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**(54) SELF ADHESIVE NAIL COATINGS**

SELBSTKLEBENDE NAGELLACKSCHICHTEN

COUCHES AUTOCOLLANTES DE VERNIS A ONGLES

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**WO-A-88/02227** **US-A- 2 581 982**  
**US-A- 2 688 331** **US-A- 2 816 555**  
**US-A- 4 903 840**

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**EP 0 519 918 B1**

## Description

The present invention relates to fingernail coatings or press-on nails which are intended to provide an attractive, finished-looking fingernail polished-looking coating. It is quite common today for women's fingernails to be coated with liquid enamel, which is dried by exposure to the air. The drying time requires, of course, that the nails not come into contact with any object, lest the nail coating become smudged or smeared. In addition, it is currently quite fashionable for French manicuring or polishing, i.e., applying a first coat of liquid nail polish to the nails, allowing them to dry and then superimposing thereon a partial second coat of liquid enamel to create a fanciful design. For example, the first coat is ordinarily a solid background of a first color, while the second coating, after the first is dried, is applied only to the tip of the nail, in a second color, or a set of diagonal stripes, across the dried first layer of nail polish is provided. The present invention relates to providing, in a simple and efficient, relatively inexpensively, manner, a product which allows fingernails to be quickly coated with a high-gloss, enamel-look. The product can be of a single color for ordinary looking fingernail polishing or, preferably, a fanciful design superimposed on a solid color background of nail polish enamel can be provided for a French manicure look. The manicure or freshly polished look, provided by the present invention, is accomplished by directly adhering, by self-adhesive means, a fingernail coating to the nails, consisting of semi-solid nail enamel. This, then eliminates application of liquid enamel to the fingernails by manually brushing. Also, the prior art method of applying a coat of liquid nail polish to the fingernails suffers from the disadvantage that uniformity of thickness of application is extremely difficult, often resulting in a portion or all of one nail being coated with more nail polish than another portion or all of another nail. This lack of uniformity often caused the wearer to remove the polish, after drying, and then reapply a new coat of liquid polish in an attempt to provide uniformity of nail polish application.

Another problem which the prior art application of liquid nail polish suffered from, was that the wearer's skin often negatively reacted to the accidental contact with the nail polish, which was quite often due to the manual brushing of the polish, in liquid form, onto the skin. The use of the same nail enamel, but now, however, in a semi-solid form, eliminates the accidental contact between the liquid nail enamel and the user's skin and the negative reaction therebetween is eliminated.

US-A-2 688 331 discloses a nail coating in which a blank formed from plastics or metal film with an adhesive backing is applied to a nail to provide a coating. The blank is supplied upon a plastics support, from which it is removed, prior to application to a nail. Whilst overcoming certain of the above-discussed problems; the disclosed coatings do not provide the desired appearance.

With a view to solving the above problems, the

invention provides a product for providing a fingernail polish coating to a fingernail according to one of Claims 1 to 6 and a method of manufacturing such a product according to Claims 7 to 10.

The prior art, with respect to the product disclosed herein, is, of course, liquid finger nail enamel which comes in bottled form and is applied by either a manicurist or the individual, herself, by brushing onto the fingernails and then drying. As previously mentioned, fingernails, after being brushed with the liquid enamel, must dry, without touching anything else, for a few minutes. During this time, however, the just-coated fingernails emit, by virtue of the fragrance of the curing enamel, a pleasant but, often, too overpowering aroma. The French manicure or polishing of women's nails, recently quite popular, requires a second partial, coating of the completely dried fingernails. This, of course, is time consuming and, in addition, requires the applier, whether manicurist or the individual, herself, to be quite adept at brushing only a portion of each nail with a design of a second color of enamel. Clearly, this is quite difficult, labor intensive, frequently unsuccessful, due to smearing, hand moving, shaking, etc. and rather expensive.

The present invention relates to a method of manufacturing finger nail coatings in a semi-solid state. A set of fingernail coatings are provided for simple and inexpensive application to the nails which will not smudge or smear, need minimal time to dry and, yet, can be pre-printed with a design to look like the "perfect" manicure and French manicure. In addition, the curing of the semi-solid fingernail coatings emits an aroma almost identical in smell, but on a reduced level (due to reduced volatility of the semi-solid nail enamel of the coatings) to that of the drying of ordinary liquid enamel and that, too, enhances the desirability, while retaining authenticity, of the semi-solid fingernail coating application process.

