

No. 842,704.

PATENTED JAN. 29, 1907.

O. W. ROBINS.
SNOW SCRAPER.

APPLICATION FILED MAY 9, 1906.

2 SHEETS—SHEET 2.

Fig. 3.

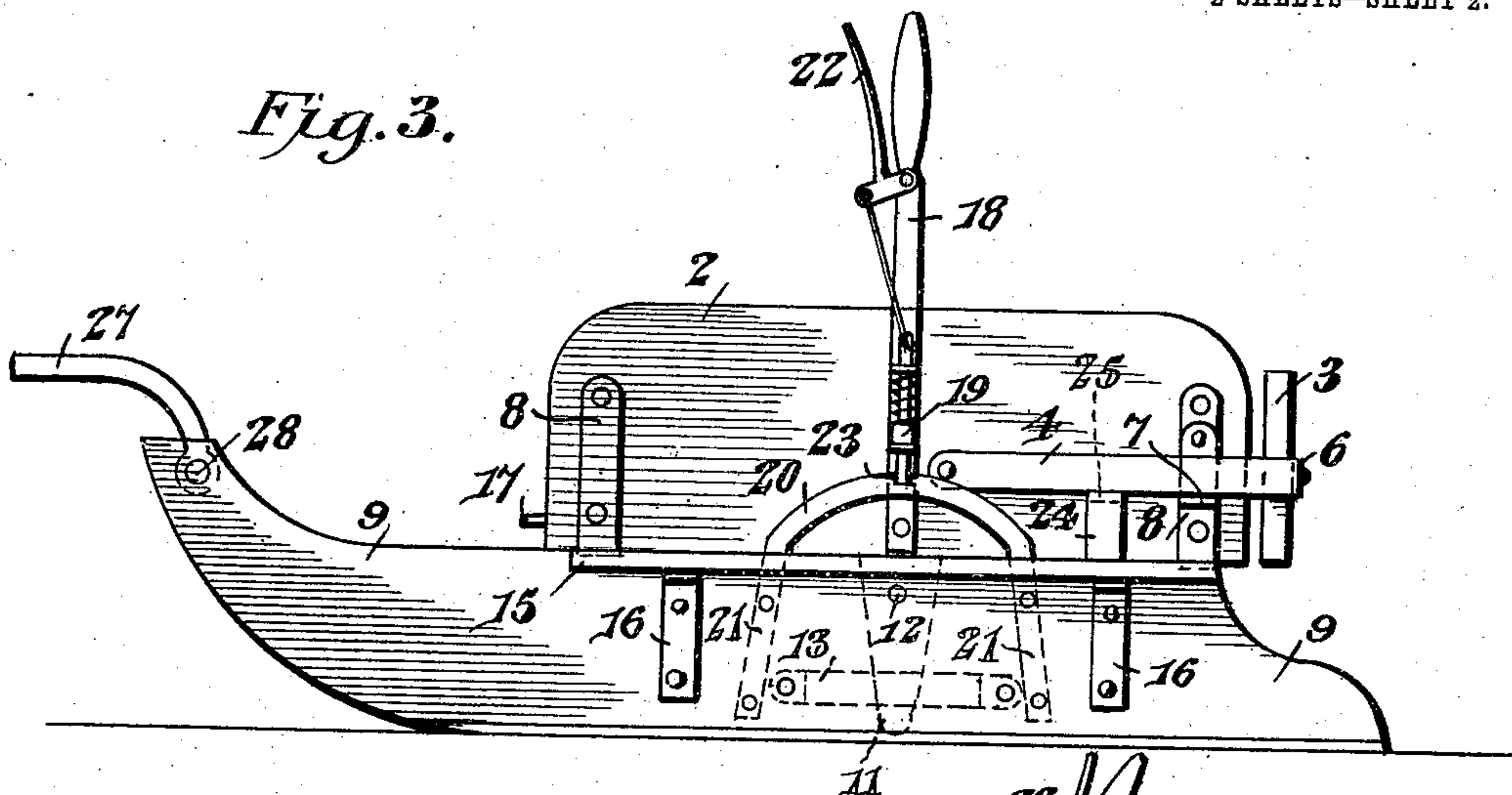


Fig. 4.

