

[54] **CROSS-COUNTRY SKI**

312,244 2/1956 Switzerland..... 280/11.13 L

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[51] **Int. Cl.²**..... **A63C 5/12**

[58] **Field of Search**..... 280/11.13 L, 11.13 K, 11.13 R; 9/310 A, 310 E, 310 B

[56] **References Cited**

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[57] **ABSTRACT**

A cross-country ski has a foamed synthetic-resin core of generally rectangular cross section covered with a hard epoxy and glass fiber skin. A pair of L-section strips of ABS resin flank this core with the vertical flange of each strip completely covering a respective side of the core and the horizontal flange of each strip extending partially under the bottom of the core. The top of the ski is covered by a single hard layer of a synthetic resin such as nylon. The bottom of the core at least between the bottom flanges of the L-section strips is covered with a similar such hard synthetic-resin layer of substantially lesser thickness than the horizontal flanges of the strips.

6 Claims, 3 Drawing Figures

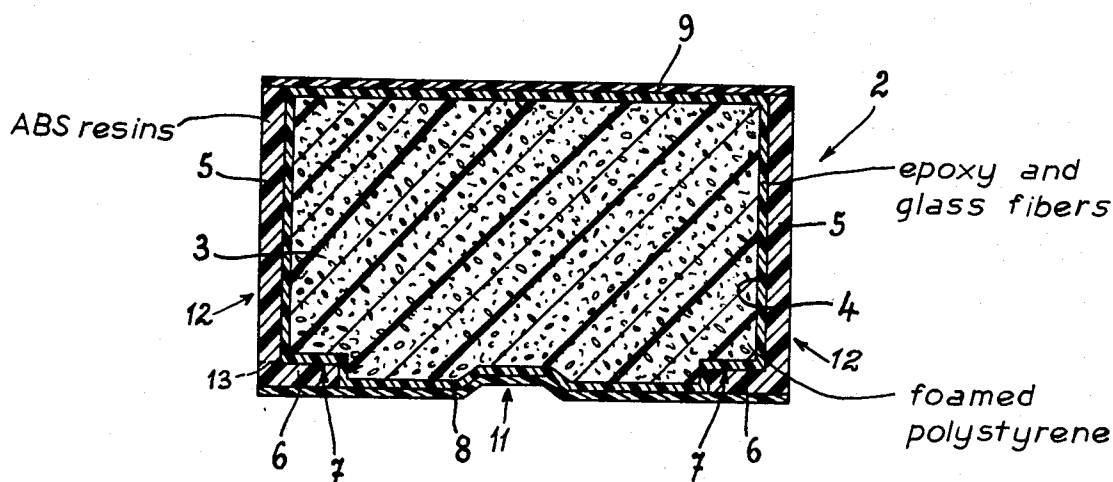


FIG. 1

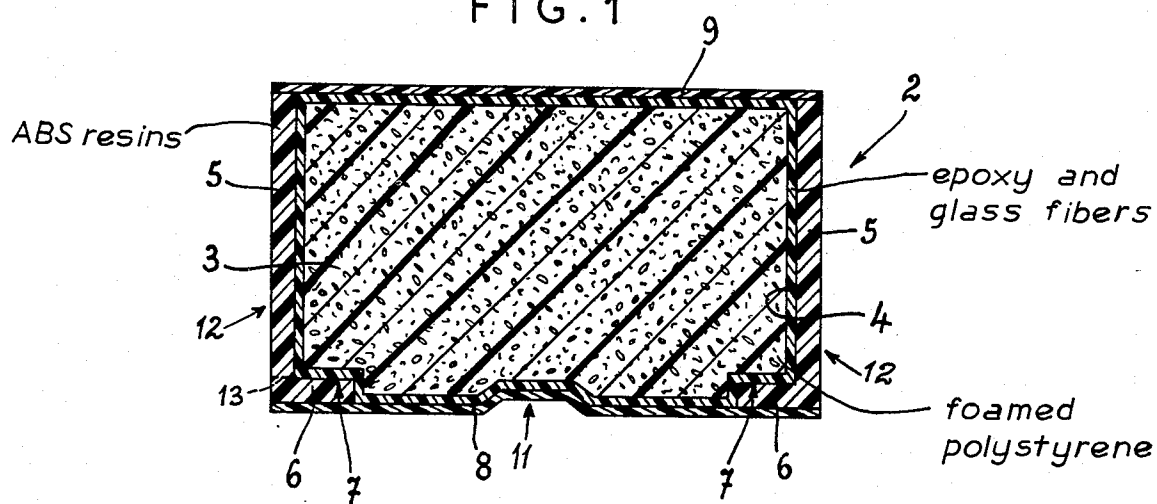


FIG. 2

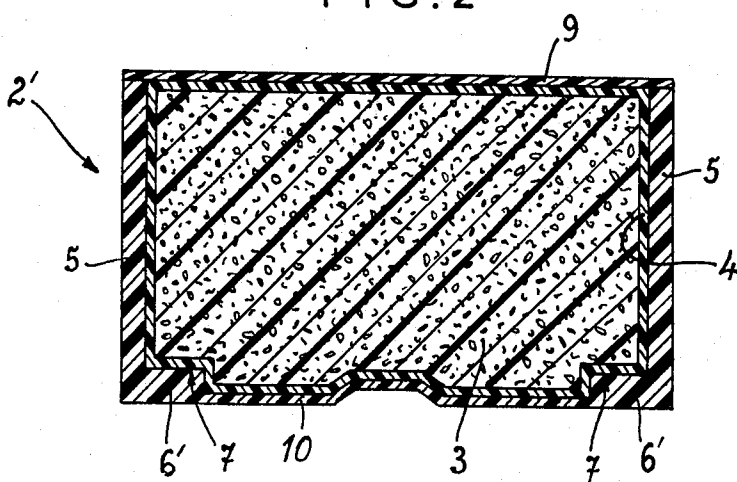
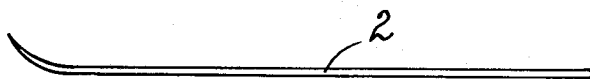


FIG. 3



CROSS-COUNTRY SKI

FIELD OF THE INVENTION

The present invention relates to a cross-country ski. More particularly this invention concerns such a ski with a synthetic-resin core.

BACKGROUND OF THE INVENTION

Two types of cross-country skis are known. The most common type is made of wood. This has the advantage of considerable strength, but the disadvantage that in time it tends to deform and become useless. In addition a wooden ski is relatively heavy so that the user tires rapidly. Wooden skis tend to wear excessively on their lower outside edges, as in cross country use the ski frequently comes into contact with rocks and other hard potentially damaging objects.

