

(No Model.)

2 Sheets—Sheet 1.

O. S. WHEELER.  
SNOW SCRAPER.

No. 418,327.

Patented Dec. 31, 1889.

Fig. 1.

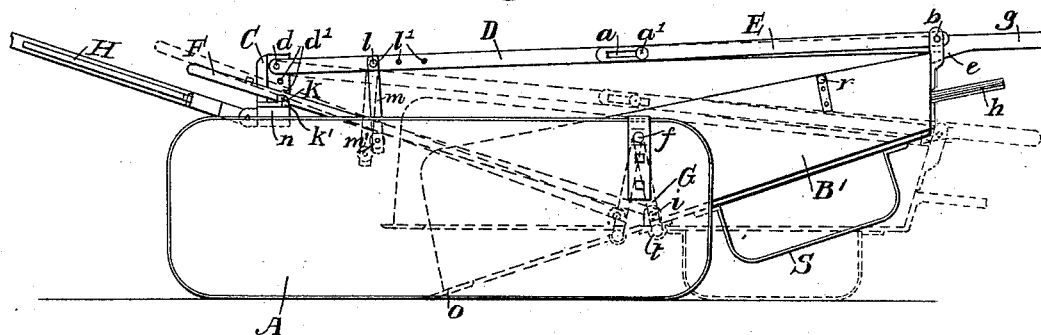
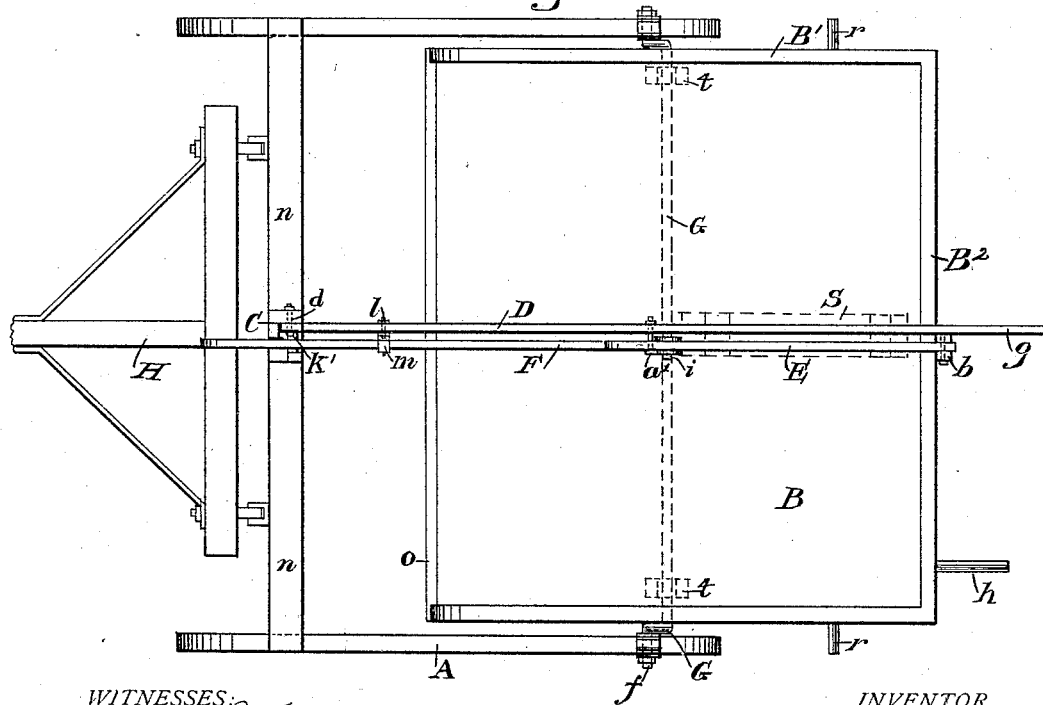


Fig. 2.



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## SNOW-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 418,327, dated December 31, 1889.