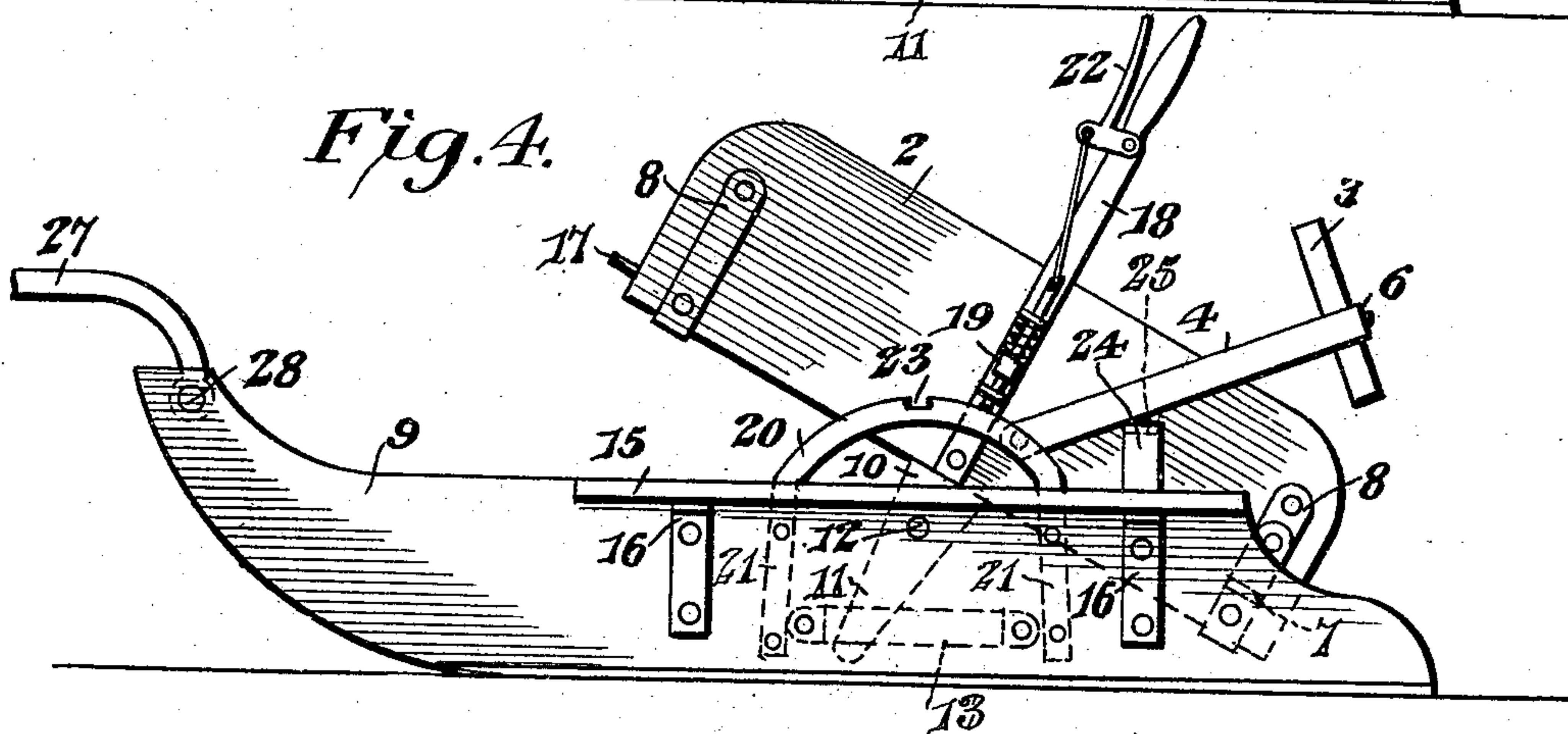
