

Front pages of 13 granted US patents



US009205283B2

(12) **United States Patent**
Miklatzky et al.

(10) **Patent No.:** **US 9,205,283 B2**
(45) **Date of Patent:** **Dec. 8, 2015**

(54) **SYSTEMS FOR CUSTOM COLORATION**

(75) Inventors: **Efraim Miklatzky**, Neve Ilan (IL);
Eliyahu Benny, Rishon-LeZion (IL);
Gilad Davara, Rehovot (IL); **Daniel**
Mandelik, Rehovot (IL)

(73) Assignee: **COLORIGHT LTD.**, Rehovot

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/005,828**

(22) PCT Filed: **Mar. 21, 2012**

(86) PCT No.: **PCT/IB2012/051351**

§ 371 (c)(1),
(2), (4) Date: **Jun. 19, 2014**

(87) PCT Pub. No.: **WO2012/127429**

PCT Pub. Date: **Sep. 27, 2012**

(65) **Prior Publication Data**

US 2014/0082854 A1 Mar. 27, 2014

Related U.S. Application Data

(60) Provisional application No. 61/454,764, filed on Mar. 21, 2011, provisional application No. 61/543,392, filed on Oct. 5, 2011, provisional application No. 61/585,701, filed on Jan. 12, 2012.

(51) **Int. Cl.**

G01J 3/00 (2006.01)
A61Q 5/10 (2006.01)

(Continued)

(52) **U.S. Cl.**

CPC **A61Q 5/10** (2013.01); **A45D 19/02** (2013.01);
A45D 44/005 (2013.01); **A45D 44/02**
(2013.01);

(Continued)

(58) **Field of Classification Search**

CPC G01J 3/00; G01J 3/02; G01J 3/10;
G01J 3/18; G01J 3/28; G01J 3/42

USPC 356/300-445
See application file for complete search history.

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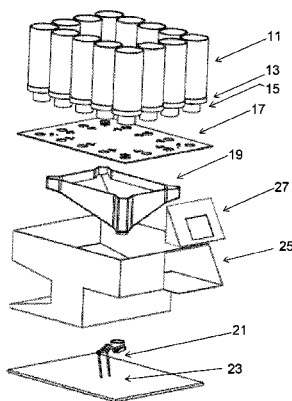
Primary Examiner — Abdullahi Nur

(74) *Attorney, Agent, or Firm* — Marc Van Dyke

(57) **ABSTRACT**

Novel systems and methods for performing treatment (e.g., coloration) of keratinous fibers are disclosed. The methods and systems utilize one or more of a dispensing device which is configured to provide customized composition for treating keratinous fibers (e.g., a coloring composition), optionally formed from tablets; an optical reader, for obtaining sufficient characteristics of the keratinous fibers to make a realistic prediction of the outcome of a treatment (e.g., coloring treatment); a computational units for predicting an outcome of a treatment, optionally being interfaced with the dispensing device and for selecting a customized treatment; and tablet formulations which are useful in preparing customized composition for treating keratinous fibers. Further disclosed are rapidly disintegrating tablets for use in the preparation of compositions for treating keratinous fibers.

5 Claims, 53 Drawing Sheets





US009316580B2

(12) **United States Patent**
Landa et al.

(10) **Patent No.:** **US 9,316,580 B2**
(45) **Date of Patent:** **Apr. 19, 2016**

(54) **SYSTEMS FOR CUSTOM COLORATION**

G01J 3/02 (2006.01)

(71) Applicant: **COLORIGHT LTD.**, Rehovot (IL)

G01J 3/18 (2006.01)

G01J 3/42 (2006.01)

(72) Inventors: **Benzion Landa**, Nes Ziona (IL); **Efraim Miklatzky**, Neve Ilan (IL); **Sagi Abramovich**, Raanana (IL); **Yacov Mazuz**, Rishon-LeZion (IL); **Anton Krassilnikov**, Holon (IL); **Eliyahu Benny**, Rishon-LeZion (IL); **Elena Ishkov**, Givataim (IL); **Lior Shahar**, Kiryat Ono (IL); **Daniel Mandelik**, Rehovot (IL)

(52) **U.S. Cl.**

CPC *G01N 21/27* (2013.01); *B65D 1/0223* (2013.01); *B65D 83/04* (2013.01); *G01N 21/21* (2013.01); *G01J 3/02* (2013.01); *G01J 3/18* (2013.01); *G01J 3/42* (2013.01); *G01N 2201/062* (2013.01); *G01N 2201/105* (2013.01)

(58) **Field of Classification Search**

CPC *G01J 3/00*; *G01J 3/02*; *G01J 3/10*; *G01J 3/18*; *G01J 3/28*; *G01J 3/42*
USPC 356/300-445
See application file for complete search history.

(73) Assignee: **COLORIGHT LTD.**, Rehovot (IL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(56) **References Cited**

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424/70.2

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Primary Examiner — Abdullahi Nur

(74) *Attorney, Agent, or Firm* — Marc Van Dyke

(21) Appl. No.: **14/501,010**

(22) Filed: **Sep. 29, 2014**

(65) **Prior Publication Data**

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Related U.S. Application Data

(63) Continuation-in-part of application No. 14/005,828, filed as application No. PCT/IB2012/051351 on Mar. 21, 2012.

