No. 625,589. Patented May 23, 1899.

M. MULDER.

SNOW SCRAPER.

(Application filed Jan. 10, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

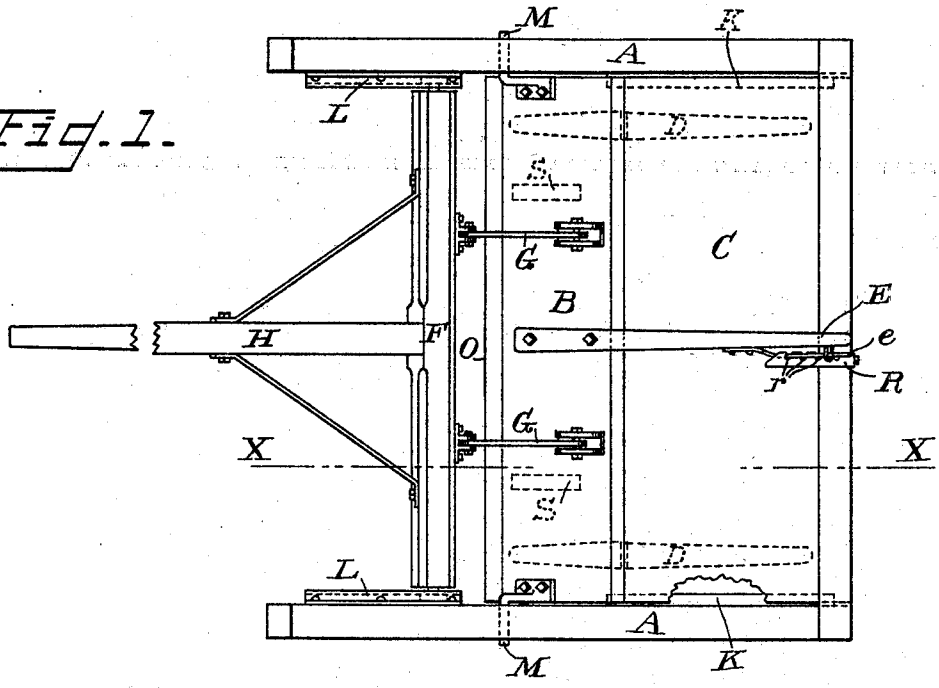


Fig. 5.

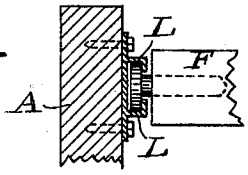


Fig. 6.

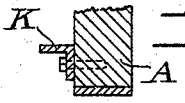
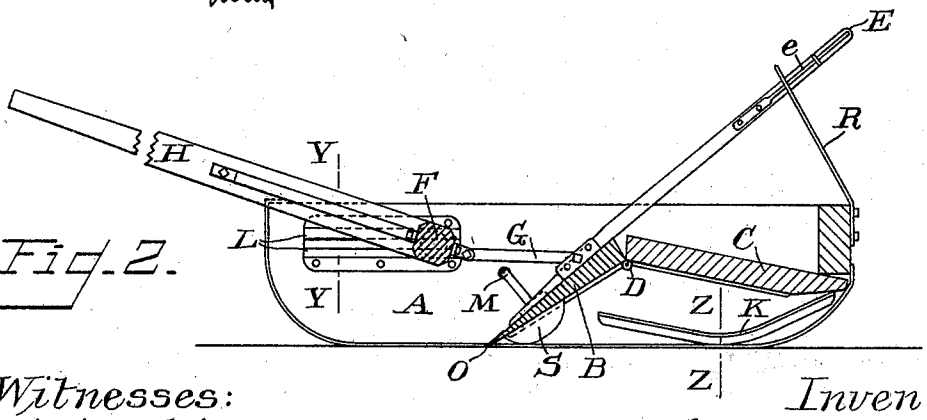


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

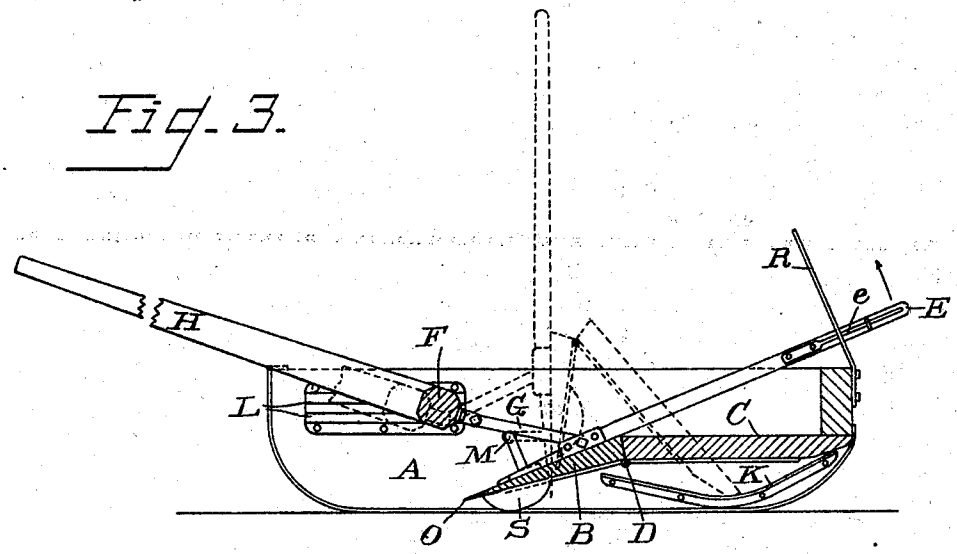


Fig. 4.

