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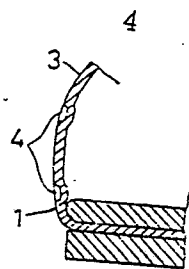
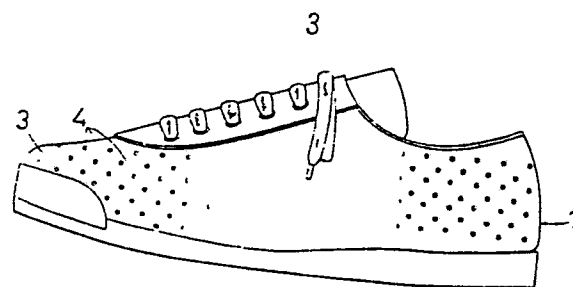
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54 **SHOE.**

57 A shoe (1) the upper (3) of which includes on its inner or outer surface vertically extending groove-like recesses (2) or dot-like recesses (4), arrayed in an appropriate manner. This feature improves the flexibility of the upper (3) and prevents the stretching of the upper. As a result, the shoe fits a foot well and enhances movement when worn, owing to the light feeling thereof. The shoe alleviates fatigue and is excellent in durability.

**EP 0 016 232 A1**

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## Specification

### Shoe

#### Technical Field

This invention relates to improved shoes made of leather or synthetic leather, said shoes having insteps formed either with vertical grooves or with dimples so that the insteps may easily bend and be prevented from unwanted expansion and so that the shoes may fit well to the feet and have a greater durability.

#### Technical Background

Unlike cotton canvas of which the insteps of canvas shoes are made, natural or synthetic flat leather of which the insteps of conventional leather shoes are made cannot be vulcanized and, consequently, is difficult to be fitted to a shoemaker's last. As a consequence, the insteps of conventional leather shoes bend in a random manner in use. Because bulging portions, sunken portions and/or wrinkles, are liable to be left on the surfaces of the insteps, the conventional leather shoes do not fit to the feet so well.

Another drawback of the conventional leather shoes

is that, because the side portions of the insteps hardly follow the bending of the feet, they are not comfortable to wear but are apt to fatigue the feet and the insteps are apt to be damaged with the fatigue of the material after a short period of use.

Because they are made of natural or synthetic leather not particularly processed for flexibility, their insteps bend and stretch in a rather unnatural manner in use. Thus, the unwanted expansion of leather with the prolonged use makes the conventional leather shoes ill-fitting and deteriorates their performance. Their insteps bend in a random manner in use, forming wrinkles on the surfaces of the insteps and making the conventional leather shoes shabby and susceptible to damage. An object of the present invention is to provide shoes which obviate the above-mentioned shortcomings and are well-fitting to the feet, comfortable to wear, and highly durable.

#### Disclosure of the Invention

The present invention provides improved shoes having the insteps formed either with vertical grooves or with dimples in a suitable arrangement so that the insteps may easily bend and be prevented from unwanted expansion and so that the shoes may be well-fitting

to the feet, comfortable to wear, highly durable, and highly efficient in sports.

#### Brief Explanation of the Drawings

Figs. 1 and 2 are a schematic view and a sectional view, respectively, of a shoe according to a preferred embodiment of the present invention. Figs. 3 and 4 are a schematic view and a sectional view, respectively, of a shoe according to another embodiment of the present invention.

#### Preferred Embodiment for Working the Invention

In order to make a detailed explanation of the present invention, reference will be made to the accompanying drawings.

Referring to Figs. 1 and 2, the numeral 1 designates a shoe, and the numeral 2 designates depressions provided in the side portion of an instep 3. The depressions 2 may be provided either on the vamp only or on the whole side portion of the instep 3.

The depressions 2 are formed by pressing. Although they are in the form of vertical grooves in Fig. 1, they may be in the form of dimples or a combination of vertical grooves and dimples.

Although the shoe 1 shown in the Figure is spiked, the present invention is not limited to spiked shoes.

Because of the depressions 2 provided in the form of vertical grooves on the instep 3, the shoe according to the first embodiment easily bends. Although it has so far been common that the bending of shoes causes the fatigue of the material and thereby causes damage of the shoes after a short period of use, such a disadvantage is eliminated by the present invention. The shoe according to the first embodiment smoothly bends, gives no sense of fatigue to the foot even after use for a long time, fits better to the foot, ensures high efficiency in sports, and feels lighter to wear.

Referring to Figs. 3 and 4, the shoe 1 is formed with a plurality of dimples 4 on the instep 3 in a suitable arrangement. In order to make the shoe 1 highly efficient in sports and prevent it from unwanted expansion, it is preferable that the shoe 1 is formed with dimples 4 in a shifted arrangement. Although in this embodiment the dimples 4 are provided on almost the whole surface of the instep 3, they may be provided only at parts which will be subjected to especially severe bending.

