

(No Model.)

2 Sheets—Sheet 1.

O. S. WHEELER.
SNOW SCRAPING MACHINE.

No. 422,674.

Patented Mar. 4, 1890.

Fig. 1

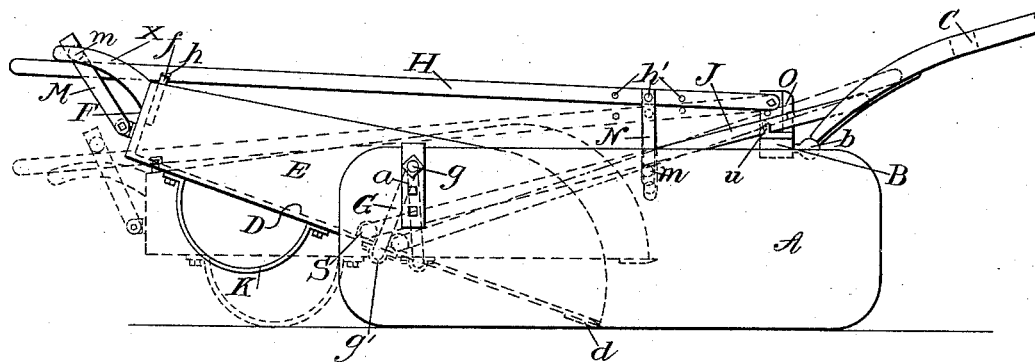
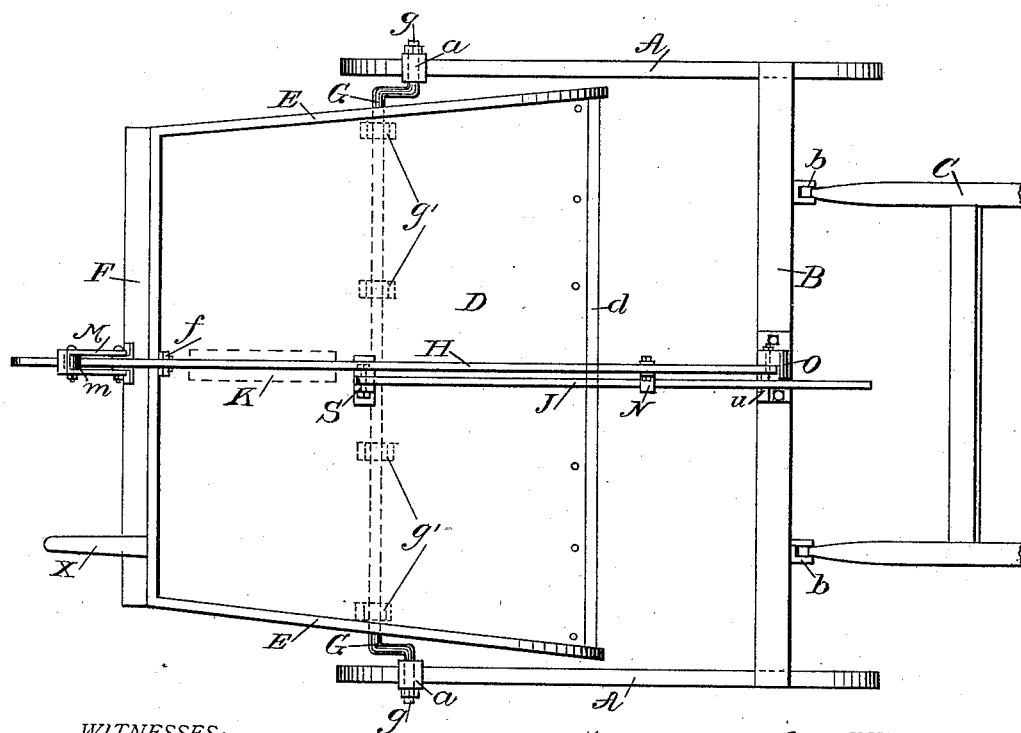


