

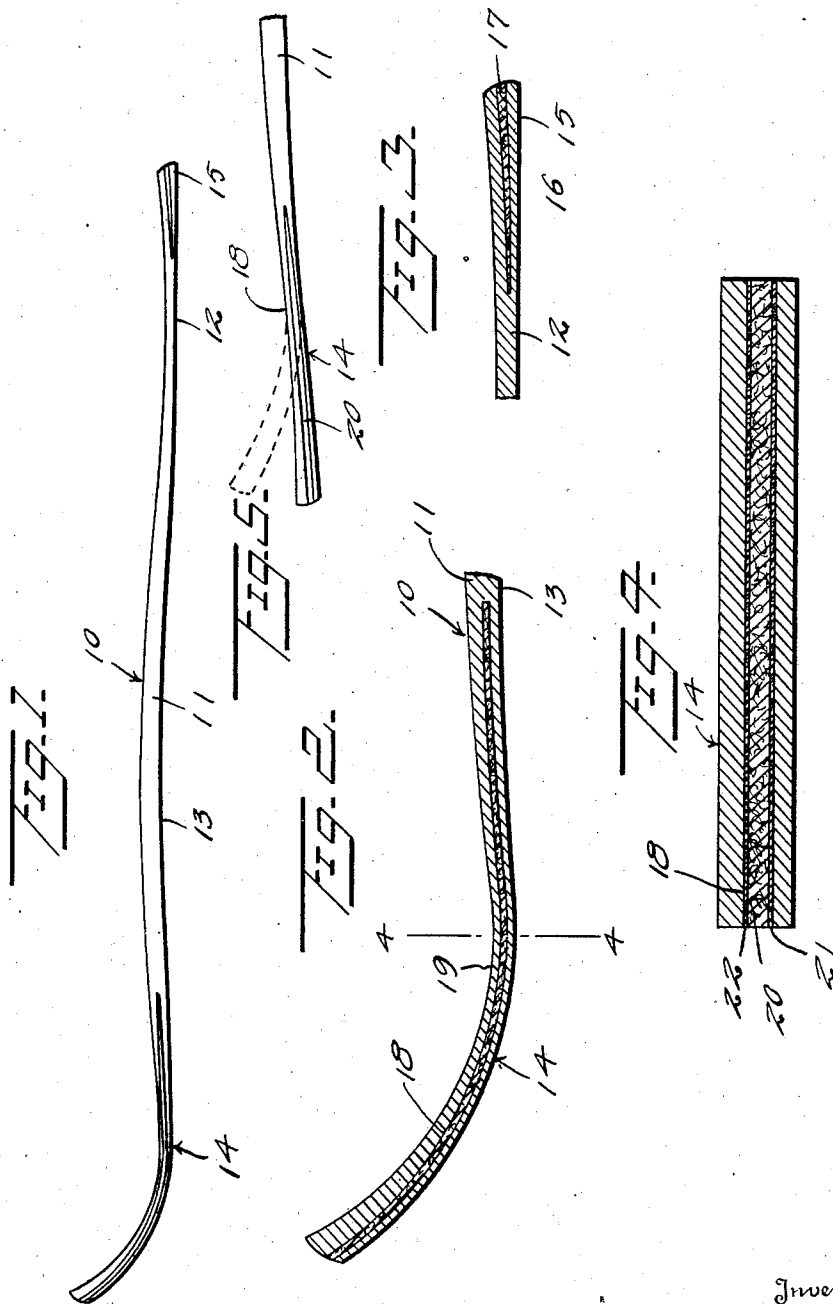
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LAMINATED TIP FOR SKIS

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LAMINATED TIP FOR SKIS

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Columbia, CanadaOriginal application August 4, 1938, Serial No.
223,093. Divided and this application May 22,
1940, Serial No. 336,670

6 Claims. (Cl. 280—11.13)

This invention relates to skis and is a division of my co-pending application Serial No. 223,093, filed August 4, 1938 for Reinforced laminated skis.

5 An object of this invention is to provide a ski structure including a longitudinally arched body and means at one or both ends of the body for reinforcing the body.

10 Another object of this invention is to provide in a ski structure a reinforcing insert which is adapted to be adhesively secured within the body of the ski at the point where the ski is subjected to undue strain so as to reinforce the ski at the point of greatest stress.

