

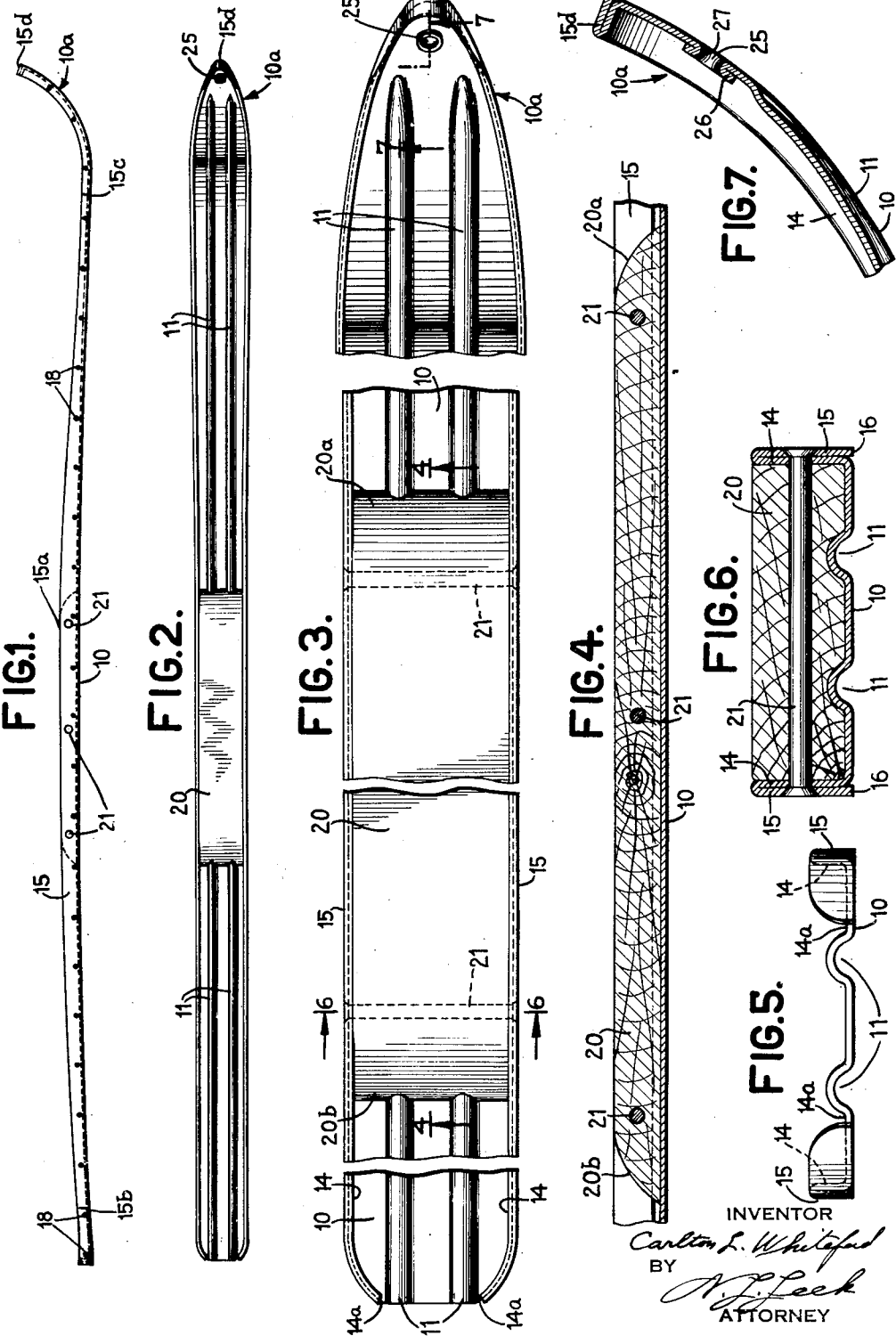
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SKI

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SKI

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3 Claims. (Cl. 280—11.13)

This invention relates to skis and has for an object to provide a durable, light weight metal ski.

