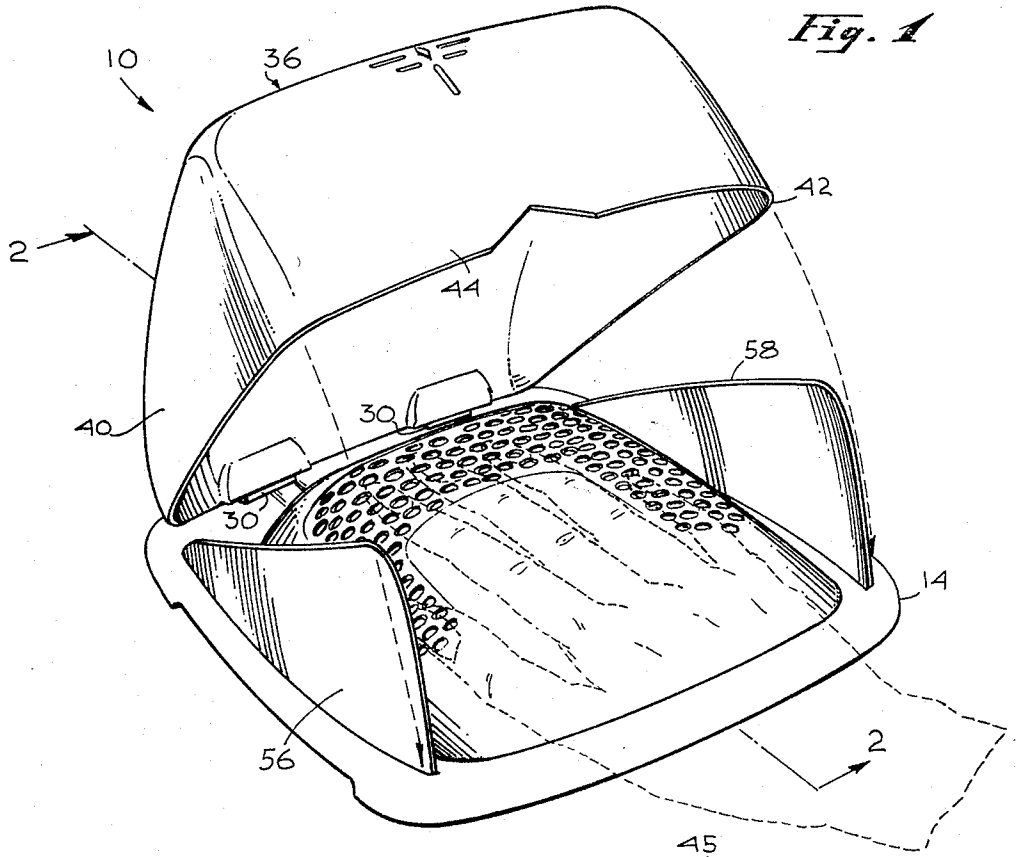
Nov. 29, 1966 H. A. SELDITZ 3,287,824

NAIL POLISH DRYER

Filed Aug. 5, 1963

Fig. 1



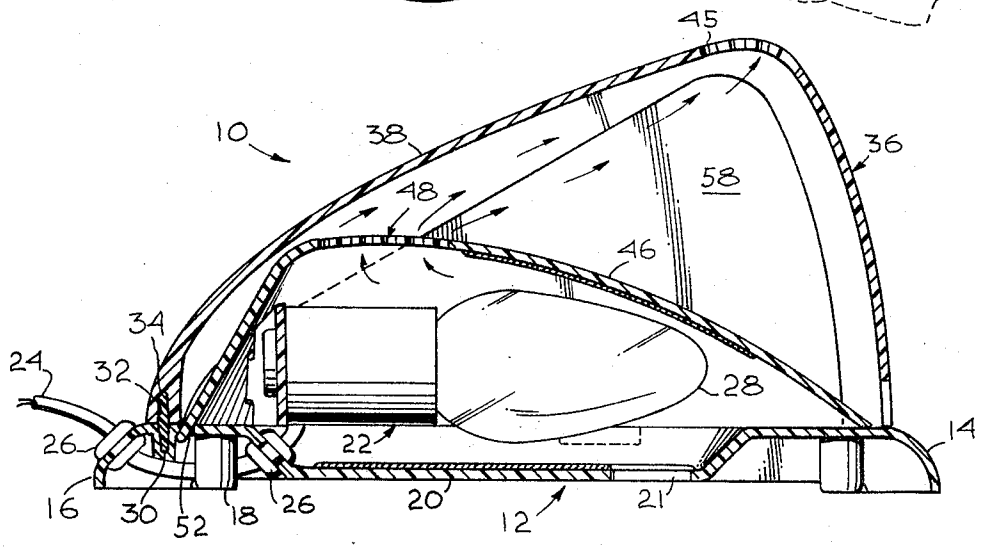


Fig. 2

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NAIL POLISH DRYER

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This invention relates generally to apparatus for drying polish applied to the nails of a human digit, i.e., the finger or toe.

