Sept. 20, 1966 R. KLIMA 3,273,263

SHOE, IN PARTICULAR, SKI-BOOT

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FIG. 1.

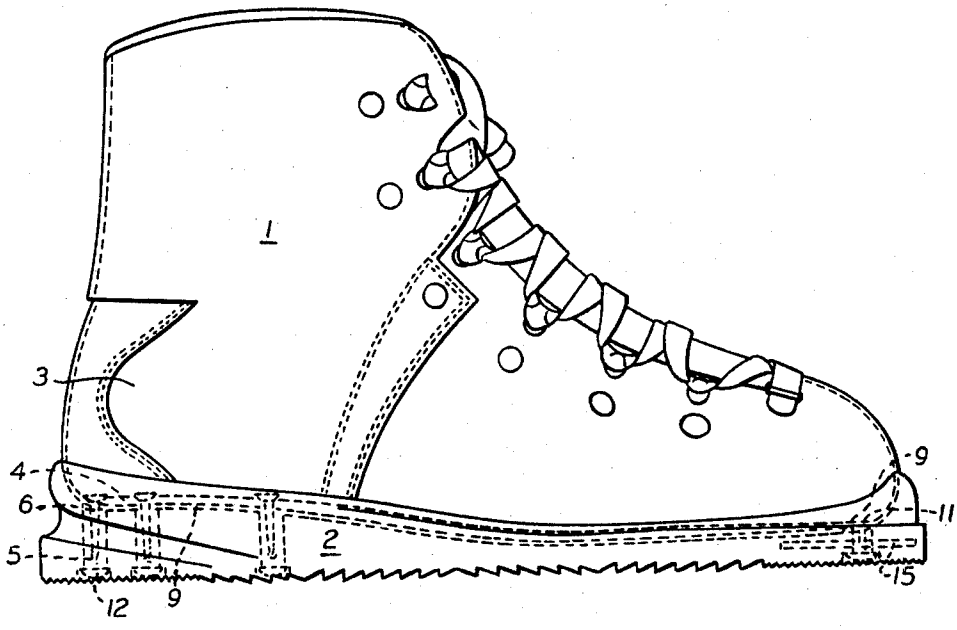


FIG. 3a.

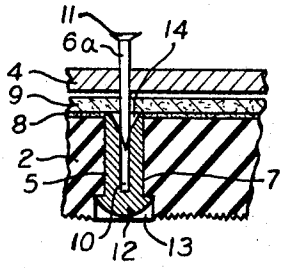
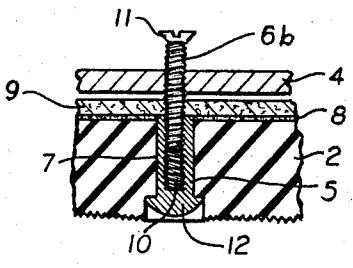


FIG. 3b.



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FIG. 2a.

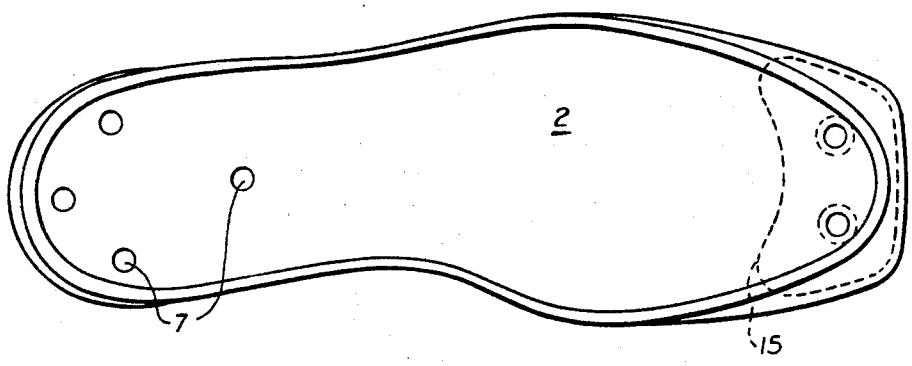


FIG. 2b.

