US005515621A

United States Patent [19]

Bloom

[11] **Patent Number: 5,515,621**

[45] **Date of Patent: May 14, 1996**

[54] **NAIL DRYING SYSTEM**

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[21] Appl. No.: **264,823**

[22] Filed: **Jun. 23, 1994**

[51] **Int. Cl.**[6] **F26B 3/34**

[52] **U.S. Cl.** **34/275**; 34/202; 34/426; 34/68

[58] **Field of Search** ..... 34/275–278, 202, 34/426, 60, 68; 250/494.1, 504 R

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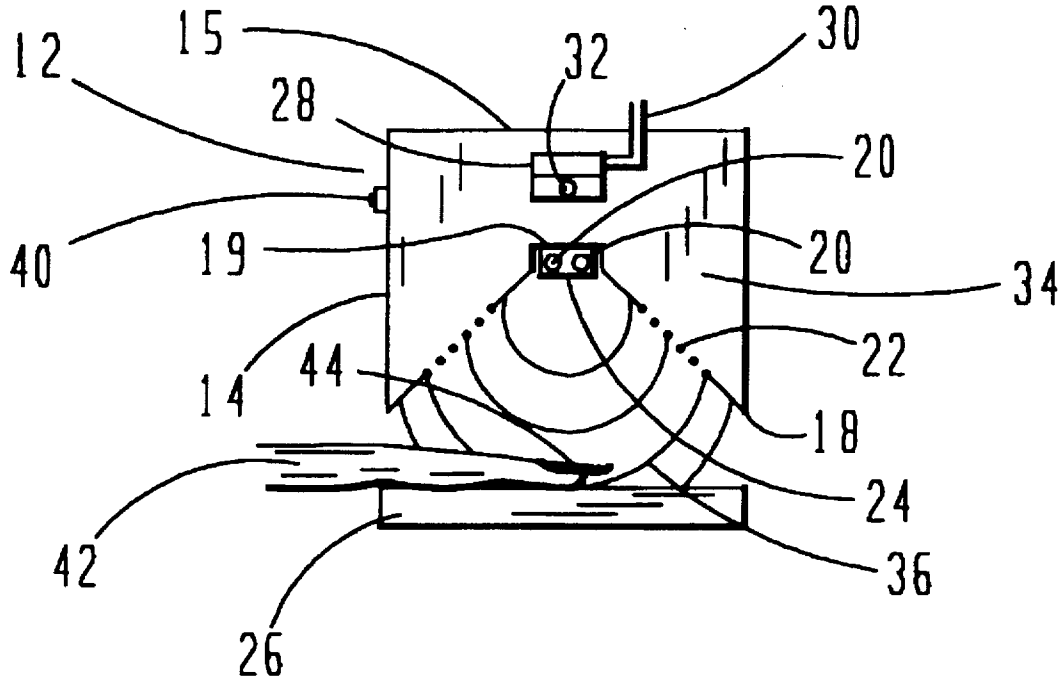
[57] **ABSTRACT**

The present invention disclosed and claimed herein comprises an apparatus and method for curing and drying coatings on nails of the human hand. A housing (**12**) is provided having two elongated solid sides (**14**), one elongated solid top (**15**), two solid ends (**16**), and an elongated underneath side (**18**) having a length. Restrictive air vents (**22**) are provided along the length of the elongated underneath side (**18**) of the housing (**12**), such that the housing (**12**) and air vents (**22**) define a substantially closed air pressure chamber (**34**). An ultraviolet light source (**20**) is disposed along the underneath side (**18**). A flat surface (**26**) running the length of the underneath side (**18**) is disposed a distance beneath the restrictive air vents (**22**) and the ultraviolet light source (**20**). Also provided are air pressure means (**28**) for pressurizing the air pressure chamber (**34**), such that air flows evenly through the restrictive air vents (**22**) and evenly aerates the area above the flat surface (**26**) along the full length of the underneath side (**18**).

