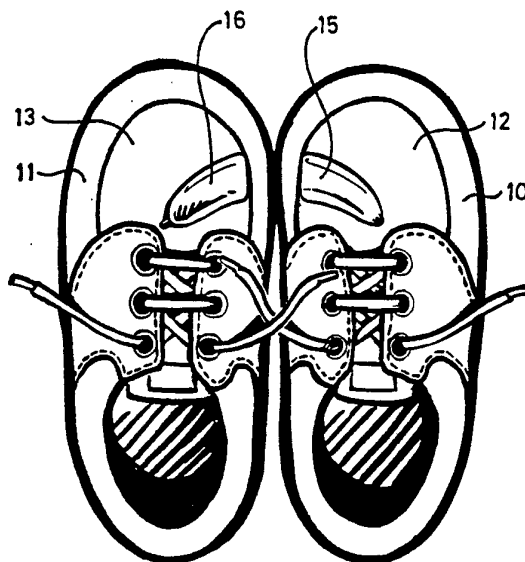




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(21) International Application Number: PCT/AU93/00351 (22) International Filing Date: 14 July 1993 (14.07.93) (30) Priority data: PL 4468 2 September 1992 (02.09.92) AU (71) Applicants (for all designated States except US): WEST, Lawrence, David [AU/AU]; 12 Blakesley Street, Tewantin, QLD 4565 (AU). WYTHES, Patricia [AU/AU]; 54 Griffith Avenue, Tewantin, QLD 4565 (AU). (71)(72) Applicant and Inventor: MUNRO, Cheryl, Lynne [AU/AU]; 12 Blakesley Street, Tewantin, QLD 4565 (AU). (74) Agent: PIZZEY & COMPANY; Level 6, Trustee House, 444 Queen Street, Brisbane, QLD 4000 (AU).		(81) Designated States: AU, CA, GB, JP, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>

(54) Title: CHIROINDICATOR APPARATUS



(57) Abstract

Chiroindicator apparatus is provided having a right hand and left hand body members (15, 16). The upper surfaces (20, 21) of the body members (15, 16) are printed to represent an elongate image having a single axis of symmetry between the body members. The image is selected such that the body members (15, 16) taper from their inner edges about the axis of symmetry to their outer ends. The body members (15, 16) are adhered to respective shoes by means of adhesive layer (23). The respective body members (15, 16) are in use located such that the right hand body member (15) is placed on the left hand side of the right shoe toe portion (12) and pressed thereto to effect adhesion of the pressure-sensitive adhesive face of the adhesive layer (23). Similarly, the left hand body member (16) is positioned on the right hand side of the left toe portion (13) and similarly pressed into adhesive engagement therewith.

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CHIROINDICATOR APPARATUS

This invention relates to chiroindicator apparatus.

This invention has particular but not exclusive application to chiroindicator apparatus adapted to provide, especially, children with means whereby the chirality or
5 "handedness" of shoes or the like may be readily apparent, and for illustrative purposes reference will be made to such application. However, it is to be understood that this invention could be used in other applications, such as apparatus for indicating differences between complementary
10 articles of clothing and the like for persons suffering from interpretational deficiencies.

It is widely considered to be advantageous that children from around the age of two, learn to be able to put their own shoes on and like functions consistent with the development
15 of motor skills and concomitant commencement of a degree of independence. In general such learning has been rendered less easy than it may have been due to the relatively subtle differences in shape or general appearance between the left and right shoe, to the extent that children up to six years
20 old are generally incapable of determining which shoe is which.

The inherent flexibility of children's feet means that most children are unable to determine, after having put them on the wrong way, that an error has been made due to the lack
25 of sensory feedback in terms of discomfort. Such young children continue to have difficulty notwithstanding that children in the target group often need to put on and take off their shoes several times a day. In the case of a preschool attendee, this might actually need to be eight
30 times per day if slippers and a day-time sleep are involved.

