and 40.

I conveniently provide keeper hooks 47 on brace 22 for holding and retaining brace 46 when the same is not otherwise in use.

In order to provide means whereby a plow embodying my invention readily and easily cleans surfaces immediately adjacent walls, fences and similar obstructions, I preferably provide wing members 50 and 51, which extend rearwardly and outwardly from the rearward corners 53 and 54 of body 2. Wing members 50 and 51 are conveniently provided with flanged upper and rear edges and are rigidly supported in place so that by merely drawing the plow backwards with one of the wings immediately adjacent the building or wall the snow may be scooped into the area defined by the two wings 50 and 51 and the back 11 of the plow and may be pulled out of the way or into the position to be moved away by the normal forward operation of the plow.

For added convenience and to render the plow more compact for storage I preferably mount the wings 50 and 51 on the back 11 with hinges 56 and 57 respectively so that the wings may be folded inwardly against the back when desired. In such instance I also preferably provide hinged braces 59 and 60 which are secured to the back and detachably secured to the wings 50 and 51 respectively to hold the wings in the open position and one or more detachable braces 62 and 63 which are adapted to be secured to and extend between the wings 50 and 51 when they are open in order to provide additional strength and rigidity. Alternatively the wings may be welded to the body of the plow so as to remain in the open position. When the wings are hinged guard strips 65 and 66 are conveniently mounted on the forward edges of wings 50 and 51 respectively and are adapted to cover the juncture between the wings and plow body when the wings are in the open position.

In operation and when the plow is to be used to clear snow from a hard smooth surface the hooks 35, 37, 38 and 40 are detached from the respective eyes and brace 46 is removed from engagement from braces 20 and 44. The plow is then used in a conventional manner for normal clearing by pushing the same forwardly. Its strong rigid construction facilitates its ease of use and aids in the rapid and easy removal of the accumulated snow. When the path to be cleared is of greater width than the plow a pass is made in one direction and then subsequent passes are made either in the same or opposite directions with the prow 7 to one side of the resultant bank of snow so that the snow is pushed away from the portion already cleared. When it is desired to clear adjacent a building or wall or if the operator otherwise finds it convenient, he may draw the plow rearwardly, trapping the snow within the wings and back of the plow and drawing the same away to any desired location.

Should it be necessary to clean a rough or soft surface, hooks 35, 37, 38 and 40 are engaged with the respective eyes and brace 46 is positioned to engage braces 20 and 44. This raises the body 2 and prow 7 thereby permitting the plow to pass over the surface being cleaned to clear the same without the prow engaging or digging into the surface and leaving at most only a very thin layer of snow on the surface. In this position too the plow may be drawn backwardly either to clear adjacent

a building or wall or otherwise at the discretion of the user.

Modifications, changes and improvements to the preferred form of my invention herein described may occur to those skilled in the art who come to understand the precepts thereof. Accordingly, I do not care to be limited in the scope of my patent to the specific embodiment of my invention herein described but rather desire that the scope of my patent be limited only by the advance by which my invention has promoted the art.

I claim:

1. A snow plow comprising a body of generally triangular shape disposed with the apex of the triangle at the center forward portion of the plow and defining the prow, the sides of the triangle defining the sides of the plow and extending rearwardly and outwardly therefrom and the base of the triangle defining the back wall of said plow, vertically extending, transversely spaced parallel braces carried by said body adjacent the respective sides thereof, vertically extending parallel slots in said vertical braces, an axle extending between and having its ends disposed in said slots and being adapted for vertical movement therein, a wheel secured to said axle in longitudinal alignment with said prow of said body, a bifurcated handle rotatably mounted on said axle on either side of said wheel, a pair of transversely spaced parallel eyes carried by said sides equidistantly from the longitudinal centerline of said plow, a second pair of eyes carried by said back wall of said body of said plow and respectively disposed on either side of and equidistantly from the longitudinal centerline of said plow, support members carried by said handle at the respective sides thereof, a pair of hooks rotatably carried by said support members respectively and detachably engaging said first pair of eyes, a second pair of hooks rotatably supported by said handle and detachably engaging said second pair of eyes, an arched brace extending between and secured to said sides in vertical alignment with said axle, a transverse brace carried by said handle, a lifting brace extending between and detachably secured to said arched and transverse braces, wing members hingedly secured to said back wall adjacent said sides respectively, hinged braces secured to said back wall and detachably secured to said wing members respectively and brace means detachably secured to and extending between said wing members, said body of said plow being raised above the periphery of said wheel when said hooks are engaged in said eyes respectively and said lifting brace engages said arched and transverse braces and said body engaging the surface upon which said plow is resting when said hooks and lifting brace are disengaged from said eyes and arched and transverse braces respectively.

2. A snow plow comprising a body of generally triangular shape disposed with the apex of the triangle at the center forward portion of the plow and defining the prow, the sides of the triangle defining the sides of the plow and extending rearwardly and outwardly therefrom and the base of the triangle defining the back wall of said plow, vertically extending, transversely spaced parallel braces carried by said body adjacent the respective sides thereof, vertically extending parallel slots in said vertical braces, an axle extending between and having its ends disposed in said slots and being adapted for vertical movement therein, a wheel secured to said axle in longitudinal alignment with said prow of said body, a handle rotatably mounted on said axle, a pair of transversely spaced parallel eyes carried by said sides equidistantly from the longitudinal centerline of said plow, a second pair of eyes carried by said back wall of said body of said plow and

respectively disposed on either side of and equidistantly from the longitudinal centerline of said plow, support members carried by said handle at the respective sides thereof, a pair of hooks rotatably carried by said support members respectively and detachably engaging said first pair of eyes, a second pair of hooks rotatably supported by said handle and detachably engaging said second pair of eyes, wing members carried by said back wall adjacent said sides respectively and wing support brace means for rigidly holding said wing members in a position extending from said back wall, said body of said plow being supported above the lower periphery of said wheel when said hooks are engaged in said eyes respectively and engaging the surface upon which said plow is resting when said hooks are disengaged from said eyes.

3. The snow plow according to claim 2 in which said wing members are hingedly secured to said back wall and said wing support brace means detachably support said wing members.

4. A snow plow including a body, an axle with wheel means mounted thereon, a handle rotatably carried on said axle, means carried by said body for supporting said axle on said body for vertical movement relative thereto, and hook and eye means carried by said handle and body respectively and detachably engaging each other for detachably supporting said body on said handle to display said axle downwardly relative to said body whereby said body is raised above the lower periphery of said wheel means when said hook and eye means are engaged and said body engages the surface upon which said plow is resting when said hook and eye means are disengaged.

5. A snow plow comprising a body having a prow at the center forward portion thereof, sides respectively extending rearwardly and outwardly therefrom and a back wall interconnecting said sides, an axle having wheel means mounted thereon, means carried by said body for supporting said axle on said body for vertical movement relative thereto, a handle rotatably mounted on said axle, wing members carried by said body and having a position extending outwardly and rearwardly from said back wall, wing support brace means for holding said wing members in said extending position, and means carried by said handle and body respectively for detachably supporting said body on said handle to displace said axle downwardly relative to said body whereby said body of said plow is raised above the lower periphery of said wheel means when said body supporting means are attached and engages the surface upon which said plow is resting when said body supporting means are detached.

6. The snow plow according to claim 5 in which said wing members are hingedly secured to said back wall and said wing support brace means detachably support said wing members.

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