15 Claims, 2 Drawing Sheets



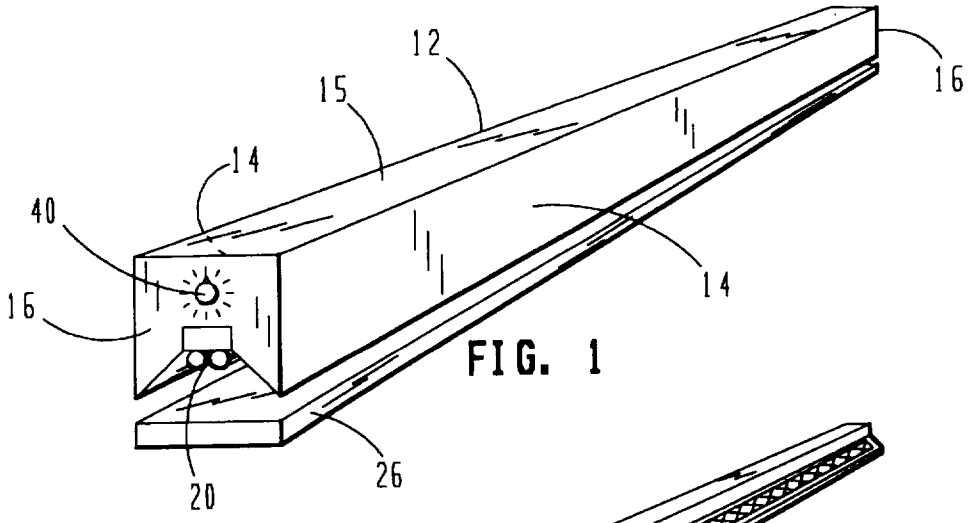


FIG. 1

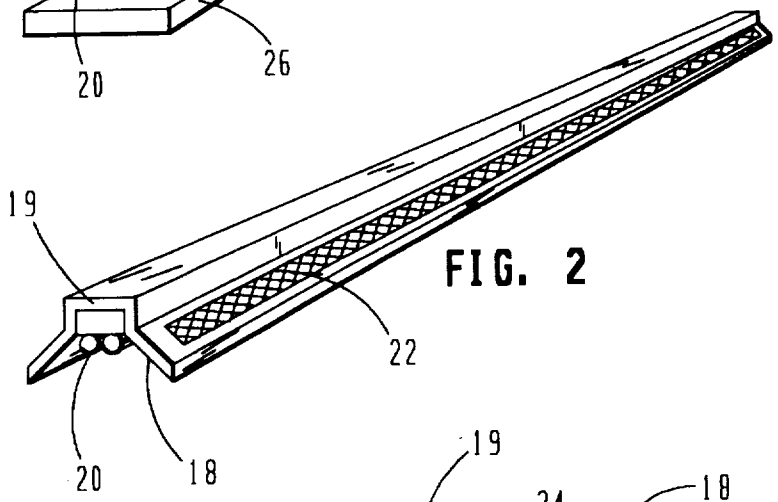


FIG. 2

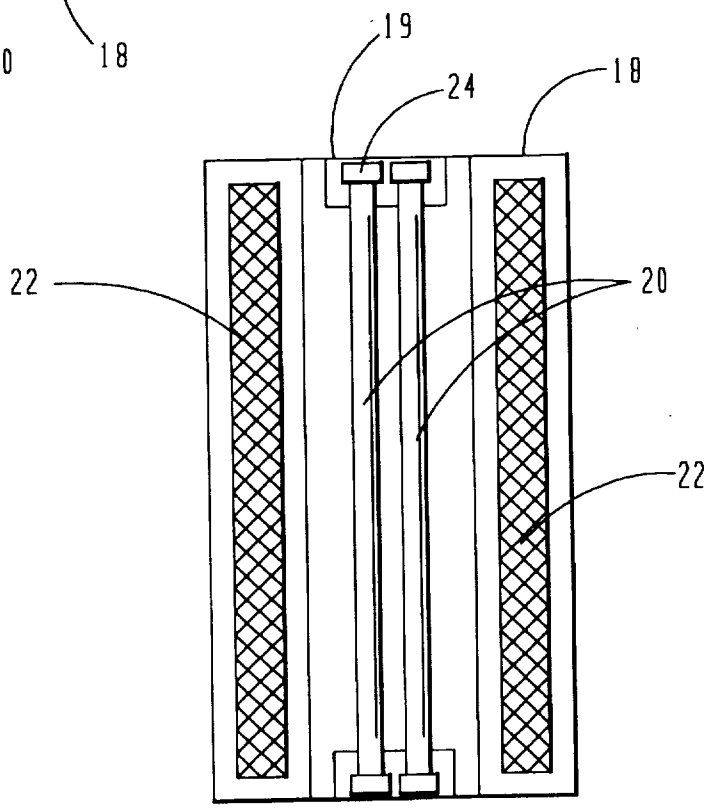


FIG. 3

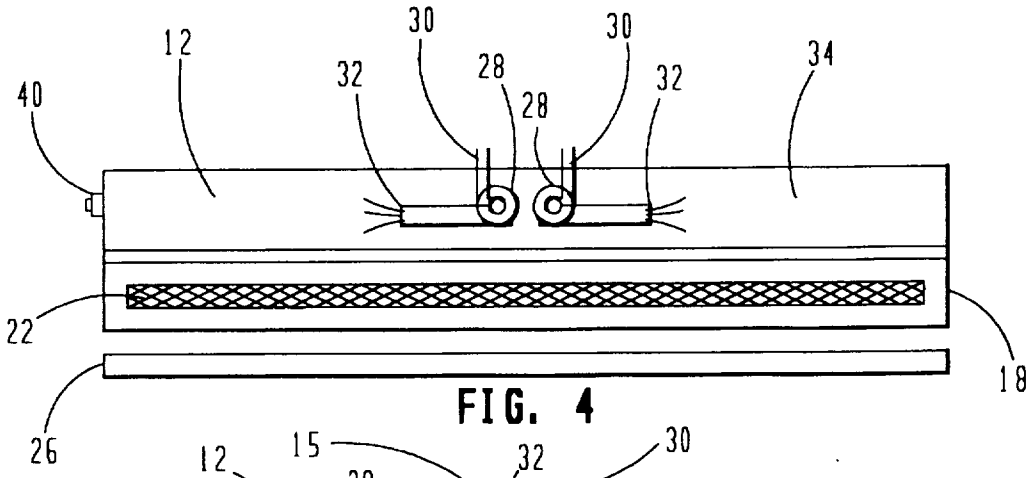


FIG. 4

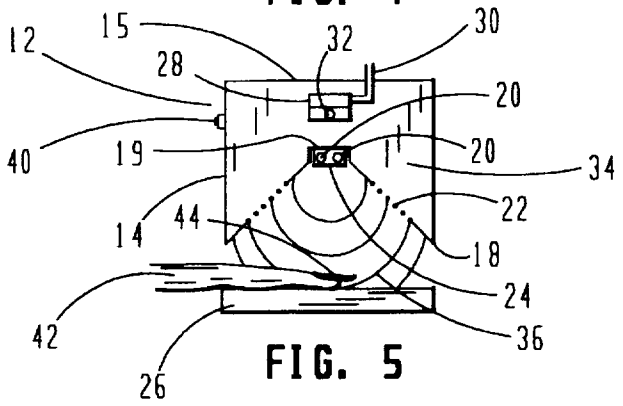


FIG. 5

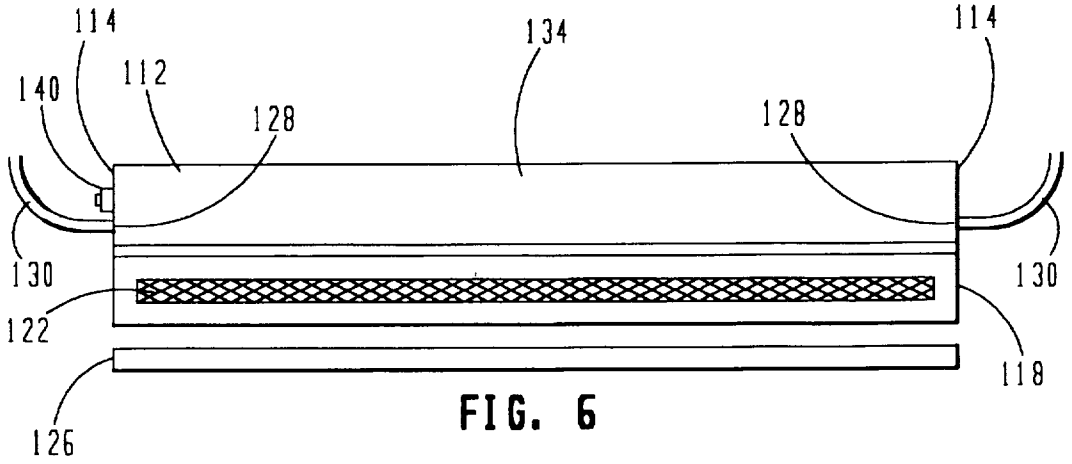


FIG. 6

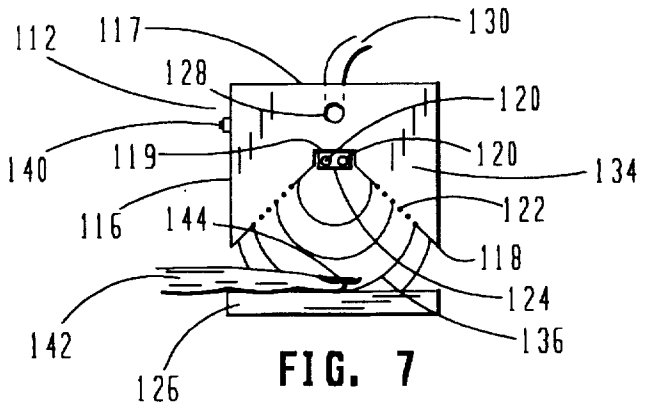


FIG. 7

NAIL DRYING SYSTEM

TECHNICAL FIELD OF THE INVENTION

The present invention pertains in general to a nail drying apparatus and method, and in particular, to drying nails using moving air and ultraviolet light.

BACKGROUND OF THE INVENTION

In the past, nail polish and enamels were usually air dried after they were applied in an effort to speed up the very slow drying process. Even this air drying process required a very long period of time before the nail polish dried on the nail. While waiting for the polish to dry, the polish wearer had to be extremely careful to avoid touching the surface of the nails, or else the polish would smear or smudge, resulting in a ruined manicure. In effect, the nail polish user or wearer was prevented from using their hands in any normal, every-day activity while the polish was drying. This especially proved burdensome for beauty salon customers who needed to manipulate or handle purses, car keys, and other objects immediately after receiving a manicure.