## Summary of the Invention

The present invention relates to a method of manufacturing a set of fingernail coatings or a manicure film in semi-solid form which, until desirably used, is stored in an air-tight envelope and to a product so formed. The invention also relates to the product, itself, independent of the method of manufacture. Upon application, the user removes the film from the package, if necessary separates the strip of film into individual nail coatings, removes the adhesive backing sheet from the film and places the film on an individual nail. The end or edge of the nail coatings are then trimmed to correspond precisely to the nail shape and dimensions. Then, the nail film, now in individual nail shapes, is adhesively secured to the nails, by pressing them firmly onto the nails. The nails are then further air dried or "cured" in a very short time period. During the drying time, however, the nail coatings will emit a pleasing aroma, quite similar to that generated by liquid nail enamel when it is drying but on a much reduced aromatic level.

The nail coatings may be made by using a mold having a pour hole and a slot or passage for a sheet of adhesively-backed paper to pass through. Liquid nail enamel is poured onto the sheet of adhesively-backed paper as it is slowly drawn through the mold. A uniformly coated, adhesively backed nail coating sheet is thus provided. The sheet is then dried, for a predetermined time, at a predetermined temperature or, until, the sheet has the nail enamel coating in a semi-solid, yet not completely dried state. The strip is then preferably cut into sets of five fingernail coatings. Preferably, too, the sheet is provided with a ribbon or tear strip which serves to facilitate the individual application of the nail coatings to the fingernails by easing removal of the coatings from the adhesive-backed paper. The sets of coatings, after partial drying, are encased in a substantially air-tight envelope until used.

#### Brief Description of the Drawings

Drawing 1 is an exploded view of the mold apparatus for manufacturing the nail coatings.

Drawing 2 is a longitudinal cross-sectional view of the mold for manufacturing the nail coatings, shown in its assembled state.

Drawing 3(A) is a perspective view of the mold apparatus for manufacturing the nail coatings, shown with the adhesive-backed strip of paper located in the mold yet, prior to passing the paper through the mold. The drawing also shows the mold fill-hole full of liquid nail enamel.

Drawing 3(B) is a perspective view of the mold apparatus for manufacturing the nail coatings, shown with the adhesive-backed strip of paper having been partially pulled through the mold, and the liquid nail enamel having been uniformly coated onto a portion of the strip of paper; the level of liquid nail enamel, in the mold fill-hole being lower than that shown in Drawing 3(A), since a portion of the liquid has now been transferred to the strip of paper, as also shown in this drawing.

Drawing 4(A) is a partial perspective view of the nail coating product or manicure film, after it has been appropriately cut and shows individual nail coatings.

Drawing 4 (B) is a partial perspective view of the nail coating product or manicure film after it has been further coated or printed with an attractive design, superimposed on top of the initial colored background, of semi-solid, nail enamel.

Drawing 5 is a partial cross-sectional view of the nail coatings, after drying on the adhesively-backed paper, i.e., the manicure film is coated on the adhesively-backed paper and some adhesive is transferred to the nail enamel on its bottom or underneath surface.

Drawings 6 show the fingernail coatings, after application to an individual nail, and also shows a second finger and nail of the fingernail coating-applying individual, as it is used for further trimming of the fingernail coating to the shape and dimensions of the nail on which the

coating is applied. The Drawings also show the finished "polished" look of the individual's fingernails, both with a solid color nail enamel and, in addition, shows the fingernail coating if it has the printed design superimposed on a solid color background.

#### Detailed Description of the Drawings and the Preferred Embodiment of the Invention

The present invention, as mentioned, relates to fingernail coatings which are applied to an individual's nails in a minimum of time, with minimum effort, require a minimum of drying time and, yet, provide a visually pleasing look of "just polished," high gloss, appear as if the nails were polished with liquid nail polish and, also, provide, where desired, the look of a French manicure, i.e., the look of a design of nail polish coated on top of a background of solid nail polish. In addition, the present invention provides, during the final curing or drying of the semi-solid nail coatings, the otherwise available and olfactory pleasing smell of liquid nail enamel as it dries but on a reduced level.