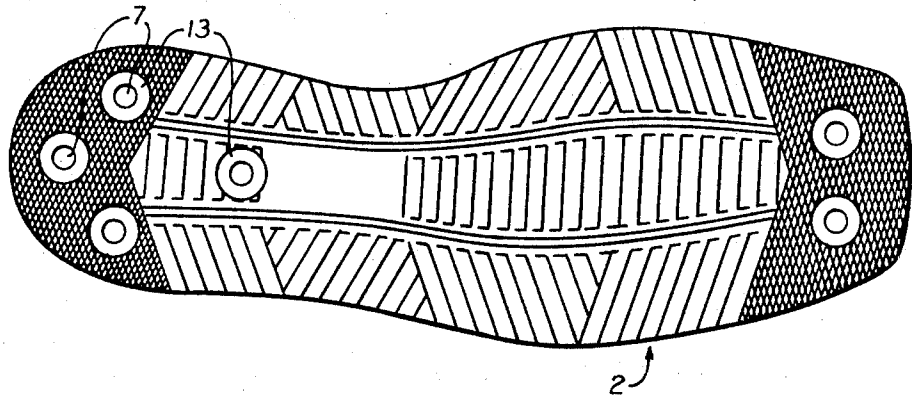
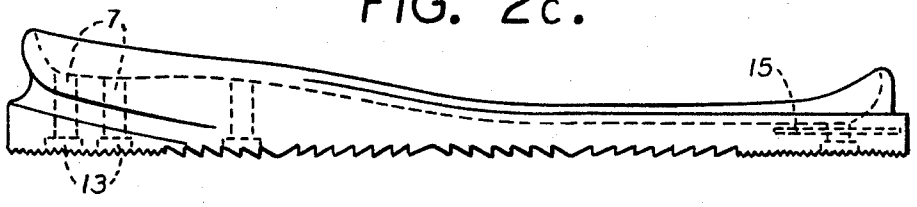


FIG. 2c.



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United States Patent Office 3,273,263 Patented Sept. 20, 1966

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SHOE, IN PARTICULAR, SKI-BOOT

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Filed Nov. 13, 1964, Ser. No. 410,944
Claims priority, application Austria, Nov. 15, 1963, A 9,148/63
17 Claims. (Cl. 36—2.5)

The present invention relates to a shoe, in particular, to a ski-boot, which has an upper part and a sole, whereby the upper part comprises a leg portion and an inner sole in a wedged-up formation and the sole consists of homogeneous, flexible material. As sole material of this type is to be considered synthetic material and rubber.

In known shoes or ski-boots of this type, the sole is connected with the upper part by vulcanization of the sole to the upper part. In particular, due to the difference of the material of the sole and of the upper part, the resistance of this connection, in particular, during jolt-like, successive stresses, which follow within short time intervals, is in many cases insufficient. It is also known to secure ready made soles consisting of homogeneous materials to sewn upper parts by means of glueing and nailing with notched nails or wood screws. This type of securing is, however, not applicable in case of upper parts in a wedged-up arrangement. Furthermore, it is known to produce shoes such, that the sole and the loose upper leather are provided with suitable holes and are connected together by screws with nuts, which are inserted into the holes, whereby under circumstances a metal part is inserted also between the upper leather and the sole, in order to increase the form stability of the shoe. Shoes of this type are, however, not in the position to comply with only slight requirements for quality and are in addition rather difficult to produce.

It is, therefore, one object of the present invention to provide a shoe or ski-boot, which avoids to a great extent the drawbacks of the known structures.

It is another object of the present invention to provide a shoe, and in particular a ski-boot, wherein the sole and the upper part are connected by means of an adhesion connection and by means of securing elements consisting of two parts, whereby the latter comprise a sleeve, which is inserted always into a recess provided in the sole, and a pin-like formed part which is inserted into the sleeve, and which has a head disposed above the inner sole and which furthermore is fed through the inner sole and the wedged-up fold of the leg portion with at least a part of the two-part securing elements.

It is another object of the present invention to provide a shoe, and in particular a ski-boot, wherein the adhesion connection comprises a connection by means of glueing or vulcanization of a ready made sole to the upper part or by pressing the sole material, which is in its plastic state, to the leg portion. In the latter case the pressing is also to be understood the securing of the material by means of injection moulding presses or of extrusion presses. The pin-like formed part of the two-part securing elements should have a nail- or screw-shaped configuration and should be inserted by pressure locking or by locking through the shape in the sleeve formed as a second part of the securing elements.