15 A further object of this invention is to provide in a ski structure a composition insert or lamination which is adapted to extend inwardly from one end of the ski and which extends from one side to the other, the lamination being adhesively secured to the adjacent surfaces of the ski.

20 A still further object of this invention is to provide in combination a ski body which may be made out of a single piece of material, such as wood or the like and to embed a reinforcing means in the form of a composition lamination within the body of the ski adjacent one or both ends thereof so as to reinforce the ski and prevent either longitudinal or transverse splitting of the ski body.

30 To the foregoing objects and to others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and illustrated in the accompanying drawing, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawing:

40 Figure 1 is a detail side elevation of a ski constructed according to an embodiment of this invention,

Figure 2 is an enlarged fragmentary longitudinal section of the tip or front end of the ski.

45 Figure 3 is an enlarged fragmentary longitudinal section of the rear end of the ski,

Figure 4 is an enlarged sectional view taken on the line 4—4 of Figure 2, and

50 Figure 5 is a fragmentary side elevation of the forward end of the ski prior to the bending of the tip.

Referring to the drawing the numeral 10 designates generally a ski body, which includes a central body portion 11, which is longitudinally bowed as at 13 so that the under surface of this

central portion 11 will normally be spaced from a horizontal line drawn from the rear portion 12 to the tip portion 14. The body portion 11 may be formed from a single piece of wood which may be steamed or otherwise bent so as to provide a central arch with the concave side thereof lowermost at substantially the center of the ski.

The body 11 tapers in the direction of the opposite ends thereof and at the rear portion 12 the ski is substantially enlarged, as at 15, so as to provide a relatively thick rear or trailing portion. The rear portion 12 is formed with a slot 16 extending inwardly, at a downward inclination from the rear end and terminating at a point rearwardly from the forward end of rear portion 12. That part of the rear portion 12 disposed over the upper side wall of the slot 16 is of greater thickness throughout than that part of rear portion 12 arranged below the lower side wall of the slot 16. The latter opens at the side edges and rear end of the ski-body. The slot 16 gradually decreases in width from its outer open end to its closed inner end. The slot 16 may be formed by either splitting the rear portion 12 transversely and then opening the slit portion so as to provide a space within which a reinforcing insert 17 is adapted to be positioned, or the slot may be formed by sawing. This insert 17 extends from one side of the ski to the other and is formed of a fibrous composition. The insert 17 is then provided with an adhesive on the upper and lower surfaces thereof and placed in the slot 16 and the rear portion 12 of the ski is then clamped together so as to tightly secure the reinforcing member 17 within the rear portion 12 of the ski. The adhesive used in securing the insert 17 is preferably a water proof adhesive and may be either a cold waterproof glue or a hot press glue.

The ski 10 at the tip end 14 is provided with a slot or opening 18, which extends inwardly from the terminal or front end of the ski 10 and terminates at a point slightly rearward of the forward end of the arched portion 13 and rearwardly of the upwardly curved portion 19. The slot 18 is of uniform width and opens at the side edges and at the forward end of the ski-body. That part of the ski-body arranged above the upper wall of the slot 18 gradually increasing in thickness from its transverse center towards each end thereof and such part is of greater thickness than that part of the ski-body arranged below the lower wall of slot 18. That part of the ski-body arranged below the lower wall of the slot 18 is substantially of uniform thick-

ness and of less thickness than the ski-body arranged above the slot 18. A fibrous insert 20 is placed within the slot 18 and this insert or reinforcing member 20 is tightly secured within the top portion 14 by adhesive 21 and 22 which engages the lower and upper surfaces of the insert 20 and also the adjacent faces of the tip 14 within the slot 18. The reinforcing insert 20 not only prevents longitudinal splitting of the tip 14 of the ski, but also prevents transverse splitting in addition to forming a means for maintaining the tip 14 of the ski in its upwardly curved position. The slot 18 may be formed by either splitting the tip 14 of the ski with a suitable splitting tool or this slot may be formed by sawing or otherwise forming the desired slot within the tip portion of the ski.