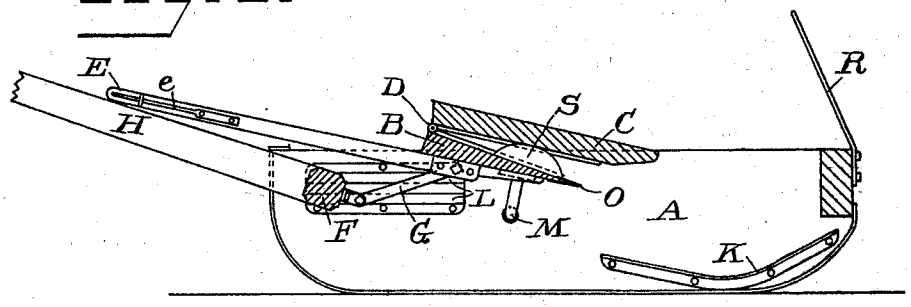
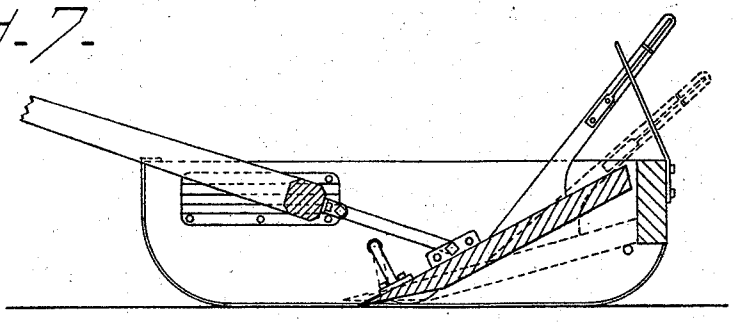


Fig. 7.



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UNITED STATES PATENT OFFICE.

MARTIENUS MULDER, OF NEW BALTIMORE, NEW YORK, ASSIGNOR TO JOHN N. BRIGGS, OF COEYMANS, NEW YORK.

SNOW-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 625,589, dated May 23, 1899.

Application filed January 10, 1899. Serial No. 701,721. (No model.)

To all whom it may concern:

Be it known that I, MARTIENUS MULDER, a citizen of the United States, residing at New Baltimore, in the county of Greene, State of New York, have invented a new and useful Improvement in Snow-Scrapers, of which the following is a specification.

My invention relates to improvements in machines for removing snow from the ice and from streets and avenues and other places.

The objects of my invention are, first, to provide a scraper which will take up a large amount of snow; second, to carry the snow to the dumping-ground; third, to have a scraper so constructed that it may be dumped and righted up again by the power employed to propel it. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of my invention. Fig. 2 is a section of Fig. 1 at X X, showing the position of the parts while at work. Fig. 3 is also a section of Fig. 1 at X X, showing the position of the parts when the edge of the scraper is raised sufficiently not to come in contact with the ground or ice when being moved to the dumping-ground loaded with snow or returning empty, the dotted lines showing the position of the several parts while being dumped. Fig. 4 is also a section of Fig. 1 at X X, showing the several parts after the scraper is dumped and in position to be moved empty. Fig. 5 is a section of Fig. 2 at Y Y. Fig. 6 is a section of Fig. 2 at Z Z, showing the plate upon which the edge of the table C slides.

Similar letters refer to similar parts throughout the several views.

My invention is an improvement in detail and construction upon the snow-scraper heretofore invented by me, for which United States Letters Patent No. 615,036 were issued to me November 29, 1898, and, like my scraper mentioned in said patent, is made to work between two sleigh-runners, so that when loaded or emptied the weight will be upon the runners, and therefore the snow can be transported with the least trouble.

A A represent the runners.

B represents the scraper proper, which has a sharp edge O to run on or next to the ground or ice. The scraper B is hung between the runners A A by means of pivots M M, which turn in the sockets made in the runners A A at a sufficient distance from the bottom of the runners to allow the scraper to turn over in dumping without the edge O extending below the bottom of the runners.

To the back of the scraper I attach a shelf or table C, which is hinged to the scraper by hinges D D. When in operation or loaded, the table is supported by the back ends of the plates K K, and when the scraper is being dumped the table C slides along the plates K, as shown in Fig. 3. When the scraper is returned to position, the table C slides along the plates K to its position.