Fig. 2



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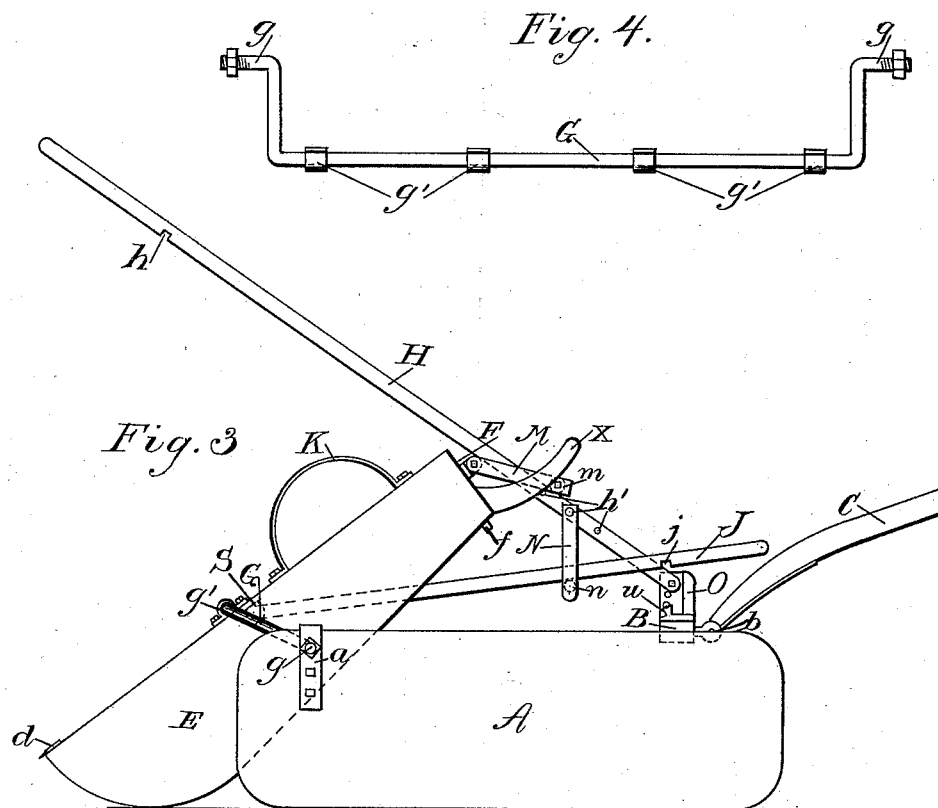


Fig. 5.

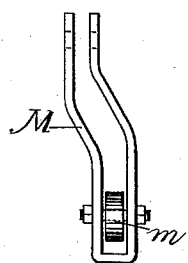


Fig. 6.

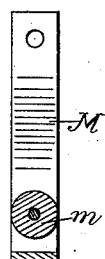
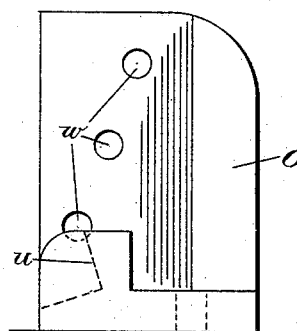


Fig. 7.



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UNITED STATES PATENT OFFICE.

ORLIN S. WHEELER, OF TROY, NEW YORK.

SNOW-SCRAPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 422,674, dated March 4, 1890.

Application filed February 20, 1889. Serial No. 300,594. (No model.)

To all whom it may concern:

Be it known that I, ORLIN S. WHEELER, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Snow-Scraping Machines, of which the following is a specification.

My invention relates generally to snow-scraping machines having an adjustable scraping-board suitably mounted upon runners and adapted to be used in scraping snow from the surface of an ice-field preparatory to harvesting the ice, and has for its objects, first, to provide suitable means for securing the scraping-board in position while scraping; second, to provide for changing said board from an inclined to a substantially horizontal position, so as to enable the scraper to serve as a sled for removing the accumulated snow to the place of deposit; third, to facilitate the overturning of the scraping-board and dumping of the snow when desired. These objects I accomplish by substantially the means illustrated in the accompanying drawings, in which—

Figure 1 represents a side view of a machine embodying my invention, showing in full lines the position and arrangement of the several parts when scraping the snow, and showing in dotted lines their position and arrangement when transformed into a sled for carrying away the snow. Fig. 2 represents a plan view of the parts shown in Fig. 1 when arranged as indicated by the full lines in said figure. Fig. 3 represents a side view of a snow-scraper embodying the parts shown in Figs. 1 and 2, the scraping-board being overturned, as when dumping the snow. Fig. 4 represents a side view of the bent axle, upon which the scraping-board is mounted. Fig. 5 represents an end view of a detached caster-hanger. Fig. 6 represents a vertical section of said hanger. Fig. 7 represents a side view of a bracket attached to the cross-bar.