Various devices have been developed to try to expedite the drying process. These devices generally consisted of a box-type dryer which blew or circulated hot or cold air onto the wet surface of each of the nails for a specified period of time. However, this device, if successful, could only dry the top nail polish protection coating on each nail and did not dry the nail polish located underneath the top coating. Also, blowing a stream of air directly on a nail covered with wet nail polish would sometimes cause the polish to ripple from the direct air pressure. Consequently, additional exposure for an extended period of time to the drying air was usually required to dry the lower coating or coating of nail polish and the manicure was still easily ruined if the nail surface came into contact with another hard surface or the drying air was moving too fast. As a result, nail polish users or wearers still had to use their hands cautiously for relatively long periods of time so as not to ruin the manicure.

SUMMARY OF THE INVENTION

The present invention disclosed and claimed herein comprises an apparatus and method for curing and drying coatings on nails of the human hand. A housing is provided having two elongated solid sides, an elongated top, two solid ends, and an elongated underneath side having a length. Restrictive air vents are provided along the length of the elongated underneath side of the housing, such that the housing and air vents define a substantially closed air pressure chamber. An ultraviolet light source is disposed along the underneath side of the housing with the ultraviolet light source disposed such that it does not block the flow of air through the vent. A flat surface running the length of the underneath side is disposed a distance beneath the restrictive air vents and the ultraviolet light source. Also provided is an air pressure means for pressurizing the air pressure chamber, such that air flows evenly through the restrictive air vents and evenly aerates the area above the flat surface along the full length of the elongated underneath side.

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention and the advantages thereof, reference is now made to the following description taken in conjunction with the accompanying Drawings in which:

FIG. **1** illustrates a perspective view of the system of the present invention;

FIG. **2** illustrates a perspective view of the system of the present invention with the solid sides and ends removed;

FIG. **3** illustrates a view of the underneath side of the housing of the system of the present invention;

FIG. **4** illustrates a lengthwise cross-sectional view of the system of the present invention;

FIG. **5** illustrates a cross-wise cross-sectional view of the system of the present invention;

FIG. **6** illustrates a lengthwise cross-sectional view of an alternate embodiment of the system of the present invention; and