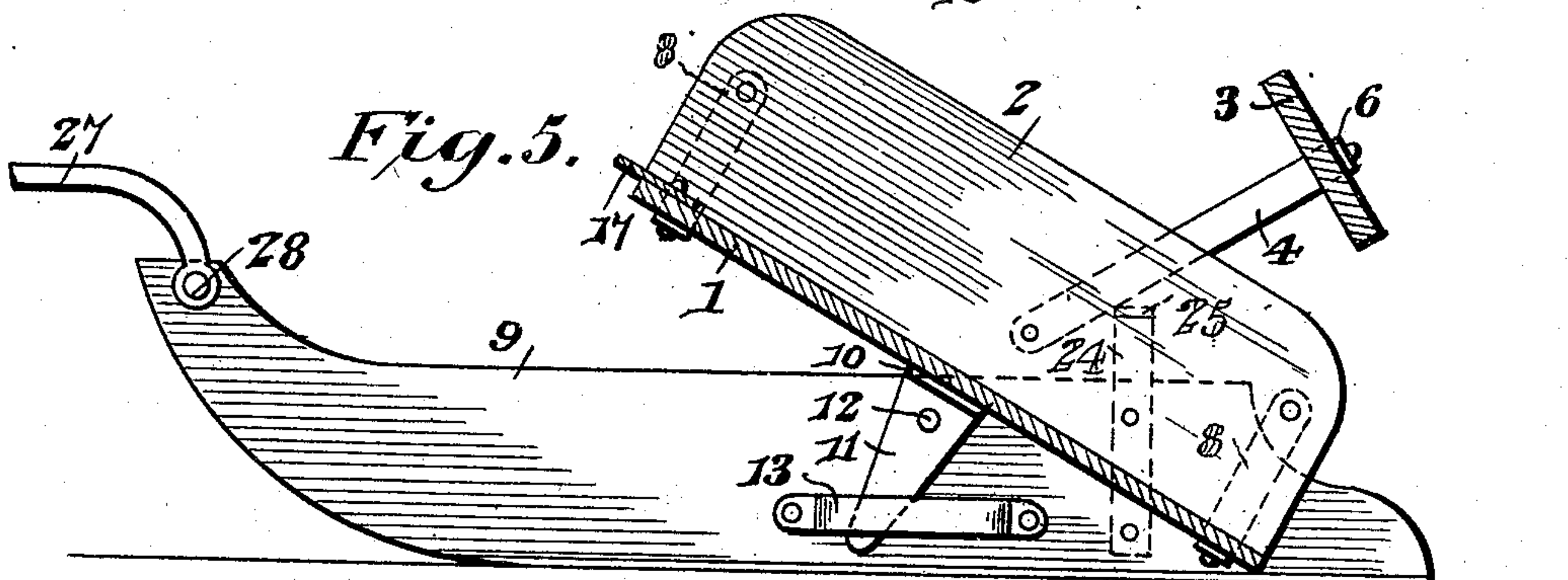