Runners A, of any suitable construction, are connected together at their forward ends by means of a cross-bar B, immovably secured thereto, and at their rear ends by means of the axle G. Draft mechanism of any suitable construction—such as the shafts C—is secured to said cross-bar. Each end of the axle G is bent at a right angle to the main portion

of the bar, and the extremity of each end is again bent into a line parallel with the main portion of the bar, so as to form offsets or trunnions *g*, which are freely journaled in the rear ends of the runners and secured in place by means of a nut engaging with the threaded end of said trunnions. A scraping-board D is mounted upon said axle and preferably secured freely thereto by means of the clips *g'*, overlapping the axle, and secured to the under side of the scraping-board, so as to form journals adapted to allow the scraping-board to rock freely on said axle. Ordinary journal-boxes or other means having similar capabilities may be used, however, instead of said clips, if desired. Side boards E and a back board F are secured to said scraping-board, forming with said scraping-board a scoop adapted to hold a large quantity of snow. The forward edge of the scraping-board is provided with a metallic scraping-blade *d*, securely fastened thereto. A locking-lever J is pivotally secured to the upper side of the face-board about the line of the axle, the forward end of the lever being provided with a notch *j*, adapted to engage with a catch *u*, formed on the bracket O, secured to the cross-bar. The bracket O is provided with a series of holes *w*, arranged one in advance of the other. A lever H is pivotally connected at one end to said bracket, and is provided on its outer or free end with a notch *h*, adapted to engage with the rear end of the scraping-board or with a plate *f*, secured thereto. This lever is also provided with a series of holes *h'*, by means of which and a pin a hanger N, provided with a caster *m*, is secured to the lever H, allowing said hanger to swing freely on said pin.

A caster-bracket M, similar in general construction to the bracket N, is secured to the back board F in an inverted position, so that the caster will be held in the upper end of the same.

When the machine is in operation scraping the snow, the parts are in the position indicated by the full lines in Fig. 1, the scraping-board D being inclined to the surface of the ice. The lever J, having its forward end locked to the cross-bar B by means of the notch *j* engaging the projection *u*, prevents either forward or backward movement of the swinging axle G or the scraping-board D, mounted

thereon. The rear end of the lever H being locked to the back of the scraping-board prevents any rocking movement of the scraping-board on its axle. The angled inclination of the scraping-board is regulated by changing the pin connecting the forward end of the lever H from one hole in the bracket O to another. The farther back said end is pivoted the higher the front scraping-edge of the board will be raised, thereby decreasing the depth of cut.

When a sufficient quantity of snow has been scraped together and it is desired to carry away the same, the lever H is raised by means of the extreme outer end, which serves as a handle. The forward end of the lever J is at the same time released from engagement with the projection *u* by means of the connection-hanger N. The scraper-board will then be free to assume the horizontal position indicated by the dotted lines in Fig. 1, and when in such position the snow may be readily removed to the place of deposit.

When it is desired to dump the snow, the lever H is raised, the forward end of the lever J being released by the same operation, and the axle G is free to swing backward or forward. A continuation of the upward movement of the lever H causes the front edge of the scraping-board to come in contact with the ice, and the team in going ahead overturns the scraping-board into the position shown in Fig. 3. The scraping-board may be brought back to its original position by drawing back on the handle *x*.

I prefer to mount the scraping-board loosely on the axle, although it may be fastened rigidly thereto.

The bracket O need not necessarily be secured to the same cross-bar to which the draft mechanism is connected; but it may instead be secured to an auxiliary cross-bar.

What I claim is—

1. In a snow-scraper, the combination, with suitable runners connected together at their forward ends by means of a cross-bar immovably secured thereto and provided with draft mechanism, of a scraping-board mounted upon said runners and movable bodily backward and forward independently thereof, and locking-levers connecting said scraping-board and cross-bar, substantially as shown and described.

2. In a snow-scraper, the combination of suitable runners connected together at their forward end by means of a cross-bar immovably secured thereto, draft mechanism connected with said cross-bar, a scraping-board movably journaled upon swinging hangers pivoted to said runners, and locking-levers connecting said scraping-board and cross-bar, substantially as shown and described.

3. In a snow-scraper, the combination, with suitable runners connected together at their forward end by means of a cross-bar immovably secured thereto, of a scraping-board movably journaled upon a swinging bent axle, and locking-levers connected with said scraping-board and cross-bar, substantially as shown and described.

ORLIN S. WHEELER.

Witnesses:

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W. A. WILLIAMS.