In the complete operation of applying polish to fingernails, at least three coats are used. Initially, a base coat is applied, followed by the application of one or more color coats and a clear top coat. Although, in the interest of appearance and durability, it is far preferable to permit each coat to thoroughly dry prior to applying a coat thereover, in practice this is seldom done because of the relatively long time required to assure thorough drying. As a result, polish that appears on the outside to be dry is often soft underneath. The failure to properly dry each coat prevents the formation of a hard surface which could otherwise be achieved and therefore, considerably reduces the durability of the polish.

In order to obviate the long waiting time required for the drying of nail polish, several attempts have been made to provide various types of apparatus for accelerating the drying process. Generally, such apparatus is characterized by a heat producing means together with a blower device for forcing hot air onto the nails. Simpler efforts have involved merely exposing the nail to a heating element, such as an incandescent lamp.

All of the known prior art efforts directed to accelerating the drying process have proved to be unsatisfactory because they have failed to realize that considerable heat does not dry, but rather tends to maintain polish in a liquid or melted condition, and that excessive air movement tends to create ripples in the polish surface, rather than the smooth, hard surface desired. However, even apparatus which is not characterized by the utilization of excessive heat or excessive air movement has been effective only to the extent of drying the outer polish coat while leaving the inner coats in a relatively soft condition.

In view of the prior art deficiencies, it is an object of the present invention to provide an improved nail polish drying apparatus which is capable of simultaneously rapidly drying a plurality of applied coats of polish.

It is a further object of this invention to provide an improved nail polish drying apparatus which is more effective than heretofore known devices and yet simple and reasonably inexpensive to provide.

Briefly, the invention herein is based on the concept that improved nail drying can be effected by the application of limited amounts of heat to the cushion side of a digit in conjunction with passing naturally convected air across the digit nail. The effect of applying heat to the digit cushion increases blood circulation in the digit tip and the resulting heat generated tends to dry the undercoats of polish while the convected air tends to dry the top coat.

The novel features that are considered characteristic of this invention are set forth with particularity in the appended claims. The invention itself both as to its organization and method of operation, as well as additional objects and advantages thereof, will best be understood from the following description when read in connection with the accompanying drawings, in which:

FIGURE 1 is a perspective view of an apparatus comprising a preferred embodiment of the invention and shows the apparatus in open condition so as to permit the insertion of a hand or foot; and

FIGURE 2 is a sectional view taken substantially along the plane 2—2 of FIGURE 1 showing the apparatus in a closed condition.

Attention is now called to the drawings which illustrate an apparatus 10 comprising the preferred embodiment of the present invention. The apparatus 10 includes a base plate 12 having a front portion 14 and a rear portion 16. Depending from the underside of the base plate 12 are feet 18, preferably of rubber, for supporting the base plate in spaced relationship to a supporting surface (not shown) in order to prevent movement of the base plate from scratching the supporting surface.

The base plate 12 is provided with a recessed central portion 20 having an opening 21 defined therein. Supported on the upper surface of the base plate 12 and extending over the recessed portion 20 is a lamp socket 22 of conventional construction. An electric power cord 24 is connected to the socket 22 and extends through grommets 26 supported in the base plate 20. The lamp socket 22 is adapted to receive therein a lamp 28 which projects above the recessed portion 20 of the base plate 12.

A pair of spaced slots 30 are formed in the rear portion 16 of the base plate 12 and are adapted to receive the lower extremities of flexible strips 32. The upper extremities of the strips 32 extend into slots 34 defined in the lower rear portion of a cover 36.

The cover 36 includes an upper wall 38, a pair of similarly shaped side walls 40 and 42, and a front wall 44. The side walls 40 and 42 are substantially triangular in shape, each having a height which increases substantially proportionally to its remoteness from the rear portion of the base plate 12. The front wall 44 is substantially rectangular in shape. The upper wall 38 extends between the side walls 40 and 42 and front wall 44. Vent openings 45 are defined in the upper wall 38 and front wall 44. Preferably, the cover 36 is integrally formed. The flexible strips 32 function to permit hinged movement of the cover 36 with respect to the base plate 12. FIGURE 1 illustrates the cover 36 pivoted to an open position while FIGURE 2 illustrates the cover 36 pivoted to a closed position.

