



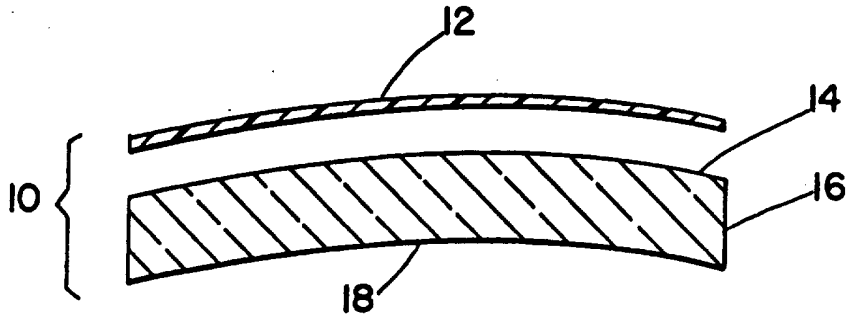
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁶ : A45D 29/00</p>	<p>A1</p>	<p>(11) International Publication Number: WO 96/16568 (43) International Publication Date: 6 June 1996 (06.06.96)</p>
<p>(21) International Application Number: PCT/US95/15531 (22) International Filing Date: 28 November 1995 (28.11.95) (30) Priority Data: 08/346,025 28 November 1994 (28.11.94) US (71) Applicant: COSMANIA, INC. [US/US]; 2121 Union Place, Simi Valley, CA 93065 (US). (72) Inventor: STROM, Robert, E.; 24929 Palmilla Drive, Calabasas, CA 91302 (US). (74) Agents: GERARDI, Michael, M. et al.; Jeffer, Mangels, Butler & Marmaro, 10th floor, 2121 Avenue of the Stars, Los Angeles, CA 90067 (US).</p>		<p>(81) Designated States: AL, AM, AT, AT (Utility model), AU, BB, BG, BR, BY, CA, CH, CN, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), TJ, TM, TT, UA, UG, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, LS, MW, SD, SZ, UG). Published <i>With international search report.</i></p>

(54) Title: ARTIFICIAL NAIL AND METHOD FOR MAKING SAME

(57) Abstract

An artificial nail (10) includes a base (16) having an upper surface (14) to which is bonded a partially colored film (12). An alternative embodiment includes a base (22) having a colored upper surface (24) to which is bonded a partially transparent film (26).



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	GB	United Kingdom	MR	Mauritania
AU	Australia	GE	Georgia	MW	Malawi
BB	Barbados	GN	Guinea	NE	Niger
BE	Belgium	GR	Greece	NL	Netherlands
BF	Burkina Faso	HU	Hungary	NO	Norway
BG	Bulgaria	IE	Ireland	NZ	New Zealand
BJ	Benin	IT	Italy	PL	Poland
BR	Brazil	JP	Japan	PT	Portugal
BY	Belarus	KE	Kenya	RO	Romania
CA	Canada	KG	Kyrgystan	RU	Russian Federation
CF	Central African Republic	KP	Democratic People's Republic of Korea	SD	Sudan
CG	Congo	KR	Republic of Korea	SE	Sweden
CH	Switzerland	KZ	Kazakhstan	SI	Slovenia
CI	Côte d'Ivoire	LI	Liechtenstein	SK	Slovakia
CM	Cameroon	LK	Sri Lanka	SN	Senegal
CN	China	LU	Luxembourg	TD	Chad
CS	Czechoslovakia	LV	Latvia	TG	Togo
CZ	Czech Republic	MC	Monaco	TJ	Tajikistan
DE	Germany	MD	Republic of Moldova	TT	Trinidad and Tobago
DK	Denmark	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	US	United States of America
FI	Finland	MN	Mongolia	UZ	Uzbekistan
FR	France			VN	Viet Nam
GA	Gabon				

ARTIFICIAL NAIL AND METHOD FOR MAKING SAME**Field of the Invention**

5 The present invention relates to a colored artificial nail, such as an artificial fingernail, and to a method for making the artificial nail.

