

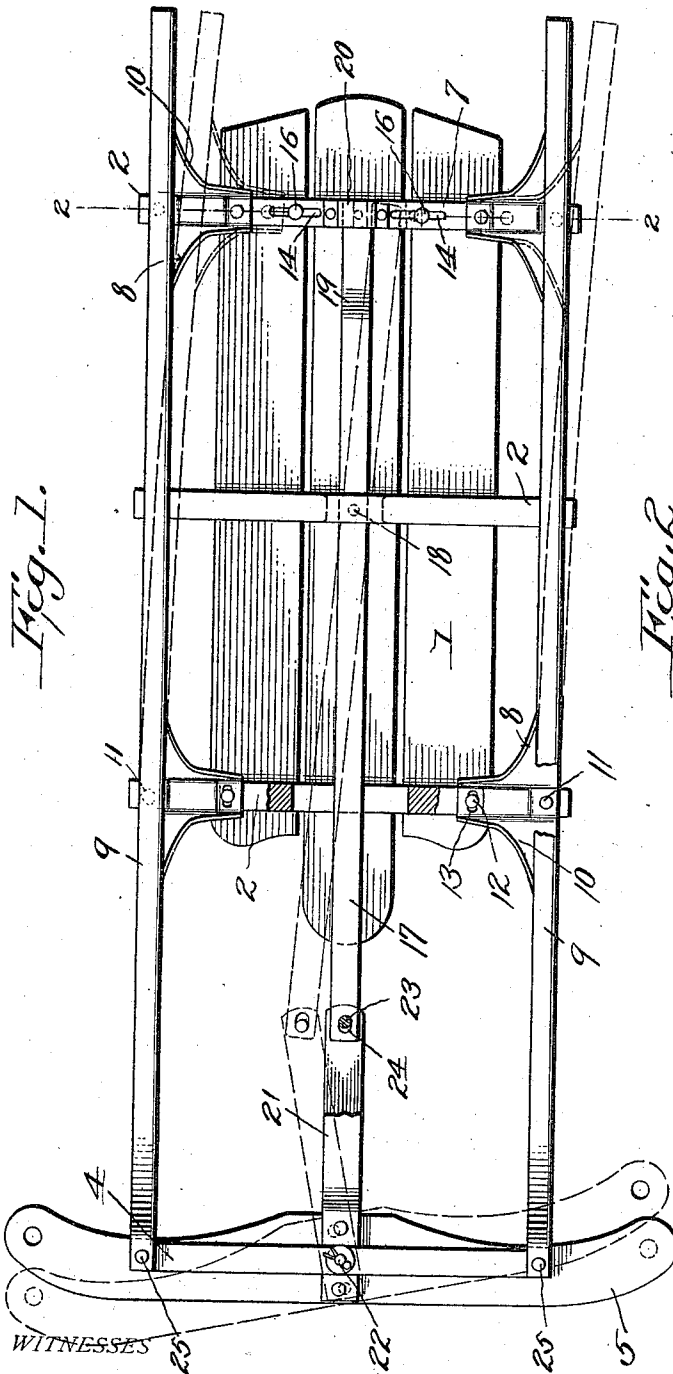
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SLED.

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1,041,324.

Patented Oct. 15, 1912.



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*Fig. 2.*

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# UNITED STATES PATENT OFFICE.

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SLED.

1,041,324.

Specification of Letters Patent.

Patented Oct. 15, 1912.

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*To all whom it may concern:*

Be it known that I, ROBERT E. MILLER, a citizen of the United States, residing at Bethlehem, county of Lehigh, State of Pennsylvania, have invented certain new and useful Improvements in Sleds, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in sleds and more particularly to what is commonly known as hand sleds, the object being to provide a sled with flexible runners having means for bending said runners laterally at their rear ends in order to steer the sled.

Another object of the invention is to provide a sled which is exceedingly simple and cheap in construction and one which is very strong and durable, the rear end portions of the runners being slidably mounted in respect to the seat of the sled in order to allow the runners to be bent laterally.

