June 5, 1928. 1,672,490

P. J. HERCHERT

SNOW CLEANER

Filed Dec. 16, 1926

Fig. 1

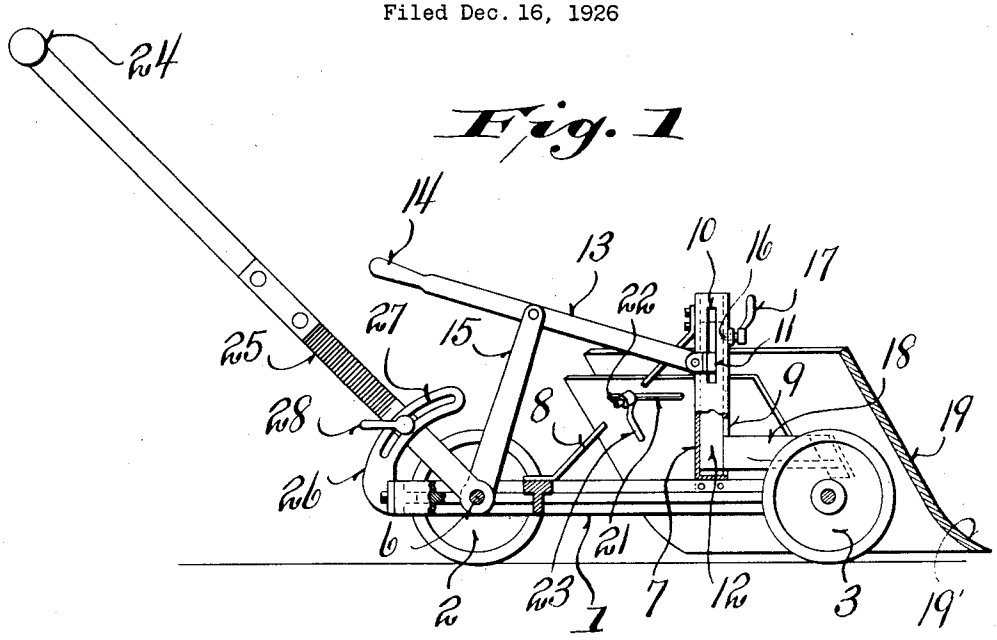
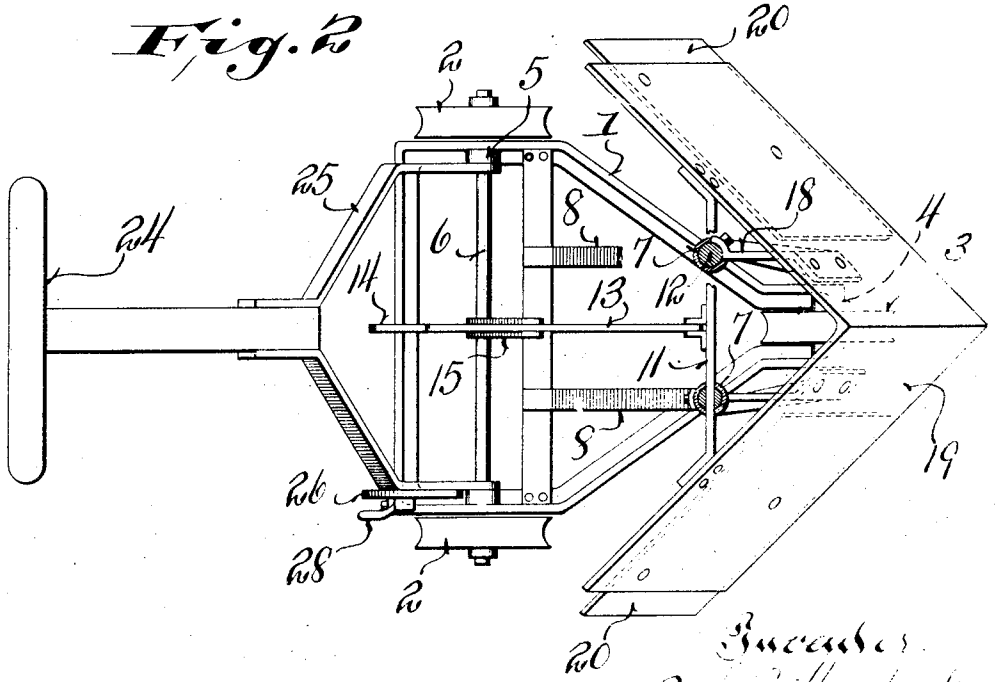


Fig. 2



Witnesses:

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Inventor

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UNITED STATES PATENT OFFICE.

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SNOW CLEANER.

Application filed December 16, 1926. Serial No. 155,161.

This invention relates to snow cleaners.

Objects of this invention are to provide a novel form of snow cleaner which is so constructed that it may be manually propelled and may be adjusted in a very simple and easy manner to any desired height or any desired width, so that when relatively heavy snow is encountered the top layer may be first removed and thereafter the machine adjusted to remove the remaining portion of the snow.

Further objects are to provide a novel form of snow cleaner in which the several parts are very rigidly braced, although adjustably carried, and in which the angle of the handle may be varied, and the handle may be locked in the desired position with the utmost facility.

Further objects are to provide a very simple type of snow plow in which the wheels for supporting the weight of the apparatus are provided in each case with spaced flanges, or in other words, with a slight groove or channel formed in their central portion, thus leaving relatively sharp marginal edges to dig into the snow and prevent side skidding of the device.

An embodiment of the invention is shown in the accompanying drawings in which:

Figure 1 is a side elevation of the device with a large portion thereof in section;

Figure 2 is a plan view of the apparatus with parts in section.

