H. E. PLUMMER.

SNOW SCRAPER.

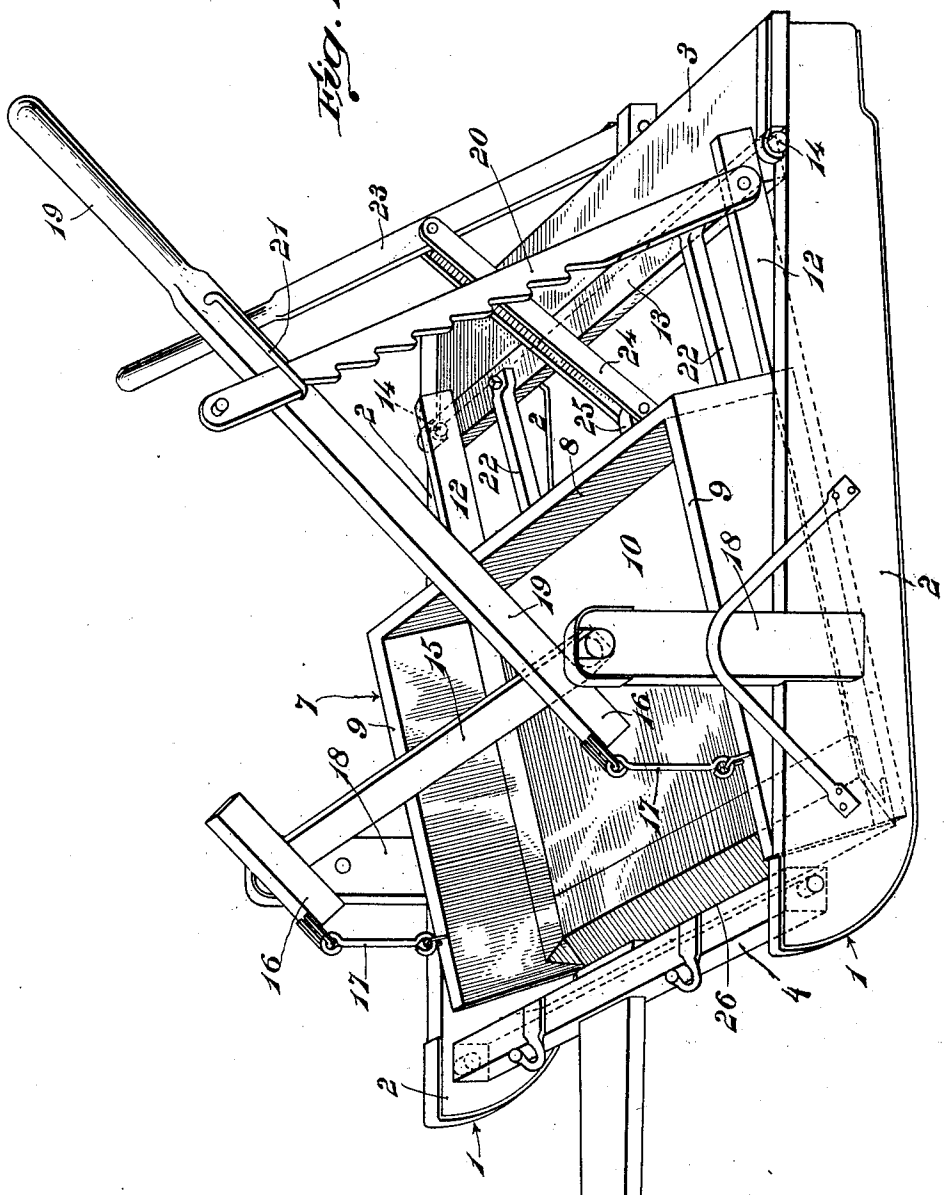
APPLICATION FILED JAN. 25, 1912.

1,100,197.

