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METHOD OF MAKING RIGID ARTICLES OF FOOTWEAR

Filed April 10, 1969

2 Sheets-Sheet 1

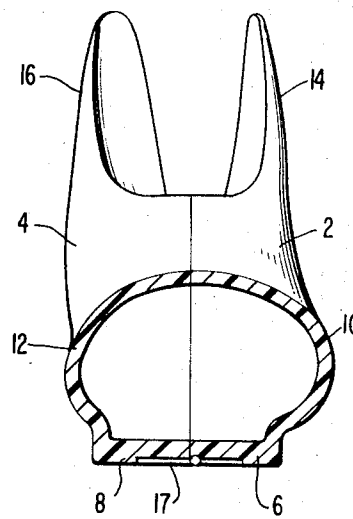
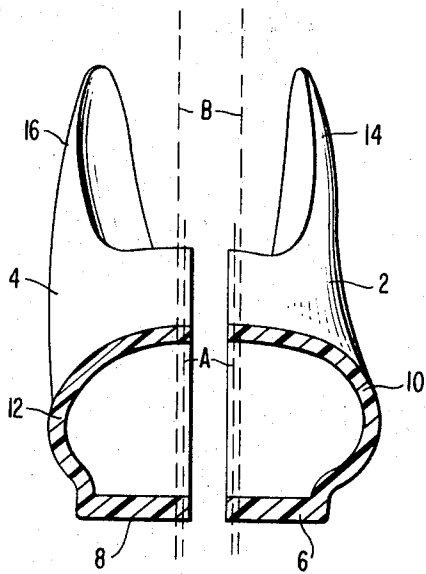
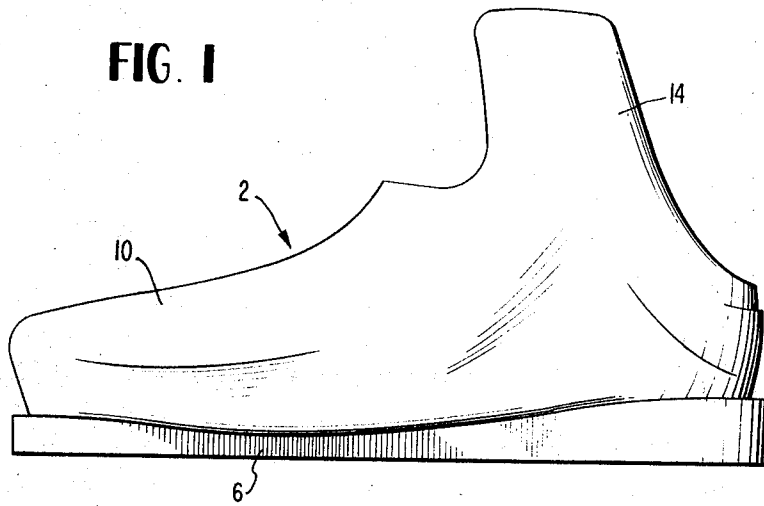


FIG. 2

FIG. 3

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FIG. 4

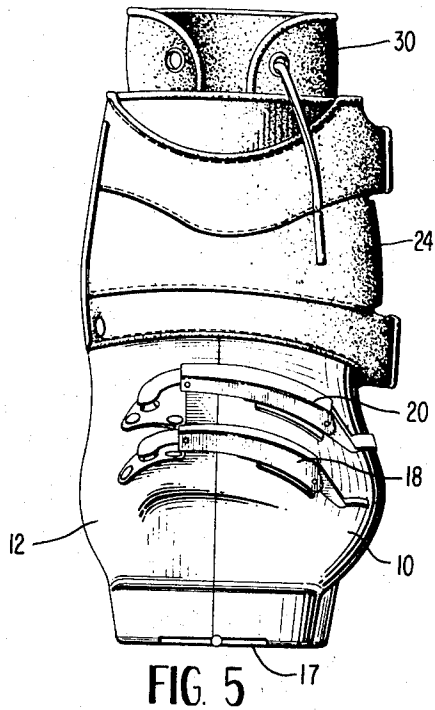
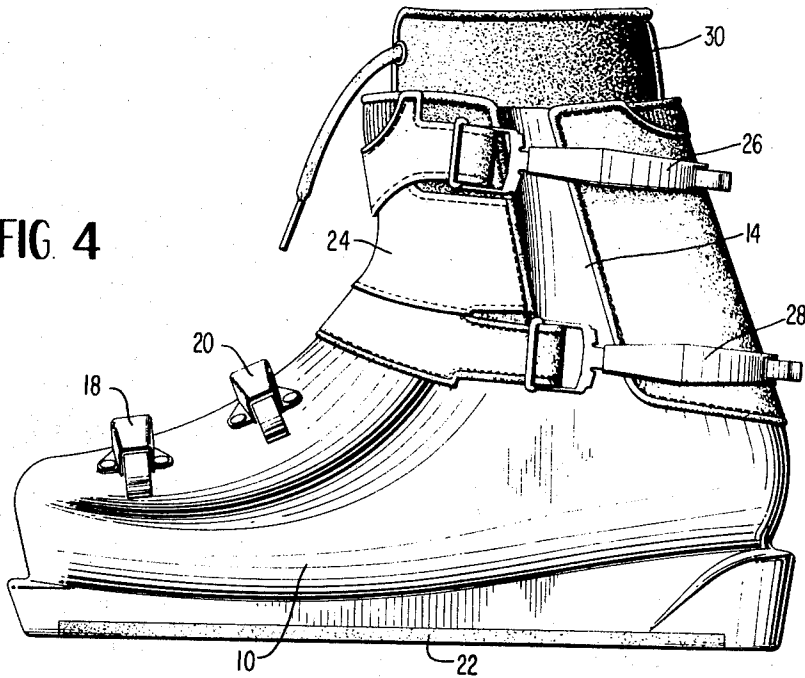