FIG. **7** illustrates a cross-wise cross-sectional view of an alternate embodiment of the system of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to FIG. **1**, there is illustrated a perspective view of the system of the present invention. A housing **12** is provided having two solid sides **14**, one solid top **15**, and two solid ends **16**. The two solid sides **14**, the solid top **15**, and the two solid ends **16** are made of a material that is resistant to the penetration of ultraviolet radiation. A flat surface **26** is provided underneath and spaced a distance from the housing **12**. The flat surface **26** is the same width and length as the housing **12**. Also provided is an underneath side (not shown). The three solid sides **14**, the two solid ends **16** and the underneath side (not shown) form an air pressure chamber (not shown). An ultraviolet light source **20** is provided and is disposed such that it runs the full length of the housing **12**. A timer **40** is provided and is operable to switch the ultraviolet light source **20** on and off.

Referring now to FIG. **2**, there is illustrated a perspective view of the system of the present invention with the two solid sides **14**, solid top **15**, and the two solid ends **16** removed. There is provided an elongated underneath side **18** with first and second elongated surfaces extending upward and inward from the solid sides **14**. Along the center of the underneath side **18**, a recess **19** is provided which runs the full length of the underneath side **18**. Disposed along the full length of the elongated underneath side **18** and on each side of the recess **19** are restrictive air vents **22**. Disposed along the full length of the underneath side **18** inside the recess **19** is an ultraviolet light source **20**. The ultraviolet light source is provided between the restrictive air vents **22** and inside the recess **19** such that the ultraviolet light source **20** will not block air flowing from the restrictive air vents **22**. The restrictive air vents **22** are formed such that they form less than a 90° angle with the horizontal, and such that they are both facing the center of the width of the flat surface **26**.

Referring now to FIG. **3**, there is illustrated a view of the bottom of the underneath side **18**. The two restrictive air vents **22** are illustrated running the full length of the underneath side **18**. A ultraviolet light socket **24** is disposed in the recess **19** at the center of each end of the underneath side **18**. Ultraviolet light bulbs **20** are disposed in the ultraviolet light socket **24** such that the ultraviolet light bulbs are positioned in the center of the underneath side **18** and inside the recess **19** and run the full length of the underneath side **18**. The restrictive air vents **22** are disposed on each side of the underneath side **18** and run the full length of the underneath side **18** on each side of the recess **19**. The restrictive air vents **22** are spaced apart from each other to allow room for the ultraviolet light bulbs **20**.

Referring now to FIG. **4**, there is illustrated a cross-sectional view of the system of the present invention. The housing **12** is illustrated. A flat surface **26** is provided a small distance below the underneath side **18** and running the full length of the underneath side **18**. Two fans **28** are provided inside the air pressure chamber **34**. Each fan **28** has an air intake **30** which extends outside the air pressure chamber **34** and an air outlet **32** which is inside the air pressure chamber **34**. The fans **28** are mounted to one of the solid sides **14** or the solid top **15** of the housing **12**. The fans **28** are located near the center of the length of the housing **12** and underneath side **18**. The fans **28** expel air in opposite directions along the length of the underneath side **18** and substantially parallel to the restrictive air vents **22**. The fans **28** are also controlled by the timer **40**.

Referring now to FIG. **5**, there is illustrated a side cross-sectional view of the system of the present invention. The housing **12** having two sides **14** and a top **15** is illustrated. The underneath side **18** is illustrated having disposed therein restrictive air vents **22**. The recess **19** is provided running the length of the underneath side **18**. The fan **28** is disposed inside the air pressure chamber **34** having an air intake **30** and an air outlet **32**. The fan **28** is positioned so that the air outlet **32** points toward the solid end of the housing (not shown), so that the air from the air outlet **32** is expelled parallel to the restrictive air vents **22**. Ultraviolet light fixtures **24** and ultraviolet light bulbs **20** are illustrated. Also illustrated is the flat surface **26** disposed a small distance below the underneath side **18**.

