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54 Improved cosmetic applicator and fibrous nib.

57 A cosmetic, in particular nail polish, applicator which has a fibrous nib (33) connecting a fluid chamber (11) to an extend-

ing applicator tip (41) is provided with at least one channel (39) extending along the outside of the nib to promote fluid flow.

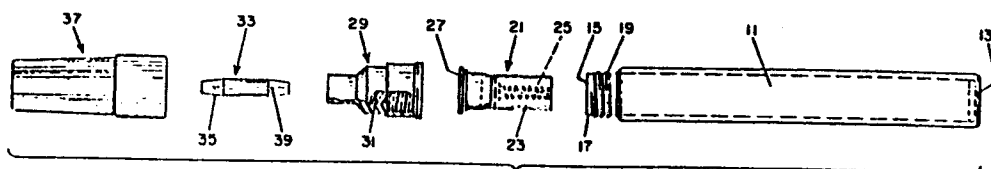


FIG. 1

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IMPROVED COSMETIC APPLICATOR AND FIBROUS NIB

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This invention relates to an improved cosmetic applicator and fibrous nib, more particularly it relates to applicators for nail polish, or like material, which include a fluid reservoir which is selectively placed in fluid communication with a fibrous nib by which the material is applied.

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For example, EP - A - 170000 relates to a nail polish composition, which has sufficiently low viscosity to enable the material to be applied using a pen-like applicator with a fibrous nib.

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The present invention relates to an improvement of the fibrous nib, which enables a better flow of nail polish or like material from the fluid reservoir to the nib tip for application.

It is therefore an object of the present invention to provide an improved nib for use in an applicator for applying nail polish or like material.

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In accordance with the present invention there is provided an improvement in an applicator for applying nail polish or like material which has a fluid supply chamber in fluid communication with an applicator nib formed entirely of homogenous fibre, which is held in a separate surrounding nib holder and extends through the holder from the fluid supply chamber to an extending nib portion. In accordance with the improvement, there is provided at least one fluid-conducting channel extending longitudinally along the outside of the nib from the fluid supply chamber to the extending nib portion.

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According to a preferred embodiment, the extending nib portion is tapered to form a chisel-like tip having tapers on opposite sides of the nib. Two channels are provided which intersect the tapers. The channels are preferably rectangular in cross-section and have a cross-

- 2 -

1 sectional area of about 10% of the nib cross-section.
Referring to the accompanying illustrative drawings:

Figure 1 is an expanded view of an applicator
5 having an improved nib in accordance with the present invention.

Figure 2 is an expanded view of the valve mechanism used in the applicator illustrated in Figure 1.

Figure 3 is a top view of a nib having the improvement in accordance with the present invention.
10

Figure 4 is a side view thereof.

Figure 5 is an interior end view thereof.

Figure 6 is an exterior end view thereof.

Referring to accompanying illustrative Figures 1
15 and 2, there is shown an expanded view of a nail polish applicator which includes the improvement according to the present invention. The applicator includes a cylindrical tube 11 which has a closed end 13 and forms a reservoir for fluid material, such as the nail polish
20 formulations described above. One end 15 of tube 11 is open and is formed with a cylindrical projection 17 having external threads 19. A valve assembly 21 fits into the open end 15 of tube 11 and is held at end 15 by a shoulder provided on valve 21.

25 Valve 21 is shown in greater detail in accompanying Figure 2 and includes a cylindrical case 23, a spring biased valve pin 25 and a top hat piece 27.

Valve member 21 is held into end 15 of tube 11 by nib holder 29, which is provided with internal threads
30 which engage threads 19 on tube 11. Nib holder 29 may include a toroidal interior washer 31 constructed of porous material, which surrounds nib 33 and may help prevent leakage of fluid around the nib. Nib member 33 is formed entirely of fibrous material and adapted to be
35 received in nib holder 29 wherein it is surrounded by washer 31. Nib 33 is separate from nib holder 29 and is

1 longitudinally moveable to operate valve 21 when nib
33 is pressed against a hard surface. Nib 33 has a
chisel-shaped tip 35 and includes, according to the
present invention, at least one longitudinal channel 39
5 extending along its length. A cap 37 is provided to
cover nib 33 and nib holder 29.

The improved nib in accordance with the present
invention is shown in greater detail in accompanying
illustrative Figures 3 to 6. The nib has an interior
10 end 43, and an exterior end 41 which has a conical taper
intersected by substantially planar surfaces 35, 36.
For manufacturing ease, the interior end 43 may also
have a conical taper 45 so that either end may then be
intersected by planar surfaces 35, 36 to form the
15 exterior end 41. The use of the planar surfaces provide
applicator end 41, which extends from holder 29, with a
tip which somewhat resembles a brush for smoothly applying
nail polish or other material. The fibrous nib has
uniform denure and may be formed of acrylic fibre or
20 nylon fibre. The nib is preferably soaked in melamine
resin or phenolic resin to provide stiffening of the
fibres and avoid damage to the nib shape when the nib
is pressed to operate valve 21.