United States Patent No. 2473877 discloses apparatus for application to respective shoes and including a phosphorescent material applied as an integral part of the shoe in the region of the heel pad and the visible part of

the instep. Embodiments of the invention disclosed include the use of differentiating indicia such as the words "left" and "right", or arrows. The object of the apparatus disclosed is to permit persons to locate and identify their shoes in the dark. United States Patent No. 2650169 is similarly directed and claims a phosphorescent sheet material per se as well as disclosing indicia for inclusion within an adult shoe for night time location and identification.

The foregoing references do not acknowledge the difficulties that the apparatus would provide for children of limited interpretation skills such as those under six years old and particularly those just beginning to put on their own shoes such as children about two years of age.

United States Patent No. 3258858 in the name of Cariffe, Jr. discloses apparatus the object of which is to overcome the difficulties that children face in determining the correct shoe for each foot. The disclosure proposes the use of a pair of indicia, one for each shoe, and adapted to be located within the shoe such that the arranged shoes result in an image being formed by the two indicia, in the mind of the child. The indicia disclosed is a caricature human face in two parts, divided along a ventral axis such that the nose is divided about the partition line.

The apparatus disclosed has several disadvantages. Firstly, it has been determined by experiment that children will not generally line the shoes up prior to attempting to put the shoes on. Accordingly, the placement of the indicia within the shoe negates the educative effect since if an error is made with the first shoe, no reference is provided by the second shoe which indicates the error to the child. Secondly, it has been determined by experiment that the device of a face is generally too complex to provide the requisite identifiability of correctness, especially for very young children.

United Kingdom Patent Specification No. GB-2167592-A

discloses similar apparatus to US 3258858, comprising a pair of indicia adapted to be located within the shoes.

Accordingly the disadvantage of in shoe placement is

similarly a feature of this disclosure. However, in this

5 disclosure, the indicia are less relatable than the face indicia of US 3258858, comprising in this case unrelated dog head caricatures for each shoe.

The present invention aims to substantially alleviate the above disadvantages and to provide chiroindicator
10 apparatus which will be reliable and efficient in use. Other objects and advantages of this invention will hereinafter become apparent.

With the foregoing and other objects in view, this invention in one aspect resides broadly in a method of
15 indicating the chirality or handedness of paired articles including the steps of:-

providing indicia comprising complementary portions of an elongate form, and

securing said complementary indicia for display on
20 respective articles in positions where the elongate form is constituted about a partition zone between the articles, said indicia extending out from said partition zone.

Preferably, the indicia are displayed such that the indicia are visible in normal use of the articles.

25 In a further aspect this invention resides broadly in chiroindicator apparatus including:-

a pair of body members;

indicia disposed on each body member and comprising complementary portions of an elongate form, and

30 attachment means for securing one of said body members to each of handed articles to display said complementary portions in positions where the elongate form is constituted about a partition zone between the articles, said indicia extending out from said partition zone.

35 Whilst in general the elongate form is preferred to

comprise an elongate image, it is envisaged that the elongate form may be otherwise such as an elongate form determined by tactile means.

5 The image selected may be such that its component indicia admit to a single sensible relative orientation. Preferably, the image is substantially symmetrical about the partition zone. Preferably, the image is such that it has but one axis of symmetry, that being substantially at the partition zone. Preferably, the indicia are tapered from the
10 partition zone to the outer end of the indicia remote from the partition zone, to provide a clear indication of the orientation required to make the image.

The indicia may comprise two portions of an illustration or shaped body representing a known and recognizable object
15 with a basic symmetry having preferably a single logical relative orientation.

For example, the indicia may in combination represent an elongated shape, such as a banana illustration or a worm illustration or shape bifurcated and mounted on said body
20 members. The indicia may be printed, painted, adhered or otherwise affixed to the body members or may alternatively be formed integrally therewith. Preferably, the indicia are simple and not over-detailed artwork, to provide general ease of recognition by target users, and are preferably selected
25 from indicia which, when separated by a gap in use, accommodates the user's perception and expectation of the length of the complete object and/or what should or might appear in the gap.

