

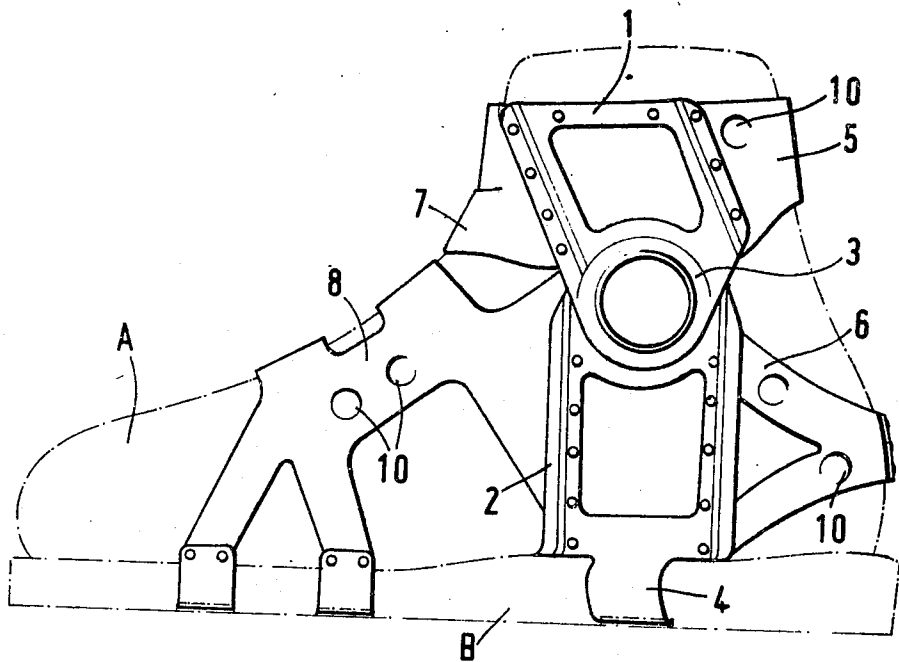
[54] **SKI BOOT**
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[51] Int. Cl. **A43b 00/00**
[58] Field of Search..... **36/2.5 R, 2.5 AL, 7.5**

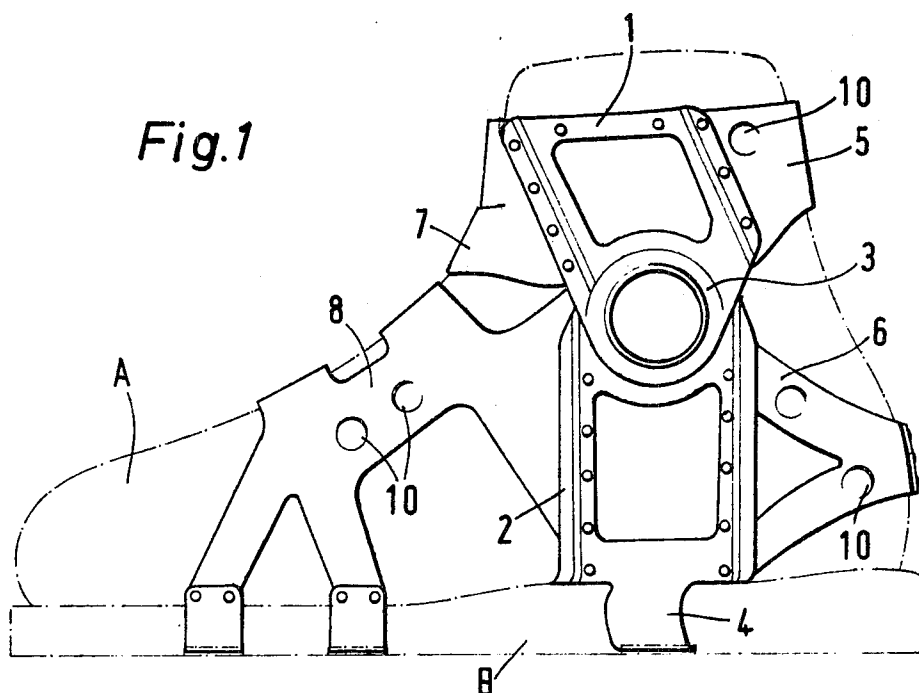
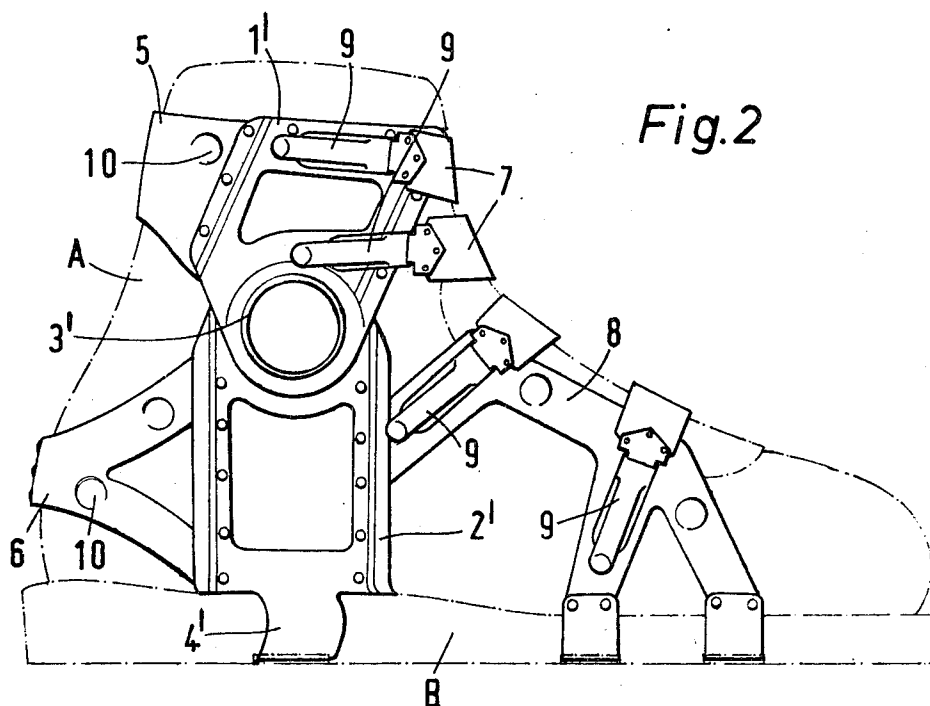
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[57] **ABSTRACT**
A ski boot provided with an external reinforcing structure which permits forward bending of the leg relative to the foot of the wearer, i.e., the normal movement carried out during skiing, said reinforcing structure being removable to permit the boot to be made of softer material than that normally used for ski boots so that the ski boot when used for walking without the reinforcing structure affords the same convenience to the wearer as a normal shoe for walking.