Referring to the drawings, it will be seen that the device comprises a body portion or frame 1 which is carried by a pair of rear wheels 2 and by a front wheel 3. The body portion may be a cast frame, if desired, and may be suitably webbed to secure the requisite rigidity and lightness. It is provided with two forwardly extending arms which have bearing portions 4 for the reception of the shaft of the front wheel. Further, it is provided with a pair of rear bearing portions 5 for the reception of the rear shaft 6 for the rear wheels.

The forward portion of the frame is provided with a pair of tubular uprights 7 which are rigidly secured thereto and are braced by the diagonal bracing members 8. These tubular members are slotted, as indicated at 9, on their front lower portions and are also provided with side slots 10. They carry plungers 12 joined by a transversely extending adjusting bar 11 so that motion of the bar is simultaneously transmitted to each of the two plungers 12 mounted in the tubular uprights 7. The adjusting bar 11 is raised or lowered by means of a lever 13 provided with a rear manipulating handle 14 and pivotally carried by a link 15 which, in turn, is pivotally mounted upon the rear shaft 6. Preferably, a set screw 16 is threaded through an enlarged boss provided for each of the tubular members 7. This set screw may be operated by a small hand lever 17 so as to lock the tubular member in adjusted position.

The plungers 12 are each provided with forwardly extending arms 18 which are preferably webbed, as indicated in Figure 1, to provide the requisite strength. The forward ends of these arms 18 are rigidly secured to the slanting front blades 19 which together form a V-shaped plow head or front for the device. These blades may be slightly curved outwardly at their lower ends, as indicated at 19', to facilitate digging into the snow. The blades, therefore, are adjustable in height by the mechanism described above. The width of the device is varied by means of a pair of plates 20 carried by the blades 19 and provided with slots 21. A threaded bolt or pin 22 passes through each of the slots and a manually operable nut provided with a manipulating handle 23 serves to clamp the adjustable plates in the desired position with respect to the main plates or blades, so that the width of the device may be varied.

An operating handle 24 is provided at the rear of the device and is equipped with a yoke or with a pair of outwardly diverging arms 25 which are pivotally mounted upon the rear axle 6. Preferably, an arcuate member 26 is carried by the body portion or main frame 1 of the device and is provided with a curved slot 27 through which a clamping bolt passes, such bolt being operated by means of the handle 28, so that the handle of the device may be adjusted to the desired angle to accommodate operators of different heights.

In using the device, the operator determines the width of the cut and accordingly adjusts the movable plates or blades 20 and locks them in their adjusted position. Thereafter, he adjusts the height at which the blades will operate by means of the handle 14, and thereafter locks the plungers by means of the set screw 16, thus locking the blades at the desired height. He ad-

justs the handle to the angle suited to him and thereafter pushes the device into the snow. The snow will, of course, be scooped up and thrown to the side, thus providing the necessary pathway. If the snow is relatively deep, the operator may thereafter lower the blades and take a second cut, removing the remaining portion of the snow.

It is to be noted particularly from Figure 2, that the peculiar grooved wheels are highly effective in preventing side slipping of the device, as they are each equipped with two spaced edges adapted to dig into the snow and thus hold the device properly aligned and in the correct position for propelling. In other words, it is impossible with this device for it to become shoved out of position laterally with respect to the path cleaned by the device.

Further, it is to be noted that the thrust from the blades is transmitted directly rearwardly through the arms 18 and through the plungers to the tubular uprights or guides. These guides are securely attached at their lower ends directly to the main frame of the device, and are braced by the members 8 at their upper ends so that the utmost rigidity of attachment is secured by this construction.

Further, it is to be noted that the transverse adjusting bar 11 has its ends rigidly secured to the blades 19 adjacent the upper edges of such blades, as may be seen from Figure 2, and thus additional bracing is secured.

It is to be noted further that the weight of the apparatus is not carried by the blades, but is carried by the wheels and, consequently, the exact depth of cut may be very accurately selected by proper adjustment of the apparatus.

Although the invention has been described in considerable detail such description is intended as illustrative rather than limiting as the invention may be variously embodied and as the scope of such invention is to be determined as claimed.

I claim:

1. A snow removing apparatus comprising a main frame work, a transverse rear shaft carried by said frame work, wheels carried by said shaft, a front wheel carried by said frame work, a pair of vertically extending tubular guides secured rigidly to said frame work, plungers slidably mounted within said guides and having forwardly extending arms, a pair of blades mounted in front of the front wheel and rigidly attached to said arms and forming together a V, lever mechanism for adjusting the height of said plungers, locking means for locking said plungers in position, and a rearwardly projecting adjustable handle for propelling the device into the snow.

2. A snow removing apparatus comprising a main frame work, a transverse rear shaft carried by said frame work, wheels carried by said shaft, a front wheel carried by said frame work, a pair of vertically extending tublular guides secured rigidly to said frame work, plungers slidably mounted within said guides and having forwardly extending arms, a pair of blades mounted in front of the front wheel and rigidly attached to said arms and forming together a V, lever mechanism for adjusting the height of said plungers, locking means for locking said plungers in position, a rearwardly projecting adjustable handle for propelling the device into the snow, and means for operating said lever mechanism, whereby said blades may be either locked in the desired vertically adjusted position or may be manually changed during operation of the device.

3. A snow removing apparatus comprising a frame having two rear wheels and a front wheel, a pair of blades mounted in front of the front wheel and forming a dihedral angle, each of said wheels having a dished out peripheral portion to provide cutting flanges to bite into the snow and ice, said frame having a pair of vertical tubular guides, a pair of plungers mounted within said guides and connected to said blades, a bar joining said plungers, means for elevating and locking said plungers in any desired adjusted position, a rearwardly extending handle pivotally supported with reference to said frame, and means for locking said handle in any desired angular adjustment to said frame.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

PAUL J. HERCHERT.