The dimples 4 are formed by dieing with a hot die before the stitching work. They may also be provided on the inside of the instep 3.

Because of the dimples 4 provided on the instep 3, the shoe according to the second embodiment fits better to the last during shoemaking. During use, the instep 3 bends along the rows of dimples and is prevented from being indecently bulged or sunken. Bending is controlled to a desired degree, and the instep 3 fits better to the foot. As a consequence, the shoe according to the second embodiment feels lighter to wear, and gives no sense of fatigue to the foot even after use for a long time. Indecent wrinkles are not left on the surface of the instep. Since the dimples harden with hot dieing, the instep 3 is prevented from becoming baggy. This increases the durability of the shoes and eliminates the necessity of providing a lining. This helps to decrease the manufacturing costs and makes the shoes lighter.

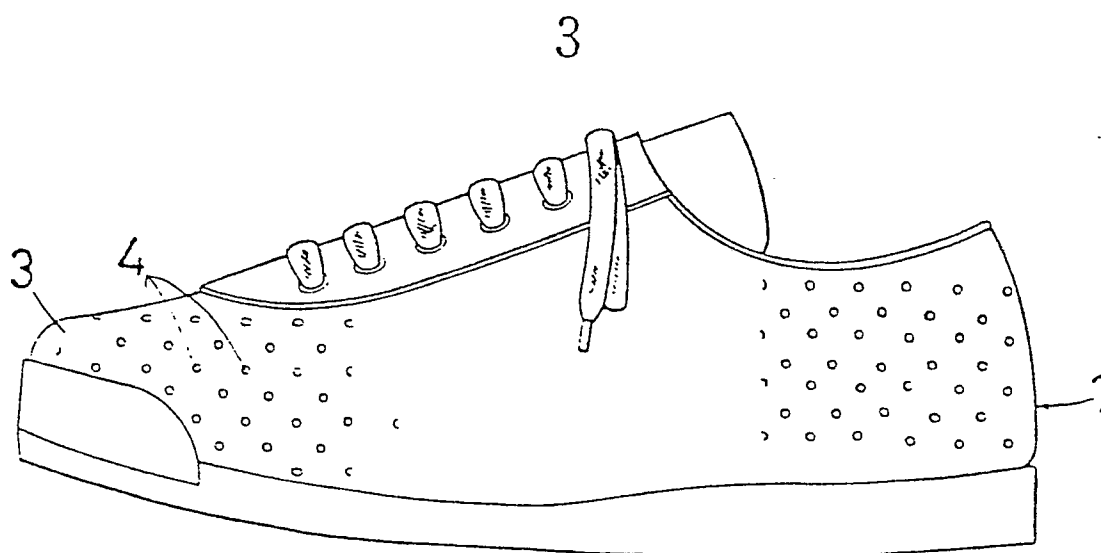
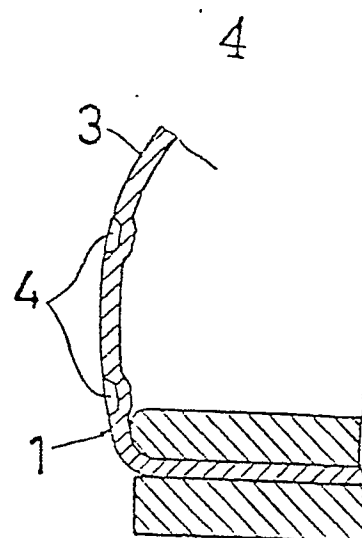
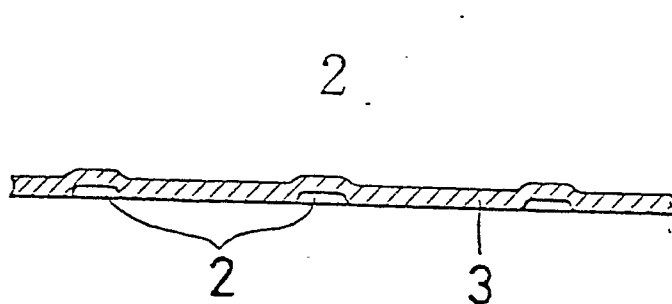
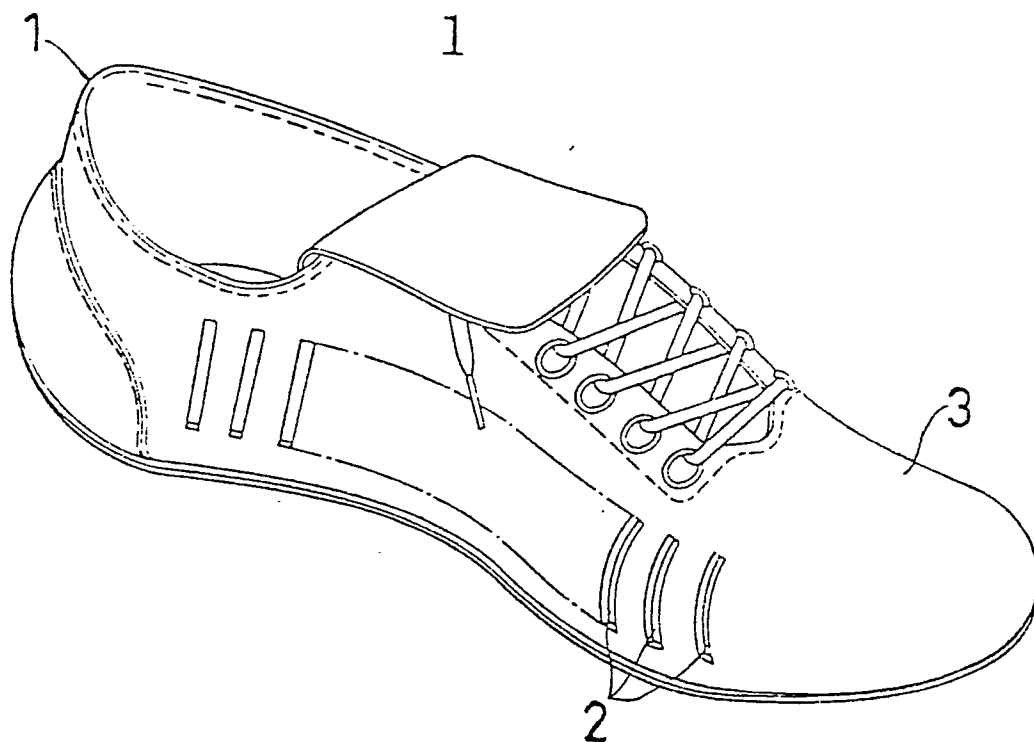
#### Possibility of Industrial Utilization

