

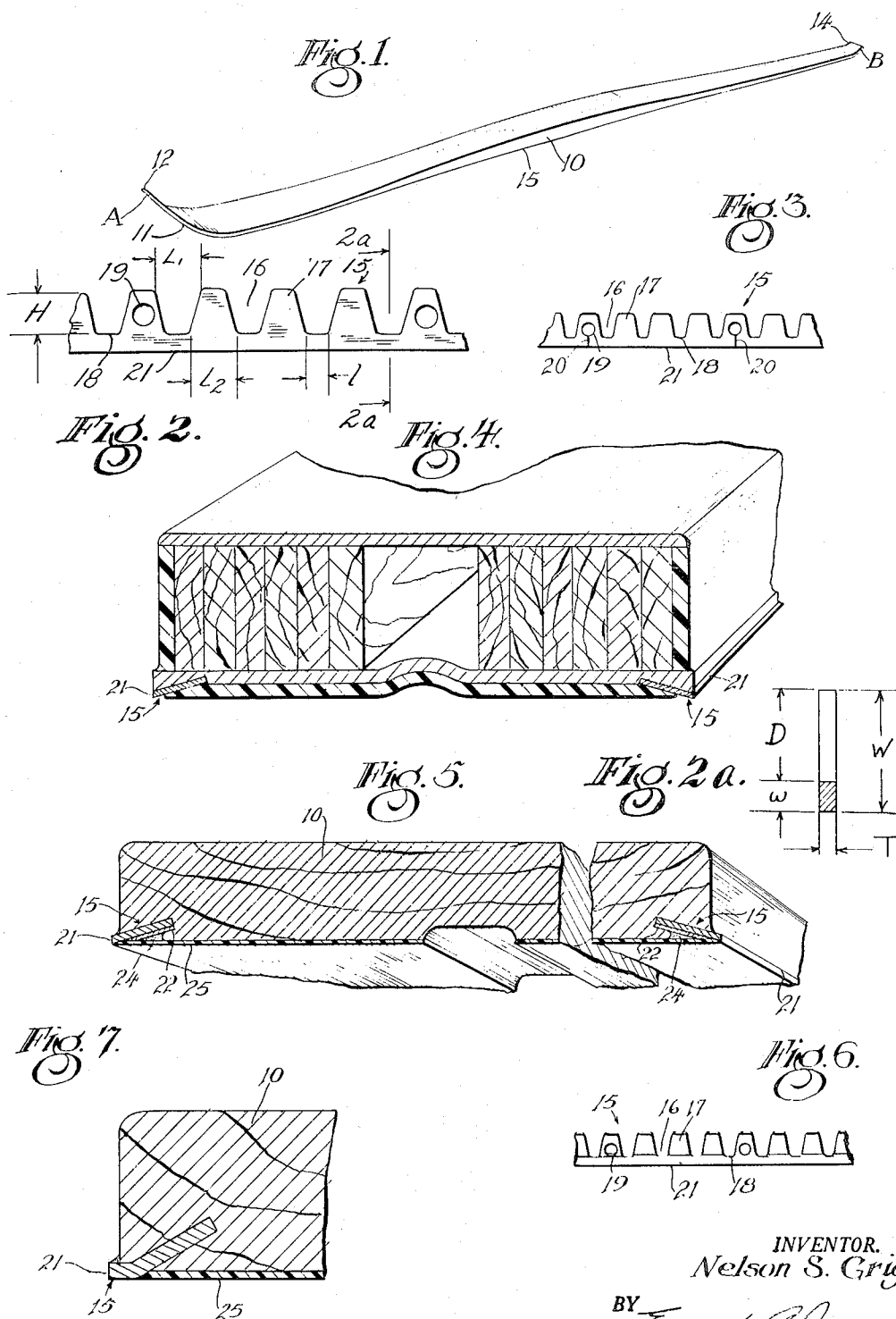
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FLEXIBLE RUNNING EDGE FOR SKI

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FLEXIBLE RUNNING EDGE FOR SKI

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The present invention relates to skis, and more particularly, to improved running edges for skis.

Heretofore, it has been proposed to improve the wearing qualities of skis in many ways. For example, relatively thick metallic strips have been applied to the edges of skis to prevent wear, such strips being secured to the skis by means of several dozen screws. After use of the skis for a time, the screws loosen, and it is extremely difficult and quite costly to properly re-secure the strips to the skis without impairing their usefulness and proper functioning of the skis.

More recently, it has been proposed to reinforce the running edges of skis by means of relatively thin metallic strips embedded in the body of the skis at each side thereof adjacent the running surface in a manner so that only the thin edges thereof are exposed. These strips are adapted to be anchored in diagonally extending slots or recesses in the body of the ski by means of cement or adhesive, and additional fastening means such as pins may be driven from the sides of the ski, through the strips and into the body of the ski. In the actual use of skis so reinforced, it has been found that such a practically solid strip, although relatively thin, seriously alters the normal flexibility of the ski whereby much of the ability of the skis to respond to the skill of the expert skier is lost.