An important feature of the improved nib according
25 to the present invention is the provision of at least
one longitudinal channel extending along the exterior of
the nib. The embodiment illustrated in accompanying
Figures 3 to 6 includes two channels 39 and 40 of
rectangular cross-section which extend along opposite
30 sides of the nib and intersect planar tapers 35 and 36
at the exterior applicator end 41 of the nib. It has
been found that the provision of such channels on the
nib improves the fluid flow and may enable the use of
fluid material, such as nail polish, which has a larger
35 average particle size, thereby giving improved coverage
when the nail polish is applied. In addition, the

- 4 -

1 channels provide a path for venting air to enter the
fluid reservoir as the fluid material becomes depleted.
It has been found that channels 39, 40 are preferably
of rectangular cross-section to provide the improved
5 fluid flow. It has been found that other shapes, such
as semi-circular or V-shaped channels, are also
acceptable.

The width and depth of channels 39 and 40 is
selected to allow improved flow of material and improved
10 air venting without causing leakage, and without seriously
weakening the structural strength of the fibrous nib.
In the exemplary embodiment illustrated, a nib having an
overall length of approximately 1 inch (2.54 cm) and a
diameter of 0.175 inch (0.44 cm) is provided with two
15 channels, each having a width of 0.04 inch (0.1 cm) and
depth of 0.03 inch (0.08 cm). The total cross-sectional
area of the two channels amounts to approximately 10% of
the cross-sectional area of the cylindrical portion of
the nib. The structural strength of the channelled nib
20 may also be maintained by re-treating the nib with resin
after formation.

It has been found that the channels on the nib may
be simultaneously formed by passing the nib material
longitudinal between opposite grinding wheels having the
25 required separation and thickness to form the channels.

Those skilled in the art will recognize that the
improvement according to the present invention may be
used in applicators for other materials having high
particle content, such as eye liner or other cosmetics.
30

1 CLAIMS

1. A cosmetic applicator comprising a fluid supply
chamber (11) in fluid communication with an
5 elongated applicator nib (33) formed entirely of
homogenous fibre, the said nib being held in a
separate surrounding nib holder (29) and extending
longitudinally through the said holder from the
said fluid supply chamber on the inside of the
10 said applicator to an extending nib portion on the
outside of the said applicator, characterised in
that there is provided at least one fluid-conducting
channel (39) extending longitudinally along the
outside of the said nib from the said fluid supply
15 chamber to the said extending nib portion.
2. An applicator as claimed in claim 1 wherein the
said nib has a taper on the said extending nib
portion, and wherein the said channel intersects
20 the said taper.
3. An applicator as claimed in claim 1 wherein there
are provided two of the said channels on opposite
sides of the said nib.
25
4. An applicator as claimed in claim 3 wherein the
said nib has tapers on opposite sides of the said
extending nib portion and wherein the said
channels intersect the said tapers.
30
5. An applicator as claimed in any of claims 1 to
4 wherein the said channel has a cross-section
which is small compared to the cross-section of the
said nib.
35
6. An applicator as claimed in claim 5 wherein the

- 6 -

- 1 said channel cross-section is about 10% of the
cross-section of the said nib.
- 5 7. An applicator as claimed in claim 1 wherein there
are provided two of the said channels having a
total cross-section which is about 10% of the cross-
section of the said nib.
- 10 8. An applicator as claimed in any of claims 1 to 4
wherein the said channels have a rectangular
cross-section.
- 15 9. A fibrous nib for a fluid applicator characterised
in that it comprises an elongated homogenous
fibrous body having a first applicator end and a
second fluid-receiving end, the said body having a
length and cross-section selected to be received in
a nib holder with the said applicator end extending
beyond the said nib holder and the said body having
20 at least one channel extending axially along the
periphery of the said body, the said channel having
a cross-section selected substantially to maintain
the structural rigidity of the said fibrous body.
- 25 10. A fibrous nib as claimed in claim 9 wherein the
said body has a taper at the said applicator end
and wherein the said channel intersects the said
taper.
- 30 11. A fibrous nib as claimed in claim 9 wherein the
said body has two of the said channels arranged on
opposite sides of the said body.
- 35 12. A fibrous nib as claimed in claim 11 wherein the
said body has two tapers on opposite sides of the
said body at the said applicator end, and wherein

1 the said channels intersect the said tapers.

13. A fibrous nib as claimed in any of claims 9 to 12
5 wherein the said channels have a rectangular
 cross-section.

14. A fibrous nib as claimed in any of claims 9 to 13
 wherein the total cross-sectional area of the said
10 channels is about 10% of the cross-sectional area
 of the said body.

