Aug. 30, 1960 V. P. RUDINE 2,950,922

SNOW COASTING DEVICE

Filed June 13, 1955

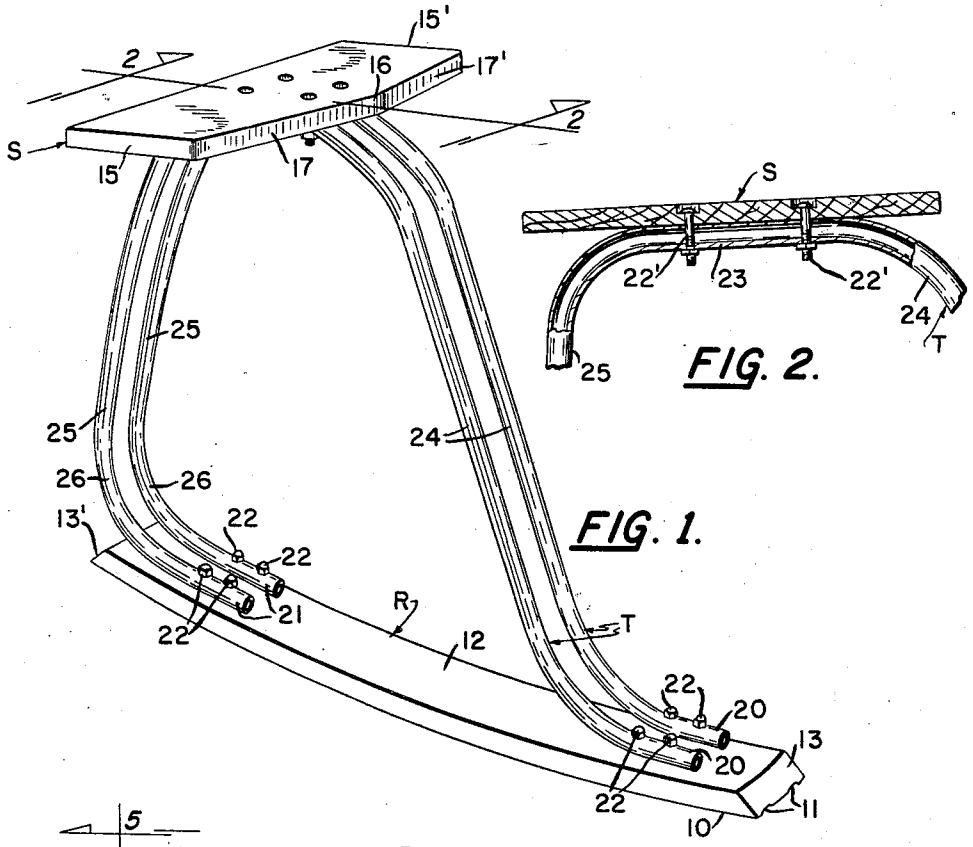


FIG. 1.

FIG. 2.

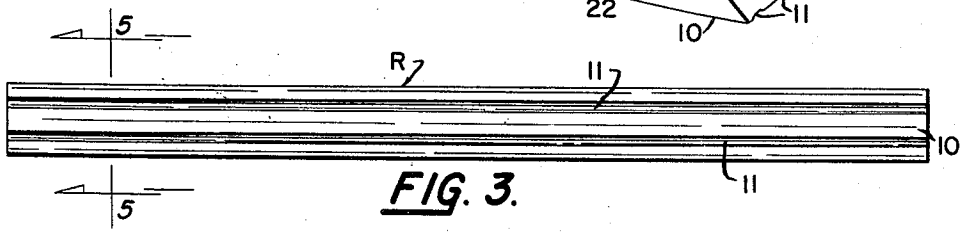


FIG. 3.

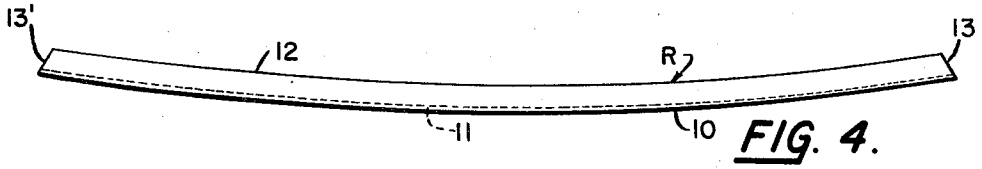


FIG. 4.

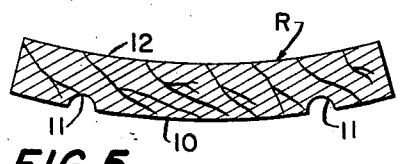


FIG. 5.

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SNOW COASTING DEVICE

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1 Claim. (Cl. 280—12)

This invention relates to coasting devices for use on snow.