According to a preferred method of manufacturing the present nail coatings, a mold (best seen in Drawings 1, 2, 3 and 4) is used, generally referred to as 1, and comprises a bottom half or panel 2 and an upper half or panel 3. The bottom half or panel 2 has a center passage 5 recessed therein which serves to guide the passage of and hold a strip of adhesively-backed paper therethrough, when the mold is assembled together. The depth of the passage 5 is sufficient to allow the adhesive-backed strip of paper 4 to be easily pulled through the mold and to have the liquid nail polish become uniformly coated onto the strip of paper as it is pulled through the mold at a uniform rate. A set of alignment and mold securing holes are provided along with corresponding pegs to assemble the halves 2 and 3 together.

The upper half or panel 3 is provided with a mold fill hole or aperture 6 which completely passes through the upper half or panel 3. When the mold halves 2 and 3 are assembled together, as seen in Drawings 2, 3 and 4, liquid nail enamel can be poured into the mold fill hole 6 and as the paper strip 4, having an adhesive backing, is pulled through the passage 5 (with the adhesive material facing towards the bottom of the upper half or panel 3), the liquid nail enamel is uniformly coated onto the strip of paper. It should be appreciated that the strip of paper provides adhesiveness beneath the application of the liquid nail enamel so that upon separation of the adhesive backing sheet from the nail coatings, after initial drying of the liquid nail coatings into their semi-solid state, the nail coatings are themselves adhesively backed and thus capable of being easily secured, by location and pressing, onto the nail.

Preferably, the mold fill hole 6 downwardly expands, from the top of the upper half or panel 3 to the bottom thereof, i.e., it outwardly tapers from the top surface of the upper half or panel 3 to the bottom surface (the sur-

face which is intended to be placed immediately over and in contact with the upper surface of the bottom half or panel 2). This allows the nail enamel liquid to spread out over a larger area than area of the top opening of the mold fill hole 6. Preferably, the length of the bottom or enlarged portion 7 of the mold fill hole 6 corresponds to the length of the fingernails sought to be coated with the ultimate product produced by the mold, i.e., the fingernail coatings.

Drawing 3(A) shows a strip of adhesive-backed paper 4, located between the upper half or panel 3 and the lower half or panel 2 of the mold 1, with the paper 4 secured within the confines of passage 5. This drawing also shows the mold, in its assembled state, with the mold fill hole 6 fully filled with liquid nail enamel 9. Thus, the mold 1 is ready to manufacture the semi-solid nail coatings, the ultimate product to be produced. The arrow shown in Drawing 3(A) shows the intended direction of pulling the paper 4, during the manufacturing process.

Drawing 3(B) shows the same assembled mold, after a portion of the adhesively-backed strip of paper 4 has been pulled through the passage 5 of the mold 1. This Drawing shows the paper 4 coated with a uniform thickness of nail enamel 10 of substantially the same length as the length of the large portion 7 of the fill up hole 6 (See Drawing 3(B)). Further, this Drawing shows how the level of the liquid nail enamel 9 has become reduced down below the top surface of the upper half or panel 3, as the paper 4 has been pulled through the mold and as the nail enamel has become coated onto the paper 4. Clearly, the downward decrease of the level of the liquid nail enamel 9 is directly related to the quantity of liquid nail enamel coated onto the adhesively-backed sheet of paper 4.

The upper half or panel 3 overlies the lower half or panel 2. After inserting the adhesive-backed paper 4 between the panels 2 and 3, within the confines of passage 5, the liquid nail enamel 9 is injected into the mold fill hole 6. Then, the paper is slowly and at a uniform rate, pulled through the passage 5. The lamination of the paper 4 with the liquid nail enamel 9 is preferably to a thickness of about 0.04 mm (40 microns). Subsequently, the paper, with the liquid nail enamel coated thereon, is dried at about 30° C. for about 5 minutes. It is then further cooled for about 2 to 3 minutes at about 0° C. This produces a semi-solid set of nail coatings which are adhesively-backed, when removed from the paper 4.