Background of the Invention

 Artificial nails, such as artificial fingernail and toenails, have long been known. Artificial nails are frequently used for cosmetic purposes, for example, in
10 order to afford long, brightly polished, fashionable fingernails to women who lack the opportunity to allow their own nails to grow to the desired length.

 Many desirable cosmetic effects may be realized using artificial nails. The nails may be polished using a polish of a single color. Alternatively, one or more
15 nails may be given a different color. Various designs may be applied to the artificial nails after they have been bonded to the wearer's nails.

 More unusual effects have been realized in artificial nails known to the art. For example, U.S. Patent No. 4,876,121, to Cohen, discloses artificial nails having a moire pattern. Cohen's nails include first and second grid pattern layers affixed
20 to a nail bed, which preferably is transparent. The grid patterns intersect to produce the moire effect.

 U.S. Patent No. 4,751,935, to Mast et al., reveals artificial nails having light-diffusing means formed therein.

 Fashionable effects have also been produced by application of jewels piece
25 by piece to artificial fingernails, and also by airbrushing color patterns on artificial nails. Airbrushing is a very expensive process, however.

 A continuing need exists for artificial nails, such as artificial fingernails, having new and attractive cosmetic appearances, and for improved methods for producing them. It would be particularly desirable to provide an inexpensive method for providing an artificial fingernail with an airbrush pattern.

Summary of the Preferred Embodiments

In accordance with one aspect of the present invention, an artificial nail, such as a fingernail or toenail, comprises a base having an upper surface to which is bonded a colored film.

5 In a preferred embodiment, the colored film comprises mylar. A multicolor pattern is formed on the mylar by airbrushing, printing or silk screening. Preferably, the base comprises a plastic material such as acrylonitrile butadiene styrene copolymer (ABS).

10 According to another aspect of the present invention, a method of producing an artificial nail is provided which comprises the step of bonding a colored film onto the upper surface of a base. Such a base is typically a pre-formed, commercially available artificial nail base having a curved surface. The base can be transparent or opaque, and can be colored if desired.

15 In a preferred embodiment, a colored mylar film is bonded to an artificial nail base by hot-rolling.

In another preferred embodiment, a colored nylon film is applied to a nylon base, and the base is then placed in an oven. The nylon film is thereby baked onto the nylon base.

20 According to still another aspect of the present invention, an artificial nail comprises a base having a colored upper surface to which is bonded a transparent film. Preferably the entire base is colored during manufacture of the base.

According to yet another aspect of the present invention, a method of producing an artificial nail comprises the step of bonding a transparent film onto a base having an upper surface which is colored.

25 Other objects, features and advantages of the present invention will become apparent to those skilled in the art from the following detailed description. It is to be understood, however, that the detailed description and specific examples, while indicating preferred embodiments of the present invention, are given by way of illustration and not limitation. Many changes and modifications within the
30 scope of the present invention may be made without departing from the spirit thereof, and the invention includes all such modifications.

Brief Description of the Drawings

The invention may be more readily understood by referring to the accompanying drawings in which

FIGS. 1a-b are front and back elevational views, respectively, of an embodiment of an artificial nail according to the invention, illustrating an exemplary multicolored pattern;

FIG. 2 is a partial cross-sectional exploded view of an artificial nail of the invention across line A-A in FIG. 1a-b (not to scale);

FIG. 3 is a partial cross-sectional exploded view of an alternative embodiment of an artificial of the invention in which a transparent film is bonded to a colored base.

Detailed Description of the Preferred Embodiments

Referring now to the drawings, in FIGS. 1a-b and 2 an artificial nail 10, more particularly an artificial fingernail, according to the invention includes a colored film 12 which is bonded to the upper surface 14 of a base 16.

The colored film 12 can be of a single uniform color, or can be provided with any desired design, such as spots, stripes, florals, swirls, etc. The colored film 12 can also include uncolored, e.g., transparent, areas which allow the base to be viewed through the film. The design can be formed using one color, or can preferably be formed using a plurality of different colors to produce an attractive cosmetic appearance. An exemplary multicolored pattern is shown in FIG. 1a.