(60) Provisional application No. 61/883,263, filed on Sep. 27, 2013, provisional application No. 61/585,701, filed on Jan. 12, 2012, provisional application No. 61/543,392, filed on Oct. 5, 2011, provisional application No. 61/454,764, filed on Mar. 21, 2011.

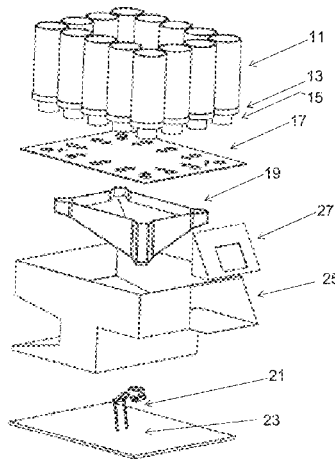
(51) **Int. Cl.**

G01J 3/00 (2006.01)
G01N 21/27 (2006.01)
B65D 83/04 (2006.01)
G01N 21/21 (2006.01)
B65D 1/02 (2006.01)

(57) **ABSTRACT**

Novel systems and methods for performing treatment (e.g., coloration) of keratinous fibers are disclosed. The methods and systems utilize one or more of a dispensing device which is configured to provide customized composition for treating keratinous fibers (e.g., a coloring composition), optionally formed from tablets; an optical reader, for obtaining sufficient characteristics of the keratinous fibers to make a realistic prediction of the outcome of a treatment (e.g., coloring treatment); a computational units for predicting an outcome of a treatment, optionally being interfaced with the dispensing device and for selecting a customized treatment; and tablet formulations which are useful in preparing customized composition for treating keratinous fibers. Further disclosed are rapidly disintegrating tablets for use in the preparation of compositions for treating keratinous fibers.

6 Claims, 74 Drawing Sheets





US009844687B2

(12) **United States Patent**
Landa et al.

(10) **Patent No.:** **US 9,844,687 B2**

(45) **Date of Patent:** ***Dec. 19, 2017**

(54) **SYSTEMS FOR CUSTOM COLORATION**

(71) Applicant: **COLORIGHT LTD.**, Rehovot (IL)

(72) Inventors: **Benzion Landa**, Nes Ziona (IL); **Efraim Miklatzky**, Neve Ilan (IL); **Sagi Abramovich**, Raanana (IL); **Yacov Mazuz**, Rishon-LeZion (IL); **Anton Krassilnikov**, Holon (IL); **Eliyahu Benny**, Rishon-LeZion (IL); **Gilad Davara**, Rehovot (IL); **Chen Ofek**, Rehovot (IL); **Elena Ishkov**, Givataim (IL); **Lior Shahar**, Kiryat Ono (IL); **Daniel Mandelik**, Rehovot (IL)

(73) Assignee: **COLORIGHT LTD.**, Rehovot (IL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **14/948,430**

(22) Filed: **Nov. 23, 2015**

(65) **Prior Publication Data**

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Related U.S. Application Data

(63) Continuation of application No. 14/005,828, filed as application No. PCT/IB2012/051351 on Mar. 21, 2012, now Pat. No. 9,205,283.

(Continued)

(51) **Int. Cl.**
G01J 3/00 (2006.01)
A61Q 5/10 (2006.01)

(Continued)

(52) **U.S. Cl.**
CPC **A61Q 5/10** (2013.01); **A45D 19/02** (2013.01); **A45D 44/005** (2013.01); **A45D 44/02** (2013.01);

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(58) **Field of Classification Search**

CPC G01J 3/00; G01J 3/02; G01J 3/10; G01J 3/18; G01J 3/28; G01J 3/42

See application file for complete search history.

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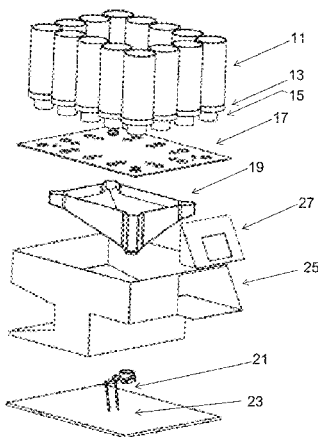
Primary Examiner — Abdullahi Nur

(74) *Attorney, Agent, or Firm* — Oblon, McClelland, Maier & Neustadt, L.L.P.

(57) **ABSTRACT**

Novel systems and methods for performing treatment (e.g., coloration) of keratinous fibers are disclosed. The methods and systems utilize one or more of a dispensing device which is configured to provide customized composition for treating keratinous fibers (e.g., a coloring composition), optionally formed from tablets; an optical reader, for obtaining sufficient characteristics of the keratinous fibers to make a realistic prediction of the outcome of a treatment (e.g., coloring treatment); a computational units for predicting an outcome of a treatment, optionally being interfaced with the dispensing device and for selecting a customized treatment; and tablet formulations which are useful in preparing customized composition for treating keratinous fibers. Further

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US00D721591S

(12) **United States Design Patent**
Hefetz et al.