Application filed October 25, 1889. Serial No. 328,188. (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-Scrapers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates, generally, to snow-scrappers having an adjustable scraping or face board suitably mounted upon runners and adapted to scrape up and remove the snow from the surface of an ice-field preparatory to harvesting.

The objects of my invention are, first, to securely fasten the face-board in an inclined position when in the act of scraping; second, to cause the face-board to be readily changed from an inclined to a substantially-horizontal position, so as to serve as means for carrying the accumulated snow off to the dumping-place, and, third, to provide means for overturning the face-board and dumping its load, when desired. These objects I accomplish by substantially the devices illustrated in the accompanying drawings, in which—

Figure 1 represents a side view of a scraper embodying my invention, showing in full lines the position and arrangement of the parts when the face-board is inclined in the act of scraping, and showing in dotted lines the face-board in substantially a horizontal position. Fig. 2 represents a plan view of the parts shown in Fig. 1. Fig. 3 represents a side view of the scraper shown in Figs. 1 and 2, the several parts being arranged in the position assumed by them after the face-board has been overturned. Fig. 4 represents a detached view of a swinging hanger; Fig. 5, an enlarged side view of a bracket provided with a locking projection and a series of holes.

A represents runners, which may be of any suitable construction, connected together at their forward ends by means of the cross-bar *n*. Attached to the cross-bar is a pole, to which the team is connected. The rear ends of the runners are connected together by means of the bent hanger *G*, having its ends *f* offset, so as to form trunnions, which are

journalled in the rear ends of the runners *A*, thereby allowing a backward and forward independently-swinging movement of the hanger. A face-board *B* is supported by the hanger *G*, and is secured thereto by means of loops *t* overlapping the hanger and attached to the under side of the face-board. Instead of the loops *t*, ordinary bearing-boxes may be used or other means of suitable construction which will allow free rocking movement of the face-board on the hanger independently of any similar movement of the hanger itself. Attached to the face-board are sides *B'* and backboard *B<sup>2</sup>*, forming with the face-board a shovel or other receptacle for holding a quantity of snow. A knife or metallic scraper-blade *O* is secured to the forward edge of the face-board.

Pivotally attached to the face-board at a point about on the line of the hanger is a lever *F*. The forward end of the lever is provided with a notch *K*, which engages with a projection *K'*, formed on the bracket *C*, attached to the cross-bar, by means of which projection and the engaging-notch *K* the forward end of the lever *F* is detachably secured to the cross-bar. A lever *D* is pivoted at its forward end to the cross-bar and projects at its rear end beyond the back edge of the face-board. The free end of this lever is provided with a projection *e*, which is adapted to engage with the edge of the back board *B<sup>2</sup>* or the rear edge of the face-board and hold the face-board in an inclined or scraping position. An auxiliary lever *E* is pivotally secured to the back board and is provided at its forward end with a longitudinal slot *a* which engages with a pin *a'*, attached to the lever *D*. The forward end of the auxiliary lever *E*, when in the position shown in Fig. 1, presses against the pin *a'*, attached to the lever *D*, and in effect forms with that portion of the lever *D* extending from the point *a'* to the point *d* one continuous brace, adapted to resist any forward pressure exerted by the back edge of the face-board, while the slot *a* permits a change of the relative position of these parts to adapt the face-board to be thrown forward into the position shown in Fig. 3, when desired. A stirrup or hanger *m* is pivoted at its upper end to the bar *D* by means of a pin *l*, and has a limited swinging movement forward and

backward on said pivot. To the lower end of the stirrup a wheel *m'* is pivotally secured, which avoids frictional movement when the lower end of the stirrup comes in contact with and moves along the lower edge of the lever F.

I do not desire to be limited to the specific construction of the stirrup shown herein, but desire to include any other means having similar capabilities. The object and purpose of said stirrup is to connect the upper lever D with the lower lever F in such a manner that when the free end of the lever D is raised it will draw up with it the forward end of the lever F and release the notch K from the projection K'.