This invention can be applied not only to ordinary shoes but also to sports shoes or any other kinds of shoes.

## Claims

1. A shoe characterized in that a plurality of indentations are formed on the instep in a suitable arrangement.
2. The shoe as claimed in claim 1 wherein said indentations are in the form of vertical grooves.
3. The shoe as claimed in claim 1 wherein said indentations are in the form of dimples.
4. The shoe as claimed in claim 3 wherein said dimples are provided on the inside of the instep.
5. The shoe as claimed in claim 1 wherein said indentations are a combination of those in the form of vertical grooves and those in the form of dimples.





**I. CLASSIFICATION OF SUBJECT MATTER** (if several classification symbols apply, indicate all) \*

According to International Patent Classification (IPC) or to both National Classification and IPC

A43B 23/02, A43B 23/07

**II. FIELDS SEARCHED**

Minimum Documentation Searched \*

Classification System

Classification Symbols

I. P. C.

A43B 23/02 ~ 23/07

Documentation Searched other than Minimum Documentation  
to the extent that such documents are included in the Fields Searched \*

Jitsuyo Shinan Koho 1913 ~ 1978

Kokai Jitsuyo Shinan Koho 1971 ~ 1978

**III. DOCUMENTS CONSIDERED TO BE RELEVANT** \*\*

Category *	Citation of Document, ** with indication, where appropriate, of the relevant passages **	Relevant to Claim No. 13
A	JP, Y1, T14-9849, 1925-3-31 See lines 6 to 10	1
A	JP, Y1, 07-11965, 1932-9-16 See column 1, lines 5 to 8	1
A	JP, Y1, 09-8019, 1934-6-15 See column 1, lines 6 to 11	1
A	JP, Y1, 39-12542, 1964-5-13 See column 4, lines 12 to 15	1
A	JP, U, 49-38453, 1974-4-4 See column 1, line 9 to column 2, line 1	1

## \* Special categories of cited documents: \*\*

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"P" document published prior to the international filing date but on or after the priority date claimed

"T" later document published on or after the international filing date or priority date and not in conflict with the application, but cited to understand the principle or theory underlying the invention

"X" document of particular relevance

**IV. CERTIFICATION**

Date of the Actual Completion of the International Search \*

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Date of Mailing of this International Search Report \*

26 November 1979 (26.11.79)

International Searching Authority \*

Japanese Patent Office

Signature of Authorized Officer \*\*