Feb. 6, 1923. 1,444,114.

N. A. ENSTAD.

SLED.

FILED JUNE 1, 1920.

Fig. 1.

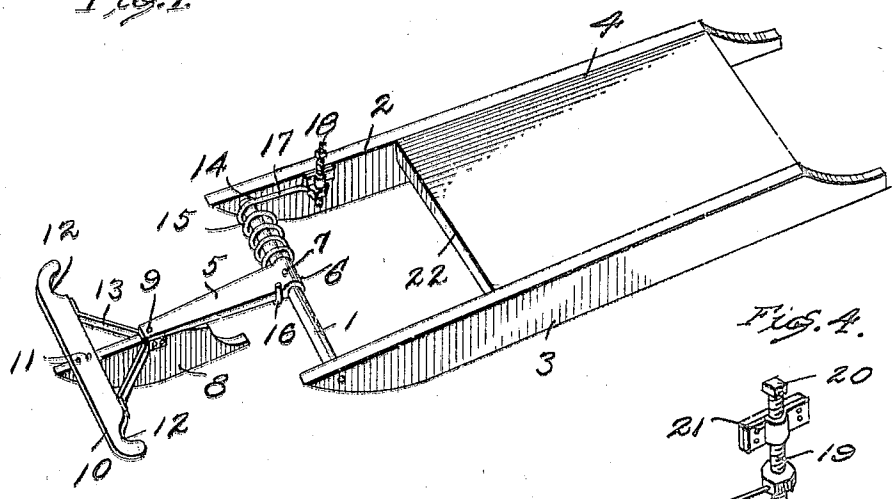


Fig. 4.

Fig. 2.

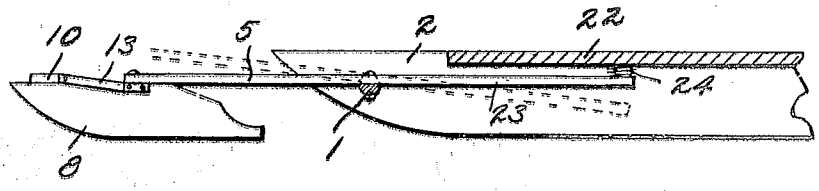
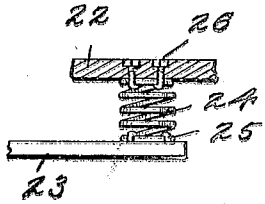


Fig. 3.



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Patented Feb. 6, 1923. 1,444,114

UNITED STATES PATENT OFFICE.

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SLED.

Application filed June 1, 1920. Serial No. 385,669.

To all whom it may concern:

Be it known that I, NELLIE A. ENSTAD, a citizen of the United States, residing at Harrold, in the county of Hughes and State of South Dakota, have invented certain new and useful Improvements in Sleds, of which the following is a specification.

This invention relates to coasting sleds and more particularly to means for guiding such sleds at the will of the person carried.

A further object is to provide novel steering means which may be readily attached to any sled and which will normally be retained out of contact with the ground; the said means being adjustably tensioned to keep the guide runner in an elevated position.

With the above and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter more fully described and pointed out, reference being had to the accompanying drawings, wherein—

Figure 1 is a perspective of the proposed invention and

Figure 2 is a longitudinal sectional view illustrating the application of the invention in a modified form.

Figure 3 is a detail of the spring connection shown in Figure 2; and

Figure 4 is a further detail showing the tongue or reach adjusting mechanism attached to the runner of the sled.

The steering attachment contemplated by the present invention embodies a roller 1 journaled horizontally between the runners 2 and 3 of a sled 4 adjacent the front end and carrying a tongue member or reach 5. The tongue member 5 is provided with a sleeve 6 through which the roller 1 is inserted and the tongue is fastened to the roller by any suitable fastening means 7 passing through the sleeve and entering the roller. This tongue, it will be noted, projects forwardly of the roller from a central point and carries at its free end a guide runner 8 which pivots on a stud 9 so as to be easily turned in any direction. To facilitate the turning of the guide runner a bar 10 is disposed transversely of the upper edge thereof being rigidly fastened to the runner by suitable fastening means 11 and this bar has curved recesses 12 formed adjacent its ends to receive the feet of the person. This guide bar 10 is connected to the runner 8 by means of side braces 13 which are preferably of some flexible material so as not to interfere with the shifting of the guide bar from one side to the other of the tongue. Each brace is fastened to the bar adjacent a recess 12 and extends angularly towards the tongue, being secured to the runner and adjacent the outer end of said tongue. To guide the sled by means of the runner 8 it is only necessary to press the foot hard against the guide bar on the side opposite to that to which the sled is to be turned while relaxing the pressure of the foot on the side of the bar, thus causing the runner to pivot in the desired direction on the stud 9 causing the sled runners 2 and 3 to swerve in the same direction, thus turning the sled. By reason of the roller 1 being journaled between the sled runners and consequently free to revolve it will be seen that the runner 8 is permitted to ride easily over any obstruction without any danger of the tongue snapping in two and without causing any incidental shock or jar to the sled 4.