(10) **Patent No.:** **US D721,591 S**

(45) **Date of Patent:** **** Jan. 27, 2015**

(54) **BOTTLE**

(71) Applicant: **ColoRight Ltd.**, Rehovot (IL)

(72) Inventors: **Joseph Hefetz**, Tel-Aviv (IL); **Yuri Movshovich**, Ramat-Gan (IL)

(73) Assignee: **ColoRight Ltd.**, Rehovot (IL)

(**) Term: **14 Years**

(21) Appl. No.: **29/433,010**

(22) Filed: **Sep. 25, 2012**

(51) **LOC (10) Cl.** **09-01**

(52) **U.S. Cl.**
USPC **D9/523**

(58) **Field of Classification Search**
USPC D9/516, 522, 523, 526, 547, 549-551,
D9/560, 564, 571-572; 215/381-385,
215/396-398, 235, 305; 220/666, 675;
222/566, 572, 215, 450-462
See application file for complete search history.

(56) **References Cited**

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Primary Examiner — Prabhakar Deshmukh

(74) *Attorney, Agent, or Firm* — Marc Van Dyke

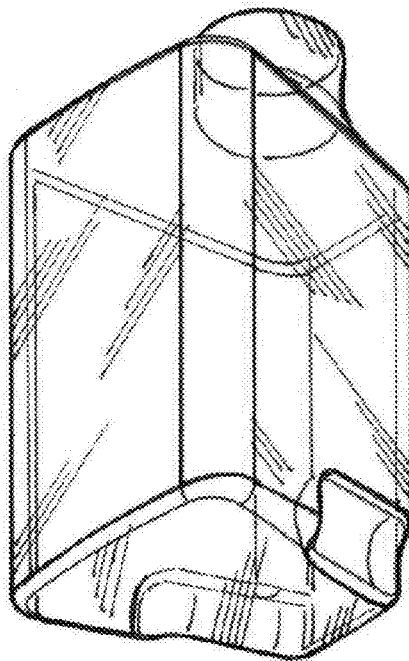
(57) **CLAIM**

The ornamental design for an bottle, as shown and described.

DESCRIPTION

FIG. 1 is a bottom plan view of a bottle showing our new design;
FIG. 2 is a left side elevation thereof;
FIG. 3 is a front elevation thereof;
FIG. 4 is a top plan view thereof;
FIG. 5 is a right side elevation thereof;
FIG. 6 is a bottom, front and side perspective view thereof;
FIG. 7 is a top, front and side perspective view thereof; and,
FIG. 8 is another perspective view thereof.

1 Claim, 1 Drawing Sheet





US00D731116S

(12) **United States Design Patent**
Hefetz et al.

(10) **Patent No.:** **US D731,116 S**
(45) **Date of Patent:** **** *Jun. 2, 2015**

- (54) **HAIR COLOR DISPENSER**
- (71) Applicant: **ColoRight Ltd.**, Rehovot (IL)
- (72) Inventors: **Joseph Hefetz**, Tel-Aviv (IL); **Yuri Movshovich**, Ramat-Gan (IL)
- (73) Assignee: **COLORIGHT LTD.**, Rehovot (IL)
- (*) Notice: This patent is subject to a terminal disclaimer.
- (**) Term: **14 Years**
- (21) Appl. No.: **29/433,652**
- (22) Filed: **Oct. 2, 2012**
- (51) **LOC (10) Cl.** **28-02**
- (52) **U.S. Cl.**
USPC **D28/7**
- (58) **Field of Classification Search**
USPC D28/7, 8, 20-22, 30-31, 76, 85, 99;
132/108, 202, 208, 317.32;
401/202-207, 261-267; D4/132-135;
D24/119
See application file for complete search history.

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Primary Examiner — Zenia Bennett

(74) *Attorney, Agent, or Firm* — Marc Van Dyke

(57) **CLAIM**

The ornamental design for an hair color dispenser, as shown and described.

DESCRIPTION

FIG. 1 is a front view of a hair color dispenser according to a first embodiment;
 FIG. 2 is a rear view of the hair color dispenser shown in FIG. 1;
 FIG. 3 is a right side view of the hair color dispenser shown in FIG. 1;
 FIG. 4 is a left side view of the hair color dispenser shown in FIG. 1;
 FIG. 5 is a top view of the hair color dispenser shown in FIG. 1;
 FIG. 6 is a bottom view of the hair color dispenser shown in FIG. 1; and,
 FIG. 7 is a perspective view of the hair color dispenser shown in FIG. 1.

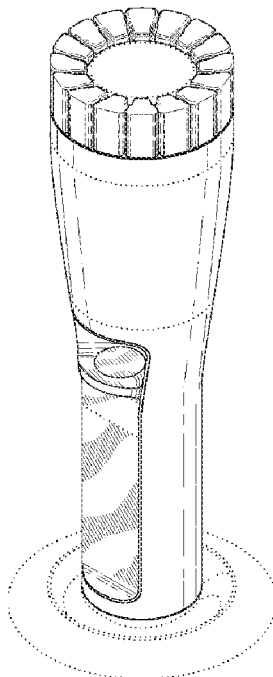
The broken lines are for the purpose of illustrating portions of the hair color dispenser and form no part of the claimed design.