Accordingly, an object of the present invention is to overcome the foregoing difficulties in a simple and economical manner.

Another object is to provide a practical and reliable running edge for skis which increases their useful life without sacrificing their normal flexibility.

Another object is to provide such a running edge which is adapted to extend from substantially the tip of the ski to the trailing edge thereof.

Another object is to provide such a running edge which very closely approaches the natural flexibility of the skis at the point of application thereto and at the same time strengthens the same.

A further object is to provide such a running edge which is suitable for application to skis of the leading brands of manufacture, as well as all other special designs.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

In accordance with the present invention, the foregoing objects are generally accomplished by providing a running edge formed of a substantially flat serrated metallic strip of spring steel, for example. Preferably, the strip has relatively deep and wide recesses spaced apart lengthwise along one side edge of the strip to provide tabs of a width to anchor the same in the body of the ski and to provide narrow strip sections connecting adjacent tabs and being of approximately equal width

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and thickness whereby to facilitate flexing of the strip laterally in all directions with respect to the longitudinal axis thereof.

In the drawing:

Fig. 1 is a perspective view of a ski embodying the present invention.

Fig. 2 is an enlarged fragmentary elevational view of one form of running edge strip in accordance with the invention.

Fig. 2a is a sectional view taken along the line 2a—2a on Fig. 2.

Fig. 3 is an enlarged fragmentary elevational view of another form of running edge strip in accordance with the invention.

Fig. 4 is an enlarged fragmentary perspective view illustrating the cross-section of one form of ski construction in which the strip shown in either Fig. 2 or Fig. 3 may be embodied.

Fig. 5 is a view similar to that of Fig. 4 illustrating another form of ski construction.

Fig. 6 is an enlarged fragmentary elevational view of still another form of running edge strip in accordance with the invention.

Fig. 7 is an enlarged fragmentary sectional view illustrating a ski construction embodying the strip shown in Fig. 6.

Referring to the drawing in detail and more particularly to Fig. 1, there is shown a ski to which the present invention is applied. This ski is of a conventional shape, and consists of a body 10 having the usual curved leading end 11 terminating in a tip or point 12 and having a slightly curved trailing end 14. As previously indicated herein, such skis, if of modern manufacture, are provided with a metallic running edge 15 at each side which is embedded in the body adjacent the running surface or underside of the body. The present invention contemplates providing a continuous metallic strip serving as a running edge which may extend from about the point A at the tip 12 to the point B at the very end of the trailing end 14.

In Figs. 2 and 2a, one form of running edge 15 is partially shown which comprises a substantially flat metallic strip, for example, a spring steel strip. This strip is serrated, and, preferably has a series of relatively deep and wide recesses 16 spaced apart lengthwise along one side edge of the strip to provide a series of tabs 17 of a sufficient length to anchor the same in the body of the ski and to provide narrow strip sections 18 connecting adjacent tabs and being of approximately equal width and thickness whereby to facilitate flexing of the strip laterally in all directions with respect to the longitudinal axis or length thereof. Certain of the tabs are formed with an aperture 19 about halfway between the side edges of the strip. Preferably, the tabs, recesses and apertures are formed while the strip is soft, and the strip thereafter is tempered to render it springlike.

In a practical embodiment of the present invention, the strip may have the following approximate dimensions, all given in inches:

Width of strip W	.2500
Thickness of strip T (19 gauge)	.0420
Depth of recesses D	.1875
Length of recesses L ₁	.1000
Height of tabs H	.1875
Length of tabs L ₂	.2000
Length of sections L	.1000
Width of sections w	.0625
Diameter of apertures 19	.0938
Spacing between apertures 19	1.2500

These dimensions are given by way of example, and

it is not intended to limit the present invention thereto in any manner. For example, the tabs and recesses could be of equal length, but not exceeding the width of the strip.

In effect, the strip is a length of rectangular, almost square (Fig. 2a), spring wire constituting the running edge per se and being provided with tabs for securing the wire to the body of the ski.

In Fig. 3, another form of running edge 15 is partially shown which is identical to that shown in Fig. 2, except that narrow sheared slits 20 extend from the apertures to the side edge 21 opposite the side edge of the strip in which the serrations are formed. In this manner, provision is made for ultimate ski flexibility to allow for elongation, in accordion fashion, and stretch of the ski due to tension without sacrificing, in effect, the continuity of a solid running edge construction.

In Fig. 4, a Head type ski construction is illustrated embodying a running edge 15 which may be in accordance with that shown in either Fig. 2 or Fig. 3.