The reinforcing composition 20 is relatively rigid, but has a degree of resiliency and by gluing this reinforcing member 20 within the top portion of the ski, the ski will be formed with a laminated tip which will reinforce the ski at the point of greatest stress. The composition 20 is of such a construction that it will not readily split or tear, being formed of wood fibers which are formed into a sheet under high compression and this sheet is then treated in such a manner that it will not swell under moisture conditions.

In Figure 5 there is disclosed the initial step in the method of producing a ski with a reinforced tip. This ski is initially split at the forward or tip end either by a splitting tool or a saw so as to form the slot 18 and then the longitudinal arch may be formed by steaming in a press. The insert 20 is then placed in the slot 18 and the insert 20 preferably has positioned on the opposite faces thereof the adhesive 21 and 22. The tip end of the ski 10 is then placed in a press so as to bend the tip 14 on a curve reverse from the longitudinal arch and at the same time the bent and compressed tip is subjected to heat where hot press glue is used, so that the adhesive 21, 22 will firmly secure the insert 20 within the slot 18. This slot 18 preferably has at least one face thereof substantially parallel with a face of the ski 10, as shown in the drawing. The insert 20 in the tip end of the ski will thus not only hold the tip 14 in its upwardly bent form, but will also prevent both longitudinal and transverse splitting of the ski. By making the ski in accordance with this method it is not necessary to subject the ski to several steaming operations in order to form the several bends in the ski, as is at present the case.

Through the provision of the two inserts 17 and 20, the ski 10 is reinforced in such a manner that it will not split at the ends where the greatest stress occurs and in addition these inserts will not add any additional weight to the ski so that the ski may be properly balanced and also formed of a single piece of wood thereby providing a relative cheap ski structure, which at the same time is reinforced in such a manner that it will withstand the normal strains to which a ski is subjected.

What I claim is:

1. A ski comprising an elongated one-piece member, an upwardly arched tip integral with said elongated member and provided with an elongated rearwardly extending slot parallel with and inwardly of the upper and lower surfaces thereof, and a compressed substantially

rigid fibrous reinforcing lamination adhesively embedded in said slot.

2. A ski comprising an elongated one-piece body having upwardly curved opposite ends, and a compressed substantially rigid fibrous reinforcing lamination embedded in at least one end of the body and adhesively secured therein, said lamination extending from one side of the body to the other side and coating to maintain said one end in curved position while simultaneously holding the body against transverse and longitudinal splitting.

3. A ski comprising an elongated one-piece body having an upwardly curved forward end, said body having an elongated slot therein extending from the terminal end of said forward end and terminating within the forward portion of the longitudinal arch of the body, and compressed substantially rigid fibrous reinforcing lamination adhesively embedded in said slot and coating to hold said forward end in curved position while simultaneously holding said forward end against longitudinal or transverse splitting.

4. A ski comprising an elongated body formed of a single length of wood, said body including an arched portion merging into a curved tip portion, and a compressed substantially rigid fibrous reinforcing lamination respectively embedded in and throughout said tip portion and in a part of said arched portion, said lamination being flush with the side edges and the leading end of said body.

5. A ski comprising an elongated body formed of a single length of wood, said body including an arch-shaped portion and an upwardly curved forward terminal portion merging at its rear end into the forward end of said arch-shaped portion, said body being formed with a transverse slit between opposite faces thereof extending from the free end of said terminal portion to a point rearwardly of said end of said arch-shaped portion, a compressed relatively rigid fibrous reinforcing insert arranged within and completely filling said slit, and adhesive means for securing opposite faces of the insert throughout to the walls of the slit to thereby provide for reinforcing the said forward terminal portion and the forward portion of the arch-shaped portion.

6. A ski comprising an elongated body formed of a single length of material, said body having an upcurved leading part, an upcurved trailing part oppositely disposed with respect to the leading part and an arch-shaped part of greater length than and disposed between and merging into said other parts, a compressed fibrous reinforcing means common to said leading part and the forward portion of said arch-shaped part, said reinforcing means arranged within, secured to and disposed in transverse relation with respect to said leading part and said portion of said arch-shaped part, said means extending completely through said leading part, and a compressed fibrous reinforcing means arranged within, secured to, disposed transversely of, of less length than and arranged at a downward inclination from rear to front with respect to said trailing part, and adhesive means on opposite faces of each of said reinforcing means for securing them to said body, the said reinforcing means being flush with the ends and with spaced portions of the sides of said body.

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