Patented June 16, 1914.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
S. J. Henderson
Fred A. Klinge

Inventor:
Henry E. Plummer,
by Thos. G. Anderson, Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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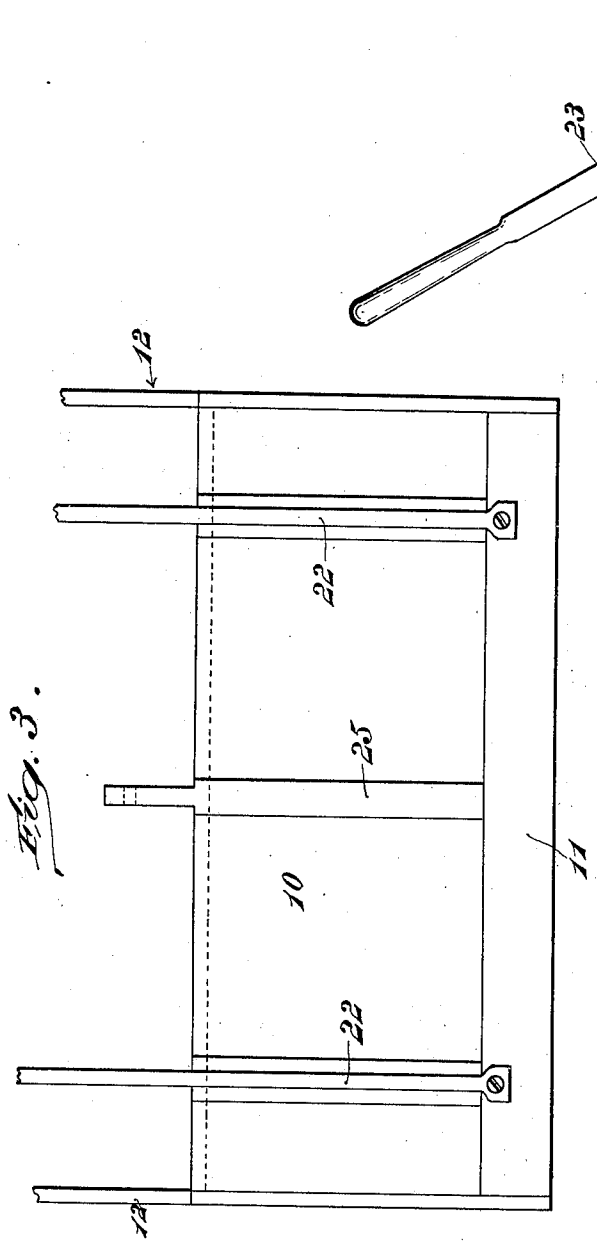


Fig. 3.

