

MECHANISM FOR FASTENING REPLACEABLE VAMP

BACKGROUND OF THE INVENTION

Field of Invention

The present invention relates to shoes and more particularly to an improved mechanism for fastening an outsole to a vamp of one of a variety of shoes including but not limited to one without an outside counter, one without a heel, and a sandal.

Related Art

A conventional shoe (e.g., sandal) adapted to incorporate a replaceable vamp is shown in FIG. 1. The shoe comprises an outsole 1 having a plurality of compartments 1a, a plurality of fastening blocks 2, a plurality of elongated vamp elements 3 each having a snapping member 4 at either end for fastening at a mated member 2a of the fastening block 2 by snapping for securing the vamp elements 3 and the outsole 1 together, a middle sole 5 on the outsole 1, and an insole 6 on the middle sole 5. Such vamp fastening mechanism is only applicable to sandal. Thus, continuing improvements in the exploitation of vamp fastening mechanism are constantly being sought.

SUMMARY OF THE INVENTION

In one aspect, there is provided a pair of shoes each comprising an outsole; a middle sole including a plurality of holes formed on both sides of its intermediate portion and its heel portion, each hole including a flexible tab having a projection; a vamp including a plurality of projecting pegs on its bottom, each peg including a rib, the peg being conformed to securely snap into the hole by lockingly engaging the rib with the projection, and a plurality of bottom protrusions formed on its toe portion; an insole; and a fastening mechanism disposed on a toe portion of the middle sole and including a lower plate including a top hollow portion, an upper plate including a rear opening, a plurality of side grooves with the protrusions fitted in, and a longitudinal ridge on a wall of the opening, an intermediate sliding plate

including a rear upright disposed in a large portion of the opening, the upright having a longitudinal cavity adapted to matingly engage with the ridge, and a plurality of side protuberances, and a positioning member including a top raised portion disposed in the opening, and a rear longitudinal recess; whereby pushing the sliding plate forward will insert the protuberances in the grooves, and sliding the positioning member from a small portion of the opening to the large portion of the opening will urge the positioning member against the upright and matingly engage the ridge with the recess for fastening the vamp.

In one embodiment disclosed herein, the shoes are a pair of shoes each without an outside counter.

In another embodiment disclosed herein, the shoes are a pair of shoes each without a heel.

In a further embodiment disclosed herein, the shoes are a pair of sandals.

The above and other objects, features and advantages of the present invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view of a sandal incorporating a conventional mechanism for fastening vamp;

FIG. 2 is a perspective view of a shoe incorporating a vamp fastening mechanism according to the invention;

FIG. 3 is an exploded view of FIG. 2;

FIG. 4 is another exploded view of FIG. 2;

FIG. 5 is an exploded view of fastening mechanism shown in FIG. 3;

FIG. 6 is a top plan view of the fastening mechanism assembled in a toe;

FIG. 7 is another top plan view of the fastening mechanism assembled in a toe;

FIG. 8 is a sectional view of FIG. 7;

FIG. 9 is a perspective view of a portion of one type of shoe without an outside counter incorporating the vamp fastening mechanism according to of the invention;

FIG. 10 is a perspective view of the complete shoe shown in FIG. 9;

FIG. 11 is a perspective view of a portion of another type of shoe without a heel
5 incorporating the vamp fastening mechanism according to of the invention;

FIG. 12 is a perspective view of the complete shoe shown in FIG. 11; and

FIG. 13 is an exploded view of a sandal incorporating the vamp fastening mechanism according to of the invention.

DETAILED DESCRIPTION OF THE INVENTION

10 Referring to FIGS. 2 to 8, a shoe of the invention comprises an outsole 10, a vamp 20, an insole 40, and a fastening mechanism 30 on a toe portion of a middle sole. Each component is discussed in detailed below.