Preferably, the indicia are displayed on the articles in
30 a position whereby the indicia remain visible while the articles are in use such that the correct relative orientation may be confirmed by the user at all stages of use.

Whilst it is envisaged that the articles may be of any
35 form consistent with the objects of the present invention,

for the purposes of further description the invention will be described hereinafter with reference to the articles being a pair of shoes. The body members may take any suitable form such as rigid or flexible sheet or shaped body members. For example, the body members may each comprise a piece of flexible plastics material, either cut to a shape corresponding to the particular indicia selected or not.

It has been determined that in the particular application of the invention to children's shoes that vinyl sheeting provides suitable properties of durability, printability and flexibility and may be advantageously selected from materials having a thickness of from about 0.2 mm to about 1.5 mm. The vinyl sheet material may advantageously be bonded to a fabric layer such as coarsely-woven synthetic material, for the purpose of minimising the effects of flexing of the articles which may promote delamination, and to promote adhesion to uneven article surfaces such as over shoe seams.

The display surface may take any suitable form and will generally be selected according to the type and compatibility of the body members and the indicia. For example, in the case of the preferred vinyl body members the display surface may comprise a major surface of the body members preferably selected or treated to accept the selected indicia. In general such vinyl body members may be formed having a suitable surface.

The attachment means may be selected according to the application and will generally be selected to be compatible with the body members and the substrates. For example, in the case of shoes being the substrate the attachment means may comprise adhesives compatible with both the shoe material and the body members, complementary hook-pile fastening members attached to the shoes and body members, or fixings of other kinds such as stitching.

Preferably, the attachment means is such that the body

members may be easily attached to the shoes such as may be provided by the use of pressure sensitive adhesive attachment means including a release layer to be removed prior to application of the body member to the shoe. Advantageously, the attachment means may comprise an adhesive layer such as that marketed by the Minnesota Mining and Manufacturing Corporation under the trade designation "9830T". It has been found that such adhesive material may be applicable to a wide range of substrates including rubber, leather, vinyl, woven synthetic and other woven materials such as brushed cotton. The adhesive itself will generally cure to be substantially irremovable in about six hours without clamping required.

If desired the apparatus may be selected to be adjustable to the particular application by trimming or the like such as with scissors or other readily available trimming means without affecting the integrity of the indicia, such that the apparatus may be optimised in position on the shoes.

In a typical use, apparatus in accordance with the present invention may be applied to the shoes in a visible position relative to the wearer and preferably may be applied to the toes of the shoes. Preferably, the apparatus is applied to the shoes such that one of the indicia is located towards the top left side of the right shoe and the other is located towards the top right side of the left shoe such that relative positioning contributes with the indicia in determining for the user the correct shoe for a foot. The indicia are also preferably selected such that the user may readily identify the combination of indicia irrespective of their limited cognitive skills and literacy/numeracy skills.

It is envisaged that the apparatus in accordance with the present invention would find particular application in respect of users who are children in the age group 2 - 6 years, although it is also envisaged that other persons may usefully avail themselves of apparatus in accordance with the

present invention such as people with intellectual disabilities.

Preferably, the apparatus is produced in the form of a laminated sheet comprising a flexible layer, an adhesive layer and a release layer covering the adhesive layer. The laminated sheet preferably has cut therethrough the outline of the pair of body members having their respective indicia disposed on each. The adhesive layer provides the attachment means for securing the body members to their respective shoes. By this means one or more apparatus may be packaged for sale as a flat product of regular shape, having the preferably die cut body members retained by the release layer which also prevents adhesion before use. The regions of the flexible layer not forming the body members may bear trade mark, advertising, or instructional materials.

For example, a flexible vinyl composite material comprising a vinyl face layer backed by a woven scrim layer is generally provided as rolls, typically 1.37 m wide by 55 m long. Pressure sensitive adhesive may be provided in sheet form and delivered as a roll of laminate comprising an adhesive layer and a release layer. The adhesive face of the unrolled adhesive laminate is advantageously bonded under roller pressure to the scrim face of the vinyl composite to form a tertiary composite comprising a vinyl layer, a scrim layer, an adhesive layer and a release layer. Typically, the relative thickness of the layers will be in the region of 0.7 mm vinyl, 0.4 mm scrim, 0.2 mm adhesive and 0.2 mm release paper, making a total laminate thickness in the region of 1.5 mm.

