A. L. & E. Z. NEEDHAM.

BOB-SLEDS.

No. 185,451. Patented Dec. 19, 1876.

Fig. 1.

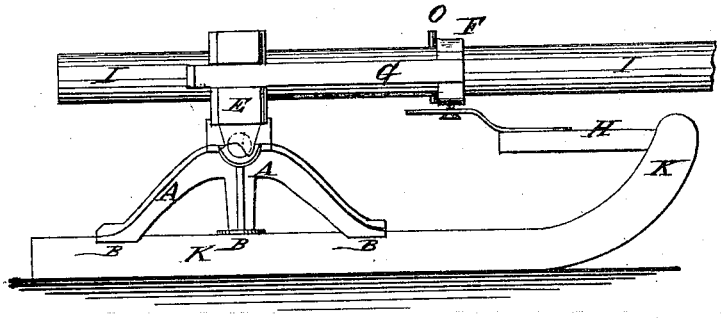


Fig. 2.

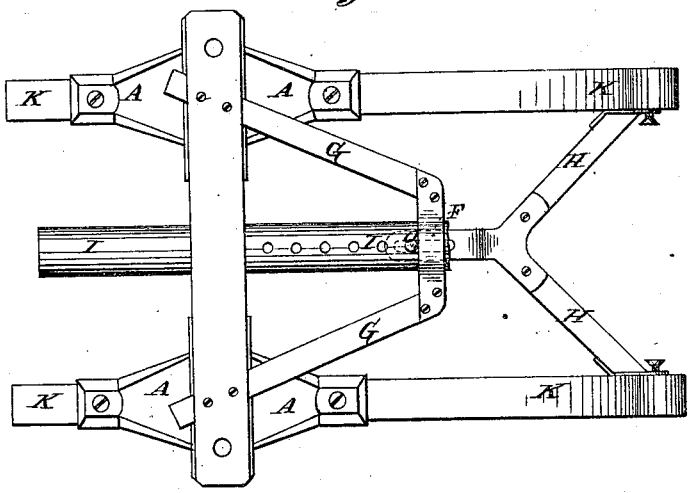
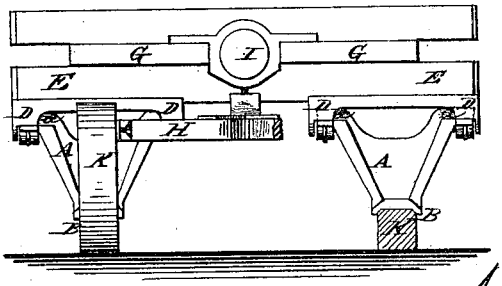


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALFRED L. NEEDHAM AND EDWARD Z. NEEDHAM, OF FARMINGTON, MINN.

IMPROVEMENT IN BOB-SLEDS.

Specification forming part of Letters Patent No. **185,451**, dated December 19, 1876; application filed October 30, 1876.

To all whom it may concern:

Be it known that we, ALFRED L. NEEDHAM and EDWARD Z. NEEDHAM, of Farmington, in the county of Dakota and State of Minnesota, have invented a new and useful Improvement in Sleds, of which the following is a specification:

Figure 1 is a side view of a bob or sled. Fig. 2 is a plan view of the same. Fig. 3 is a front view of the same, with a portion of one of the runners removed.

Similar letters of reference indicate corresponding parts.

The object of this invention is to so construct a bob-sled that it will readily adjust itself to any position required by the inequalities of the path, without undue strain upon any of its parts.

This invention consists of a method of constructing and combining the runners K, the yokes or supports A, and the crooked brace H, with the hounds G and reach I, so that the runner K may swing or lift at either end together or independently, or the bob itself may be tipped without effecting the adjustment of its parts or its connection with the reach I. The yokes A are made of metal, in one piece, of an arched and corrugated form, having a central column and two longitudinal braces, B B B, all firmly secured to the runner K, while the top of A is spread laterally into two journals or bearings, *a a*, of sufficient length to give the requisite stability to the whole. The journals *a a* run in metal boxes D, which are secured by bolts and flanges to the cross-girt E. The cross-girt E serves to keep the yokes A, and through them the runners K, at the proper distance laterally, and also to carry the hounds G, and load or body of the sled. To the forward ends of the runners K is attached, by a bolt or hinge-joint, the crooked brace H, serving to keep the ends or noses of the runners K at their proper distance apart, and also allowing of perfect freedom of motion in the runners K in passing over obstructions. The middle of the crooked brace H is attached to the hounds G, or reach-slide F, by a sliding joint, which keeps it in the proper position, and also permits the desired freedom of motion. To the hounds G is secured the reach-slide F, through which passes the reach I. The reach I is made cylindrical in form, and allowed to turn freely in the slide F, so that lifting either runner, or tipping the bob, will not cause any twisting strain on I. The reach I is secured in the slide F by the pins O, by means of which the bob is drawn or backed at will and without interfering with the motions of the runners, as described.

Having thus described our invention, we claim as new and desire to secure Letters Patent—

1. The combination, with hounds G and runners K, of the pivoted brace H, having a slotted projection at the point or vertex, and the connection F having subjacent headed pin, as and for the purpose set forth.

2. The combination, with sled-runners, of the independently-pivoted supports A A, the pivoted brace H connected by sliding joint with hounds, and the reach I, arranged loosely in the connection F, as and for the purpose specified.

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Witnesses:
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