1 Claim, 6 Drawing Sheets

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(12) **United States Design Patent**
Hefetz et al.

(10) **Patent No.:** **US D732,736 S**
(45) **Date of Patent:** **** Jun. 23, 2015**

(54) **HAIR READER**

(71) Applicant: **ColoRight Ltd.**, Rehovot (IL)

(72) Inventors: **Joseph Hefetz**, Tel-Aviv (IL); **Yuri Movshovich**, Ramat-Gan (IL)

(73) Assignee: **COLORIGHT LTD.**, Rehovot

(**) Term: **14 Years**

(21) Appl. No.: **29/433,309**

(22) Filed: **Sep. 27, 2012**

(51) **LOC (10) Cl.** **28-03**

(52) **U.S. Cl.**
USPC **D28/10**

(58) **Field of Classification Search**
USPC D28/9-10; D24/133, 144, 209-210;
235/462.44-462.49; 132/200
See application file for complete search history.

(56) **References Cited**

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Primary Examiner — Jennifer Rivard

(74) *Attorney, Agent, or Firm* — Marc Van Dyke

(57) **CLAIM**

The ornamental design for an hair reader, as shown and described.

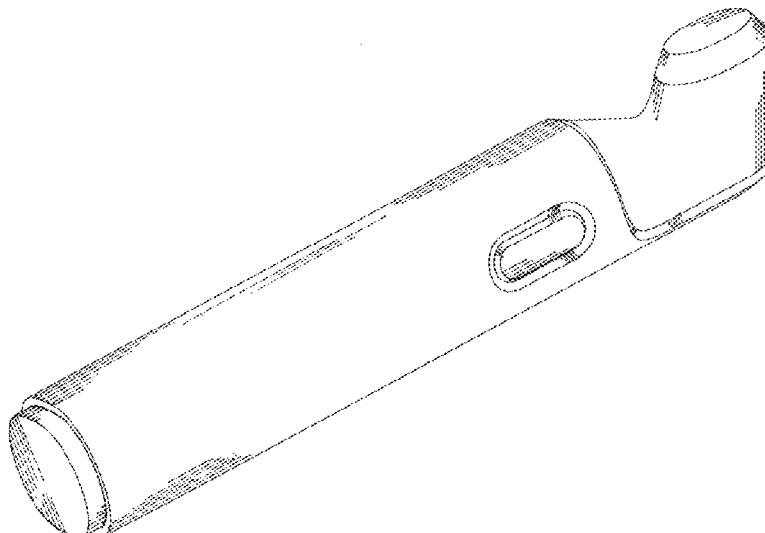
DESCRIPTION

FIG. 1 is a right side view of a hair reader according to a first embodiment;

FIG. 2 is a rear view of the hair reader shown in FIG. 1;
FIG. 3 is a left side view of the hair reader shown in FIG. 1;
FIG. 4 is a front view of the hair reader shown in FIG. 1;
FIG. 5 is a top view of the hair reader shown in FIG. 1;
FIG. 6 is a bottom view of the hair reader shown in FIG. 1;
FIG. 7 is a first perspective view of the hair reader shown in FIG. 1;
FIG. 8 is a second perspective view of the hair reader shown in FIG. 1;
FIG. 9 is a right side view of a hair reader according to a second embodiment;
FIG. 10 is a rear view of the hair reader shown in FIG. 9;
FIG. 11 is a left side view of the hair reader shown in FIG. 9;
FIG. 12 is a front view of the hair reader shown in FIG. 9;
FIG. 13 is a top view of the hair reader shown in FIG. 9;
FIG. 14 is a bottom view of the hair reader shown in FIG. 9;
FIG. 15 is a first perspective view of the hair reader shown in FIG. 9;
FIG. 16 is a second perspective view of the hair reader shown in FIG. 9;
FIG. 17 is a right side view of a hair reader according to a third embodiment;
FIG. 18 is a rear view of the hair reader shown in FIG. 17;
FIG. 19 is a left side view of the hair reader shown in FIG. 17;
FIG. 20 is a front view of the hair reader shown in FIG. 17;
FIG. 21 is a top view of the hair reader shown in FIG. 17;
FIG. 22 is a bottom view of the hair reader shown in FIG. 17;
FIG. 23 is a first perspective view of the hair reader shown in FIG. 17; and,
FIG. 24 is a second perspective view of the hair reader shown in FIG. 17.

The claimed design is shown in solid lines. The broken lines illustrate portions of the hair reader and form no part of the claimed design.

1 Claim, 6 Drawing Sheets





US010012588B2

(12) **United States Patent**
Miklatzky et al.