The tertiary laminate stock may be cut to sheet sizes suitable for printing, typically 685 mm by 645 mm, such as by guillotine cutting, prior to screen printing or the like. The sheets may be screen printed such as by means of up to 8 colour multiscreen processes to reproduce, typically, multiple image sets, borders, packaging and trade mark

material on the exposed vinyl face, after which the sheets are top cut by die to the release layer about the shape of the indicia to form the body members, and punch cut about each set generally comprising a plurality of indicia, through
5 all of the layers including the release layer to provide a separated product for packing and sale. Typically 24 packs may be obtained from each printed sheet.

Whilst apparatus in accordance with the present invention is in one respect directed to apparatus which may
10 be retrofitted to an existing pair of shoes, it is envisaged that this invention may find use in shoe manufacture.

Accordingly, in a further aspect this invention resides broadly in a pair of shoes including respective toe portions having indicia disposed thereon and comprising complementary
15 portions of an elongate image, said complementary portions being displayed in positions where the image is constituted when the shoes are arranged in the correct side by side relationship, said indicia each extending out from their respective adjacent portions.

20 As before, the indicia may comprise two portions of an illustration or shaped body representing a known and recognizable object with a basic symmetry, preferably having a single logical relative orientation to generate the complete form.

25 For example, the indicia may in combination represent an elongated shape or illustration bifurcated and mounted on the display surfaces of the toe portions. Again, the indicia may be printed, adhered or otherwise affixed to the toe portions or may alternatively be formed integrally therewith.

30 In order that this invention may be more easily understood and put into practical effect, reference will now be made to the accompanying drawings which illustrate a preferred embodiment of the invention, wherein:-

FIG. 1 is a top view of a pair of shoes bearing
35 chiroindicator apparatus in accordance with the present

invention, and

FIG. 2 is a top perspective view of the chiroindicator apparatus of FIG. 1.

FIG. 3 is a plan view of apparatus in accordance with
5 the present invention as configured for sale.

In the figures, there is illustrated a pair of shoes comprising a right shoe 10 and a left shoe 11 having respective toe portions 12, 13.

Chiroindicator apparatus 14 is provided having a right
10 hand body member 15 and a left hand body member 16, jointly formed from fabric-backed sheet vinyl material in the shape of a banana and partitioned at 17 to form the body members 15, 16.

The upper surfaces 20, 21 of the body members, 15, 16
15 are printed with coloured ink and graphic material to more closely represent a banana.

The fabric backing 22 of each of the body members 15, 16 is adhered on its underside to one adhesive surface of each of a pair of adhesive layers 23, 24 having a release paper
20 over both adhesive layer portions 23, 24 and serving to re-join the body members 15, 16 for sale and packaging prior to use.

In use, the respective body members 15, 16 are removed from the release paper with their respective fabric backings
25 22 to expose their respective adhesive faces of the adhesive layers 23, 24. The respective body members 15, 16 are then located such that the right hand body member 15 is placed on the left hand side of the right shoe toe portion 12 and pressed thereto to effect adhesion of the pressure-sensitive
30 adhesive face of the adhesive layer 23. Similarly, the left hand body member 16 is positioned on the right hand side of the left toe portion 13 and similarly pressed into adhesive engagement therewith.

In the embodiment of FIG. 3, there is illustrated a
35 typical pack of apparatus in accordance with the present

invention and including a generally rectangular blank member
30 laminated to pressure sensitive adhesive and release
layers (not shown) and having printed thereon indicia
portions 31 and trade mark matter 32. Die cut about the
5 indicia portions 31 are the outlines of body portions 33, the
die cutting extending to the adhesive layer.