A further object of the invention is to provide novel means for bending said runners laterally whereby the sled can be readily guided in such a manner that it will be under perfect control of the user.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawing—Figure 1 is an inverted plan view of my improved sled showing the rear portions of the runners in dotted lines bent laterally; and Fig. 2 is a transverse section taken on line 2—2 of Fig. 1.

Like numerals of reference refer to like parts in the several figures of the drawing.

In carrying out my improved invention, I employ a seat 1 which is formed of a series of slats, as clearly shown, mounted on cross-bars 2 which are provided with handle bars 3 at their ends, said bars being connected together at their ends by a metal bar 4 upon which is mounted a steering bar 5 which can be operated either by hand or by the feet and is preferably formed of the shape shown and is provided with openings to receive a rope for drawing the sled.

The rear cross-bar 2 is provided with bearing plates 6 which are mounted on a cross bench 7 carried by the laterally extending bearing portions of substantially inverted U-shaped standards 8 which are fixed to the runners 9 by any suitable means, said runners being preferably formed of spring

steel and having rounded tread surfaces in order to allow the same to move easily laterally, as will be later described. The forward cross-bar 2 is supported by standards 10 carried by the runners, said standards having inwardly projecting portions forming bearings for the cross-bar, and said standards are pivotally mounted at 11 in order to allow the same to oscillate, the movement of which is limited by a pin 12 carried by the cross-bar and extending through a slot 13 formed in the bearing portion of the standards.

The cross bench 7, carried by the rear standards, is provided with longitudinal slots 14 to each side of its center through which extend rivets 15 provided with heads 16 in order to hold the cross-bar in position on the cross bench in such a manner that the same is free to move laterally in either direction. By this construction, it will be seen that the cross bench carried by the rear standards is slidably mounted in respect to the seat in order to allow the runners to be bent laterally by moving the cross bench outwardly in either direction and as the runners are bent outwardly, the forward standards oscillate upon their pivots in order to prevent their twisting whereby the runners are bent in such a manner that all danger of injuring the same is prevented.

For moving the standards in either direction, to bend the runners, I provide an operating bar 17 which is pivotally mounted in a slot formed in the central cross-bar as shown at 18 and is provided with an off-set end portion 19 which extends into a keeper 20 secured upon the cross bench 7 between the slots 14 and it will be seen that when said operating bar is swung on its pivot, the cross bench will be moved in respect to the seat. The operating bar extends through a slot formed in the forward cross-bar and has pivotally connected to its end a connecting bar 21 which is preferably formed of a pair of straps which are secured to the upper and lower faces of the steering bar 5 and through which a pivot pin 22 passes for mounting the steering bar upon the bar 4 in order to allow the same to oscillate. The straps forming the connecting bars are connected together by a pivot pin 23 which extends through a slot 24 formed in the forward end of the operating bar 17 in order to allow the same to move therein when the steering bar is oscillated. Assuming the runners are in

their normal position as shown in Fig. 1, by oscillating the steering bar 5, the operating bar will be swung on its pivot to move the cross bench laterally which will bend the runners sidewise, as shown in dotted lines, the forward standards swinging on their pivots in order to allow the runners to bend without twisting the same.

By this construction, a sled is provided that will have many advantages over sleds of this character now in use which are steered by bending the forward ends of the runners. It will be seen that the forward ends of the runners have a fixed connection with the forward ends of the handle bars 9 as clearly shown at 25 and it is, of course, understood that the runners are curved upwardly and are of the ordinary shape now in use. When the steering bar is operated the runners are bent laterally from a point slightly in advance of the forward standards which causes the standards to swing on their pivots in order to obtain a gradual bend which prevents the dragging effect produced by runners which are bent abruptly from a certain point and thereby overcoming the difficulties now existing as the speed of the sled is retarded.

Having described my invention and set forth its merits what I claim and desire to secure by Letters Patent is—

1. A sled having flexible runners, a seat mounted thereon, said runners having a fixed connection at their forward ends, and means for slidably connecting said runners to the seat at their rear ends.