(10) **Patent No.:** **US 10,012,588 B2**

(45) **Date of Patent:** **Jul. 3, 2018**

(54) **APPARATUS AND METHOD FOR CUSTOMIZED HAIR-COLORING**

(58) **Field of Classification Search**

CPC G01J 3/463; G01J 3/50; G01J 3/524; G01J 2003/466; G01J 3/02; G01J 3/462;

(Continued)

(71) Applicant: **COLORIGHT LTD.**, Rehovot (IL)

(56) **References Cited**

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(72) Inventors: **Efraim Miklatzky**, Neve Ilan (IL); **Elena Ishkov**, Givataim (IL); **Daniel Mandelik**, Rehovot (IL); **Gilad Davara**, Rehovot (IL)

(73) Assignee: **COLORIGHT LTD.**, Rehovot (IL)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **15/303,726**

(22) PCT Filed: **Apr. 27, 2015**

(86) PCT No.: **PCT/IB2015/053065**

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(2) Date: **Oct. 12, 2016**

(87) PCT Pub. No.: **WO2015/166403**

PCT Pub. Date: **Nov. 5, 2015**

(65) **Prior Publication Data**

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Related U.S. Application Data

(60) Provisional application No. 61/984,796, filed on Apr. 27, 2014.

(51) **Int. Cl.**

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G01N 21/47 (2006.01)

(Continued)

(52) **U.S. Cl.**

CPC **G01N 21/47** (2013.01); **A45D 44/005** (2013.01); **G01J 3/463** (2013.01); **G01N 21/25** (2013.01);

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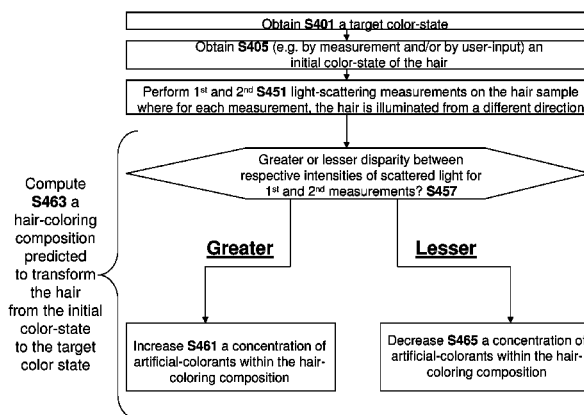
Primary Examiner — Michael P Stafira

(74) *Attorney, Agent, or Firm* — Oblon, McClelland, Maier & Neustadt, L.L.P.

(57) **ABSTRACT**

An apparatus and method for customized hair-coloring is disclosed. In some embodiments the method comprises: a. performing a plurality of light-scattering measurements upon a sample of hair such that for each light-scattering measurement, the sample of hair is illuminated from a different respective direction; b. comparing the results of the light-scattering measurements; c. in accordance with results of the comparing, computing an initial damage-state of hair of the sample by comparing the results of the light-scattering measurements; d. obtaining an initial color-state of the hair of the sample; and e. computing a hair-coloring composition that is predicted to transform the hair sample from the initial

(Continued)





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(12) **United States Patent**
Landa et al.

(10) **Patent No.:** **US 10,046,183 B2**

(45) **Date of Patent:** ***Aug. 14, 2018**

(54) **SYSTEMS FOR CUSTOM COLORATION**

(71) Applicant: **COLORIGHT LTD.**, Rehovot (IL)

(72) Inventors: **Benzion Landa**, Nes Ziona (IL); **Efraim Miklatzky**, Neve Ilan (IL); **Sagi Abramovich**, Raanana (IL); **Yacov Mazuz**, Rishon-LeZion (IL); **Anton Krassilnikov**, Holon (IL); **Eliyahu Benny**, Rishon-LeZion (IL); **Gilad Davara**, Rehovot (IL); **Chen Ofek**, Rehovot (IL); **Elena Ishkov**, Givataim (IL); **Lior Shahar**, Kiryat Ono (IL); **Daniel Mandelik**, Rehovot (IL); **Uri Zadok**, Herzliya (IL)

(73) Assignee: **COLORIGHT LTD.**, Rehovot (IL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **15/131,074**

(22) Filed: **Apr. 18, 2016**

(65) **Prior Publication Data**

US 2016/0339274 A1 Nov. 24, 2016

Related U.S. Application Data

(63) Continuation of application No. 14/501,010, filed on Sep. 29, 2014, now Pat. No. 9,316,580, and a (Continued)

(51) **Int. Cl.**
G01J 3/00 (2006.01)
A61Q 5/10 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC **A61Q 5/10** (2013.01); **A61K 8/0216** (2013.01); **B65D 1/0223** (2013.01); **B65D 83/04** (2013.01);
(Continued)

(58) **Field of Classification Search**

CPC G01J 3/00; G01J 3/02; G01J 3/10; G01J 3/18; G01J 3/28; G01J 3/42

See application file for complete search history.

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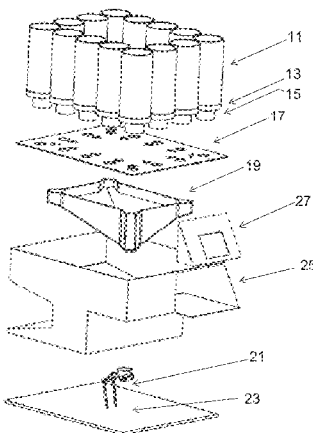
Primary Examiner — Abdullahi Nur

(74) *Attorney, Agent, or Firm* — Oblon, McClelland, Maier & Neustadt, L.L.P.