The other type of ski has a cellular-resin core surrounded by a reinforcing skin or the like. Such a ski tends to hold its shape and is relatively light. On the other hand such a ski breaks readily and can be made completely useless by a blow sufficiently strong to pass through the reinforcing skin, particularly at the lower outer edges thereof.

OBJECTS OF THE INVENTION

It is therefore an object of the present invention to provide an improved cross-country ski.

Another object of the present invention is the provision of such a ski which while very light is stronger than the prior-art skis.

Another object is the provision of a cross-country ski which overcomes the above-given disadvantages.

SUMMARY OF THE INVENTION

This object is attained according to the present invention in a ski having a cellular elongated synthetic-resin core with a pair of opposite lateral sides and opposite top and bottom sides, all surrounded by a reinforcing skin of, for instance, an epoxy resin and glass fibers. A pair of L-section reinforcing profiles is provided each having a vertical leg lying against a respective lateral side of the core and a horizontal leg extending at least partially under the bottom side of the core. These L-section profile strips are of relatively rugged and rigid material, an ABS (acrylonitrile-butadiene-styrene) resin being particularly indicated, due to its characteristics of being rigid, hard, and tough but not brittle while having a good impact strength, heat resistance, low temperature properties, and chemical resistance. In such an assembly the L-section reinforcing strips protect those parts of the ski which are most subject to damage.