Another object is to provide a ski of the above type which may be stamped or formed from sheet metal, such as "Dural" and which is provided with a sharp side skiing edge.

Another object is to provide a metal ski of the above type which is arranged and constructed to receive a standard foot binding.

Another object is to provide a metal ski having sufficient strength and elasticity to prevent the same from being distorted, cracked or broken in normal use and in which all sharp edges with which the skier might come in contact are eliminated.

Various other objects and advantages will be apparent as the nature of the invention is more fully disclosed.

Although the novel features which are believed to be characteristic of this invention will be more particularly pointed out in the claims appended hereto, the invention itself may be better understood by referring to the following description, taken in connection with the accompanying drawing, in which a specific embodiment thereof has been set forth for purposes of illustration.

In the drawing:

Fig. 1 is a side elevation of a ski embodying the present invention;

Fig. 2 is a top plan view thereof;

Fig. 3 is an enlarged broken top plan view of the ski;

Fig. 4 is a longitudinal section taken along the line 4—4 of Fig. 3, showing the wooden foot support;

Fig. 5 is a rear elevation of the ski;

Fig. 6 is a section taken on the line 6—6 of Fig. 3; and

Fig. 7 is a partial section taken on the line 7—7 of Fig. 3.

In the following description and in the claims certain specific terms are used for convenience in referring to various details of the invention. It is to be understood, however, that these terms are to be given as broad an interpretation as the state of the art will permit.

Referring to the drawing more in detail, the ski in accordance with the present invention is shown as made of sheet metal having a bottom or skiing surface 10 which is of the usual and standard shape. It will be noted that this bottom 10 is provided with a pair of longitudinally extending grooves or channels 11 which are sub-

stantially semi-circular in section and extend from the rear of the ski to a point near the front thereof, terminating short of the marginal edge of the ski so as not to interfere with the subsequent forming operation. The grooves 11 extend parallel to the axis of the ski and are used to provide the necessary amount of guidance in soft snow as is well known in the art. The bottom 10, for the greater part of its length, is bowed upwardly by an amount such that the ski is normally straightened out when the weight of the skier is applied thereto. The front end 10a of the ski is curved upwardly so as to ride over the snow.

The metal is bent upwardly along the sides of the bottom 10 to form an upstanding side flange 14 on both sides thereof which extends from the rear end of the ski along the sides and around the upturned front end. The flange may terminate short of the channels 11 to provide drainage openings 14a for discharge of snow or other materials from the rear end of the ski. The metal is also bent downwardly to form an outer downturned flange 15 in contact with the flange 14. A two-ply flange is thus provided which strengthens and stiffens the ski. The outer flange 15 terminates in a sharp, skiing edge 16, flush with the skiing surface 10. This edge 16 is provided in order to enable the ski to properly cut across tracks in soft snow or to properly cut a path through the crust of hard snow.

The side flanges above mentioned have their greatest height at a point 15a (Fig. 1) where the foot support is positioned, tapering downwardly to a point 15b near the rear end of the ski and to a point 15c near the front end thereof. The side flanges may increase in height from the point 15c to the extreme front end 15d. The flange thus provides the maximum rigidity in a longitudinal direction at the points required. The maximum bending moment occurs at the point where the foot supports are located and for this reason the side flanges are tapered from this point to the front and rear of the ski. At the point 15c, a maximum flexibility is required to enable the ski to conform generally to the changing contours of the snow. For this reason the height of the side flange is reduced at this point and increases around the front end of the ski in order to provide sufficient strength to prevent blows at the front of the ski from distorting the upward curve. The two thicknesses 14 and 15 of the side flanges are held in intimate contact by any suitable means. In the form shown, these flanges are held in contact by spaced spot welds

18 which are located at various points along said flanges. It is to be understood, however, that these flanges could be secured together by other means, such as rivets or continuous welding as may be desired.