[56] **References Cited**
UNITED STATES PATENTS
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5 Claims, 4 Drawing Figures





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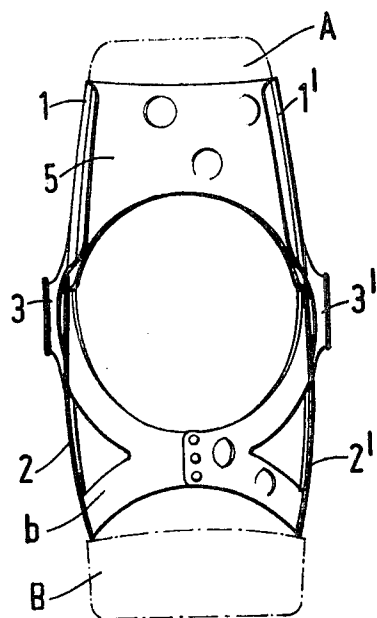


Fig. 3

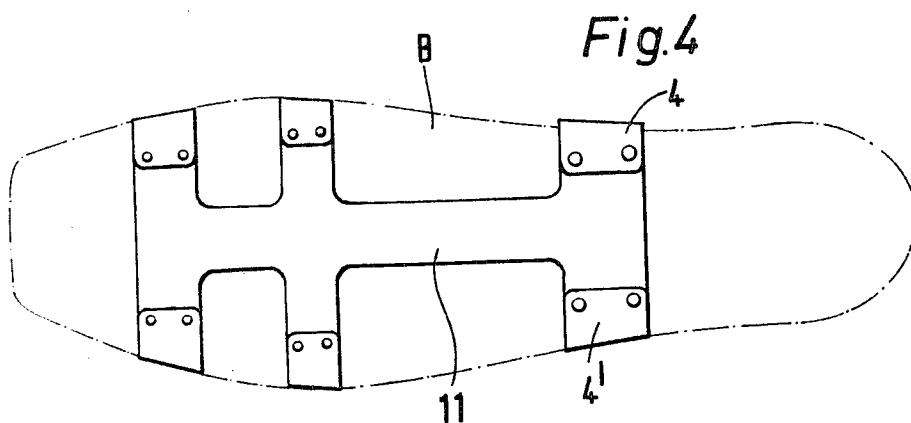


Fig. 4

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SKI BOOT

This invention relates to a ski boot provided with an external reinforcing structure which permits forward bending of the leg relative to the foot of the wearer, i.e., the normal movement carried out during skiing.

