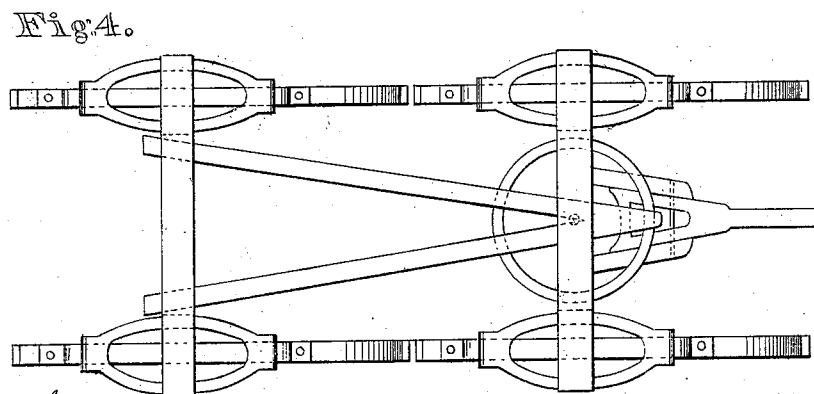
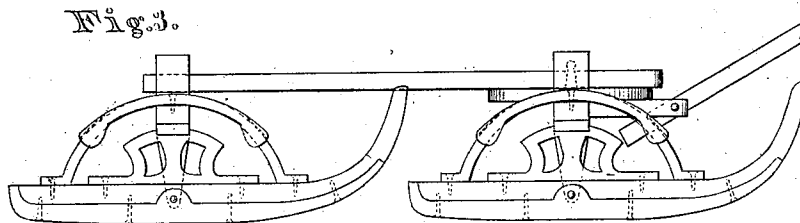
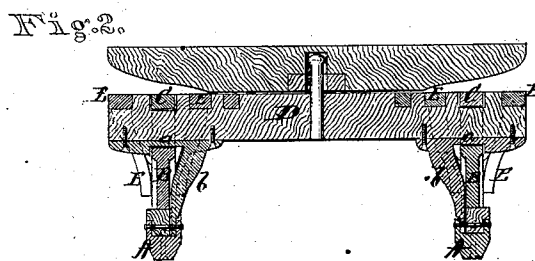
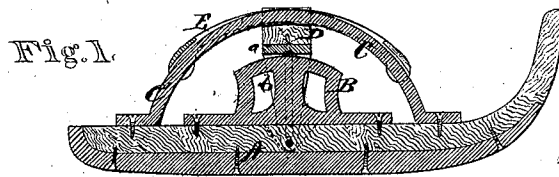


J. MARTIN.

Sleigh.

No. 109,531.

Patented Nov. 22, 1870.



Witnesses:
Chas. H. H. H.
F. B. H. H.

Inventor:
J. Martin,
Chipman & Co.,
Atty.

United States Patent Office.

JAMES MARTIN, OF MORENCI, MICHIGAN.

Letters Patent No. 109,531, dated November 22, 1870.

IMPROVEMENT IN SLEIGHS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES MARTIN, of Morenci, in the county of Lenawee and State of Michigan, have invented a new and valuable Improvement in Sleighs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of my sleigh-runner in longitudinal vertical section.

Figure 2 is a longitudinal vertical section of the front beam, with the two front runners in transverse vertical section.

Figure 3 is a side elevation; and

Figure 4, a plan view of the sled-frame with runners.

The nature of my invention consists in the construction and arrangement of an oscillating sleigh-runner whereby the draft or point where the power is applied, is lowered as near the ground as possible.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation.

A represents the sleigh-runner, constructed in any of the known and usual ways.

On the upper side of the runner A is placed a knee, B, the upper side of which is curved, forming a segment of a circle.

There is also a semicircular bar, C, attached to the upper side of the runner, said bar passing a suitable distance above the knee B.

Both the knee B and bar C are parts of circles having the same center, namely, the point where the power is applied to the runner, as will be hereinafter described.

D represents the beam which connects the two runners together, said beam being near each end provided with a grooved casting, *a*, on the under side.

The upper curved side of the knee B passes through the groove in said casting, so that the beam does, in fact, rest upon the knee.

On the upper side of the beam D, near each end, is secured a curved elliptical-shaped brace, E, the ends of which are grooved on their under or inner side.

The semicircular bar C passes through said grooved ends of the brace E, and also through a groove in the upper side of the beam D, and thus the runner is securely braced, so as not to turn inward nor outward.

From the casting *a* on the inner side of the knee B, descends an arm, *b*, which is pivoted to ears projecting upward from the shoe of the runner, this point being the center of the circles B and C, as above mentioned.

Thus the entire draft is applied to the runners as near the ground as it is possible, and at the same time there is no weight on the pins or pivots, as that is all on the knee B and bar C.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The runner A provided with the knee B and semicircular bar C, constructed and arranged substantially as and for the purposes herein set forth.

2. The grooved casting *a*, provided with the arm *b* and arranged on the beam D, substantially as and for the purposes herein set forth.

3. The combination of the runner A, knee B, bar C, beam D, brace E, casting *a*, and arm *b*, all constructed and arranged substantially as and for the purposes herein set forth.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

JAMES MARTIN.

Witnesses:

C. S. INGALS,
O. H. GALIS.