In Fig. 5, another type of ski construction is illustrated comprising a wooden body 10 having a slot or recess therein at each side adjacent the underside which extends from the tip to the trailing end. An edge strip 15, which may be in accordance with that shown in either Fig. 2 or Fig. 3, is mounted therein with the tabs 17 secured by means of suitable adhesive and the edge 21 is exposed to provide the running edge. A cover strip 22, for example a woven fiber glass tape, is adhered to the underside of the edge strip 15 to prevent the recesses 16 from being completely filled with a mass of adhesive 24 which fills the bottom of the slot, and a plastic running surface member or sole 25 is adhered to the underside of the ski body with its outer edge in contact with the edge 21 of the running edge strip.

In Fig. 6, still another form of running edge strip 15 is illustrated which may be identical to the strip illustrated in either Fig. 2 or Fig. 3, except that the tabs 17 are bent at an angle of 30° with respect to the horizontal, as viewed in Fig. 7, when the strip is applied to a ski. This form of strip provides a running edge at the side edges and the underside of the ski.

From the foregoing description, it will be seen that the present invention provides an improved ski by reason of the novel running edge construction. This edge has extreme flexibility, conforms to the contour of the ski without building up stresses, and is readily embedded in the ski body without the need for jigs or fixtures. The serrations allow for flexibility at any angle of deflection, in fact, a torsional twist can be accomplished with seemingly equal ease. The center-to-center spacing between serrations allows the adhesive to absorb the compressive forces developed in the wood which otherwise would shear the tabs away at the adhesive line or curb the flexural freedom of the strip. The effective continuous solid running edge will not permit the ski bottom to stretch or elongate, particularly at the zones closely adjacent the edge. This is considered an outstanding advantage, particularly in wooden ski constructions, because wooden fibers will withstand much less tension than compression. Therefore, unless these forces are restrained, diverted or absorbed in compression in the course of drastic bending of the ski, as in normal usage, a fracture would otherwise start with fiber failure at some point on the ski bottom. In the ultimate, a longer lasting, more durable and better controllable ski is provided by the improvements in accordance with the present invention, and these advantages are attained in a simple, practical and economical manner.

As various changes may be made without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in any limiting sense.

I claim:

1. A ski comprising a body portion having a running surface and a recess at each side thereof adjacent said running surface and inclined with respect thereto and extending substantially from the tip of the ski to the trailing end thereof; a running edge element in each of said recesses extending from end to end thereof and inclined with respect to said running surface, each of said edge elements consisting of a unitary spring steel strip of substantially uniform thickness throughout the length and width thereof having transverse recesses spaced equidistantly apart lengthwise along one side edge of said strip to define transverse tabs and alternate lengthwise extending connecting sections at the other side edge of said strip, said tabs having a greater maximum lengthwise extending dimension than said sections as measured between two adjacent sections but not exceeding the width of said strip and said sections having a transverse width about equal to the thickness of said strip whereby to facilitate flexing of said strip laterally in all directions with respect to the longitudinal axis thereof, said tabs being disposed in said ski body recesses and said sections being exposed at the sides of said ski body; and means for adhesively bonding said tabs in said ski body recesses to integrally secure said edge elements to said ski body portion.

2. A ski comprising a body portion having a running surface and a recess at each side thereof adjacent said running surface and inclined with respect thereto and extending substantially from the tip of the ski to the trailing end thereof; a running edge element in each of said recesses extending from end to end thereof and inclined with respect to said running surface, each of said edge elements consisting of a unitary spring steel strip of substantially uniform thickness throughout the length and width thereof having transverse recesses spaced equidistantly apart lengthwise along one side edge of said strip and converging from said side edge to define serrate tabs and alternate lengthwise extending connecting sections at the other side edge of said strip, said last mentioned recesses and said tabs having about equal lengthwise extending dimensions at the side edge of said strip in which said recesses are formed, said dimensions not exceeding the width of said strip, and said sections having a transverse width about equal to the thickness of said strip whereby to facilitate flexing of said strip laterally in all directions with respect to the longitudinal axis thereof, said tabs being disposed in said ski body recesses and said sections being exposed at the sides of said ski body; and means for adhesively bonding said tabs in said ski body recesses to integrally secure said edge elements to said ski body portion.

3. A ski comprising a body portion having a running surface and a recess at each side thereof adjacent said running surface and inclined with respect thereto and extending substantially from the tip of the ski to the trailing end thereof; a running edge element in each of said recesses extending from end to end thereof and inclined with respect to said running surface, each of said edge elements consisting of a unitary spring steel strip of substantially uniform thickness throughout the length and width thereof having a multitude of transverse recesses spaced equidistantly apart lengthwise along one side edge of said strip to define regularly spaced transverse tabs and alternate lengthwise extending connecting sections at the other side edge of said strip, said last mentioned recesses and said tabs having maximum lengthwise extending dimensions not exceeding the width of said strip and said sections having a transverse width about equal to the thickness of said strip whereby to facilitate flexing of said strip laterally in all directions with respect to the longitudinal axis thereof, said tabs being disposed in said ski body recesses and said sections extending partially outwardly of said ski body recesses; and means for adhesively bonding said tabs in said ski

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body recesses to integrally secure said edge elements to said ski body portion.

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