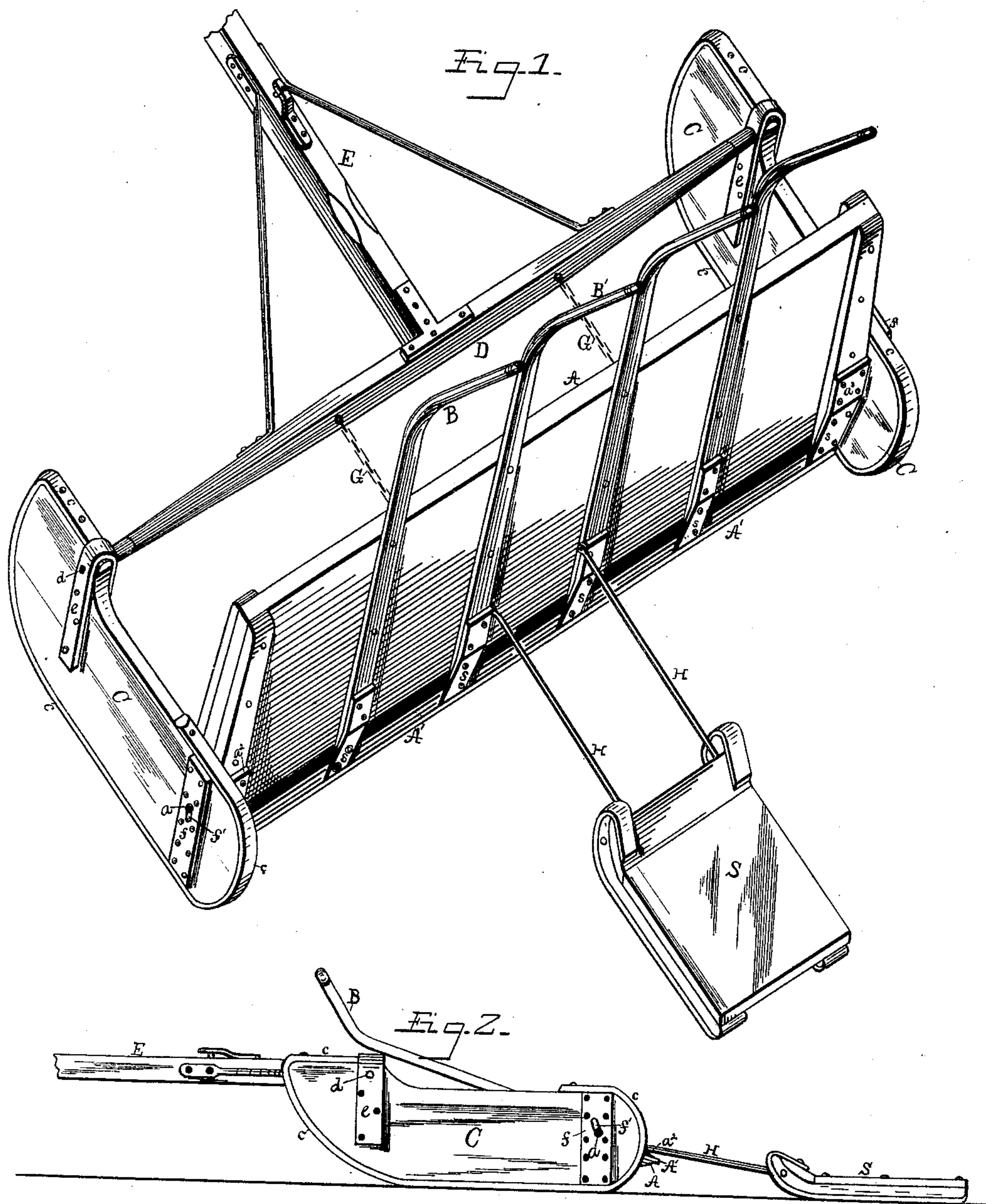


(No Model.)

E. GATES.  
SNOW SCRAPER.

No. 414,110.

Patented Oct. 29, 1889.



Witnesses

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# UNITED STATES PATENT OFFICE.

ELIAS GATES, OF COXSACKIE, NEW YORK.