Fig. 5.



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SNOW-SCRAPER.

No. 842,704.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed May 9, 1906. Serial No. 316,029.

To all whom it may concern:

Be it known that I, OLIVER W. ROBINS, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and useful Snow-Scraper, of which the following is a specification.

The invention relates to improvements in snow-scrapers.

The object of the present invention is to improve the construction of snow-scrapers and to provide a simple and comparatively inexpensive one designed for use in ice-fields for cleaning the ice previous to harvesting the same and adapted to effectively scrape the snow from the surface of the ice.

A further object of the invention is to provide a snow-scraper of this character adapted after scraping a load of snow to lift the same clear of the ice and dump the load at the back after conveying the same to the dumping-ground.

Another object of the invention is to provide a snow-scraper having a pivotally-mounted body adapted to be tilted forwardly for scraping the snow from the ice and capable of being arranged in a horizontal position for carrying a load of snow and adapted also to be tilted rearwardly for dumping the load.

The invention also has for its object to provide means for automatically opening the end-gate of the body when the latter is tilted rearwardly for dumping a load.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a snow-scraper constructed in accordance with this invention, the body being tilted forwardly to arrange the same for scraping. Fig. 2 is a transverse sectional view, the body being arranged in a horizontal position. Fig. 3 is a side elevation of a snow-scraper, the body being arranged in a horizontal position. Fig. 4 is a similar view, the body being tilted rearwardly for dumping a

load. Fig. 5 is a longitudinal sectional view of the same.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a tiltable body consisting of a bottom, sides 2, rigidly secured to the bottom, and a rear end-gate 3, which is movably connected with the sides of the body and which is adapted to be automatically opened when the body is tilted rearwardly for discharging its load. The end-gate is provided with forwardly-projecting arms 4, consisting of metallic straps or bars extending forwardly from the terminals of the end-gate and arranged exteriorly of the sides 2 and pivoted at their front ends to the sides by means of screws or other suitable fastening devices. The rear terminals 6 of the said metallic straps or bars are bent at an angle and are secured to the rear or outer faces of the end-gate 3, as indicated by dotted lines in Fig. 2 of the drawings.

The arms 4 of the end-gate 3 are supported by brackets 7 when the body is in a horizontal position or is tilted forwardly. The brackets 7, which are L-shaped, have outwardly-extending portions, which receive the lower edges of the arms 4. The sides of the body are secured to the bottom by means of front and rear substantially L-shaped metallic straps or bars 8, which have vertical and horizontal portions secured, respectively, to the outer faces of the sides 2 and to the lower faces of the bottom of the body. The brackets 7 are preferably secured to the upwardly-extending portions of the rear straps or bars 8.

The tiltable body is mounted upon runners 9 by means of substantially L-shaped brackets or hinge elements 10, consisting of horizontal portions and depending portions, which are arranged vertically when the body is in a horizontal position. The horizontal portions of the brackets 10 are secured to the lower faces of the bottom of the body, and the depending portions 11 are pivoted to the inner faces of the runners 9 by means of bolts, screws, or other suitable fastening devices. The pivots 12 are arranged near the upper ends of the depending portions 11, and the lower ends of the latter are received within combined guides and keepers 13, secured to the inner faces of the runners, as clearly illustrated in Figs. 2 and 5 of the drawings. The metallic guides or keepers 13 consist of straps

or bars bent at each end to provide the attachment portions and to offset the intermediate portion from the runners. One of the runners, preferably the left-hand one, is provided with a platform 15, upon which the driver or operator stands. The platform extends horizontally from the upper edge of the runners and is supported by suitable angle-irons or brackets 16, secured to the outer face of the contiguous runner and having horizontal arms or portions, which receive the platform.

The body, which is provided at the front edge of the bottom with a scraper plate or blade 17, is tilted by means of an operating-lever 18, consisting of a bar secured to the outer face of the side of the body adjacent the platform and terminating at its upper end in a suitable grip or handle. The operating bar or lever 18 is provided with a spring-actuated dog or detent 19, which is adapted to engage an arcuate bar 20, forming a ratchet and having terminal portions 21, which are secured to the inner face of the adjacent runner, as clearly indicated in dotted lines in Figs. 3 and 4 of the drawings. The spring-actuated detent is suitably connected with a latch-lever 22, mounted on the operating bar or lever adjacent the handle or crank portion thereof, and adapted to be grasped simultaneously with the same. The arcuate bar 20 is provided with a central notch 23 to receive the spring-actuated dog or detent for locking the body in a horizontal position, as clearly illustrated in Fig. 3 of drawings, and when the dog or detent is disengaged from the central notch or recess of the arcuate bar the body of the snow-scraper is adapted to be tilted forwardly, as shown in Fig. 1 of the drawings, for scraping the snow from the surface of the ice to clean the same, or the body may be tilted rearwardly to the position illustrated in Figs. 4 and 5 of the drawings for dumping a load.

