

[54] **SKIS WITH STEERING STRINGS**

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[58] Field of Search. 280/11.13 J, 11.13 E, 11.13 P,
280/11.13 H, 11.13 S, 11.35 P

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[57] **ABSTRACT**

This specification discloses skis having the following characteristics: (1) an upwardly curved front tip, (2) an uncurved sliding surface, (3) a steering string attached to the curved front tip, (4) a boot heel binding near the tail end of the ski plate so as to place the center of the body weight near the tail end of the ski, (5) overall length which is remarkably shorter than that of conventional skis, and (6) gradually increasing thickness from the front tip to the tail end.

5 Claims, 4 Drawing Figures

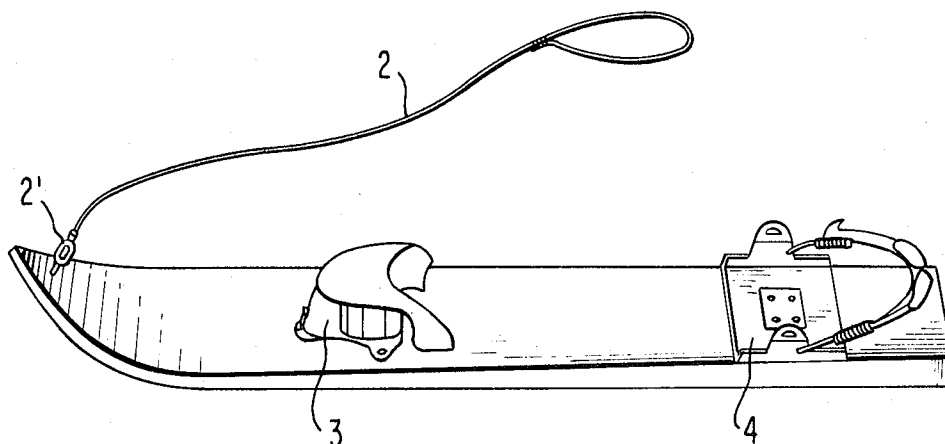


FIG. 1

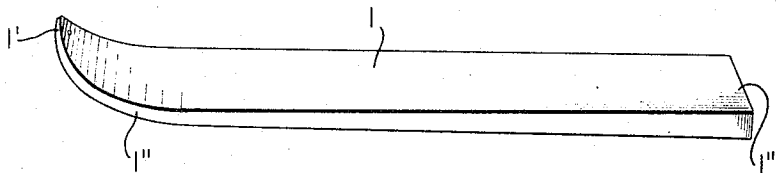


FIG. 2

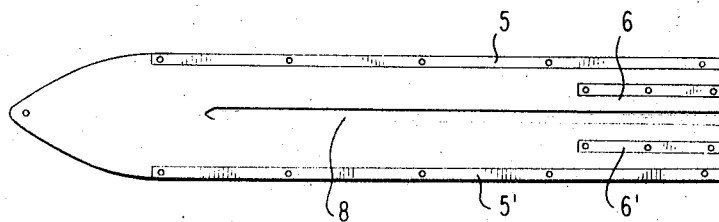


FIG. 3

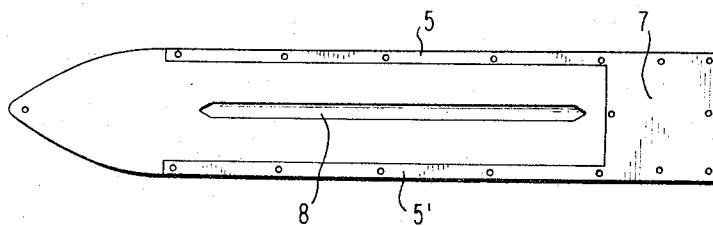
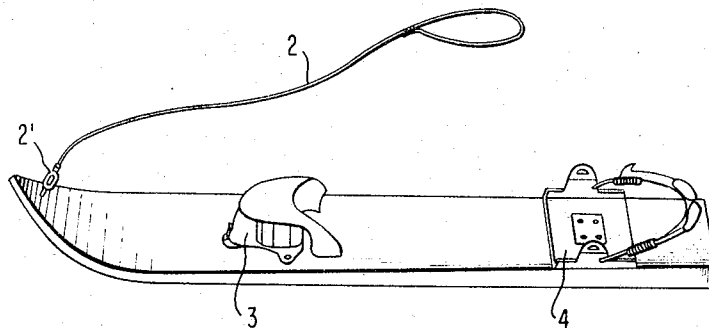