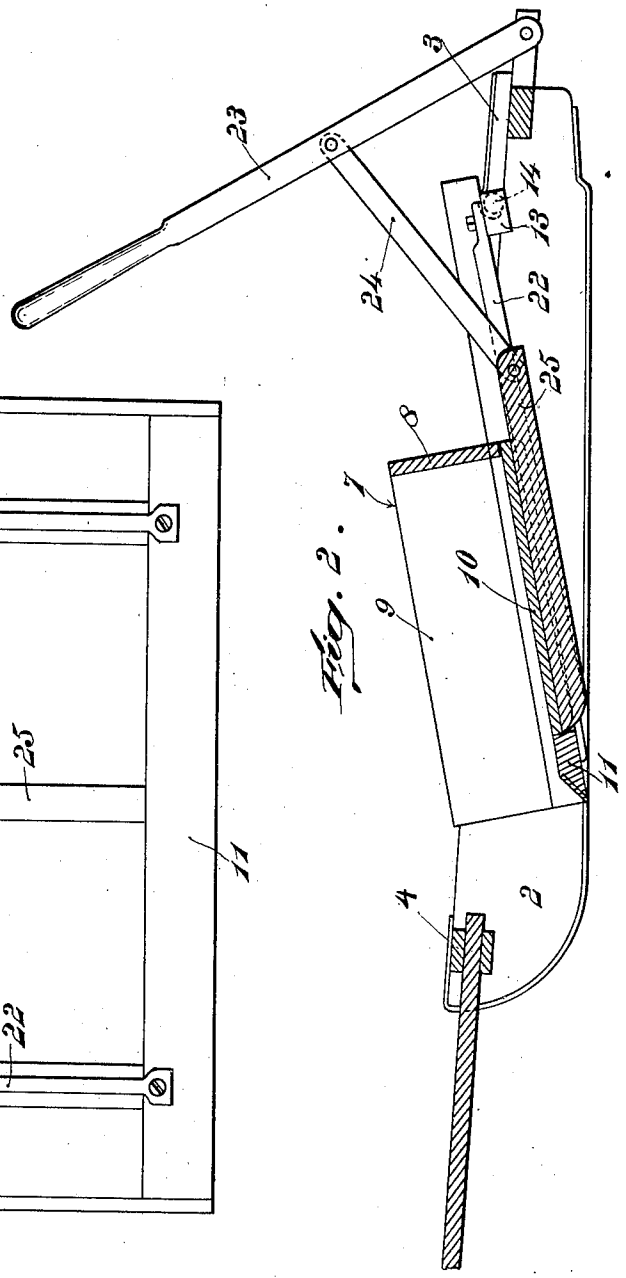


Fig. 2.

Witnesses:
S. J. Henderson
Fred G. Kluge

Inventor:
Harry E. Plummer,
by R. G. Henderson, Attys.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HARRY EVERETT PLUMMER, OF LISBON FALLS, MAINE.

SNOW-SCRAPER.

1,100,197. Specification of Letters Patent. Patented June 16, 1914.

Application filed January 25, 1912. Serial No. 673,327.

To all whom it may concern:

Be it known that I, HARRY EVERETT PLUMMER, a citizen of the United States, residing at Lisbon Falls, in the county of Androscoggin and State of Maine, have invented certain new and useful Improvements in Snow-Scrapers; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in snow scrapers and it proposes an apparatus which is especially intended for use upon city streets, highways, tracks, and other places where the demands of economy require the rapid removal of snow in relatively large quantities.

The principal objects of the invention are to provide a snow scraper which may be operated rapidly and with great facility, thereby insuring of the removal of a large quantity of snow in a given period of time; and which shall be extremely simple in its structural details so that it may be cheaply manufactured and readily and quickly repaired whenever the occasion may arise.

Having these objects in view the invention comprehends a snow-scraping pan which is associated with a sled or its equivalent and is pivotally supported in order that it may be lowered to an operative position, or raised to an inoperative position, as when the snow is to be conveyed to the place of discharge. This pan is supported at the front end of a skeleton rectangular frame and the latter which projects some distance rearwardly from the pan is pivoted to the rear portion of the sled. The pan is equipped with a sliding bottom which may be retracted so as to withdraw its support from the body of snow and enable the latter to drop through the skeleton frame. The supporting frame carries guide bars along which the pan bottom is movable; and the movements of said pan bottom in either direction are effected by a lever which is conveniently located at the rear of the sled. After the bottom has been retracted so as to discharge the load it is advanced into relation to the vertical walls of the pan and the operation of scraping the snow from the surface is continued until another full load is obtained.

The invention also comprehends a movable cut off board which may be used when a load of snow, taken up by the pan, has to be carried for a considerable distance to the place of discharge; this board is so mounted that in normal operation it can be positioned clear of the pan while during the transport of the load, it may be disposed to form a front wall of the pan and prevent the scattering of the load.

An embodiment of the invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a perspective view of the improved snow scraper; Fig. 2 is a central detail longitudinal sectional view showing the main elements thereof; Fig. 3 is a bottom plan view of the pan and its supporting frame.

Similar characters of reference designate corresponding parts throughout the several views.

The operating parts are carried by a suitable vehicle such as a sled, indicated generally at 1, and having the usual runners 2, the driver's platform 3, and the cross brace 4, to which the draft appliances may be attached.

The snow scraping pan is designated generally by the numeral 7, and comprises the back wall 8, the end walls 9 and the bottom wall 10, and an iron shod scraping bar 11, in advance and in the plane of the bottom wall 10. The support for the pan 7 comprises a skeleton rectangular frame 12 the rear bar of which, as 13, is provided with trunnions 14, which are journaled in suitable bearings, slightly in advance of the driver's platform 3; and a rock shaft 15 provided with arms 16 which are connected by links 17 to the end walls of the pan adjacent the front thereof. The shaft 15 is journaled in uprights 18 which are attached to the runners 2. By rocking the shaft 15 the pan may be raised or lowered, and for this purpose said shaft carries at one end thereof a lever 19, which is held in any desired position by suitable means such as a rack bar 20, pivoted to the frame of the sled. The lever 19 carries a loop 21 which surrounds the bar 20 and engages in the notches thereof.