The guide runner is normally held out of contact with the ground by means of a wire spring 14 which is coiled about the roller 1 as shown at 15 with one end extending under the tongue and bent upwardly on one side as indicated at 16. The other end 17 of the spring is adapted to be fastened to a nut 18 which is threaded for engagement with the threaded shank 19 of the vertically disposed bolt 20. This bolt is adapted to be revolubly supported in a threaded socket 21 fastened to the runner 2 on the inside and at a point slightly remote from the roller 1. Upon turning the bolt 20 in the proper direction, the nut 18 may be caused to move either upwardly or downwardly with the threaded shank, causing the spring to expand or contract at its coiled portion 15, thus varying the lift upon the tongue of the guide runner. It will thus be seen that this attachment, when applied to a sleigh, provides means whereby a person may easily guide the same by foot pressure, the recesses of the guide bar providing foot rests as previously pointed out. The runner 8 will of course contact with the ground only when the feet rest against the bar 10 and counteract the tensioning effect of the coiled spring 15, which as before stated, normally tends to raise the tongue 5 upwardly so as to hold the guide runner above the ground. The roller 1 may be positioned adjacent the sled runners, either adjacent their outer ends as il-

lustrated in Figure 1 or it may be positioned inwardly in close relation to the seat 22, but the arrangement illustrated is preferred in view of the fact that the steering means is thus projected forwardly of the sled proper and acts as a piloting guard or fender for the sleigh proper.

In its modified form, the invention contemplates the provision of a longer tongue or reach which will extend rearwardly of the roller 1 so that its rear portion 23 passes beneath the seat 22 of the sled. A coiled spring 24 is fastened to the upper face of the extension, and adjacent its end as indicated at 25, the other end of the spring being firmly gripped and held against the under side of the seat 22 by means of fastening elements 26 which as illustrated to advantage in Figure 3 of the drawings may consist of bolts having their heads countersunk in the seat and their shanks extending downwardly and curved at their outer ends for gripping the spring. The spring 25 in the modification replaces the spring 17 used in Figure 1 and is tensioned to normally expand outwardly against the end of the extension 23 so as to raise the runner 8 as indicated by the dotted line structure in Figure 2. In either case when the guide runner is not needed to steer the sled the spring tends to keep it out of contact with the ground and the roller 1 may be used as a foot rest, the feet resting upon the roller on either side of the tongue 5 or 5′.

In operation, the person using the sled seats himself upon the seat 4 with the feet resting either upon the roller 1 or against the guide bar 10, in which latter event the runner will be forced downwardly against the tension of the spring so as to be in contact with the ground. The sled is guided at will merely by varying the foot pressure on opposite sides of the guide bar so as to cause the runner 8 to turn in the desired direction. The tensioning effect exerted upon the tongue 5 by the spring may be varied at the will of the operator by adjusting the bolt 20 so as to adjust the position of the nut 18, as previously described. It is also to be observed that this attachment can be readily applied to any style of sled without requiring any material alteration in the construction of the latter it being merely necessary to journal the rollers 1 between the sled runners and to affix the adjusting bolt and holder 21 upon the inner face of one of the runners as described, and illustrated. The attachment is complete in itself and the extent of its projection forwardly of the sled may be varied.

Although the foregoing description and illustration may be said to embody the preferred construction of the invention it is to be understood that minor changes with regards to arrangemenet of parts, details of construction, etc., may be resorted to as fall within the scope of the invention claimed.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:—

1. A steering device comprising a sled having a roller journaled between the forward ends of the runners, guide means supported forwardly of the roller and movable therewith, tensioning means cooperating with the guide means for normally holding the sled in inoperative position, and means for varying the tension.

2. In a steering device for sleds, a roller journalled between the runners of the sled, an arm fixed centrally of the roller and projecting forwardly therefrom, a guide runner mounted on the forward end of said arm, a coil spring surrounding the roller and having one end engaged beneath the arms and its other end positioned alongside of one of the sled runners, and means on said sled runner for forcing the last mentioned end downwardly and thereby increasing the tension on the spring.

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

NELLIE A. ENSTAD.

Witnesses:
WM. CAMPBELL,
C. W. SAMMONS.