Various devices have been made for use on snow including sleighs, sleds, snow shoes, skis and toboggans. A sleigh, of course, requires a horse or other animal to draw the same, while snow shoes, although particularly useful in deep snow, do not permit any particular degree of speed in going down hill and also require effort even to travel down hill. Skis are attached to the feet of the user, and require considerable skill to avoid accidents. Sleds are much safer to use than skis, but can be used only on ice or hard packed snow, the runners biting into loose snow so deeply that attempts to coast down hill in loose snow on a sled are not satisfactory. Attempts have been made to provide single runner coasting devices provided with a seat, but such devices have not been particularly easy to guide, and therefore follow substantially a straight path except as changed by the terrain in somewhat the same manner as a toboggan Toboggans, of course, normally require a prepared track and can be quite dangerous to use off such a prepared track.

Among the objects of the present invention are to provide a coasting device which may be used on snow, irrespective of whether it is relatively loose or packed relatively hard, and also can be guided with relative ease and accuracy. The guiding characteristics of a coasting device constructed in accordance with this invention are obtained by providing a runner which is curved convexly on the underside, both longitudinally and laterally, the lateral curvature being quite important, since the user may lean to one side or the other when sitting on the device to cause the runner to deviate to one side or the other from its previous path. This does not require any special manipulation of feet or a complicated timing of weight shifting, as in making turns on skis, although some degree of timing of weight shifting may be found desirable. The device is provided with a seat which is mounted above the runner and which is preferably disposed above the rear of the runner. In addition, the seat is tipped upwardly toward the front so that the weight of the user tends to be concentrated on the rear of the runner, thus providing a pivot point on which the weight of the user may be shifted in guiding the runner. During use, the front end of the runner tends to ride upwardly so that loose snow may be traveled without the front end of the runner digging in. Preferably, the seat has a greater width than the runner so that the user may readily shift his weight from side to side. The device may be used on relatively long or short slopes, but a speed approaching that of skiers is not often obtained, thus contributing to the safety of the device in use. However, sufficient speed may be obtained to permit an enjoyable ride down even a relatively short slope. Also, if sudden stops are necessary, the user may merely fall off into the snow without any

serious danger of injury, since the device is not attached to the body of the user.

Additional objects of this invention are to provide such a device which is safe in operation and may be used by an unskilled individual; to provide such a device which is sufficiently rugged in construction that it will withstand the rigours of hard usage; and to provide such a device which is relatively simple in construction and therefore economical to manufacture.

The above and additional objects of this invention, together with the novel features thereof, will become apparent from the description which follows, taken in connection with the accompanying drawing, in which:

Fig. 1 is a perspective view of a coasting device constructed in accordance with this invention;

Fig. 2 is an enlarged fragmentary cross section, taken through the seat along line 2—2 of Fig. 1;

Fig. 3 is a bottom plan view, on a reduced scale, of the runner of the device of Fig. 1;

Fig. 4 is a side elevation of the runner; and

Fig. 5 is an enlarged cross section of the runner, taken along line 5—5 of Fig. 3.

As illustrated in the drawing, a coasting device constructed in accordance with this invention may comprise a runner R and a seat S, supported above the runner R in a suitable manner, as by tubes T. The seat S is conveniently made of wood, although other materials may be utilized, while the tubes T are conveniently made of metal, such as aluminum tubing. The runner R is specially constructed, being curved convexly on the underside 10, both longitudinally and laterally, as will be evident from Figs. 4 and 5, respectively. Conveniently, the radius of longitudinal curvature of the under surface 10 is relatively long, as in Fig. 4, while the radius of lateral curvature of the under surface 10, as in Fig. 5, may be slightly shorter than the radius of longitudinal curvature. Preferably, the underside of the runner R is provided with a pair of longitudinal grooves 11, which are preferably spaced equidistantly from the longitudinal center line of the runner. These grooves 11 assist in maintaining a grip of the runner on the snow and therefore facilitate steering as well as movement over the snow, although the lateral curvature appears to contribute more substantially to the steering. The top surface 12 of the runner R may be parallel to the under surface 10, although the top surface 12 may extend straight across, if desired. The runner R is conveniently milled or otherwise formed from a single piece of wood, such as hard wood, or may be molded or otherwise formed from laminated wood, plastic, aluminum or other metal, or other suitable material and the under surface 10 may be treated with a suitable preparation, such as a wax or paraffin in somewhat the same manner as skis. The front and rear ends 13 and 13', respectively, of the runner R may be bevelled off at an angle, if desired, to facilitate movement through the snow.