Colored film 12 comprises a material which is self-supporting, as opposed, e.g., to a liquid material which is applied to a base and dries to form a coating. The film preferably is not roughened, grooved or otherwise textured. The preferred material for the colored film 12 according to the invention is a plastic, such as mylar (a polyethylene terephthalate) or nylon. Very preferably a mylar film is employed.

The colored film 12 preferably has a thickness from about 0.01 mm to about 0.05 mm prior to application.

The colored film 12 can be produced in any conventional manner. The design is preferably produced without the use of adhesives. In a preferred method, a roll of film, preferably a mylar film, is colored by airbrushing, printing or silk-screening using any conventional dyes. Depending on the technique employed to produce the colored film 12, the inventive artificial nails will have a uniform or random appearance. Colored designs (other than solid single colors) typically will not be precisely the same on the various individual units due to the

differences in size and configuration of the bases 16 to which they are to be bonded. Other variations can be attributed to the nature of the design formation process. For example, due to the essentially random nature of the airbrushing process, no two artificial nail having an airbrushed colored layer 12 will be alike.
5 Rather, every nail will be an original impression. Printing processes, on the other hand, can afford artificial nails having more uniform appearances.

The resulting colored film is subsequently cut into individual nail-shaped units, which are then bonded to the base 16.

10 Base 16 preferably comprises a plastic material such as ABS, polypropylene, polyvinyl acetate or nylon. ABS is particularly useful in producing artificial nails according to the invention. Use of transparent or translucent plastic materials, such as ABS, will allow a pattern from film 12 to be viewed from the back of nail 10 through lower surface 18 of base 16, as indicated in Figure 1b.

15 Other useful materials which can be employed for base 16 and/or film 12 include polyvinyl chloride, vinyl chloride/vinyl acetate copolymer, cellulose acetate, cellulose butyrate, Bisphenol A polycarbonate, polymethyl methacrylate, polyethylene, polystyrene and the like.

20 Preferably, base 16 has a thickness from about 0.05 mm to 1.5 mm, more preferably from about 0.15 mm to 0.8 mm. Base 16 has a shape which conforms to size, shape and handedness of the nail of the user to which it is to be applied. Conventional methods, such as injection molding, stamping, etc., are useful in producing base 16 in various shapes and sizes.

25 Colored film 12 is preferably bonded to base 16 by application of heat and pressure, without the use of adhesives. In a preferred method, a hot-stamping machine is employed. Useful hot-stamping machines are commercially available, for example, from Spatz Laboratories (Oxnard, California).

30 According to the preferred hot-stamping method, a convex mold is prepared for each size and shape of nail to be produced. A base 16 having the selected size and shape is then placed on the mold. Colored film 12, cut to the appropriate size and shape, is then placed on the upper surface 14 of base 16. The hot-stamping machine then rolls over the colored film. The hot-rolled film is thus heat-sealed to the base.

35 The hot-stamping process is preferably carried out at a temperature from about 250°C to 300°C, more preferably about 280°C. The pressure employed is preferably about 1 to 10 psia, more preferably about 5 psia. The stamping time is preferably about 2 seconds.

According to an alternative method for producing an artificial nail of the invention, a colored film 12 is affixed to a base 16 having the same or similar chemical composition as the colored film 12. The film 12 and base 16 are then placed in an oven and baked until the two components are bonded together.

5 Preferably, both the colored film 12 and the base 16 are comprised of nylon.

The temperatures and times employed in the baking process will depend on the materials used to form the film and base. For nylon, the baking process preferably takes place at a temperature from about 55°C to 65°C, more preferably about 60°C, for a time from about 3 to 5 minutes.

10 The foregoing embodiment is most appropriate when the colored film has a multicolor pattern which does not require sharp delineations between colors. This is because colors from film 12 may bleed into base 16 during the bonding process when both layers are comprised of the same material, resulting in a somewhat blurred appearance.