2. A sled having flexible runners, a seat, standards connecting said seat to said runners adjacent their forward ends, and standards carried by the rear ends of said runners having a cross bench upon which said seat is slidably mounted.

3. A sled comprising a seat having cross-bars fixed thereto, handle bars carried by said cross-bars, standards pivotally connected to the forward cross-bars of said seat, standards slidably connected to the rear cross-bars of said seat, and flexible runners carried by said standards having a fixed connection at their forward ends with the handle bars.

4. A sled provided with flexible runners, having a fixed connection at their forward ends, and means for slidably connecting the rear ends of said runners to said sled.

5. A sled comprising a seat having cross-bars, handle bars connected to said cross-bars, runners fixed to the forward end of said handle bars, standards loosely connecting said runners to said cross-bars, and means for moving the rear standards laterally in respect to the seat.

6. A sled comprising a seat having handle bars, flexible runners connected to said handle bars, standards pivotally connecting the

forward portions of said runners to said seat, standards slidably connecting the rear portions of said runners to said seat, and means for moving the rear standards laterally in respect to the seat.

7. A sled comprising a pair of flexible runners having standards secured thereon, a seat mounted on said standards carrying handle bars to which the forward ends of said runners are connected, rear standards having a sliding connection with the seat, and means for moving said standards laterally in respect to the seat.

8. A sled comprising a seat having cross-bars, runners provided with standards, handle bars carried by the cross-bars to which the forward ends of said runners are connected, a cross bench carried by the rear standards having a sliding connection with the seat, an operating bar mounted in one of the cross-bars of the seat having a connection with the cross bench, and a steering bar having a sliding connection with said operating bar.

9. In a sled, the combination with a pair of flexible runners having fixed forward ends and movable rear ends, of standards fixed to said runners, a cross bench connected to two of said standards, a seat provided with cross-bars mounted upon said standards and cross bench, handle bars carried by the cross-bars to which the forward end of said runners are connected, and means for moving said cross bench laterally in respect to said seat.

10. A sled comprising a seat having a fixed connection with a pair of flexible runners at its forward end and a slidable connection at its rear end, pivoted intermediate connections between said runners and seat, and means for flexing said runners laterally in respect to said seat.

11. A sled having laterally flexible runners provided with fixed forward ends and movable rear ends, and a pivoted intermediate connection between the body of the sled and the runners.

12. A sled comprising a seat having cross-bars carrying handle bars, a bar connecting the forward ends of said handle bars, runners connected to the forward ends of said handle bars, standards carried by the rear ends of said runners, a cross bench connecting said standards having a sliding connection with the rear cross-bar of said seat, an operating bar mounted in one of said cross-bars having a sliding connection with said cross bench, standards carried by said runners having a pivoted connection with the forward cross-bar of said seat, a steering bar mounted upon the cross-bar of said handle bars, and a connection between said steering bar and operating bar.

13. A sled comprising a seat mounted upon cross-bars provided with handle bars,

a bar connecting the forward ends of said handle bars, a steering bar pivotally mounted on said bar, runners connected to the ends of said handle bars, standards carried by  
5 said runners having a pivotal connection with the forward cross-bar of said seat, standards secured to the rear portion of said runners having a cross bench provided with slots upon which the rear cross-bar of said  
10 seat is mounted, headed members carried by said cross-bar working in said slots, a keeper carried by said cross bench, an operating bar pivotally mounted in the central cross-bar of said seat extending into said keeper,  
15 and a connection between the forward end of said operating bar and said steering bar.

14. A sled comprising a pair of flexible runners carrying standards, a seat mounted upon said standards having a fixed connection with the forward end of said runners  
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and a movable connection with the rear standards and a pivotal connection with the intermediate standards, an operating bar for moving said rear standards laterally, and a steering bar connected to said operating bar.

15. A sled comprising flexible runners and a seat mounted thereon, said seat having a fixed connection at its forward end and a slidable connection at its rear end, and  
30 means mounted upon the body of the sled for flexing the rear ends of said runners laterally.

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

ROBERT E. MILLER.

Witnesses:

F. J. HAUS,  
VICTOR D. TRAUGER.

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