During the lamination or coating of the nail enamel onto the strip of paper, much of the solvent of the nail enamel volatilises. The film, as mentioned, turns into a semi-solid state as it is dried at about 30° C. for about 5 minutes. The adhesive layer of the adhesive-backed strip of paper 4 maintains its adhesion and yet, transfers it to the underside of the coatings because the nail enamel does not significantly volatilise there. The film 10 does not fully dry since it is cooled, after initial drying, at about 0° C. for about 2 to 3 minutes.

Drawing 5 shows a partial cross-sectioned view of the nail coatings after drying on the adhesive-backed paper 4. The film 13 is coated on the adhesive-backed paper 4 and some of the adhesive 8 is transferred to the nail enamel 13 on its bottom or underneath surface.

If desired, fanciful drawing patterns are pad printed onto the cooled and dried semi-solid nail coatings. The drawing patterns 11 are shown in Drawing 4(B) and also in Drawing 6. Then, after pad printing with the drawing patterns, if desired, the enamel portion of the strips are scored and trimmed according to the size of the fingernails 12. The coatings are cut into sets of five fingernail coatings and stored or packaged in a semi-solid state in a closed container. Preferably, the container is an air-tight plastic envelope.

The fingernail coatings, after drying can be handled rather cleanly and the coatings can be easily attached to fingernails. Preferably, the attachment of the fingernail coatings to the fingernails is facilitated by the use of a ribbon or tear strip 14, attached at one side of the semi-solid nail enamel coatings.

The semi-solid fingernail coatings, when desirably attached to the fingernails, are removed from the packaging, as a set of five fingernails, i.e., enough for coating an entire hand, separated, if desired into individual nail coatings, removed from the adhesive-backed strip of paper (facilitated by the ribbon or tear strip 14) and initially secured to the nail. Then, the fingernail coatings are firmly pressed onto the nail. After securing it to the nail, the portion of the nail coating extending over the edge of the nail can be cut off, by scissor, or by using another nail and scraping it against the edge of the just-coated nail. It is then a short period of time for the fingernail coatings to completely dry.

It should be appreciated that the scope of the present invention is not limited to the drawings illustrated or the embodiments described herein. Rather, it should be understood that the specific forms of the invention herein illustrated and described are intended to be representative only, as certain changes may be made therein, without departing from the clear teachings of the disclosure. Accordingly, reference should be made to the following appended claims, as interpreted by the Courts, in determining the full scope of the invention.

## Claims

1. A product for providing a finger nail polish coating to a fingernail comprising:

- (a) a backing sheet (4) of paper having an adhesive coating (8);
- (b) a substantially uniformly thick, flat layer of partially cured nail polish material (13), in the general shape of a fingernail (12); and
- (c) a substantially air-tight package in which said backing sheet of paper (4) and said layer of nail polish material (13) are stored, prior to

use, to inhibit further curing until said packing is opened

the arrangement being such that when the nail polish material (13) is removed from said backing sheet it is non-liquid yet three dimensionally conformable to the curvature of a fingernail and at least some of said adhesive coating (8) remains on its bottom surface (13') for securement to a fingernail (12).

2. A product as claimed in claim 1, further comprising a ribbon means, attached to said backing sheet of paper (4) for facilitating removal of said layer (13) of said nail polish material from said backing sheet.

3. A product as claimed in Claim 1, wherein said layer of said nail polish material (13) is about 0.04 mm thick.

4. A product as claimed in Claim 1, wherein said layer of said nail polish material (13) can be formed from liquid, commercially available, nail enamel.

5. A product as claimed in Claim 1, further comprising a visual design pattern (11) directly printed on said layer of nail polish material (13).

6. A product as claimed in Claim 5, wherein said visual design pattern (11) is obtainable by pad printing on said layer of nail polish material (13).

7. A method of manufacturing a product for providing a fingernail polish coating comprising:

- (i) providing a backing sheet (4) of paper having an adhesive coating (8);
- (ii) applying a layer of liquid nail polish material (13), in the general shape of a fingernail (12), to the adhesive coating (8);
- (iii) allowing the layer of nail polish material (13) to partially cure into a substantially uniformly thick, flat, non-liquid layer which, when removed from the backing sheet (4), retains at least some of the said adhesive coating (8) on its bottom surface (13') and is three dimensionally conformable to the curvature of a fingernail (12); and
- (iv) sealing the structure in an air-tight package to inhibit further curing of the nail polish material until the package is opened.