## SNOW-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 414,110, dated October 29, 1889.

Application filed April 3, 1889. Serial No. 305,852. (No model.)

*To all whom it may concern:*

Be it known that I, ELIAS GATES, a citizen of the United States, residing at Coxsackie, in the county of Greene and State of New York, 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.

My invention is an improvement in snow-scrapers; and my said invention consists in certain details of construction and arrangement of the parts composing the same, as and for the purposes as will be hereinafter more fully described, and form the subject-matter of the annexed claims.

The object of my invention is to provide a snow-scraper for use in opening roads, cleaning snow from ice to be cut, and for similar purposes; and to this end I proceed as follows, reference being had to the accompanying drawings, forming a part hereof, and wherein—

Figure 1 is a view in perspective of a snow-scraper constructed according to my invention, and Fig. 2 a side elevation of the same.

Similar letters of reference indicate like parts throughout the drawings.

The letter A designates the scraper proper, whose lower edge is shod with iron, as at A', and which is provided with a double set of handles B B', by which to operate and direct the movement of the same. This scraper is of any desired width and for use with two horses, but smaller sizes may be made and but one horse employed, as desired or the exigencies of the case require. Pivotaly connected to each end of this scraper A, by pivot-bolts *a*, is a runner C, which is shod with iron, as *c*, and at their front ends is arranged a cross-bar D, to which the draft-tongue E is secured. This pole D is secured to the top front end of the runners C by bolts *d*, which pass through the runners C and into the ends of the pole D, and thereby form pivot-bearings for said pole. Vertically upward and over the top of the runners C C, and through

which the pivot-bolts *d* of the pole D and pivot-bolts *a* of the scraper pass, are secured metal straps *e* and *f* to strengthen the parts and form bearings for the said pivot-bolts, and the said bearings for the bolts *a* of the scraper are in the form of vertical slots *f'* in the straps *f*, whereby a certain amount of vertical play of the runners and scraper is permitted.

Extending from the pole D to near the lower front edge of the scraper A are chains G G, by which the central portion of the scraper is held in position, and from the rear of the scraper extend rods H H, to the outer ends of which is a drag or low sled S, upon which the driver stands when the implement is in use. This drag or sled may, however, be dispensed with, but it is preferred.

The scraper A is strengthened at each extremity by pieces *a<sup>2</sup> a<sup>3</sup>*, and at the foot of the rear strips *a<sup>2</sup> a<sup>3</sup>* and also the guide-arms or handles B B' are shoes *s* to strengthen the parts, preserve them from undue wear, and reduce friction when the implement is in use.

The double handles B and B' permit the employment of two men to manipulate the implement when the fall of snow is heavy, and because of the slots *f'* in the runners C C for the pivot-bolts *a* of the scraper a certain amount of play between the scraper and runners is permitted for passing over stones, &c.

The implement is used in the same manner as road-scrapers, as shown in Fig. 1, with the scraper A in an elevated position resting upon its shod edge A', and in this position is drawn along until the face of the scraper has become filled with snow, when the load is dumped by simply letting go the handles B, whereupon the top of the scraper is carried forward and the load escapes beneath it, as shown in Fig. 2. To resume operations, the scraper is again adjusted to a vertical position, and so held by the handles until another load of snow has accumulated, when the operation of dumping is again gone through with.

Having described my invention, I claim—

1. The combination, in a snow-scraper, with the scraper A, having handles B B' and pivot-bolts *a a*, of the sled-runners C C, having vertical slots *f'*, pole D, secured to the top front end of the runners C C, tongue E, and connecting-chains G G, all constructed and ar-

ranged to operate substantially as described, for the purposes specified.

2. In a snow-scraper, the combination, with the scraper A, having the pivot-bolts *a a* at its lower front ends, of the runners C C, having irons *c*, and straps *e* and *f*, the strap *f* having a slot *f'*, pole D, and tongue E, substantially as and for the purposes described and shown.

3. In a snow-scraper, the combination, with the scraper A, pivoted to the runners C C, and having handles B B', of the sled S, attached to the rear of the scraper A by rods H, as described, for the purposes specified.

ELIAS GATES.

In presence of—

ISAAC C. HALLENBECK,  
NEWTON A. CASKIN.