(57) **ABSTRACT**

Novel systems and methods for performing treatment (e.g., coloration) of keratinous fibers are disclosed. The methods and systems utilize one or more of a dispensing device which is configured to provide customized composition for treating keratinous fibers (e.g., a coloring composition), optionally formed from tablets; an optical reader, for obtaining sufficient characteristics of the keratinous fibers to make a realistic prediction of the outcome of a treatment (e.g., coloring treatment); a computational units for predicting an outcome of a treatment, optionally being interfaced with the dispensing device and for selecting a customized treatment; and tablet formulations which are useful in preparing customized composition for treating keratinous fibers. Further

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(12) **United States Patent**
Miklatzky et al.

(10) **Patent No.:** **US 10,292,482 B2**
(45) **Date of Patent:** **May 21, 2019**

(54) **HAIR-HOLDER, HAIR-READER COMPRISING THE SAME, AND METHODS FOR OPTICALLY ACQUIRING DATA FROM HAIR**

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(71) Applicant: **COLORIGHT LTD.**, Rehovot (IL)

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(72) Inventors: **Efraim Miklatzky**, Nevellan (IL); **Tal Marcu**, Mevaseret Zion (IL)

International Search Report and Written Opinion dated May 23, 2018 in PCT/IB2018/000040, citing documents AA, AB, AC, AD, AO, AP and AQ therein, 15 pages.

(73) Assignee: **COLORIGHT LTD.**, Rehovot (IL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 161 days.

Primary Examiner — Michael Collins

(21) Appl. No.: **15/399,796**

(74) *Attorney, Agent, or Firm* — Oblon, McClelland, Maier & Neustadt, L.L.P.

(22) Filed: **Jan. 6, 2017**

(57) **ABSTRACT**

(65) **Prior Publication Data**

US 2018/0192764 A1 Jul. 12, 2018

(51) **Int. Cl.**
A45D 44/00 (2006.01)
A45D 8/00 (2006.01)
(Continued)

A system for optically acquiring data from hair comprises a hair-holder including: upper and lower plate assemblies respectively having downward-facing and upward-facing opposing surfaces defining a gap therebetween, the lower plate assembly having a window-void therein, the upper plate assembly further comprising a sideward-facing sample-thickness-regulating surface above the gap; and an alignment-wall mechanically coupled to both plate assemblies and having a side-facing alignment surface within gap or sideward-facing into the gap, the alignment surface being straight along a longitudinal direction parallel to both of the opposing surfaces, the hair-holder being configured so that: when an externally-tensioned sample of hair is loaded onto the hair-holder by laterally moving the sample towards the alignment surface, a presence of the sideward-facing sample-thickness-regulating surface regulates an amount of hair permitted to enter the gap, thereby regulating a thickness of hair above the window-void to at least 0.5 mm and at most 2 mm, and after the loading and after release of the external tension, static friction applied by the side-facing alignment surface upon shafts of the hair sample maintain alignment of hair above the window-void.

(52) **U.S. Cl.**
CPC **A45D 44/005** (2013.01); **A45D 8/00** (2013.01); **G01N 21/25** (2013.01); **G01N 21/84** (2013.01);
(Continued)

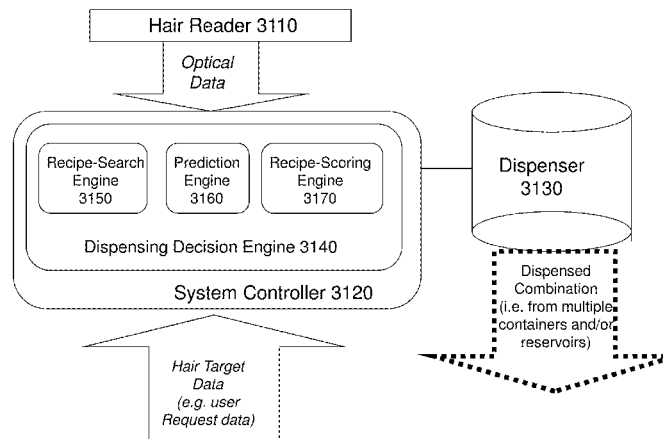
(58) **Field of Classification Search**
CPC .. **A45D 44/005**; **A45D 8/00**; **A45D 2044/007**; **G01N 21/25**; **G01N 33/4833**; **G01N 21/84**
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(56) **References Cited**

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(Continued)

17 Claims, 25 Drawing Sheets



(12) **United States Patent**
Miklatzky et al.