The insole 40 is fitted on the outsole 10 and comprises a loop 41 on one side for ease of removal. A plurality of holes 11 are formed on both sides of an intermediate
15 portion of the middle sole and a heel thereof. Each hole 11 has a flexible tab 111 having a projection 112. The vamp 20 comprises a plurality of projecting pegs 21 on its bottom. Each peg 21 corresponds to a hole 11 and comprises a rib 211. The peg 21 is conformed to securely snap into the hole 11 by lockingly engaging the rib 211 with the projection 112. A plurality of protrusions 22 are formed on a toe portion of the
20 vamp bottom.

The fastening mechanism 30 comprises a lower plate 31, an upper plate 32 substantially having the same shape as the lower plate 31 but slightly smaller than it, an intermediate sliding plate 33 fitted in a hollow section of the lower plate 32, and a positioning member 34. The upper plate 32 comprises an opening 321 at its rear, a
25 plurality of oval grooves 322 on its both sides with the protrusions 22 securely fitted in, and a longitudinal ridge 323 on a wall of the opening 321. The sliding plate 33 comprises a rear upright 331 disposed in a large portion of the opening 321, the

upright 331 having a longitudinal cavity adapted to matingly engage with the ridge 323 (see FIG. 6), and a plurality of side protuberances 332. The positioning member 34 comprises a raised portion 341 on its top surface disposed in the opening 321, and a rear longitudinal recess 342.

5 Referring to FIGS. 6, 7, and 8, a fastening operation of the invention is described below. A person may push the sliding plate 33 forward to insert the protuberances 332 in the grooves 322. Next, slide the positioning member 34 leftward from the position of FIG. 6 to the position of FIG. 7 so as to urge against the upright 331 of the sliding plate 33. Also, the ridge 323 is adapted to matingly engage with the recess 342 when the
10 positioning member 34 is disposed in the large portion of the opening 321 (see FIG. 7). This can prevent the vamp 20 from disengaging with the rest of the shoe.

Referring to FIGS. 9 to 13, the vamp fastening mechanism according to of the invention can be mounted in other types of shoe. For example, the vamp fastening mechanism is adapted to mount in one type of shoe without an outside counter (see
15 FIGS. 9 and 10). Also, the vamp fastening mechanism is adapted to mount in another type of shoe without a heel (see FIGS. 11 and 12). Further, the vamp fastening mechanism is adapted to mount in a sandal (see FIG. 13). The only difference between any two types of shoe described above is the vamp. In brief, the vamp fastening mechanism of the invention is adapted to mount in one of a variety of shoes.

20 While the invention herein disclosed has been described by means of specific embodiments, numerous modifications and variations could be made thereto by those skilled in the art without departing from the scope and spirit of the invention set forth in the claims.

WHAT IS CLAIMED IS:

1. A pair of shoes each comprising:

an outsole;

a middle sole including a plurality of holes formed on both sides of its
5 intermediate portion and its heel portion, each hole including a flexible tab having a
projection;

a vamp including a plurality of projecting pegs on its bottom, each peg including a
rib, the peg being conformed to securely snap into the hole by lockingly engaging the
rib with the projection, and a plurality of bottom protrusions formed on its toe portion;

10 an insole; and

a fastening mechanism disposed on a toe portion of the middle sole and including
a lower plate including a top hollow portion, an upper plate including a rear opening, a
plurality of side grooves with the protrusions fitted in, and a longitudinal ridge on a wall
of the opening, an intermediate sliding plate including a rear upright disposed in a
15 large portion of the opening, the upright having a longitudinal cavity adapted to
matingly engage with the ridge, and a plurality of side protuberances, and a
positioning member including a top raised portion disposed in the opening, and a rear
longitudinal recess;

whereby pushing the sliding plate forward will insert the protuberances in the
20 grooves, and sliding the positioning member from a small portion of the opening to the
large portion of the opening will urge the positioning member against the upright and
matingly engage the ridge with the recess for fastening the vamp.

2. The shoes of claim 1, wherein the shoes are a pair of shoes each without an
outside counter.

25 3. The shoes of claim 1, wherein the shoes are a pair of shoes each without a heel.

4. The shoes of claim 1, wherein the shoes are a pair of sandals.