In operation, a person sets the timer **40** to the desired length of time. This turns on the fans **28** and the ultraviolet lights **20**. Then, one or more persons place their hand **42** containing fingernails **44** on the flat surface **26**. The ultraviolet lights **20** shine directly on the fingernails **44**. The fan **28** takes air in through the air intake **30** and expels it through the air output **32**. The air is expelled laterally, i.e., parallel to the length of the underneath side **18**. This creates a back pressure in the air pressure chamber **34**. The air pressure chamber **34** is long and enclosed by two solid sides **14**, one solid top **15**, two solid ends **16**, and the underneath side **18** containing the restrictive air vents **22**. Because of this, air does not flow directly from the air output **32** of the fan **28** through the restrictive air vents **22**, but the air from the air output **32** of the fan **28** builds up as back pressure in the air pressure chamber **34**. When the back pressure in the air pressure chamber **34** reaches a certain point, a gentle flow of air is pushed through the restrictive air vents **22** such that a pillow of air **36** is created just above the flat surface **26**. This is due to the fact that the air flow through the vents **22** is restricted to ensure that the pressure is relatively even over the entire length of the air pressure chamber **34**. This gentle pillow of air **36** coming from the restrictive air vents **22** in addition to the ultraviolet light helps to harden and dry the coatings on the nails **44** without disturbing or rippling the coating on the nails **44**. It is noted that the chamber **34** is substantially longer than a human hand, such that up to ten individuals can dry their nails at the same time by distributing the individuals on either side of the chamber **34**.

Referring now to FIG. **6**, there is illustrated a cross-sectional view of an alternate embodiment of the system of the present invention. A housing **112** is illustrated substantially similar to housing **12** above. A flat surface **126** is provided a small distance below the underneath side **118** and running the full length of the underneath side **118**. Two air inlets **128** are provided inside the air pressure chamber **134**. Each air inlet **128** has an air hose **130** which extends outside the air pressure chamber **134** and is attached to an air compressor (not shown). The air inlets **128** are disposed in each of the solid ends **114** of the housing **112**. The air inlets **128** expel air in opposite directions along the length of the underneath side **118** and parallel to the restrictive air vents **122**. The air compressor (not shown) is also controlled by the timer **140**.

Referring now to FIG. **7**, there is illustrated a side cross-sectional view of the alternate embodiment of the system of the present invention. The housing **112** having two sides **116** and a top **117** is illustrated. An underneath side **118** is illustrated having disposed in it restrictive air vents **122**. A recess **119** is provided running the length of the underneath side **118**. The air inlet **128** is disposed inside of the air pressure chamber **134** having an air hose **130**. The air inlet **128** is positioned in the middle of the solid end of the housing (not shown), so that the air from the air inlet **128** is expelled parallel to the restrictive air vents **122**. Ultraviolet light fixtures **124** and ultraviolet light bulbs **120** are also illustrated. Also illustrated is a flat surface **126** disposed a small distance below the underneath side **118**.

In operation, a person sets the timer **140** to the desired time. This turns on the air compressor (not shown) and the ultraviolet lights **120**. Then, one or more persons place their hand **142** containing fingernails **144** on the flat surface **126**. The ultraviolet lights **120** shine directly on the fingernails **144**. The air inlet **128** expels air into the air pressure chamber **134**. The air is expelled laterally, i.e., parallel to the length of the underneath side **118**. This creates a back pressure in the air pressure chamber **134**. The air pressure chamber **134** is long and enclosed by two solid sides **116**, one solid top **117**, two solid ends **114**, and the underneath side **118** containing the restrictive air vents **122**. Because of this, air does not flow directly from the air inlet **128** through the restrictive air vents **122**, but the air from the air inlet **128** builds up as back pressure in the air pressure chamber **134**. When the back pressure in the air pressure chamber **134** reaches a certain point, a gentle flow of air is pushed through the restrictive air vents **122** such that a pillow of air **136** is created just above the flat surface **126**. This is due to the fact that the air flow through the air vents **122** is restricted to ensure that the pressure is relatively even over the entire length of the air pressure chamber **134**. This gentle pillow of air **136** coming from the restrictive air vents **122** helps to harden and dry the coatings on the nails **144** without disturbing or rippling the coating on the nails **144**. It is noted that the chamber **134** is substantially longer than a human hand, such that up to ten individuals can dry their nails at the same time by distributing the individuals on either side of the chamber **134**.