(10) **Patent No.:** **US 10,302,495 B2**
(45) **Date of Patent:** **May 28, 2019**

(54) **HAIR READER, DISPENSER DEVICE AND RELATED SYSTEMS AND METHODS**

(71) Applicant: **COLORIGHT LTD.**, Rehovot (IL)

(72) Inventors: **Efraim Miklatzky**, Neve Ilan (IL); **Daniel Mandelik**, Rehovot (IL); **Gilad Davara**, Rehovot (IL); **Eliyahu Benny**, Rishon-LeZion (IL); **Oded Livneh**, Holon (IL); **Elena Ishkov**, Givataim (IL); **Uri Zadok**, Herzliya (IL); **Lior Shahar**, Kiryat-Ono (IL)

(73) Assignee: **ColorRight Ltd.**, Rehovot (IL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **15/023,398**

(22) PCT Filed: **Sep. 28, 2014**

(86) PCT No.: **PCT/IL2014/050850**
§ 371 (c)(1),
(2) Date: **Mar. 20, 2016**

(87) PCT Pub. No.: **WO2015/044944**
PCT Pub. Date: **Apr. 2, 2015**

(65) **Prior Publication Data**
US 2016/0209272 A1 Jul. 21, 2016

Related U.S. Application Data

(60) Provisional application No. 61/883,263, filed on Sep. 27, 2013, provisional application No. 61/926,909, (Continued)

(30) **Foreign Application Priority Data**

Sep. 26, 2013 (CA) 2828363
Sep. 24, 2014 (WO) PCT/IB2014/064809

(51) **Int. Cl.**
G01J 3/46 (2006.01)
G01N 21/25 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC **G01J 3/462** (2013.01); **A45D 44/005** (2013.01); **B01F 13/1055** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC G01J 3/462; G01J 3/463; G01J 3/50; G01J 3/0272; A45D 44/005; B01F 13/1055;
(Continued)

(56) **References Cited**

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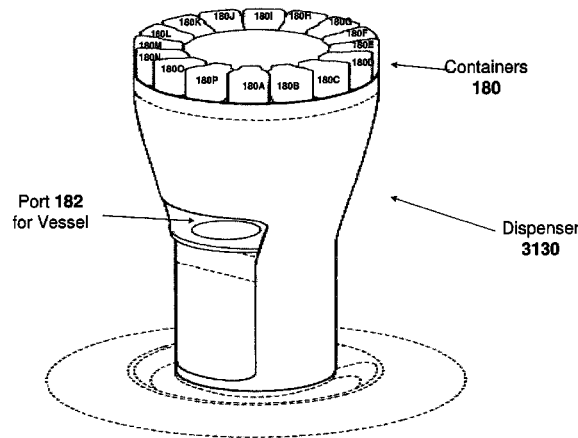
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Primary Examiner — Michael Collins
(74) *Attorney, Agent, or Firm* — Oblon, McClelland, Maier & Neustadt, L.L.P.

(57) **ABSTRACT**

The present disclosure relates to hair readers, dispenser devices, and related systems and methods. For example the present application relates to a method of optically acquiring data from keratinous fibers, the method comprising: a.
(Continued)





US010416078B2

(12) **United States Patent**
Miklatzky et al.

(10) **Patent No.:** **US 10,416,078 B2**

(45) **Date of Patent:** ***Sep. 17, 2019**

(54) **APPARATUS AND METHOD FOR CUSTOMIZED HAIR-COLORING**

(71) Applicant: **COLORIGHT LTD.**, Rehovot (IL)

(72) Inventors: **Efraim Miklatzky**, Neve Ilan (IL);
Elena Ishkov, Givataim (IL); **Daniel Mandelik**, Rehovot (IL); **Gilad Davara**, Rehovot (IL)

(73) Assignee: **COLORIGHT LTD.**, Rehovot (IL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **16/023,139**

(22) Filed: **Jun. 29, 2018**

(65) **Prior Publication Data**
US 2018/0321146 A1 Nov. 8, 2018

Related U.S. Application Data
(63) Continuation of application No. 15/303,726, filed as application No. PCT/IB2015/053065 on Apr. 27, 2015, now Pat. No. 10,012,588.
(Continued)

(51) **Int. Cl.**
G01N 21/47 (2006.01)
G01J 3/46 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC **G01N 21/47** (2013.01); **A45D 44/005** (2013.01); **G01J 3/0264** (2013.01); **G01J 3/463** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC G01J 3/463; G01J 3/0264; G01J 3/504; G01J 2003/466; G01J 3/0272; G01J 3/42;
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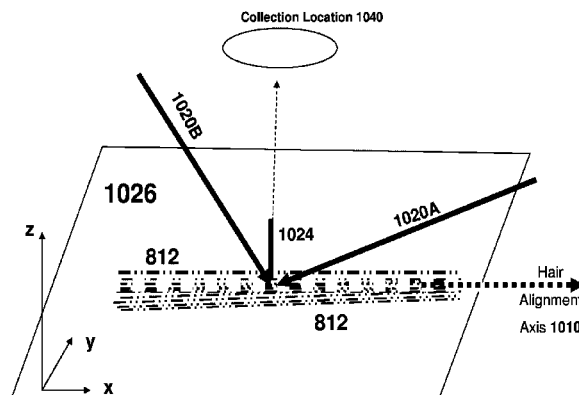
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Primary Examiner — Michael P Stafira
(74) *Attorney, Agent, or Firm* — Oblon, McClelland, Maier & Neustadt, L.L.P.

(57) **ABSTRACT**

An apparatus and method for customized hair-coloring is disclosed. In some embodiments the method comprises: a. performing a plurality of light-scattering measurements upon a sample of hair such that for each light-scattering measurement, the sample of hair is illuminated from a different respective direction; b. comparing the results of the light-scattering measurements; c. in accordance with results of the comparing, computing an initial damage-state of the sample by comparing the results of the light-scattering measurements; d. obtaining an initial color-state of the hair of the sample; and e. computing a hair-coloring composition that is predicted to transform the hair sample from the initial color-state to a target color-state such that in response to a determining of a greater (lesser) extent of initial damage, a concentration of artificial-colorant(s) within the computed coloring composition is reduced (increased).

