Feb. 12, 1935. J. MADER ET AL 1,991,167

SLED RUNNER

Filed May 1, 1934

Fig. 1.

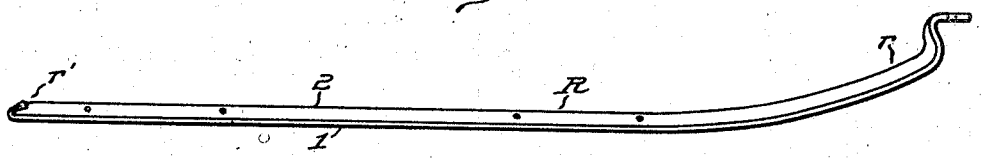


Fig. 2.

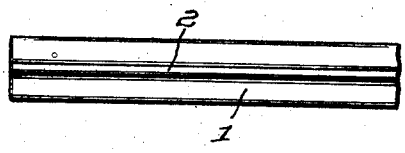


Fig. 3.

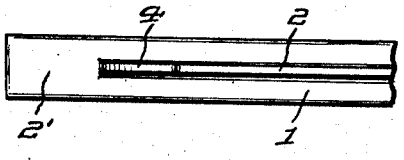


Fig. 4.

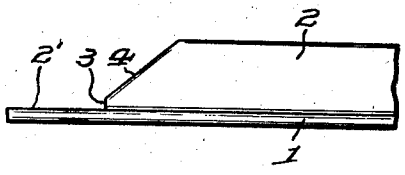
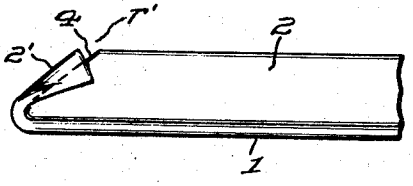


Fig. 5.



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1,991,167

SLED RUNNER

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Application May 1, 1934, Serial No. 723,320

4 Claims. (Cl. 280—28)

The runners of modern coasting sleds of the steering type are usually of inverted T-section save at their forward ends where they are generally flattened to facilitate attachment to adjacent portions of the sled structure; at their rear ends no particular finish is provided, the flange and web of the runner being merely cut off either in a vertical plane transverse to the body of the runner or in a plane slightly forwardly inclined from the vertical. Relatively sharp points or corners are thus created at the rear ends of the runners and, in consequence, accidents resulting in serious bodily harm sometimes occur from careless handling of the sleds by the users, who are frequently children of immature age.

To obviate this condition, various expedients have been suggested but none, so far as we are aware, have been entirely satisfactory in practice because, among other reasons, they either detract from the appearance of the sled, present considerable difficulty from a manufacturing standpoint in connection with the inverted T-section runner, or make it difficult to stand the sled in a vertical position by pushing the rear ends of the runners in the snow or in the ground which is something sled users often desire to do. As a result, they have failed of adoption by sled makers in general so that the commercial steering sleds now being marketed are still devoid of any means of protection against accidents due to the exposed corners and edges at the rear ends of the runners.

The object of our invention, therefore, is the provision of means for affording this protection yet of such character that they can be incorporated in a sled runner of the usual inverted T-type without detracting from its appearance, without materially increasing the cost of its production, and without negativing the possibility of readily inserting the ends of the runners into the snow or ground with the object of holding the sled in a generally vertical position.

Other objects, advantages and details of construction and arrangement comprehended by our invention are hereafter more particularly pointed out or will be apparent to those skilled in the art from the following description of a preferred embodiment thereof as incorporated in a sled runner of inverted T-type and illustrated in the accompanying drawing, in which Fig. 1 is a side elevation of the finished runner ready for assembly with the other parts of the sled, and Figs. 2 to 5 inclusive illustrate the sequence of steps in the formation of the rear end thereof in accordance with our invention. More particularly in the said drawing:

Fig. 1, as stated, is a side elevation of the finished runner ready for assembly with the other parts of the sled;

Fig. 2 is a top plan view, on a considerably larger scale than Fig. 1, of that end of the piece of stock from which the runner is to be made and which is to constitute the rear end thereof;

Fig. 3 is a similar view of the same piece after the first operation incident to the practice of our invention has been performed upon it;

Fig. 4 is a side elevation thereof, and

Fig. 5 is a like view of the piece after the completion of the second and final operation incident to the said practice.