The bottom 10 of the pan 7 is retractable, being preferably mounted for sliding move-

ment between the front and the rear ends of the sled. Said bottom accordingly rests on inclined guide bars 22 which may form, in effect, a part of the frame 12. The sliding movement of the bottom 10 is effected by a lever 23 which is preferably pivoted in the rear of the platform 3 and is connected by a link or links 24 to a cleat 25 which projects centrally from the rear edge of the bottom 10.

In use, the lever 19 is manipulated to let the pan 7 come into its lowermost position, and the bottom 10 is disposed within the confines of the walls 8 and 9. Thereupon the scraper is drawn over the ground and the snow is taken up by the pan until a full load has been secured. At such time the lever 19 is manipulated to raise the pan slightly until its bottom clears the surface of the snow, and the load is then taken to the place of discharge. Thereupon the pan is raised as far as possible and the bottom 10 is retracted so as to withdraw its support from the load of snow and to allow the latter to drop from the pan. The discharging operation having been thus accomplished, the scraper is ready to take up another load and the pan is lowered to its original position.

It will be apparent from the foregoing operation that loads of snow may be taken up and discharged with great facility and that the apparatus is consequently capable of a large output of work. The only operations involved relate to the positioning and manipulation of the pan and these operations may be very readily and quickly effected by mechanism of extremely simple character.

The apparatus embodies no parts which are peculiarly liable to derangement and its structural elements are readily accessible and may be easily and quickly repaired, whenever the occasion may arise.

Having fully described my invention, I claim:—

1. A snow scraper comprising a vehicle having a driver's platform at the rear thereof, a frame pivoted in advance of the driver's platform, and a pan carried at the forward end of the frame and having a retractable bottom wall which is slidable to occupy the space between the rear wall of the frame and the driver's platform or to occupy the space defined by the walls of the pan.

2. A snow scraper comprising a vehicle having a driver's platform at the rear thereof, a frame pivoted in advance of the driver's platform, a pan carried at the forward end of the frame and having a retractable bottom wall which is slidable to occupy the space between the rear wall of the frame and the driver's platform or to occupy the space defined by the pan, a lever pivoted adjacent the driver's platform, and a link connecting the lever and the slidable bottom wall of the pan.

3. A snow-scraper comprising a vehicle having a driver's platform at the rear end thereof, a frame pivoted in advance of the driver's platform, a pan located at the forward part of the frame when in position for scraping and having a retractable bottom which is slidable at will rearward from under the interior of said pan and longitudinal guides on which said bottom rests and which are inclined upwardly and rearwardly to raise said bottom as it moves rearward and permit it to descend as it moves forward into operative position for scraping.

4. A snow-scraper comprising a vehicle having a driver's platform at the rear end thereof, a frame pivoted in advance of the driver's platform, a scraping-pan carried by the forward part of the frame and having a retracting bottom which is slidable at will rearward from under the body of said pan, rearwardly and upwardly inclined longitudinal guides for said bottom, means for tilting said pan and a lever and connections for moving said bottom backward or forward.

5. In combination with a snow-scraping pan having a movable bottom and means for raising or lowering said pan, means for retracting said bottom, inclined guides for said bottom arranged to make it rise as it withdraws rearward and to facilitate by downward inclination its return to the operative position, and a movable cut-off board adapted to be held at the front of the pan for retaining the snow during transportation to the place of discharge.

6. In combination with a snow-scraping pan having a bottom adapted to slide rearward from below the interior of the same, a frame supporting said pan, adapted to permit the descent of snow through it after said bottom has been withdrawn and extended rearward of said pan to provide a secure support for all parts of said bottom when the latter is withdrawn behind said pan as set forth.

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

HARRY EVERETT PLUMMER.

Witnesses:
WM. H. NEWELL,
M. A. PARLIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."