Apparatus in accordance with the abovedescribed
embodiment has been determined to include several advantages.
It has been determined that children younger than two have
10 been able to consistently select the correct shoe for a foot
in controlled testing, whereas control tests indicate that
such children rarely achieve greater than 50% success with
normal shoes. The apparatus has proved to be effective
without substantial training and reinforcement, apparently
15 because the apparatus relies on hitherto unutilized cognitive
skills that virtually all children of an age to wear shoes,
have already acquired. The apparatus has proved to have a
positive response from test children who indicate enjoyment
from using the apparatus. An apparent advantage of
20 apparatus in accordance with this embodiment includes a
perceived gain in personal esteem in achieving success in
discriminating the correct shoe against the hitherto
impossibility of the task.

In the case of pre-school students and the like, a
25 further benefit arises from the "personalising" effect that
the apparatus can provide. With the advent of generic shoe
styles and limited colours, and especially with often-removed
footwear such as rain or snow boots, confusion often arises
where large numbers are involved. Apparatus in accordance
30 with the present invention will serve to distinguish a
particular wearer's boots and may further be marked such as
by permanent marker pen to, for example, add the initials of
the child in some position preferably without impairing the
distinguishability or function of the indicia to the child.

35 It will of course be realised that while the above has

been given by way of illustrative example of this invention,
all such and other modifications and variations thereto as
would be apparent to persons skilled in the art are deemed to
fall within the broad scope and ambit of this invention as
5 defined in the claims appended hereto.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. Chiroindicator apparatus including:-

a pair of body members;

indicia disposed on each body member and comprising complementary portions of an elongate form, and

attachment means for securing one of said body members to each of handed articles to display said complementary portions in positions where the elongate form is constituted about a partition zone between the articles, said indicia extending out from said partition zone.

2. Chiroindicator apparatus according to Claim 1, wherein said indicia are displayed such that the indicia are visible in normal use of the articles.

3. Chiroindicator apparatus according to Claim 1 or Claim 2, wherein said elongate form comprises an elongate image.

4. Chiroindicator apparatus according to Claim 3, wherein said image is selected such that its component indicia admit to a single sensible relative orientation.

5. Chiroindicator apparatus according to Claim 4, wherein the said image is substantially symmetrical about the partition zone.

6. Chiroindicator apparatus according to Claim 5, wherein said image is such that it has but one axis of symmetry, that being substantially at the partition zone.

7. Chiroindicator apparatus according to any one of the preceding Claims, wherein said indicia are tapered from the partition zone to the outer end of the indicia remote from the partition zone.

8. Chiroindicator apparatus according to any one of the preceding Claims, wherein said indicia comprise two portions of an illustration or shaped body representing a known and recognizable object with a basic symmetry, said portions having a single logical relative orientation.
9. Chiroindicator apparatus according to any one of the preceding Claims, wherein said body members each comprises a piece of flexible plastics material formed substantially to a shape corresponding to its respective indicum.
10. Chiroindicator apparatus according to Claim 9, wherein said flexible plastics material is bonded to a fabric layer.
11. Chiroindicator apparatus according to any one of the preceding Claims, wherein said attachment means comprises pressure sensitive adhesive means.
12. Chiroindicator apparatus according to Claim 11, wherein said pressure sensitive adhesive means comprises pressure sensitive adhesive laminate material including an adhesive layer and a release layer.
13. A pair of shoes including respective toe portions having indicia disposed thereon and comprising complementary portions of an elongate image, said complementary portions being displayed in positions where the image is constituted when the shoes are arranged in the correct side by side relationship, said indicia each extending out from their respective adjacent portions.
14. A method of indicating the chirality or handedness of paired articles including the steps of:-
 - providing indicia comprising complementary portions of an elongate form, and

securing said complementary indicia for display on respective articles in positions where the elongate form is constituted about a partition zone between the articles, said indicia extending out from said partition zone.

15. Chiroindicator apparatus for indicating the handedness of articles and including a laminated sheet material comprising a flexible layer, an adhesive layer and a release layer covering said adhesive layer, said laminated sheet having cut therethrough the outline of a pair of body members having indicia disposed on each and comprising complementary portions of an elongate form, said adhesive layer providing attachment means for securing one of said body members to each of handed articles to display said complementary portions in positions where the elongate form is constituted about a partition zone between the articles, said indicia extending out from said partition zone.