Supported on the base plate 12 above the recessed portion 20 is a digit supporting platform 46. The platform 46 is perforated at 48. The rear portion of the platform 46 projects into an opening 52 defined in the base plate 12 so as to prevent forward and rearward movement of the platform 46 with respect to the base plate 12 while still permitting easy removal thereof to provide access to the lamp socket 22 and lamp 28.

Supported on the base plate 12 are a pair of spaced side walls 56 and 58 which are similar in shape to the side walls 40 and 42 of the cover 36. The side walls 56 and 58 extend parallel to but are offset from the side walls 40 and 42.

In the utilization of the illustrated apparatus, a user will open the apparatus by pivoting the cover 36 with respect to the base plate 12. Thereafter, the user will rest the digits of either his hand (as shown in FIGURE 1) or foot on the digit supporting platform 46. Thence, the cover 36 will be pivoted toward a closed position. The side walls 56 and 58 whose forward edges frictionally engage the front wall 44 of the cover 36 can maintain the apparatus slightly open so as to permit insertion and withdrawal of the hand or foot during drying. In this position a substantially closed volume will be defined between the platform 46 and the cover 36. The side walls 56 and 58 of course aid in enclosing the volume. As a result, all of the warm convected air is vented either through the vent openings 45 in the cover 36 or through the opening between the cover 36 and the base plate 12. In either event, the convected warm air will pass over the nails.

The application of electrical power to the cord **24** will illuminate the lamp **28** so as to heat the air disposed between the platform **46** and base plate **12**. This heated air will, through natural convection, flow through the perforations **48** in the platform **46**. The ascending air passing through the perforated platform **46** will be diverted by the lower surface of the upper wall **38** of the cover **36** to move across the nails of the digits supported on the platform **46**. The convected air will then be directed forwardly and rearwardly and will be exhausted through the vent openings **45**. The effect of the naturally convected air moving over the nails tends to dry the upper polish coats applied to the nails. Inasmuch as the air movement caused by natural convection is not excessive, no rippling of the nail polish will be caused.

In addition to passing the warm air over the upper surface of the nails however, it will be noted that the convected warm air together with heat radiated by the lamp **28** will be applied to the cushion or undersurface of the digits. As a result, the blood temperature will be increased and the natural blood circulation will transfer heat to the nail. Thus, a heating and drying effect will be created on and immediately under the digit nail to thereby facilitate the drying of the undercoats of polish.

The dual effect of drying the upper polish coats by convected air and drying the under polish coats by increasing blood temperature not only reduces the total drying time requirement but perhaps more significantly assures proper drying by tending to prevent the drying of an upper polish coat without the accompanying drying of undercoats. Moreover, although the invention is useful for drying polish on both finger and toenails, it is particularly useful with toes which are characteristically cold and consequently normally very difficult to dry. Thorough drying of all applied coats in the described manner tends to reduce the brittleness and increase the flexibility of the polish thereby significantly increasing its durability.

Although the invention is exceedingly useful where polish coats are applied on top of coats not yet dry, the invention is of course also useful for drying each applied coat separately.

The cover **36**, platform **46**, and base plate **12**, can all be formed of appropriate plastic materials, it being apparent that the particular choice of materials is principally

dependent upon cost considerations rather than upon any critical operational considerations. A suitable source of heat can comprise a 10 watt incandescent lamp. Inasmuch as a clear lamp tends to introduce moisture while red and blue lamps tend to absorb moisture, utilization of the latter is clearly preferable. The illustration of a lamp however should not be taken to mean that other heating elements could not be just as advantageously utilized for heating the air to radiate heat and produce a naturally convected warm air flow.

What is claimed is:

A device for drying polish applied to the nail of a human digit including a base plate having front and rear portions; a digit cushion supporting perforated platform disposed above said base plate; a cover including an upper wall and a first pair of side walls depending therefrom, hinge means coupling said cover upper wall to said rear portion of said base plate for pivotal movement with respect thereto, said cover side walls each being substantially triangularly shaped and having a height which increases substantially proportionally to its remoteness from said base plate rear portion; said cover upper wall defining vent openings therein remote from said hinge means; a heating element supported between said platform and said base plate for heating air therebetween to cause it to be naturally convected through said perforated plate and directed over said platform and through said vent openings; second side wall means shaped similarly to said first pair of said walls and supported on said base plate parallel to and slightly offset from said first pair of side walls for frictionally engaging said cover to maintain it in a selected pivotal position.

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