With these and other objects in view, which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawings, in which:

FIGURE 1 is a side elevation of a ski-boot designed in accordance with the present invention;

FIG. 2*a* is a top plan view of a sole of the shoe shown in FIG. 1;

FIG. 2*b* is a bottom plan view of a sole of the shoe shown in FIG. 1;

FIG. 2*c* is a side elevation of the sole shown in FIG. 1;

FIGS. 3*a* and 3*b* are sections through the sole indicating the two-part securing elements and disclosing two embodiments thereof.

Referring now to the drawings, and in particular to FIGS. 1, 2*a*, 2*b* and 2*c*, the ski-boot comprises an upper part **1** and a sole **2**.

The upper part **1** comprises a leg portion **3** and an inner sole **4** and is wedged-up in a "MACKAY-TEX" manner or in a glueing manner. The sole **2** consists of homogeneous, flexible material, as for instance, rubber and synthetic material, respectively. In case of the use of ready made soles, the latter are at first connected with the upper part **1** by means of glueing or vulcanization, to form an adhesion layer **8** (FIG. 3).

Thereafter, the sole **2** and the upper part **1** are connected by two-part securing elements which comprise a sleeve **5** and a pin-like part, which can be a notched pin **6***a*, as shown in FIG. 3*a*, or a screw-like pin or screw bolt **6***b*, as shown in FIG. 3*b*. For this purpose, at first the sleeves **5** are inserted in bores **7** provided in the sole **2** and thereafter, the pin-like parts **6***a* or **6***b*, which are equipped with a head **11**, are pressed through an inner sole **4** and a wedge-fold **9** of the leg portion **3** and finally into bores **10** of the sleeves **5**. The pin-like parts are formed advantageously as notched nails **6***a*, which are driven into the bores **10**, whereby even with smooth bores **10** an extremely rigid connection is brought about by the particular shape, as well as by a pressure connection (FIG. 3*a*). If it is possible to keep the tolerances of the bores **10** and of the diameter of the pin low, with good results also smooth pins can be used. Likewise, the pin-like part can be formed also as a counter-sunk head screw **6***b* and the sleeve bore can be equipped with a corresponding inner thread (FIG. 3*b*). The transmission to the securing elements of the forces exerted upon the sole **2** and the upper part **1**, respectively, takes place for an appreciable part by the heads **11** of the pin-like parts **6***a* and **6***b* disposed above the inner sole **4** and by means of widened portions **12** provided on the outer side of the sleeve **5**. These widened portions **12** are formed advantageously as lens-shaped the heads **11** of the pin-like parts **6***a* and **6***b* disposed above sole with cup-shaped widened portions **13**. The depth of these widened portions is chosen such, that the bottom side of the lens-shaped head widened portions **12** is disposed above the bottom plane of the sole **2**. In order to reduce the possibility of escape, even after wear of the sole profile, if already the underside of the widened portions **12** projects slightly out of the sole profile, the surface of the lens-shaped head widened portions **12** is suitably rippled. The shape of the widened portions is not bound to the shape of the lens-shaped head; the widened portions can, for instance, also be formed as annular flanges, as wedge-shaped, cube-shaped or screw-shaped projections or the like. For the simplification of the insertion of the pin-like parts **6***a* or **6***b* into the bore **10** of the sleeves **5**, the bore **10** has suitably at the end opposite the inner sole **4** a funnel-shaped widening **14**.

A sheet of soft leather is inserted into the shoe above the inner sole **4**, in order to cover up the heads **11**.

In addition to the glueing or vulcanization of a ready made sole, the adherence of the sole **2** to the upper part **1** can be obtained also such, that the sole material is applied in its plastic state to the upper part **1** by pressing to the under side of the upper part **1**. The language "pressing" is to be construed in its most general sense and should, for instance, also include any pressing by

any suitable type of presses. In order to connect the sole 2 by pressing the sole material in its plastic state to the upper part 1 of the ski-boot, the upper part 1 of the shoe is inserted into a sole press mold.