16. Chiroindicator apparatus substantially as hereinbefore defined with reference to the accompanying drawings.

1 / 3

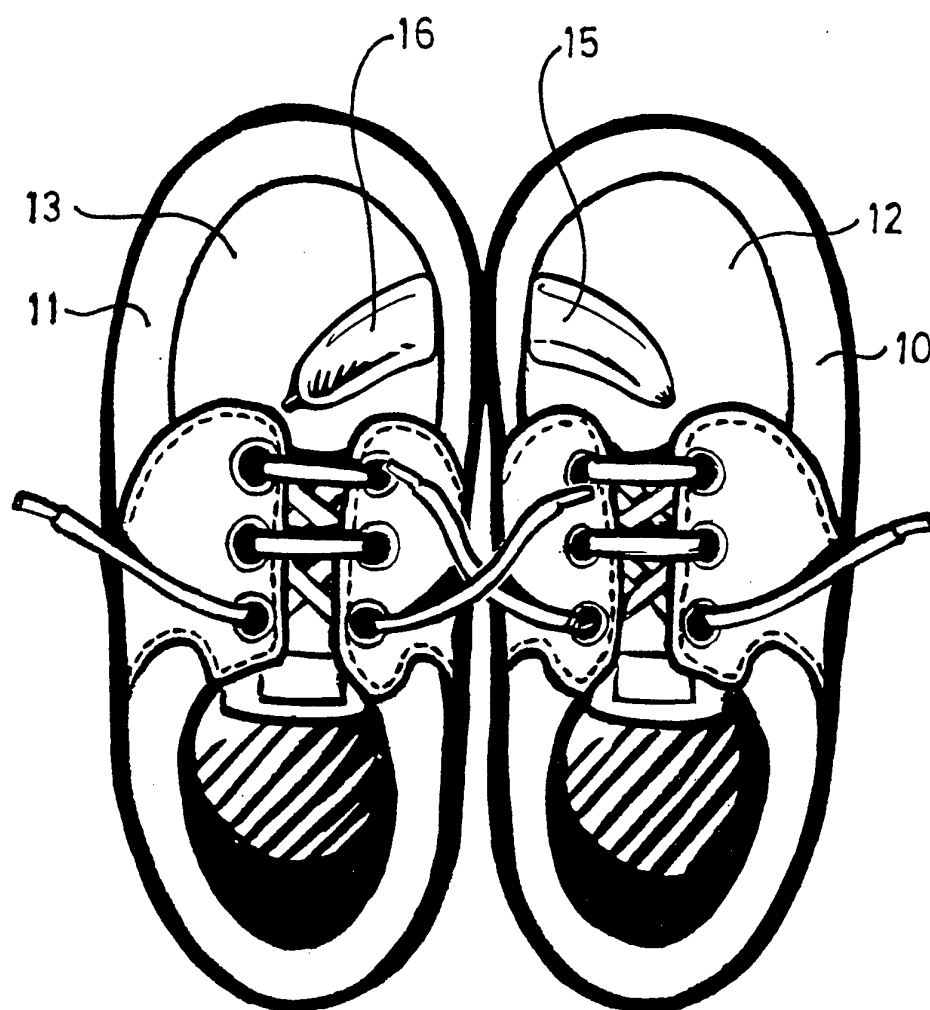


FIG. 1