The seat S, as indicated previously, is disposed above the rear of the runner R, the seat S conveniently being made from wood, metal or plastic, and having a width greater than the width of the runner R, so that the side edges 15 and 15' will overhang the runner R and the user may shift his weight onto one of the sides to guide runner R during movement along the snow. The seat S may be longer from front to back at the center 16 than at the sides, so that the front edges 17 and 17' extend outwardly and rearwardly from the front center 16. Although other configurations of the seat may be utilized, the above configuration is a relatively simple shape and provides sufficient comfort for the user. In addition, the outward taper of the front edges tends to assist the shifting of weight from one side to the other.

The seat S is tipped upwardly at the front, being inclined at any suitable angle with respect to the runner R, such as at an angle of approximately 5° with respect to a line which is tangent to the under side of the runner R at the center thereof. This combination of the upward tilt of seat S and its position over the rear of the runner insures that the weight of the user will be distributed over the rear portion of the runner and the front end of the runner will ride up out of the snow. In addition, weight distribution appears to facilitate steering the runner, since with the weight on the rear of the runner, the direction of the runner is not so easily changed by irregularities of the snow surface. In other words, the weight and shifting thereof for changing directions is applied where the runner is riding deeply in the snow. Of course, the user may lean backward on the seat or forward to shift the distribution of weight slightly, such as in accordance with snow conditions, i.e., for light deep snow, the weight should be further back, but for harder packed snow, the weight may be shifted forwardly.

The seat S is supported above the rear of the runner R in any suitable manner, the pair of tubes T being convenient and economical and also imparting durability to the device. Furthermore, when the tubes T are made of a relatively light metal, such as aluminum, the total weight of the device is decreased so that it is more readily carried about by the user, such as uphill between down runs. The tubes T may be disposed in parallel relationship, the front end 20 and rear end 21 of each being curved slightly so as to correspond generally in curvature to the upper surface of the runner R, so as to be attached to the runner R adjacent the front and rear ends of the runner, respectively, as by bolts 22, which may be carriage bolts extending through the runner and provided with nuts above the tube ends. An upper portion 23 of each of the tubes T may be relatively straight, as in Fig. 2, so as to fit against the under side of the seat S, to which the tubes may be attached by carriage bolts 22', or in any other suitable manner. The angularity between the upper straight portion 23 and the ends 20 and 21 corresponds to the desired angle of inclination of the seat S with respect to the runner R. From the upper portion 23, a front portion 24 of each tube extends forwardly and downwardly to the front ends 20, while a rear portion 25 of each tube T extends downwardly and slightly rearwardly to an arcuate portion 26, which extends forwardly to the rear ends 21, the latter of which preferably extend forwardly so that the rear portions 25 will be disposed substantially above the rear end of the runner R.

As will be evident, the shaping of seat S and runner R may be readily accomplished on conventional woodworking equipment, while the tubes T may be readily bent to the desired shape. The assembly of the device is, of course, relatively simple, so that the cost of manufacture may be reduced to a minimum. As will also be evident, due to the lateral as well as longitudinal

curvature of the under surface of the runner R, the coasting device may be more readily controlled and guided by a user and also may be used on substantially any type of snow, irrespective of whether it is hard or soft. While some skill is required to remain balanced on the seat S at higher speeds, at the same time, anyone who has acquired some sense of balance from riding a bicycle or using roller skates can readily use the device. While the speed of the device is not unduly great and therefore the device is much safer to use than skis, at the same time, a sufficient speed downhill may be obtained so that the user will secure the exhilaration and thrill of moving downhill in a manner similar to numerous other winter sports.

While the metal tubes T are preferably utilized to support the seat S, other configurations of the tubes may be used, or other types of supports, either metal or wood, may also be utilized. Thus, although a specific embodiment of this invention has been illustrated and described and certain variations therein indicated, it will be understood that other embodiments may exist and other variations made, all without departing from the spirit and scope of this invention.

What is claimed is:

A coasting device comprising a single elongated runner having an under surface convexly curved both longitudinally and laterally, the radius of longitudinal curvature being relatively long and the radius of lateral curvature being less than the radius of longitudinal curvature, said runner having a pair of longitudinal grooves on the under side and disposed on opposite sides of the center line thereof; a seat having a width greater than the width of said runner and disposed above the rear of said runner, said seat tipping upwardly toward the front at an angle of approximately five degrees to a longitudinal line tangent to the center of said runner, the width of said seat being greater than the maximum front to back distance thereof and the front edge thereof being inclined rearwardly to each side from the center; and a pair of parallel metal tubes affixed to the underside of said seat and at opposite ends to said runner, each said tube extending downwardly and forwardly from said seat with the front end extending forwardly and attached to said runner adjacent the front end of said runner and each said tube extending rearwardly and downwardly from said seat and then arcuately and forwardly with the rear end extending forwardly and attached to said runner adjacent the rear end of the latter.

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