8. A method according to Claim 7, wherein the said layer of nail polish material (13) is formed from liquid, commercially available, nail enamel.

9. A method according to claim 7 or 8, comprising printing a visual design pattern (11) on the said layer of nail polish material (13) prior to sealing the

structure in the package.

10. A method according to Claim 9, wherein the said design (11) is pad printed onto the layer of nail polish.

#### Patentansprüche

1. Produkt zur Bereitstellung einer Nagellackschicht auf einem Fingernagel, umfassend:

- (a) ein Trägerblatt (4) aus Papier mit einer Haftschrift (8);
- (b) eine im wesentlichen einheitlich dicke, flache Schicht aus teilweise gehärtetem Nagellackmaterial (13) in der allgemeinen Form eines Fingernagels (12); und
- (c) eine im wesentlichen luftdichte Verpackung, in der das Trägerblatt aus Papier (4) und die Schicht aus Nagellackmaterial (13) vor der Verwendung gelagert werden, um eine weitere Härtung zu verhindern, bis die Verpackung geöffnet wird

wobei es so angeordnet ist, daß das Nagellackmaterial (13), wenn es von dem Trägerblatt entfernt wird, nicht flüssig, jedoch dreidimensional an die Krümmung eines Fingernagels anpaßbar ist und zumindest ein Teil der Haftschrift (8) auf seiner Bodenoberfläche (13') zur Befestigung auf einem Fingernagel (12) zurückbleibt.

2. Produkt nach Anspruch 1, das weiter eine Bänderichtung umfaßt, die an das Trägerblatt aus Papier (4) zur Erleichterung der Entfernung der Schicht (13) aus dem Lackmaterial von dem Trägerblatt angebracht ist.

3. Produkt nach Anspruch 1, worin die Schicht aus dem Nagellackmaterial (13) etwa 0,04 mm dick ist.

4. Produkt nach Anspruch 1, worin die Schicht aus dem Nagellackmaterial (13) aus einem flüssigen, im Handel erhältlichen Nagellack gebildet werden kann.

5. Produkt nach Anspruch 1, das weiter ein visuelles Designmuster (11) umfaßt, das direkt auf der Schicht aus Nagellackmaterial (13) aufgedruckt ist.

6. Produkt nach Anspruch 5, worin das visuelle Designmuster (11) durch Klotzdruck auf der Schicht des Nagellackmaterials (13) erhältlich ist.

7. Verfahren zur Herstellung eines Produkts zur Bereitstellung einer Nagellackschicht, umfassend:

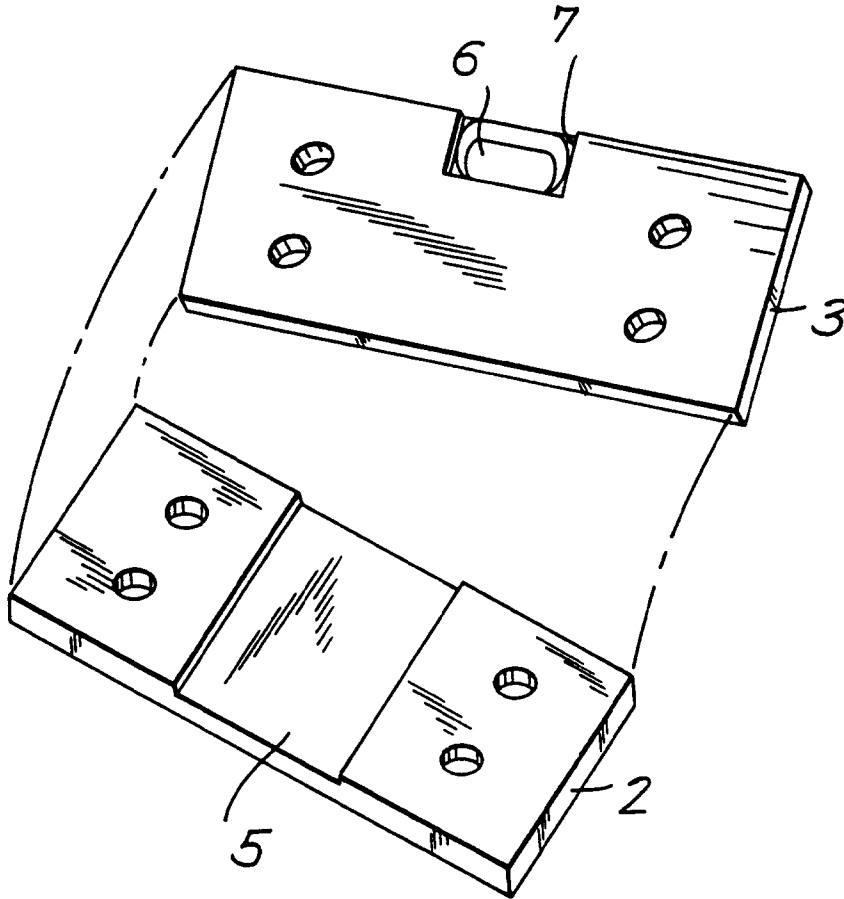
- (i) Bereitstellen eines Trägerblatts (4) aus Papier mit einer Haftschrift (8);

