Jan. 11, 1966 H. LUDWIG 3,228,122

SKI BOOT

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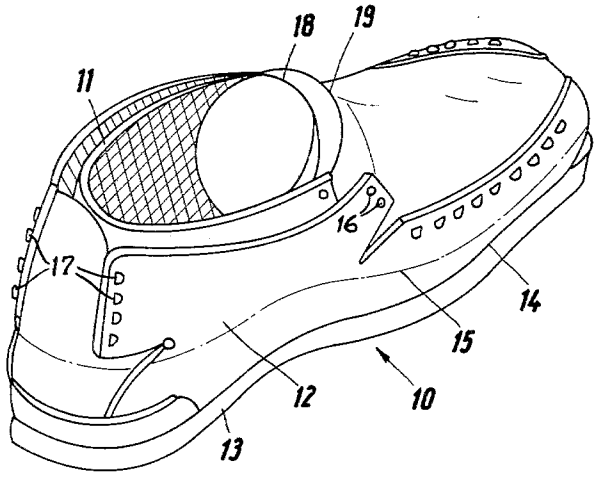
Fig. 1



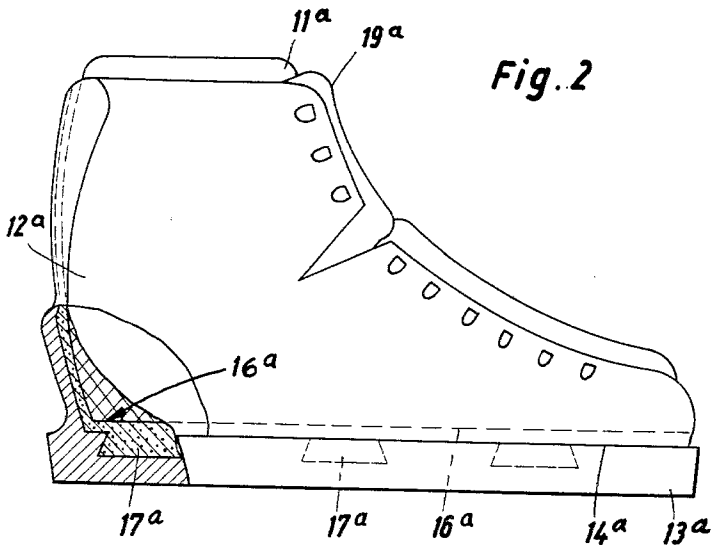


Fig. 2

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SKI BOOT

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This invention relates to a ski boot which comprises an outer boot which includes a sole and a boot upper, and an additional inner boot with a boot sole and a boot upper that has a preferably thinner sole.

Ski boots of the aforementioned type are already known. In such boots, the outer boot usually consists of robust and relatively stiff leather to which the sole, which generally comprises a plurality of layers, is secured by means of a double seam. The connection between the outer boot and the sole must be carried out particularly carefully since in a ski boot this connection is subjected to considerable mechanical strain, for example by the ski-binding from which a tensioning rope on the rear part of the boot passes over the edge of the sole. The manufacture of the entire sole is therefore complicated and involves considerable expenditure.

The inner boot may be connected in various ways with the outer boot. In a very frequently adopted form of realization, the inner boot is formed without a special sole and the inner boot upper is secured only by its lower edge to the outer boot upper or to the outsole together with the outer boot upper.

A further problem in the known ski boots employing an outer and an inner boot is the considerable influences of snow and especially of snow slush. When skiing, ski boots are always immersed to a certain extent in the snow, owing to which they get permeable after some time, especially when the snow is thawing, even if carefully treated with impregnating agents. Moisture will penetrate not only in the region of the uppers but above all in the region of the seams, for example, in the region of the connecting seam between the upper of the boot and the bottom sole.

It is the object of the present invention to eliminate the aforementioned disadvantages of the known ski boots. To achieve this object, the invention proposes to make the outer boot of one piece of vulcanized rubber and the inner boot of one piece of leather.

According to another solution of the present invention, the outer boot may be made of plastic, preferably by injection molding, while the inner boot may consist of leather.