It is known that the conventional ski boots must possess sufficient rigidity and therefore be made of sufficiently hard material because of the need to render the boot rigid to transverse movements and the sole of the boot must be rigid as well. Thus these ski boots have the disadvantage of being too rigid to permit easy forward bending of the leg.

Many attempts have already been made to eliminate this disadvantage and to make the instep of the ski boot flexible in a forward direction, but up to date no satisfactory result has been obtained.

It is the object of the present invention to eliminate this disadvantage by providing a ski boot having an external reinforcing structure which can be removed to permit the ski boot to be used for walking in streets as with normal walking shoes.

In other words, the ski boot according to the invention is made of relatively soft but perfectly watertight and snowtight material to permit the foot to be moved easily in all directions, the ski boot being enclosed by a reinforcing structure which can be secured thereto when the wearer intends to go skiing and the reinforcing structure being articulated at the ankles to permit the wearer to bend the boot forwardly but prevent lateral movements.

The reinforcing structure itself consists of four metal elements connected in pairs by means of hinges located at the position of the ankles, each pair of elements forming a small frame extending from the top of the boot to the sole thereof and embracing the latter with its narrow ends connected with each other, the four elements forming the frames being kept in position by a plurality of straps of plastic material connected thereto, surrounding the boot and provided with hook means for tightly closing the boot and keeping the articulated elements in place.

Conveniently the front straps extend downwardly around the sole and are connected with each other and with the narrow ends of said frames by a metal strap extending in the longitudinal central portion of the sole so as to keep the latter rigid during skiing.

A preferred embodiment of the invention will now be described by way of example and with reference to the accompanying drawings, in which:

FIG. 1 is a side view of a ski boot according to the invention, provided with a reinforcing structure, as seen from the inner side;

FIG. 2 is a side view of the same ski boot from the outer side;

FIG. 3 is a rear view thereof, and

FIG. 4 is a plan view thereof as seen from below.

Referring to FIG. 1, the ski boot is formed of the usual uppers A and sole B and is made of a suitable soft material so that the boot is not rigid as the usual ski boots and when its reinforcing structure has been taken off it can be used as a

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normal shoe for walking.

The boot is provided with a reinforcing structure formed of four metal elements 1, 2 and 1', 2' connected together in two similar pairs by hinges 3, 3' so that the elements 1, 1' can rotate relative to the elements 2, 2'. The hinges 3 and 3' are located on the sides of the uppers in the exact position of the ankles. Each pair of the elements forms a small frame that runs from the top of the uppers A to the sole B, embracing the latter with its narrower ends 4 and 4' which are connected to each other.

The four elements 1, 2 and 1', 2' forming the two frames are kept in position by a plurality of plastic straps 5, 6, 7 and 8 secured thereto. The straps 5 and 6 embrace the rear portion of the uppers A while the straps 7 and 8 embrace the vamp on the instep of the foot. The straps 7 and 8 are provided with hooks 9 for tightly closing the boot and for keeping the articulated elements in place.

The front straps 8 extend downwardly around the sole B and are connected at the narrow ends of the frames by a metal strap 11 extending below the sole along the centerline thereof so as to make the sole rigid when using the skis.

For this purpose grooves are provided in the sole B to receive the straps 8 and 11 and the ends 4, 4' of the elements 2, 2' to ensure that the straps will remain in alignment with the outer surface of the sole.

Although only "straps" have been described in the present specification it is obvious that these "straps" may be connected to form branches or a network. Also the straps may be provided with weight-reducing holes 10 and the materials used may be different from what has been described and illustrated without departing from the scope of the invention.

I claim:

1. In a ski boot having an external reinforcing structure formed of four elements connected in pairs by means of hinges located at the ankles of the wearer and each pair of elements forms a frame extending from the top of the ski boot to the sole, embracing the latter with its narrow ends connected to each other, the improvement wherein the four elements forming the frame are kept in position by a plurality of straps connected thereto, surrounding the ski boot and provided with hook means for tightly closing the ski boot and keeping the articulated elements in place.

2. A ski boot as claimed in claim 1, wherein the four elements forming the frames are connected by a plurality of forward and rearward straps and the forward straps extend downwardly around the sole and are connected to each other and to the narrow ends of the frames by a strap for reinforcement of the sole, extending along a generally central longitudinal line of the sole.

3. A ski boot as claimed in claim 1, wherein the sole is provided with transverse and longitudinal grooves receiving the straps below the sole.

4. A ski boot as claimed in claim 1, wherein the straps are connected to form a network.

5. A ski boot as claimed in claim 1, wherein the straps are provided with weight-reducing holes.

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