The runner R shown in Fig. 1, is of generally inverted T-section having the usual horizontal flange 1 and vertically directed web 2, the flange being desirably concave on its lower face so as to afford the necesary "bite" or grip on the snow or ice when the sled is in use. The forward end r of the runner, that is, the end toward the right-hand side of the sheet, is curved in a generally upward direction and then flattened and bent over in the customary way to form a lug for attachment to the adjacent portion of the sled, while the web is drilled at intervals to provide points for fastening the struts which support the deck-carrying cross members. However, as the present invention is concerned only with the formation of the rear end r' of the runner, further description of the latter, as a whole, would be superfluous.

The runner is formed from a piece of T-section preferably high carbon steel stock, one end of which, designed to constitute the rear end of the runner, is shown in Fig. 2 as it appears after the stock has been cut off to the required length. In carrying out our invention, we first remove the web 2 from this extremity of the stock inwardly for a distance preferably a little greater than the height of the web, and then bevel the end of the latter on an angle approximating 45°, either clear from the surface of the flange to the upper edge of the web or, preferably, from a point slightly above that surface so that a short vertically extending edge 3 is provided between the lower end of the inclined edge 4 and the upper edge of the flange; the end of the stock then appears as in Figs. 3 and 4. The removal of this portion of the web can be effected in any desired way as by cutting, grinding, stamping in a die, or the like, as may be found most convenient.

The stock having been prepared as just de-

scribed, the next operation consists in bending that part 2' of the flange, which is now devoid of any web, upwardly and forwardly about the edge 3, then down against the inclined or beveled edge 4 of the web, and finally pinching or crimping the corners of the flange which now project forwardly on opposite sides of the said edge downwardly and inwardly against or substantially against the web approximately as shown in Fig. 5, thus completing the finishing of the rear end r' of the runner. With most classes of stock, this bending up of the portion 2' of the flange and the crimping of its marginal portions or front corners down on opposite sides of the web can best be performed while the stock is heated and with the aid of a die or fixture so as to produce a neat and symmetrical job, but the particular conditions as to temperature and the instrumentalities utilized are entirely a matter of choice and will naturally vary in accordance with the preference of different manufacturers.

From an inspection of Fig. 5 and the runner shown as a whole in Fig. 1 it will be apparent that the rear end of the runner, when formed as hereinabove described, presents no sharp corners or projections of a character likely to cause injury to a user of the sled although entirely capable of being readily thrust into the ground or snow with a minimum of effort when it is desired to stand the sled in a substantially vertical position while the extremity of the web is strengthened and afforded effective lateral support. Moreover, our method of finishing the runner end presents no major difficulties from a manufacturing and/or production standpoint, as it requires a minimum number of operations of a very simple character and thus does not materially enhance the cost of the runner as a whole. It therefore results that by our invention we have provided a runner end finish which meets the requirements of both the user and the sled manufacturer, while devoid of the objections which have been inherent, as far as we are aware, in the various end finishes heretofore proposed for the rear ends of inverted T-section sled runners for the purpose of protecting the users of the sleds from bodily injury.

While we have herein described a form of our invention which we consider as preferable, we do not desire or intend to specifically restrict ourselves thereto, as modifications and changes may be made therein in various particulars if deemed advisable without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described our invention, we claim and desire to protect by Letters Patent of the United States:

1. A sled runner comprising a horizontal flange and a vertical web, the flange extending beyond the rear end of the web and overlying the latter with the marginal parts of the flange crimped down adjacent its opposite sides.

2. A sled runner comprising a horizontal flange and a vertical web, the flange extending beyond the rear end of the latter and curving upwardly and forwardly in substantial coincidence therewith with the edge portions of the flange adjacent its extremity depending on opposite sides of and embracing the web.

3. A sled runner comprising a horizontal flange and a vertical web integral therewith, the rear end of the web inclining upwardly and forwardly from the flange from a point remote from the adjacent extremity thereof, that part of the flange lying rearwardly of the web extending upwardly and forwardly in substantial coincidence with the inclined end of the web with its lateral portions crimped downwardly and inwardly into proximity with the faces of the latter.

4. A sled runner comprising a vertical web and a horizontal flange integral therewith, the web terminating short of the rear end of the flange in an upwardly and forwardly inclined edge, that part of the flange in rear of the web curving upwardly and forwardly in substantial coincidence with said edge with its marginal portions depending on opposite sides of the latter.

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