FIG. 4



SKIS WITH STEERING STRINGS

BACKGROUND OF THE INVENTION

The prior ski plates were considerably long and hence they were extremely difficult to be handled by beginners or children. Even for those skilled in the ski, highly skilful technique is required for performing the ski actions such as down hill run, turning, braking and the like by using such long skis, and with only one erroneous operation, injuries such as bone fracture, sprain, etc. are often caused.

In view of such disadvantages encountered in prior skis, the inventors have strived from various approaches to develop a ski with which safety and comfortable skiing can be enjoyed even by beginner and, as the result, have accomplished a novel and useful invention providing skis which will completely satisfy the wish of ski enthusiasts and children altogether easily to play with skis.

SUMMARY OF THE INVENTION

This invention relates to skis having the following characteristics: (1) an upwardly curved front tip, (2) an uncurved sliding surface (3) a steering string attached to the curved front tip, (4) a bootheel binding near the tail end of the ski plate so as to place the center of the body weight near the tail end of the ski, (5) overall length which is remarkably shorter than that of conventional skis, and (6) gradually increasing thickness from the front tip to the tail end.

This invention will further be described in detail with regard to the embodiment referring to the accompanying drawing.

BRIEF EXPLANATION OF THE ACCOMPANYING DRAWINGS

FIG. 1 is a perspective view showing a ski plate of a preferred embodiment of skis with steering strings according to this invention;

FIG. 2 and FIG. 3 are plane views showing bottom surfaces of the ski plates in two different embodiments according to this invention; and

FIG. 4 is a perspective view of the completed ski according to this invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows a single ski plate 1 suitable for fabricating a ski according to this invention ski plate 1 ranges between 30 and 80 cm, which is extremely shorter than the length of prior ski plates. The plate length is determined herein depending on the height and weight of the particular ski user. It has been found that ski plates shorter than 30 cm for children and 50 cm for adults tend to sink deeply into snow thereby causing difficulties in down hill run, and ski plates longer than 55 cm for children and 80 cm for adults make it difficult to handle the steering strings or turn skis. The preferred ranges of ski plate length for children and adults are 35 to 55 cm and 50 to 70 cm respectively.

The width of the ski plate 1 is wider than that of conventional ski plates for the sake of stability, ranging between 8 to 15 cm, preferably 8 to 11 cm, also depending on the height and weight of the particular ski user.

Ski plates narrower than 8 cm will sink into snow, thereby significantly reducing the down hill speed, while ski plates wider than 15 cm bring difficulties in

turning operation. In this embodiment, the plate width may be some what wider in the vicinity of curved portion 1'' than at the tail end 1'''.

The thickness of the ski plate 1 is not uniform throughout its length, but increases gradually from 0.5 - 0.8 cm at the tip end 1' to 1.5 - 2.2 cm at the tail end 1''' for the sake of stability in downhill turning and stopping. With less than 0.5 cm thick, the tip end 1' tends to be broken easily during use and with more than 0.8 cm thick, the top bend of the tip end 1' becomes so rigid that it can not easily be controlled by the operation of the steering string 2 thus hindering the comfortable down hill run. The tail end 1''' which acts as a supporting point in turning operations by being bitten into the snow, serves an important function for enabling skiers suitably to perform various ski actions such as down hill on a or icy slope, stopping operation, and the like. This portion is subjected to rather severe force, particularly when it is caused to bite into the snow. Therefore, with less than 1.5 cm thick, the tail end 1''' may be broken at the part attached with boot heel binding 4. On the other hand, if the tail end 1''' is made more than 2.2 cm thick, the performance in turning and the stability in down hill run are reduced although the strength is increased.