With the inner boot consisting of leather, a ski boot constructed as proposed by the invention has the advantages of a conventional ski boot but avoids the disadvantages thereof in that the outer boot consists of vulvanized rubber or plastic. The outer boot is absolutely impermeable to moisture, also in the region of the junction between the boot upper and the bottom sole. A further advantage of the instant ski boot is that it can be manufactured much more easily than the known ski boots since it is possible to form the outer boot around the inner boot by injection molding, the inner boot being placed into a suitable die. Naturally, the inner and outer boots can be interconnected by vulcanizing. The ski boot proposed by the invention may be constructed in the same manner as the known ski boots, the only difference being that the outer boot is made of plastic or rubber and of unitary construction, as illustrated.

According to an advantageous feature of the invention, the inner boot may be glued into the outer boot. But the inner boot may also be connected to the outer boot by vulcanizing.

According to a further proposal of the invention, the inner and outer boots may be interconnected by their soles. But it is also possible that the inner and outer boots are interconnected only near their soles. To improve the durability of the connection between the inner and outer boots, the invention proposes that interlocking studs and recesses are provided in the surface of the soles facing each other.

Two embodiments of the invention will now be described by way of example and with reference to the accompanying drawing, in which:

FIG. 1 is a perspective view of a ski boot according to the invention, and

FIG. 2 is a side elevational view, partly in section, of another embodiment of the ski boot proposed by the invention.

FIG. 1 shows a ski boot according to the invention which comprises an outer boot **10** and an inner boot **11**. The outer boot **10** consists of vulcanized rubber or plastic preferably applied to the inner boot **11** by injection molding and comprises a boot upper **12** and a sole **13** of unitary construction. Since the boot upper **12** and the sole **13** expediently consist of rubber or plastic, no seam in the sense of the hitherto customary ski boots is formed along a junction **14** between the sole **13** and the boot upper **12** or at the point **14***a* as shown more clearly at the heel portion of FIG. 2. The upper part of the boot leg **12** may be laced both in front, through apertures **16**, and at the back, through similar apertures **17**. Since the inner boot is formed by soft leather, the part of the boot upper **12** which is located above the heel may pass around the inner boot upper **11** without forming a seam as illustrated in FIG. 2.

According to the invention, the inner boot **11** and the outer boot **10** may be connected in various ways. For example, the soles of the inner and outer boots may be glued together or connected by vulcanizing. But instead of that also the upper portions of the inner and outer boots may be connected with each other. A dash-and-dot line **15** in FIG. 1 indicates that the upper portions of the inner and outer boots are interconnected, for example by gluing, vulcanizing or injection molding, in a zone adjacent the sole **13**.

A further advantageous possibility of connecting the inner and outer boots is shown in FIG. 2. In this embodiment the inner boot **11***a* has a sole **16***a* provided with transversely extending elongated studs **17***a* of dovetailed cross section. For example, these studs **17***a* may be strips of leather or the like, which have been attached by gluing but they may also be formed directly out of the sole **16***a* of the inner boot **11***a*.

The outsole **13***a*, which in the embodiment shown in FIG. 2 consists of plastic, is attached to the sole **16***a* of the inner boot **11***a* by injection molding so that the plastics material encloses the studs **17***a* and provides a secure undetachable connection between the inner boot **11***a* and the outer boot **12***a*. The studs **17***a* may also have any other convenient cross section.

In the front part of the ski boot, a tongue **18** (FIG. 1) is provided on the inner boot **11** and a similar tongue **19** is arranged on the outer boot **10** and may consist either of leather, rubber or plastic, the tongue on the outer boot **12***a* of FIG. 2 being designated by the reference character **19***a*.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description and all changes which come within the meaning and range

of equivalency of the claims are therefore intended to be embraced therein.

I claim:

1. A moisture-proof ski boot comprising a moisture impermeable outer boot having an integral sole and a boot upper and a one-piece soft boot positioned within the outer boot and comprising a boot upper and sole, a portion of the outside surface of said inner boot being permanently attached to the interior surface of said outer boot, the permanent attachment between the inner boot and outer boot being located between the sole of the inner boot and the sole of the outer boot.

2. A moisture-proof boot as in claim 1 wherein the permanent attachment between the outer and inner boots is effected by interlocking studs and recesses formed on sole portions of the inner boot and outer boot.

3. A moisture-proof ski boot as set forth in claim 2 wherein the outer boot is formed of a plastic material

having recesses in the inner surface of the sole portion within which studs from the sole portion of the inner boot are received.

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