FIG. 5

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**METHOD OF MAKING RIGID ARTICLES
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2 Claims

ABSTRACT OF THE DISCLOSURE

Rigid articles of footwear made from complementary left and right half shells are given different overall widths by removing different amounts of material from the mating surfaces of the shells, and then pivotally interconnecting the shells.

BACKGROUND

In certain types of footwear, particularly ski boots, it is desirable to have a permanently rigid outer shell which includes a pair of pivotally interconnected half shells which adjoin each other at mating portions which lie along a longitudinal vertical plane. This outer shell may, in itself, constitute the article of footwear; however, it preferably is used to enclose a removable inner boot which is formed of flexible sheet material such as leather.

It is important, particularly in the construction of ski boots, that the shell have a proper width so it is comfortable but laterally confines the foot and a lower portion of the skier's leg immediately above his ankle joint. According to this invention, rigid outer shells may be mass produced from a single mold or pair of molds and provided with differing widths which will properly accommodate the wearer's feet.

SUMMARY

Rigid articles of footwear are made by forming complementary left and right half shells which are adapted to have their mating portions lying in a longitudinal vertical plane. After initial formation of a half shell, shell material is removed from the surface which mates with the complementary half shell in order to provide a complete shell having the desired overall width. Shells of different widths are produced from shell halves which are made in the same molds by removing differing amounts of shell material from the mating surface or surfaces.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevation of a rigid boot shell constructed according to the invention;

FIG. 2 is a transverse sectional view showing a pair of mating half shells used in constructing an individual boot;

FIG. 3 is a transverse sectional view of two interconnected boot shell halves; and

FIGS. 4 and 5 respectively show side and front elevations of a complete boot which is made according to this invention.

**DESCRIPTION OF THE PREFERRED
EMBODIMENT**

The manufacture of rigid shells for footwear requires a separate set of molds or dies for fabricating the boot shells of a particular length. This invention involves the

manufacture of boot shells having differing widths by using shell halves which are made of a particular length. Briefly, this method involves first manufacturing the rigid half shells, preferably by forming a plastic composition such as glass-reinforced polyester resin in suitable molds. Then, in order to establish the final width of the shell, shell material is removed from the mating portion of one or both of the mating half shells. This permits the manufacture of boots having differing widths from the half shells made in a same mold or pair of molds.

FIGS. 1 and 2 of the drawings show the initial shell construction as it appears after a conventional molding operation. Each boot is formed of a left shell half 2 and a complementary right shell half 4, each of which has a sole portion 6, 8, a lower foot-enclosing portion 10, 12, and upstanding side portions 14, 16 which will extend above the wearer's ankle. The illustrated shell halves are used for making a boot for the left foot, but it will be understood that obverse shell halves will be used for a boot for the right foot. Preferably each shell half is made in an individual mold, so that a set of four separate molds must be used in forming the shell halves for a pair of boots.

According to this invention, only one set of molds is used to make boot shells which have a same length but different widths. This is possible since differing widths are established by removing different amounts of material from one or both mating surfaces of the complementary right and left half shells of a particular length. For example, referring to FIG. 2, a wide boot may be made by uniting a pair of complementary half shells without removing any material. A boot of medium width may be formed by removing material to the depth indicated by the planes A and, a narrow boot may be made by removing material to the planes B.

After one or both half shells are sawed, milled, or otherwise operated upon to remove material from the mating portions, they are connected together, preferably by the hinge 17 which is shown in FIG. 3.

The boot shell may then be completed by attaching the various appurtenances which are shown in FIGS. 4 and 5. These include clamp means 18 and 20 which will hold the shell in a closed position, a unitary sole piece 22 which extends across the entire sole portion and is flexible and impervious to moisture, and a cuff member 24 which is held around an upper portion of the boot shell by clamping devices 26 and 28. These drawings also show an upper portion 30 of a removable inner boot which is located within the shell.

From the foregoing description, it will be appreciated that this invention provides a convenient and uncomplicated method of forming rigid boot shells of different widths from a pair of complementary shell halves produced by a single mold or set of molds.

What is claimed is:

1. The method of making articles of footwear wherein each article is formed by a pair of complementary left and right half shells which have their mating portions lying generally in a longitudinal vertical plane, comprising the steps of making a plurality of identical left half shells and a plurality of identical right half shells, removing shell material at the mating portion of a first of the half shells and connecting it to a complementary half shell to provide an article of footwear of a first width, and removing from the mating portion of a third half shell a greater amount of shell material than was removed

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from the first half shell, and connecting the third half shell to a complementary fourth half shell to provide an article of footwear which is narrower than the article formed from the first and second half shells.

2. The method of claim 1 including the step of removing the material from the mating portions of the second and fourth half shells.

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PATRICK D. LAWSON, Primary Examiner