- (ii) Aufbringen einer Schicht aus flüssigem Nagellackmaterial (13) in der allgemeinen Form eines Fingernagels (12) auf die Haftschicht (8);
- (iii) teilweise Härten lassen der Schicht aus Nagellackmaterial (13) zu einer im wesentlichen einheitlich dicken, flachen, nicht flüssigen Schicht, die, wenn sie von dem Trägerblatt (4) entfernt wird, zumindest einen Teil der Haftschicht (8) auf ihrer Bodenoberfläche (13') zurückbehält und dreidimensional an die Krümmung eines Fingernagels (12) anpaßbar ist; und
- (iv) Versiegeln der Struktur in einer luftdichten Verpackung, um ein weiteres Härten des Nagellackmaterials zu verhindern, bis die Verpackung geöffnet wird.
8. Verfahren nach Anspruch 7, worin die Schicht aus Nagellackmaterial (13) aus flüssigem, im Handel erhältlichem Nagellack gebildet wird.
9. Verfahren nach Anspruch 7 oder 8, das das Drucken eines visuellen Designmusters (11) auf der Schicht aus Nagellackmaterial (13) vor dem Versiegeln der Struktur in der Verpackung umfaßt.
10. Verfahren nach Anspruch 9, worin das Design (11) durch Klotzdruck auf die Schicht aus Nagellack aufgebracht wird.