SUBSTITUTE SHEET

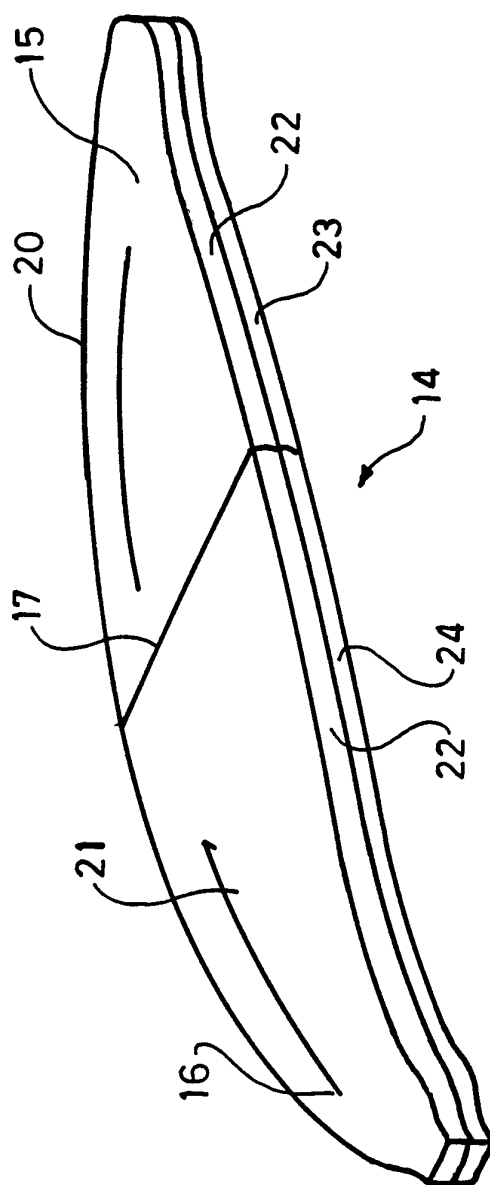


FIG. 2

SUBSTITUTE SHEET

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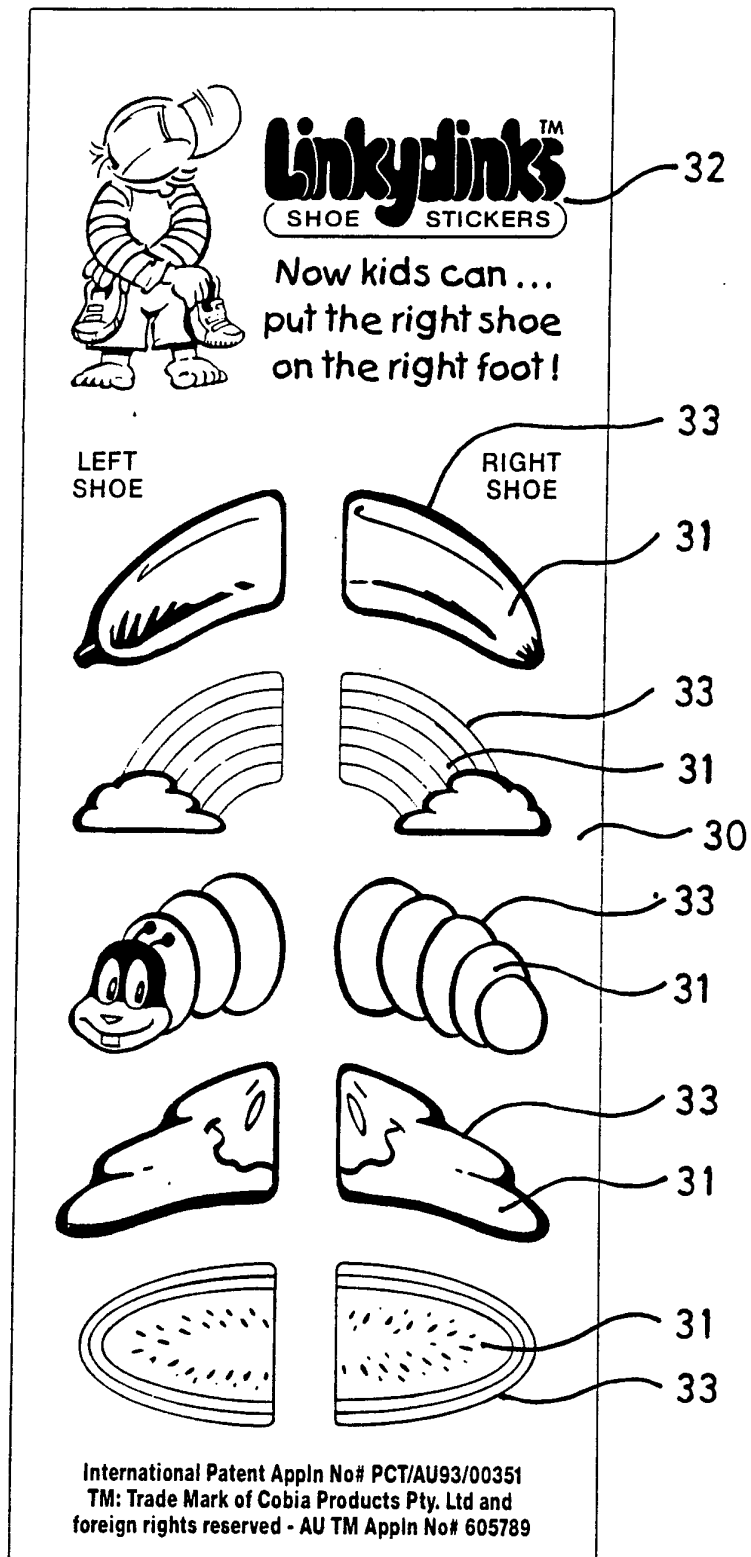