Attached to the cross-bar *n* is a bracket C, provided with a series of holes *d'*, by means of which the position of the lever D is regulated, so as to adjust the face-board at the desired inclination, and thereby regulate the depth of cut. These holes are arranged at points varying in distance from the rear end of the face-board, and when the forward end of the lever D is connected to the bracket C by means of a pin engaging with the bracket-hole nearest to the shaft the catch *e* on the rear end of the lever will be in engagement with the rear end of the face-board or with the back board, as shown in Fig. 1, the face-board will be inclined to its fullest capacity, and its forward or cutting edge will be in direct contact with the surface of the ice. When it is desired to diminish the depth of cut, the pin *d* is removed and inserted in one of the bracket-holes farther back, so as to move the lever D slightly backward. By pressing down on the handle *g* of the lever the back edge of the face-board will be pressed slightly downward until it comes in contact with the projection *e*, and the forward edge of the face-board will then be raised slightly off the ice, and the depth of cut thereby decreased.

When the parts are in the position indicated by the full lines in Fig. 1, the lever F is locked in position at its forward end by means of the notch K and the engaging projection K', and thereby prevents the hanger G from swinging backward and, with the projection *e* and lever *m*, holds the hanger and back edge of the face-board from raising upward.

When a sufficient quantity of snow has been scraped together and it is desired to remove it from the field, the lever D is lifted upward by means of the handle *g*, releasing the projection *e* from engagement with the back edge of the face-board. When the lever D is thus raised, the forward end of the lever F is also raised by means of the connecting-stirrup *m* and the notch K released from the catch K'. The face-board will then be free to assume a substantially-horizontal position, as indicated by the dotted lines in Fig. 1, and in this position the mass of snow may be removed to any desired place. When the

dumping-place has been reached and it is desired to deposit the snow, the back end of the face-board is lifted up by means of the handle *h*, the forward edge of the face-board catches into the ice and the adhering coating of snow, and is overturned by a continuation of the forward movement of the machine, as indicated in Fig. 3. The face-board may be readily drawn back into working position by means of the handle *h*.

The devices herein shown for holding the face-board securely in position and for overturning the same may be used, if desired, with other means than the bent swinging hanger G shown herein for mounting the face-board upon runners without departing from my invention, and some of the devices may be used without the others.

I do not claim herein the swinging hanger for supporting the face-board, nor the runners and connecting cross-bar having draft mechanism attached thereto, as such subject-matter is claimed by me in another application filed February 20, 1889, Serial No. 300,594.

What I claim is—

1. In a snow-scraper, the combination, with a face-board suitably mounted upon runners, of the locking-lever F, pivoted to the face-board, the lever D, pivoted to the cross-bar, auxiliary lever E, and means for connecting the levers D and F together, substantially as shown and described.

2. In a snow-scraper, the combination, with a face-board suitably mounted upon runners, of the lever D, pivoted to the cross-bar, and auxiliary lever E, provided with a longitudinal slot engaging with a pin secured to the lever D, the locking-lever F, pivoted to the face-board and adapted to engage with the cross-bar, and the stirrup *m*, pivoted to the lever D and provided with a wheel pivotally supported by the lower end of said stirrup, substantially as shown and described.

3. In a snow-scraper, the combination, with a face-board suitably mounted upon runners, of the lever D, provided with the locking projection *e*, and the auxiliary lever E, provided with a longitudinal slot engaging with a pin attached to the lever D, substantially as shown and described.

4. In a snow-scraper, the combination, with suitable runners connected together by a cross-bar, of a face-board mounted upon said runners and movable bodily backward and forward independently thereof, a lever F, pivoted to the face-board, lever D, pivoted to the cross-bar, auxiliary lever E, adjustably connected with the lever D, the stirrup *m*, and perforated bracket C, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

ORLIN S. WHEELER.

Witnesses:

ROBERT W. HARDIE,  
CHAS. H. MILLS.