15 A further embodiment of the invention is illustrated in FIG. 3. Artificial nail 20 comprises a base 22 having a colored upper surface 24 to which is bonded transparent film 26. The desired colored or multicolored upper surface 24 preferably is produced during manufacture of the base, for example by adding an appropriate dye or pigment or combination thereof to the base material prior to
20 molding. Transparent film 26 is then bonded to upper surface 24 of base 22 by any desired method, preferably the hot-rolling method discussed previously.

It is also possible to provide a colored base and a partially transparent film, that is, a film which is transparent in certain areas and colored in other areas. By means of this embodiment, patterns or printed images can be superimposed on a
25 colored background.

What is claimed is:

1. An artificial nail comprising a base having an upper surface to which is bonded an at least partially colored film.
- 5 2. The artificial nail of claim 1 wherein said film comprises a plastic material.
3. The artificial nail of claim 2 wherein said plastic material is mylar.
4. The artificial nail of claim 2 wherein said film has a pattern produced thereon by airbrushing, printing or silk screening.
5. The artificial nail of claim 1 wherein said base comprises a plastic material.
- 10 6. The artificial nail of claim 5 wherein said plastic material is selected from the group consisting of ABS, polypropylene, polyvinyl acetate and nylon.
7. The artificial nail of claim 5 wherein said plastic material is ABS.
8. The artificial nail of claim 7 wherein said film comprises mylar.
9. The artificial nail of claim 5 wherein said plastic material and said film
15 comprise nylon.
10. An artificial nail comprising a base having a colored upper surface to which is bonded an at least partially transparent film.
11. The artificial nail of claim 10 wherein said film comprises a plastic material.
12. The artificial nail of claim 11 wherein said plastic material is mylar.
- 20 13. The artificial nail of claim 10 wherein said base comprises (a) a plastic material and (b) at least one coloring agent.
14. The artificial nail of claim 13 wherein said plastic material is selected from the group consisting of ABS, polypropylene, polyvinyl acetate and nylon.
15. The artificial nail of claim 14 wherein said plastic material is ABS.
- 25 16. The artificial nail of claim 15 wherein said film comprises mylar.
17. The artificial nail of claim 14 wherein said base and said film comprise nylon.
18. The artificial nail of claim 13 wherein said coloring agent is a dye or pigment.
19. A method of producing an artificial nail which comprises the step of bonding an at least partially colored film onto the upper surface of a base.
- 30 20. The method of claim 19 wherein said film is produced by airbrushing, printing or silk screening a film.
21. The method of claim 20 wherein said film comprises a plastic material.
22. The method of claim 21 wherein said plastic material is mylar.
23. The method of claim 19 wherein said base comprises a plastic material.
- 35 24. The method of claim 23 wherein said plastic material is selected from the group consisting of ABS, polypropylene, polyvinyl acetate and nylon.

25. The method of claim 23 wherein said plastic material is ABS.
26. The method of claim 19 wherein said film comprises nylon and said plastic material is nylon.
27. The method of claim 19 wherein said film is bonded to said base by hot-rolling.
28. The method of claim 27 wherein said hot-rolling is carried out at a temperature of about 280°C and a pressure of about 5 psia.
29. The method of claim 19 wherein said film is bonded to said base by baking.
30. The method of claim 29 wherein said baking is carried out at a temperature of about 60°C and for a time from about 3 to 5 minutes.
31. A method of producing an artificial nail which comprises the step of bonding an at least partially transparent film onto a base having an upper surface which is colored.
32. The method of claim 31 wherein said base comprises (a) a plastic material and (b) at least one coloring agent.
33. The method of claim 31 wherein said plastic material is selected from the group consisting of ABS, polypropylene, polyvinyl acetate and nylon.
34. The method of claim 33 wherein said plastic material is ABS.
35. The method of claim 31 wherein said film comprises mylar.
36. The method of claim 31 wherein said film is bonded to said base by hot-rolling.
37. The method of claim 35 wherein said hot-rolling is carried out at a temperature of about 280°C and a pressure of 5 psia.
38. The method of claim 31 wherein said film is bonded to said base by baking.
39. The method of claim 38 wherein said baking is carried out at a temperature of about 60°C and for a time from about 3 to 5 minutes.