FIG. 3

SUBSTITUTE SHEET

A. CLASSIFICATION OF SUBJECT MATTER Int. Cl. ⁵ A43B 3/00, 3/30, 5/00 According to International Patent Classification (IPC) or to both national classification and IPC												
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC : A43B 3/00, 3/30, 5/00 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU : IPC as above Electronic data base consulted during the international search (name of data base, and where practicable, search terms used)												
C. DOCUMENTS CONSIDERED TO BE RELEVANT												
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.										
X	US,A, 3258858 (CARIFFE) 5 July 1966 (05.07.66) See entire document	1-8,13-15										
Y	GB,A, 2167592 (COOLING) 29 May 1986 (29.05.86) Page 1 and figure 2	9,10										
A	CA,A, 1193436 (ZIEMLINSKI) 17 September 1985 (17.09.85) Pages 1 and 4 and figures											
A	GB,A, 1092482 (MOURET) 22 November 1967 (22.11.67) Page 1 and figures											
☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.												
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> * Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed </td> <td style="width: 50%; vertical-align: top;"> <table style="border: none;"> <tr> <td style="width: 30%; text-align: right;">"T"</td> <td>later document published 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</td> </tr> <tr> <td style="text-align: right;">"X"</td> <td>document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td style="text-align: right;">"Y"</td> <td>document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td style="text-align: right;">"&"</td> <td>document member of the same patent family</td> </tr> </table> </td> </tr> </table>			* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	<table style="border: none;"> <tr> <td style="width: 30%; text-align: right;">"T"</td> <td>later document published 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</td> </tr> <tr> <td style="text-align: right;">"X"</td> <td>document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td style="text-align: right;">"Y"</td> <td>document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td style="text-align: right;">"&"</td> <td>document member of the same patent family</td> </tr> </table>	"T"	later document published 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; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"&"	document member of the same patent family
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"&"	document member of the same patent family											
Date of the actual completion of the international search 1 October 1993 (01.10.93)		Date of mailing of the international search report 15 OCT 1993 (15.10.93)										
Name and mailing address of the ISA/AU AUSTRALIAN INDUSTRIAL PROPERTY ORGANISATION PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No. 06 2853929		Authorized officer R. WEBER Telephone No. (06) 2832123										

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate of the relevant passages	Relevant to Claim No.
A	US,A, 2473877 (GOLDSTEIN) 21 June 1949 (21.06.49) Page 1 and figures	
A	US,A, 2557663 (KNODE) 19 June 1951 (19.06.51) Page 1 and figures	
A	US,A, 2650169 (GOLDSTEIN) 25 August 1953 (25.08.53) Page 1 and figures	