In accordance with the present invention a thin layer of a synthetic resin that is extremely strong is provided to protect the upper and lower sides of the ski, a polyamide such as nylon being particularly adapted for such use.

Such a ski is extremely light and has a very long service life. This is due to the fact that the relatively spongy core, other than imparting considerable rigidity to the ski, is protected at all of its vulnerable areas. The prior-art foam-core skis all require a relatively heavy reinforcing sole plate on the whole bottom of the ski. This is not necessary according to the present invention as the particularly vulnerable corners are protected by the L-section strips. The reinforcing layer on the bot-

tom of the ski serves almost exclusively as a sliding surface, not as a reinforcement for the core.

In accordance with another feature of this invention the lower leg of each L-section strip is formed integrally with the lower leg of the opposite strip so that the two L-section strips form an upwardly open channel receiving the cellular core. In this arrangement a reinforcing layer need only be applied to the top of the core, covering this core and the upper edges of the L-section strips.

BRIEF DESCRIPTION OF THE DRAWING

The above and other objects, features, and advantages will become more readily apparent from the following, reference being made to the accompanying drawing in which:

FIGS. 1 and 2 are cross-sectional views of skis in accordance with the present invention; and

FIG. 3 is a side view of the ski of FIG. 1.

SPECIFIC DESCRIPTION

As shown in FIGS. 1 and 3, a cross-country ski 2 has a core 3 formed of a foamed synthetic-resin such as polystyrene having a density between 0.05 and 0.15, preferably 0.1. This core 3 is closed in a skin 4 formed of glass-fiber reinforced epoxy resin. In addition the ski has two longitudinally extending L-section side strips 12 each comprising a vertical leg or flange 5 and a horizontal leg or flange 6, the former extending over the entire side of the core 3 and the latter extending under a part of the base thereof. To this end the base is formed at the corner between each of the sides and the bottom with a rectangular-section notch 7 elongated parallel to the bottom side and receiving the flange 6.

The L-section strips 12 are formed of ABS resin. A thin layer of synthetic-resin material, here nylon, is applied over the entire bottom side of the core 3 and the bottom faces of the flanges 6 so as to provide a good firm sliding surface. Since the flanges 6 protect those portions of the core most likely to be damaged, the layer 8 can be very thin. A longitudinal groove 11 is formed in both the core 3 and layer 8. A similar such layer 9 is provided on top of the core 3 and over the upper exposed edges of the flanges 5.

The ski 2' shown in FIG. 2 is identical to that shown in FIG. 1 except that the sole plate 8 is omitted and instead the lower flanges 6' are joined by a thin web 10 replacing this plate 8 and forming with the two L-section strips an upwardly open channel. The web 10 is only around a third as thick as the flanges 6.

It is also possible as indicated at dot-dash line 13 in FIG. 1 to form either or both of the L-section strips 12 of two separate pieces which are joined together when the ski is molded together. In any case the ABS resin are elements formed by extrusion. Thus the ski can be produced very inexpensively.

I claim:

1. A cross-country ski comprising a core of cellular synthetic-resin material and having a pair of opposite lateral sides and top and bottom sides, a reinforced skin surrounding said core, a pair of L-section strips each having a vertical flange engaging and extending over a respective side wall and a horizontal flange extending partially under said bottom wall, a sliding layer on said bottom wall at least between said horizontal flanges and of lesser vertical thickness than said horizontal flanges, and a synthetic-resin layer on said top wall

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completely covering same and of substantially lesser thickness than said vertical flanges.

2. The ski defined in claim 1 wherein said L-section strips are formed of a synthetic-resin material of substantially stronger mechanical characteristics than said core.

3. The ski defined in claim 2 wherein said strips are made of ABS resin.

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4. The ski defined in claim 2 wherein said sliding layer is integrally formed with said horizontal flanges.

5. The ski defined in claim 4 wherein said sliding layer is approximately one third as thick as said horizontal flanges.

6. The ski defined in claim 1 wherein said skin is made of glass-fiber reinforced epoxy resin.

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