The scraper is provided with a handle E, of sufficient length to extend to the rear of the scraper for operation. The handle E is provided with a spring *e*, adapted to operate in the notches *r*. The standard R, extending upwardly from the rear cross-beam of the runners A A, is provided with notches *r r*, adapted to receive the spring *e*, attached to the handle E, so that the scraper can be held automatically in any desired position by the spring *e* operating in the notches *r r*.

G G are rods, one end of each of which is attached to the cross-bar F, to which the power is applied to propel the scraper. The other ends of the rods G G are attached to the scraper in such a position that when the scraper is at work the power will be applied directly to the scraper B, the handle E holding the scraper in the desired position. When it is desired to dump the scraper, the spring *e* is released from the notches *r r* and the handle raised slightly, and the propelling power will dump or greatly assist in dumping the scraper. By reversing the propelling power or backing up the team attached to the scraper the rods will push the scraper back into position. The ends of the cross-bar F work in grooves or slideways L L, Fig. 4, so as to facilitate the dumping of the scraper and restoring it to position.

S S are projections or reliefs attached to the bottom side of the scraper B, so that when completely dumped, as shown in Fig. 4, the plate C will not come in such close contact with the scraper B as to prevent its being readily returned to position. By being kept

apart the operation of restoring the scraper to position for work is much facilitated. The ends of the table C will more readily come in contact with the plates K and slide along them to position. S S also serve as runners to support the edge O of the scraper while in use, as shown in Figs. 2 and 3.

The operation of my scraper is as follows: My scraper as shown in Fig. 1 is ready for work. The power is applied to the cross-bar F, as by the tongue H. The edge O of the scraper is held automatically by the handle E upon the ice or ground from which the snow is to be removed and even with the bottom of the runners A A, as shown in Fig. 2, the spring *e* in the notches *r* holding the scraper in any desired position. The ends of the cross-bar F work freely in the grooves or slideways L L, leaving the whole force of the propelling power to be exerted by means of the rods G G upon the scraper B. The scraper proceeding forward and the edge O being under the snow, the snow will be inclined to slide up the side of the scraper B, and when the scraper B is full will extend over and be deposited upon the table C, as well as the scraper B. When the scraper is sufficiently loaded, the handle can be lowered a notch, raising the edge O off the ground or ice, as shown in Fig. 3, and in this position can be driven to the dumping-ground with the entire weight of the snow resting upon the runners A A. When the dumping-ground is reached, by releasing the spring *e* from the notches *r* and raising the handle the power exerted upon the rods G G will assist in dumping the scraper, for the reason that when the handle is raised the power exerted upon the rods will tend to turn the scraper B around the pivots M M until the scraper B, the handle E, and the table C take the position shown in Fig. 4 and the snow drops between the runners. The scraper can be restored to position, ready for work, by reversing the propelling power, as by backing up the team attached to the tongue H, thereby sliding the ends of the cross-bar F backward through the grooves or slideways L L, thus pushing the rods G G against the scraper B and tipping the scraper B back toward its original position, and the rear corners of the table C will slide along the plates K and the scraper assume its position as shown in Fig. 1. When the scraper goes back empty, the handle may remain forward, resting upon the cross-bar F, as shown in Fig. 4, or, after being put back in position the handle E may be lowered and retained in the notch in such a position as to hold the edge O off the ice or ground, as shown in Fig. 3, and in this position the scraper can be readily transported from one place to another empty.

Fig. 7 shows a modification of my scraper, by which the table C, the hinges D D, and the plates K K are dispensed with, and when thus constructed the runners should be shortened accordingly. All of the other parts are retained and operate as above described. My scraper can be constructed in this form cheaper than with the table C and is effective for removing smaller quantities of snow or where it is not desired to carry the same for so long a distance.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for removing snow, the sliding cross-bar, to which the propelling power is attached, pivoted in horizontal slideways between the runners, the slideways adapted to receive the ends of said cross-bar, the scraper also pivoted between the two runners and rods connecting the scraper to the said cross-bar, together with the handle attached to the scraper and provided with a spring-catch adapted to operate in connection with the notches in the standard, and said standard extending upwardly from the frame of the runners, provided with notches adapted to receive the said spring-catch, substantially as described and for the purposes set forth.

2. In a machine for removing snow, the scraper pivoted between two runners, the cross-bar of the runners, to which the propelling power is applied, adapted to slide in a horizontal direction between the runners, the scraper pivoted between the runners and means for connecting said scraper to said cross-bar, the handle attached to said scraper provided with a spring-catch, a standard extending upwardly from the frame of said runners provided with notches adapted to receive and hold the spring-catch of the handle together with the table or shelf hinged to said scraper and resting on plates attached to the runners, substantially as described and for the purposes set forth.

MARTIENUS MULDER.

Witnesses:
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WM. E. VAN WERT.