In summary, there has been provided an apparatus and method for curing and drying coatings on nails of the human hand. A housing is provided having two elongated solid sides, one elongated solid top, two solid ends, and an elongated underneath side having a length. Restrictive air vents are provided along the length of the elongated underneath side of the housing, such that the housing and air vents define a substantially closed air pressure chamber. An ultraviolet light source is disposed along the underneath side of the housing with the ultraviolet light source disposed such that it does not block the flow of air through the vent. A flat surface running the length of the underneath side is disposed a distance beneath the restrictive air vents and the ultraviolet light source. Also provided is an air pressure device for pressurizing the air pressure chamber, such that air flows evenly through the restrictive air vents and evenly aerate the area above the flat surface along the full length of the elongated underneath side.

Although the preferred embodiment has been described in detail, it should be understood that various changes, substitutions and alterations can be made therein without departing from the spirit and scope of the invention as defined by the appended claims.

What is claimed is:

1. An apparatus for curing and drying coatings on nails of the human hand, comprising:

an elongated flat surface for allowing a plurality of users to place their hands thereon to allow the associated nails to dry when polish is applied thereto;

a housing having as an elongated solid top side, two elongated solid sides, two solid ends, and an elongated underneath side having a length and disposed above said surface, said elongated underneath side having first and second elongated surfaces extending upward and inward from said elongated solid sides;

restrictive air vents formed along said length of said first and second elongated surfaces of said elongated underneath side of said housing such that said housing and said air vents form a substantially enclosed air pressure chamber, wherein said restrictive air vents are disposed such that they form less than a 90 degree angle with the horizontal;

an ultraviolet light source disposed along said underneath side of said housing; and

air pressure means for pressurizing said pressure chamber such that air flows evenly through said restrictive air vents and evenly aerates the area above said flat surface for the full said length of said elongated underneath side.

2. The apparatus of claim **1**, wherein said housing is constructed of an ultraviolet light resistant material.

3. The apparatus of claim **1**, wherein said ultraviolet light source is disposed such that it does not block the flow of air through said vents.

4. The apparatus of claim **1**, wherein said air pressure means comprises fans for pulling air from the surrounding area into said air pressure chamber.

5. The apparatus of claim **4**, wherein said fans comprise a first fan and a second fan, each having an inlet and an outlet, each of said first and second fans disposed within the substantial center of said air pressure chamber, the outlets of said first and second fans interfaced with the exterior of said air pressure chamber, the outlet of said first fan directed toward one end of said air pressure chamber substantially parallel with said surface and the outlet of said second fan directed toward the opposite end of said air pressure chamber and substantially parallel to said surface.

6. The apparatus of claim **1**, wherein said air pressure means comprises an air compressor and means for transporting compressed air to said air pressure chamber.

7. The apparatus of claim **1**, wherein said air pressure means and said air vents cause the aeration to be evenly dispersed under said air pressure chamber.

8. The apparatus of claim **1**, and further comprising a timer for automatically turning on and off said ultraviolet light source and said aeration means.

9. A method for curing and drying coatings on nails on the human hand comprising the steps of:

applying a coating to the nails;

placing the hand containing the nails on a flat surface;

aerating the fingernails with moving air flowing out of an air pressure chamber through restrictive air vents along the underneath side of a housing which defines a substantially closed air pressure chamber, wherein the restrictive air vents are disposed such that they form a less than 90 degree angle with the horizontal; and

exposing the nails to an ultraviolet light disposed at the base of the substantially closed air distribution chamber.

10. The method of claim **9**, wherein the housing is constructed of an ultraviolet resistant material.

11. The method of claim **9**, wherein the step of aerating comprises using a plurality of fans disposed in the air pressure chamber for pulling air from the surrounding area into the air pressure chamber.

12. The method of claim **11**, wherein the fans comprise a first fan and a second fan, each having an inlet and an outlet, each of the first and second fans disposed within the substantial center of the air pressure chamber, the outlets of the first and second fans interfaced with the extension of the air pressure chamber, the outlet of the first fan directed toward one end of the air pressure chamber substantially parallel with the surface and the outlet of the second fan directed toward the opposite end of the air pressure chamber and substantially parallel to the surface.

13. The method of claim **9**, wherein the step of aerating comprises using an air compressor and to transport compressed air from the air compressor into the air distribution chamber.

14. The method of claim **9**, wherein the step of aerating comprises aerating with air evenly dispersed under the air pressure chamber.

15. The method of claim **9**, and further comprising the step of timing and automatically turning on and off the ultraviolet light source.

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