When a load of snow has been scraped from the ice, the body is swung upward to a horizontal position for supporting the load clear of the ice. This will enable the scraper to be driven rapidly to the dumping-ground, as it is unnecessary to drag a portion of the snow over the surface of the ice to the place of dumping. When the body is tilted rearwardly for dumping its contents, the downward movement of the end-gate is arrested to automatically open the same. This operation is effected by means of a pair of stops consisting of metallic bars 24, secured to the inner faces of the runners and extending upwardly therefrom and having their upper ends bent at an angle to form horizontal projections 25, which are arranged in the path of the arms 4. When the body is returned from a rearwardly-inclined position to a horizontal position, the arms 4 rest again upon the brackets 7, which maintain the end-gate in

its closed position, while the body is arranged either horizontally or is tilted forwardly. The runners are connected with a pole or tongue 26 by means of rearwardly-diverging bars 27, rigidly secured at their front ends to the tongue or pole, at opposite sides thereof, and connected at their rear ends by pivots 28 to the inner face of the front ends of the runners. The rearwardly-diverging bars are also connected by a transverse brace 29, which has its central portion fitted against the rear end of the tongue or pole.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A snow-scraper comprising a pair of runners, a body pivotally mounted on the runners, and means for tilting the body either forwardly or rearwardly, and for holding the same in a horizontal position.

2. A snow-scraper provided with a pivotally-mounted body having a movable end-gate, means for tilting the body either forwardly or rearwardly and for holding the body in a horizontal position, and means for automatically opening the end-gate when the body is tilted rearwardly.

3. The combination of a pivotally-mounted body, an end-gate having arms pivotally connected with the body, means carried by the body and supporting the arms for holding the end-gate in its closed position, means for tilting the body, and means arranged in the path of the arms for supporting the end-gate when the body is tilted rearwardly, whereby the end-gate will be automatically opened.

4. The combination of a pivotally-mounted body, an end-gate having an arm pivoted to the body, a bracket mounted on the body and arranged in the path of the arm for supporting the gate in its closed position when the body is horizontal, and a stop consisting of a bar or piece having a projecting portion arranged in the path of the arm for supporting the end-gate when the body is tilted rearwardly.

5. The combination with a pair of runners, of a body provided with brackets having depending portions pivoted to the runners, and combined guides and keepers mounted on the runners and located beneath the pivots of the brackets and receiving the lower portions of the latter.

6. The combination with a pair of runners, of a pivotally-mounted body, a platform extending from one of the runners, an operating bar or lever connected with the body for tilting the same, an arcuate bar mounted on one of the runners and arranged adjacent the platform, and locking mechanism carried by the operating bar or lever for engaging the arcuate bar.

7. The combination of a pair of runners, a body pivotally mounted on the runners and adapted to be tilted either backwardly or

forwardly, said body being composed of a
bottom and sides, and an end-gate having
arms pivoted to the sides, means for tilting
the body, means mounted on the body for
5 supporting the end-gate in its closed position
when the body is arranged horizontally or is
tilted forwardly, and means carried by the
runners for supporting the end-gate when the
body is tilted rearwardly, whereby the end-
10 gate is automatically opened.

8. A snow-scraper comprising a pair of
spaced runners, a body pivotally mounted

at an intermediate point of its length to and
between the runners, and at an intermediate
point of the length of the said runners, and 15
means for tilting the body either forwardly or
rearwardly.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature
in the presence of two witnesses.

OLIVER W. ROBINS.

Witnesses:

WILLIAM HOWARD,
JOHN RUDD.