The degree of curvature at the curved portion 1'' is represented as the height from the lower most line of the ski to the tip thereof as shown in FIG. 1, and it ranges between 8 and 13 cm, preferably, 9 to 11 cm, since the ski top with the height outside of the above range sticks into snow. As may be seen from FIGS. 1 and 4, the ski plate is not otherwise curved.

At the bottom or sliding surface of the ski plate 1, conventional side edges 5 and 5' are secured on both sides and two tail edges 6,6' of about 10 cm long are fixed between said side edges at the tail portion as shown in FIG. 2. This tail edges are effective for the sharp performance in down hill run on steep slope and icy slope as well as in stopping operation. It is desired to secure 2 to 4 tail edges or, alternatively, to employ an integrally shaped edge 7 which is formed as shown in FIG. 3 by transversely connecting the tail ends of the both sides edges with a plane tail edge or with such one whose front margin forms an apex of a triangle directed forward at the center thereof. At the sliding surface of the ski plate 1, one or two grooves 8 are engraved. It should be noted that more than two grooves cause difficulties in turning skis.

In order to facilitate (1) stopping by exerting the pressure force from the heel on the tail edge of the ski and (2) turning by forcing the heel outwardly to the left or right, a fitting 2' for holding the steering string 2 is secured at 1 to 3 cm from the front top of the ski on the center line of the upper surface of the ski plate 1. The fitting 2' detachably holds one end of the steering string 2' the length of which is adjusted to the height of the particular ski user. A boot heel binding 4 is mounted on the back portion of the upper surface of the plate 1 in such a position as to situate the boot heel at 2' to 5' cm from the back end, while boot top binding 3 is mounted in the appropriate place ahead of the heel binding.

For the ski plates of this invention any conventional ski material may be used such as unitary boards, laminated boards, plastics, metals, FPR, and the like.

The skis with steering strings of this invention thus constructed are operated as described just below. In clockwise turning, for example, skis can be turned by

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shifting the center of body weight a little backward to lift the curved portion of the ski plates 1 and pulling the steering string 2 in the clockwise direction. In stopping skis normal to the slant of the slope, in right side way for instance, it can be achieved by shifting the center of body weight some what backward, pulling up the steering strings 2 to cut the tail edges into snow surface and then shifting the center of body weight to the right to cut the edges at the right side into the slope. In the down hill run on the slope with slow slant, the skis can easily be braked by shifting the center of body weight backward and pulling up the steering string 2 to cut the tail edges into snow surface.

The skis with steering strings according to this invention can easily be handled, and even the beginner in skiing can perform ski operations such as down hill run, turning, stopping, and the like with ease and safety. In addition, the skis are easy to carry because of their light weight and economically excellent in view of the material cost.

What is claimed is:

1. A ski adapted to support a single foot, said ski having the following characteristics:
 - a. an upwardly curved front tip;
 - b. an uncurved sliding surface;

4

- c. a steering string attached to the curved front tip;
- d. a boot heel binding mounted on the ski plate near its tail end so as to place the center of the body weight near the tail end of the ski;
- e. overall length which is remarkably shorter than that of conventional skis; and
- f. gradually increasing thickness from the front tip to the tail end.

2. A ski as claimed in claim 1 wherein the length of the ski is between 30 and 80 cm and the width of the ski is between 8 and 15 cm.

3. A ski as claimed in claim 1 wherein the thickness of the ski gradually increases from 0.5–0.8 cm at the tip to 1.5–2.2 cm at the tail end.

4. A ski as claimed in claim 1 wherein the overall height of the ski from the bottom of the uncurved sliding surface to the top of the upwardly curved front tip is between 8 and 13 cm.

5. A ski as claimed in claim 1 wherein the boot heel binding is mounted on the ski plate in such a position as to place the rear end of the boot heel 2 to 5 cm from the tail end of the ski.

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