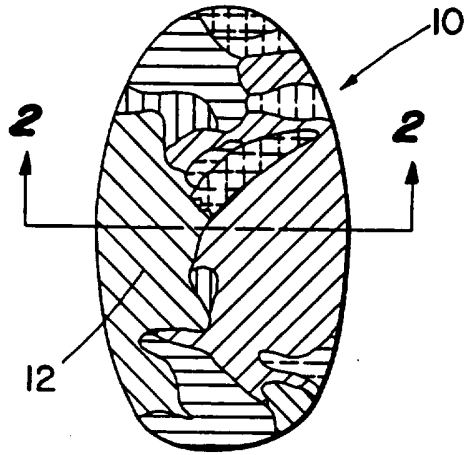


Fig. 1a

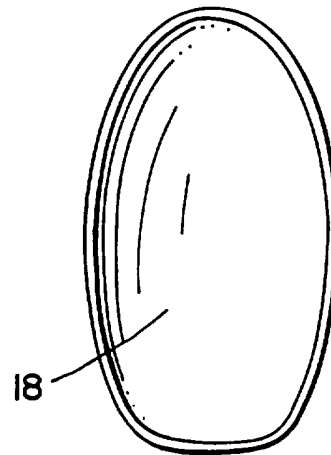


Fig. 1b

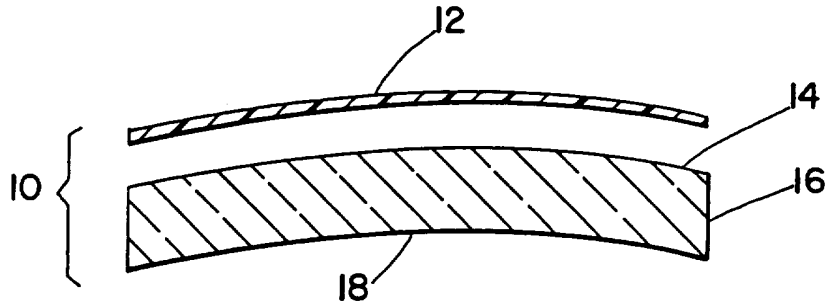


Fig. 2

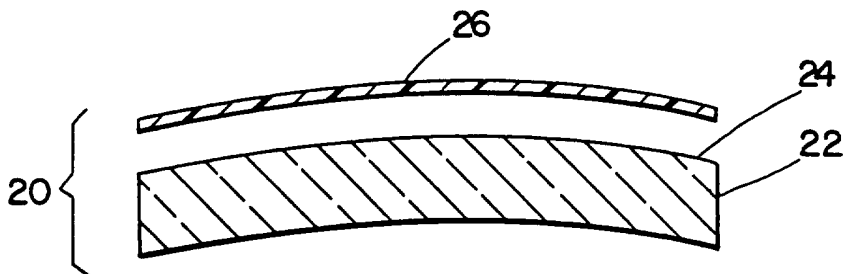


Fig. 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US95/15531

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(6) :A45D 29/00
 US CL :132/73, 73.5, 200
 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)
 U.S. : 132/73, 73.5, 200

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US, A, 4,876,121 (COHEN) 24 October 1989, see entire document.	1, 5-7, 10, 19, 20, 23-25, 31, 33, 34 ----- 2-4, 8, 9, 11-18,21, 22,26-30, 32, 35 -39
Y	US, A, 5,309,365 (SULLIVAN ET AL.) 03 May 1994, see entire document.	2-4, 8, 11, 12, 16, 21, 22, 27-30, 35-39,
Y	US, A, 4,860,774 (BECKER) 29 August 1989, see entire document.	9, 17, 26

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be part of particular relevance	"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
"E" earlier document published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search 24 JANUARY 1996	Date of mailing of the international search report 15 FEB 1996
--	---

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer <i>Gene L. Mancene</i> GENE L. MANCENE Telephone No. (703) 308-2696
---	---