In order to increase the bending strength of the front point of the sole, if necessary, a metal insert 15 can be embedded into the sole at its front point. For securing the reception of the forces exerted upon the front point and, thereby, to the metal insert 15 by means of the two-part securing elements, the sleeves 5 of the securing elements are fed through the metal plate 15.

FIG. 2*b* discloses a ready made sole for a ski-boot designed in accordance with the present invention. This ready made sole has for the reception of the securing elements bores 7 which have on the side of the running face of the sole widened portions 13. A metal plate 15 is embedded at the point of the sole 2.

While I have disclosed several embodiments of the present invention, it is to be understood that these embodiments are given by example only and not in a limiting sense, the scope of the present invention being determined by the objects and the claims.

I claim:

1. A shoe, in particular a ski-boot, comprising
an upper part and
a sole,
said upper part comprising a leg portion having a wedged-up fold and an inner sole in form of a wedged-up structure,
said sole consisting of homogenous flexible material, an adhesion connection and securing elemeans comprising two parts for connection of said sole with said upper part,
said two-part securing elements comprising a sleeve, and a pin-shaped part received by said sleeve and having a head portion disposed above said inner sole, as well as extending through said inner sole and said wedged-up fold, and
said sole having bores receiving said sleeves.

2. The shoe, as set forth in claim 1, wherein
said sole is a ready made sole, and
said adhesion connection is a glue connection.

3. The shoe, as set forth in claim 1, wherein
said sole is a ready made sole, and
said adhesion connection is a vulcanization connection.

4. The shoe, as set forth in claim 1, wherein
said sole comprises material pressed in its plastic state upon said upper part, and
said adhesion connection is formed by adhesion between said sole material and said upper part.

5. The shoe, as set forth in claim 1, wherein said sleeve has an opening smaller than said pin-shaped part, and wherein
said pin-shaped part of said two-part securing elements is inserted into said opening in said sleeve by pressure locking.

6. The shoe, as set forth in claim 1, wherein said sleeve has an opening smaller than said pin-shaped part, and wherein
said pin-shaped part of said two-part securing elements is inserted into said opening in said sleeve by pressure locking and wherein said pin-shaped part is of a configuration complementary to said bores in said sleeves.

7. The shoe, as set forth in claim 1, wherein
said pin-shaped part of said two-part securing elements is a screw-bolt.

8. The shoe, as set forth in claim 1, wherein
said pin-shaped part of said two-part securing elements is a nail.

9. The shoe, as set forth in claim 1, wherein
said pin-shaped part of said two-part securing elements is a nail having a notched shank.

10. The shoe, as set forth in claim 1, wherein
said sleeve of said two-part securing elements has a widened portion at its end remote from said inner sole.

11. The shoe, as set forth in claim 10, wherein
said widened portion of said sleeve forms a lens-shaped head.

12. The shoe, as set forth in claim 11, wherein
said sole has a recess at its bottom face, and
said recess receiving said lens-shaped head.

13. The shoe, as set forth in claim 11, wherein
the surface of said widened portions of said sleeve is rippled.

14. The shoe, as set forth in claim 1, wherein
said sleeve has an axial bore having a funnel-shaped widened portion at its end adjacent said inner sole.

15. The shoe, as set forth in claim 1, which includes a metal plate having openings therein and embedded in the front point of said sole, and
said openings receive said two-part securing elements.

16. A method of manufacturing a shoe, particularly a ski-boot, comprising the steps of providing an upper part, an insole and a ready made sole having recesses therein and a metal plate embedded in the front portion of said ready made sole,
glueing a ready made sole to an upper part of said shoe,
inserting sleeves into said recesses of said sole until the heads of said sleeves are spaced from the outer surface of said sole,
inserting of nail-like pins through said inner sole through a fold of said upper part and pressure locking the shank of said pins in said sleeves received in bores of said soles, and
inserting some of said sleeves through bores in said metal plate disposed in the front portion of said sole, in order to rigidly secure said upper part to said sole.

17. A ready made sole for a shoe, as set forth in claim 1, which includes a metal plate embedded in the front point of the sole,
which metal plate has openings therein, and
said sleeve is received in said opening of said metal plate.

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