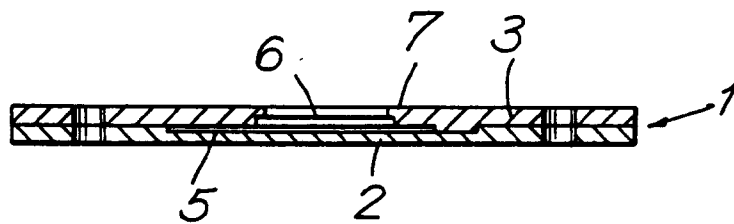
## Revendications

1. Produit pour fabriquer une pastille de vernis à ongles pour fixer à un ongle, comprenant :
- (a) une bande de papier de support (4) dotée d'un revêtement adhésif (8);
  - (b) un film plat, d'une épaisseur sensiblement uniforme, de vernis à ongles partiellement durci (13), ayant la forme générale d'un ongle (12); et
  - (c) un emballage sensiblement étanche à l'air dans lequel ladite bande de papier de support (4) et ledit film de vernis à ongles (13) sont stockés, avant utilisation, pour empêcher un durcissement supplémentaire avant l'ouverture dudit emballage
- l'agencement étant tel que lorsque le film de vernis à ongles (13) est enlevé de ladite bande de support, il est non liquide et peut, cependant, épouser, dans les trois dimensions, la courbure d'un ongle, et au moins une partie dudit revêtement adhésif (8) demeure sur sa surface inférieure (13') pour fixation à un ongle (12).
2. Produit selon la revendication 1, comprenant, en outre, une bande, fixée à ladite bande de papier de support (4), pour faciliter l'enlèvement dudit film (13) dudit vernis à ongles de ladite bande de support (4).
3. Produit selon la revendication 1, dans lequel ledit film dudit vernis à ongles (13) a une épaisseur d'environ 0,04 mm.
4. Produit selon la revendication 1, dans lequel ledit film dudit vernis à ongles (13) peut être fait de vernis liquide, disponible dans le commerce.
5. Produit selon la revendication 1, comprenant, en outre, un motif décoratif (11) imprimé directement sur ledit film de vernis à ongles (13).
6. Produit selon la revendication 5, dans lequel ledit motif décoratif (11) peut être obtenu par impression au pochoir sur ledit film de vernis à ongles (13).
7. Procédé de fabrication d'un produit pour réaliser une pastille de vernis à ongles, comprenant les phases consistant à :
- (i) disposer d'une bande de papier de support (4) dotée d'un revêtement adhésif (8);
  - (ii) appliquer un film de vernis à ongles liquide (13), ayant la forme générale d'un ongle (12), sur le revêtement adhésif (8);
  - (iii) permettre au film de vernis à ongles (13) de durcir partiellement en un film non liquide, plat, d'une épaisseur sensiblement uniforme, qui, lorsqu'il est enlevé de la bande de support (4), retient au moins une partie dudit revêtement adhésif (8) sur sa surface inférieure (13') et peut épouser, dans les trois dimensions, la courbure d'un ongle (12); et
  - (iv) enfermer la structure dans un emballage étanche à l'air pour empêcher un durcissement supplémentaire du vernis à ongles avant l'ouverture de l'emballage.
8. Procédé selon la revendication 7, dans lequel ledit film de vernis à ongles (13) est fait de vernis liquide, disponible dans le commerce.
9. Procédé selon la revendication 7 ou 8, comprenant l'impression d'un motif décoratif (11) sur ledit film de vernis à ongles (13) avant d'enfermer la structure dans l'emballage.
10. Produit selon la revendication 9, dans lequel ledit motif (11) est imprimé au pochoir sur le film de vernis à ongles.