15. A fibrous nib for a fluid applicator characterised
 in that it comprises a generally cylindrical
 homogenous fibrous body having a first applicator
15 end and a second fluid-receiving end, the said body having
 a length and diameter selected to be received in
 a nib holder with the said applicator end extending
 beyond the said nib holder, the said applicator end
 having tapers on opposite sides forming a chisel-
20 shaped tip, and two channels formed on opposite
 sides of the said body and intersecting the said
 tapers, the said channels having a cross-sectional
 area about 10% of the cross-sectional area of the
 said body.

25 16. A nib as claimed in claim 15 wherein the said
 channels have a rectangular cross-section.

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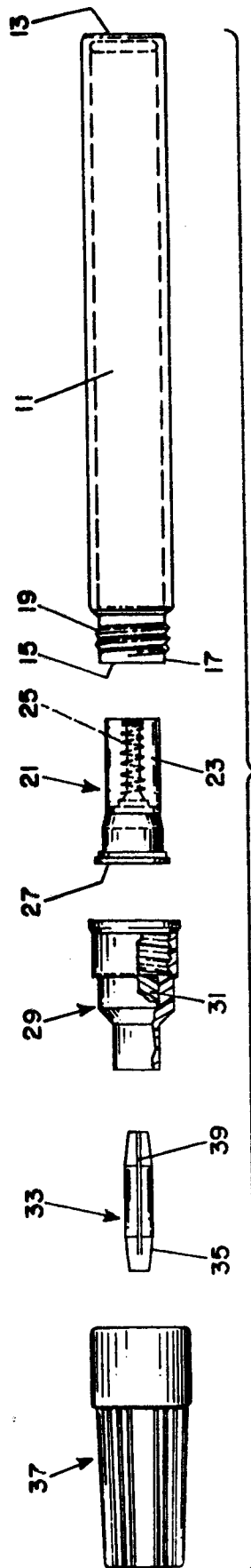


FIG. 1

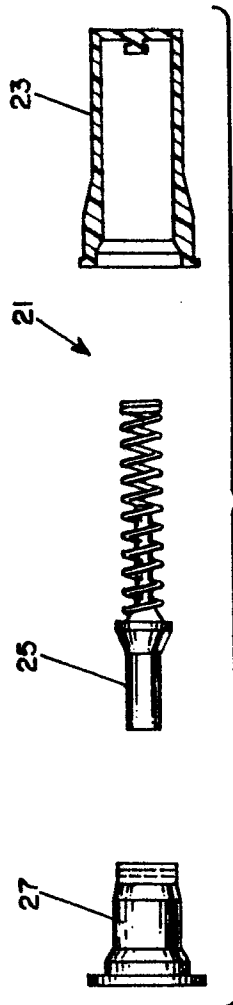


FIG. 2

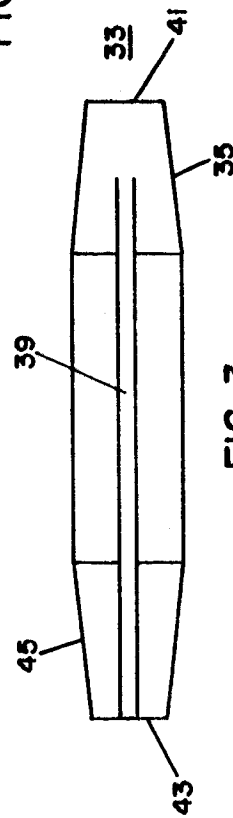


FIG. 3

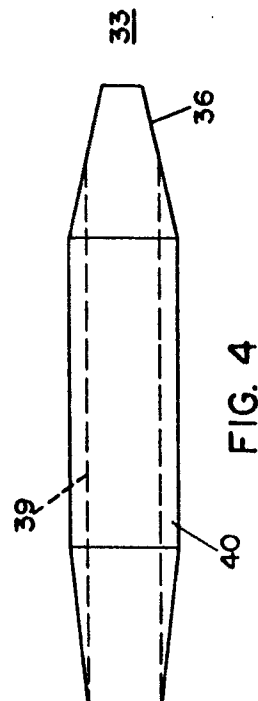


FIG. 4

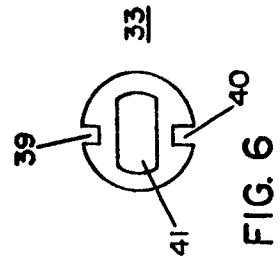


FIG. 5

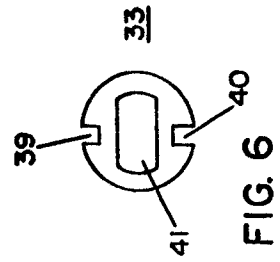


FIG. 6