The ski is provided with a foot support 20 which is preferably made of wood so as to receive the screws ordinarily used with the standard foot bindings. This foot support 20 is positioned between the two side flanges of the ski and is of a size and shape adapted to exactly fill the space between said side flanges so as to uniformly distribute the weight of the skier across the entire width and along a substantial portion of the length of the ski. The foot support is provided with front and back curved or sloped surfaces 20a and 20b, respectively, which have a sufficient slope to prevent accumulations of snow or other material adjacent the foot support. It may be secured in position by rivets 21 which may extend through the side flanges. It is to be understood, however, that other securing means may be used, such as screws or the like. The top surface of the foot support is preferably made flat and is arranged so that any standard type of foot binding may be attached thereto without varying the technique used in attaching such bindings to standard wooden skis.

The foot support may be treated with casein or other water proof material to water-proof the underside thereof before it is positioned in the ski. This prevents the material from rotting due to seepage of water thereunder.

The metal ski may be completely formed and heat treated before the foot support is inserted therein. The severe forming operation required for producing the side flanges necessitates that the forming operation take place with the metal in workable condition. After the metal has been completely formed, however, it may be heat treated in order to impart the desired toughness and springiness thereto. The desired springiness and other characteristics of a standard quality wooden ski can be obtained by varying the thickness of stock, the composition of the alloy, the design of the flange, and the heat treatment. The finished ski will in any event, after heat treatment, have a surface hardness approximating structural steel. The edge 16 is accordingly extremely resistant to wear and will retain its sharp characteristics indefinitely.

In order to provide for the hanging or towing of the skis, a hole 25 is formed at the front portion 10a of the bottom 10. This hole 25 may be punched out of the metal of the ski, which may be curled over to form a flange 26 and to provide a rounded edge 27.

It will be noted that in this ski the entire top edge of the side flange is rounded and all sharp edges which would form a hazard are eliminated. The front end is rounded to eliminate the dangerous front point which is needed on wooden skis.

It has been found that a ski of this type may be made considerably lighter than a standard wooden ski. A pair of such skis may, for example, weigh approximately six pounds as compared to 14 pounds for quality wooden skis. Furthermore, metal skis have no tendency to warp, consequently no special care is required in putting the skis away, nor is it necessary to subject the skis to waxing and dressing treatments as is customary in connection with wooden skis.

"Dural" has been specifically referred to but it is to be understood that the skis may be made of any light weight non-corroding alloy.

While a specific embodiment of the invention has been shown for purposes of illustration, it is to be understood that the invention is not to be limited thereto, but is only to be restricted in accordance with the following claims when interpreted in view of the prior art.

What is claimed is:

1. A metal ski formed of sheet metal having a bottom portion shaped to provide a skiing surface, said sheet metal being bent upwardly and then downwardly to form two-ply upstanding side flanges extending substantially entirely along the sides of said ski, the downturned flange being on the outside and terminating flush with the bottom of the ski to form a sharp longitudinal skiing edge.

2. A metal ski, comprising a substantially flat bottom portion shaped to provide a skiing surface, upstanding side flanges formed integrally therewith, said side flanges comprising two plies formed by bending the metal upwardly and then outwardly and downwardly, said flanges having a rounded upper surface, the outer flange terminating at the bottom in a sharp outer skiing edge flush with the skiing surface, said side flanges being widest at an intermediate portion of the ski corresponding to the normal foot position and tapering in width toward the front and rear of the ski to provide the necessary strength and springiness.

3. A metal ski formed of sheet metal having a bottom portion shaped to provide a skiing surface, said sheet metal being bent upwardly and then downwardly to form two-ply upstanding side flanges extending substantially entirely along the sides of said ski, the downturned flange being on the outside and terminating flush with the bottom of the ski to form a sharp longitudinal skiing edge and a foot support comprising a wooden block treated with water-proofing composition and positioned between said side flanges, said foot support having a cross section such as to substantially fill said ski between said flanges and to distribute the weight of the foot across the entire width of the ski and over a substantial portion of the length thereof, said wooden block having a substantially flat upper surface adapted to receive the foot bindings.

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