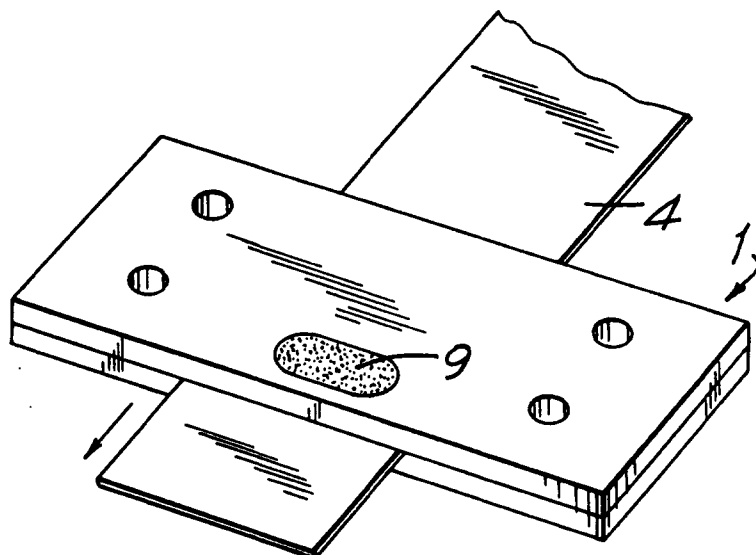
**FIG. 1**



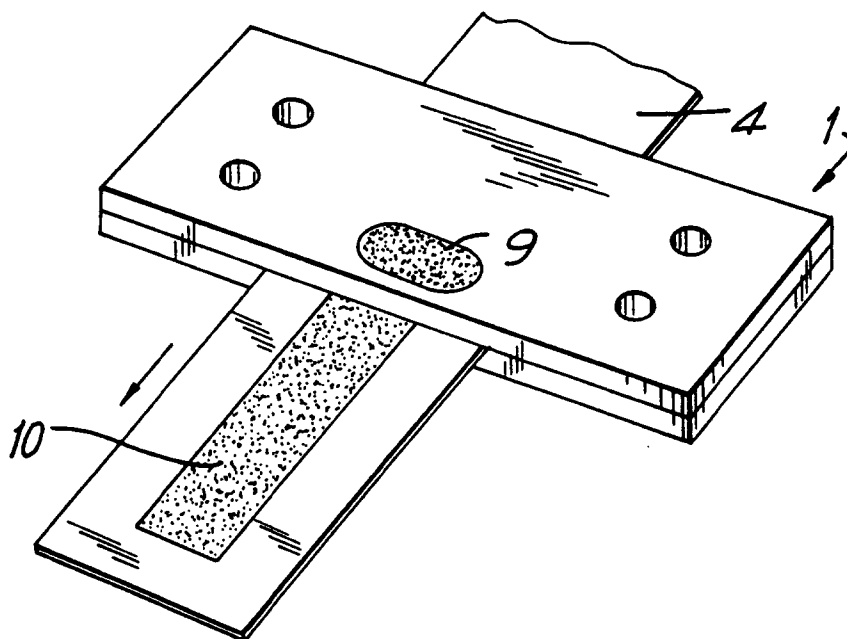
**FIG. 2**



**FIG. 3A**

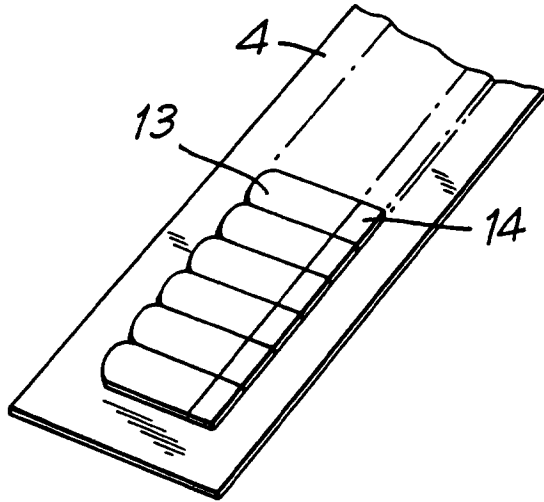


**FIG. 3B**

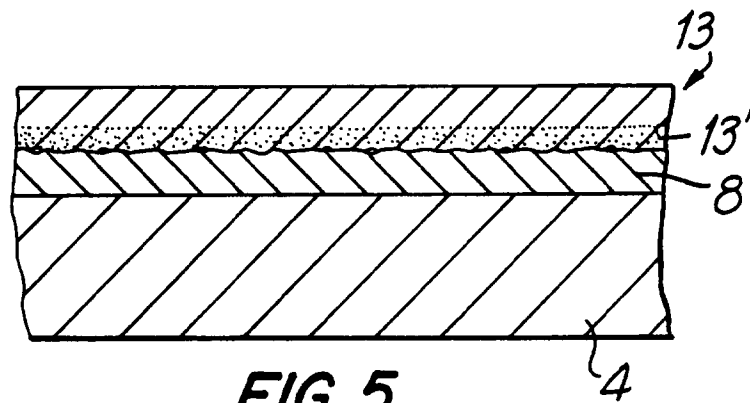
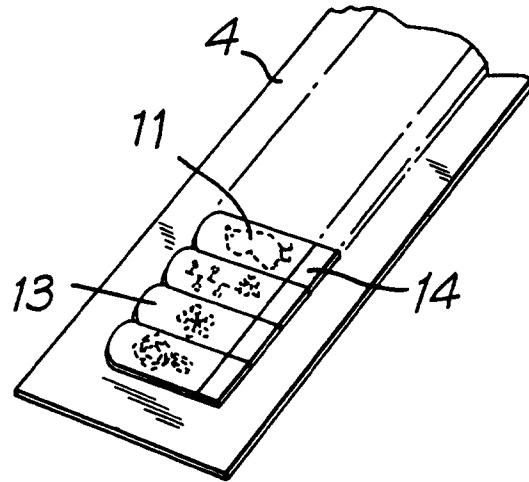




**FIG. 4A**



**FIG. 4B**



**FIG. 5**

**FIG. 6**