20 Claims, 17 Drawing Sheets





US010806234B2

(12) **United States Patent**
Miklatzky et al.

(10) **Patent No.:** **US 10,806,234 B2**

(45) **Date of Patent:** **Oct. 20, 2020**

(54) **APPARATUS AND METHOD FOR ANALYZING HAIR AND/OR PREDICTING AN OUTCOME OF A HAIR-COLORING TREATMENT**

(71) Applicant: **COLORIGHT LTD.**, Rehovot (IL)

(72) Inventors: **Efraim Miklatzky**, Neve Ilan (IL); **Daniel Mandelik**, Rehovot (IL); **Gilad Davara**, Rehovot (IL); **Eliyahu Benny**, Rishon-LeZion (IL); **Oded Livneh**, Holon (IL); **Tal Marcu**, Mevaseret Zion (IL); **Thierry Wasserman**, Tel Aviv (IL)

(73) Assignee: **COLORIGHT LTD.**, Rehovot (IL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 906 days.

(21) Appl. No.: **15/303,727**

(22) PCT Filed: **Mar. 25, 2015**

(86) PCT No.: **PCT/IB2015/000724**

§ 371 (c)(1),

(2) Date: **Oct. 12, 2016**

(87) PCT Pub. No.: **WO2015/166340**

PCT Pub. Date: **Nov. 5, 2015**

(65) **Prior Publication Data**

US 2017/0156476 A1 Jun. 8, 2017

Related U.S. Application Data

(63) Continuation-in-part of application No. PCT/IL2014/050850, filed on Sep. 28, 2014. (Continued)

(30) **Foreign Application Priority Data**

Sep. 24, 2014 (WO) PCT/IB2014/064809

(51) **Int. Cl.**
A45D 44/00 (2006.01)
G01J 3/50 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC **A45D 44/005** (2013.01); **A61B 5/1032** (2013.01); **A61B 5/448** (2013.01);
(Continued)

(58) **Field of Classification Search**
None
See application file for complete search history.

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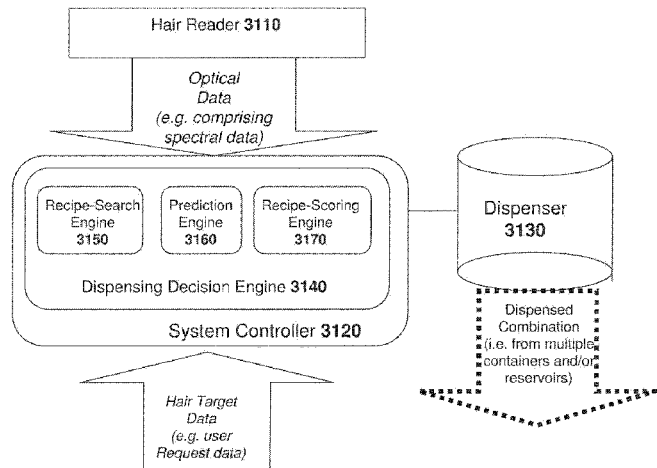
Primary Examiner — Shawn Decenzo

(74) *Attorney, Agent, or Firm* — Oblon, McClelland, Maier & Neustadt, L.L.P.

(57) **ABSTRACT**

The present disclosure relates to devices and methods for analyzing hair and/or predicting an outcome of hair-coloring treatment. disclosed is method of predicting a result of a hair-color-modifying treatment on a sample of hair, the method comprising: a. for each given region of a plurality of distinct regions, respectively measuring a region-specific spectrum of respective material of the hair-sample respec-

(Continued)





US010863816B2

(12) **United States Patent**
Miklatzky et al.

(10) **Patent No.:** **US 10,863,816 B2**

(45) **Date of Patent:** **Dec. 15, 2020**

(54) **METHOD AND SYSTEM FOR CUSTOMIZED HAIR-COLORING**

(58) **Field of Classification Search**

CPC A45D 44/005; A45D 19/0008; A45D 2019/0066; A45D 2044/007;

(Continued)

(71) Applicant: **COLORIGHT LTD.**, Rehovot (IL)

(56) **References Cited**

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(72) Inventors: **Efraim Miklatzky**, Neve Ilan (IL); **Sagiv Lustig**, Ramat Hasharon (IL); **Elena Ishkov**, Rehovot (IL); **Eliyahu Benny**, Rehovot (IL); **Hila Sela**, Ramle (IL); **Roy Frenkel**, Kfar Menachem (IL)

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(73) Assignee: **COLORIGHT LTD.**, Rehovot (IL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 361 days.

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(21) Appl. No.: **15/770,549**

Primary Examiner — Michael Collins

(74) *Attorney, Agent, or Firm* — Oblon, McClelland, Maier & Neustadt, L.L.P.

(22) PCT Filed: **Nov. 4, 2016**

(86) PCT No.: **PCT/IB2016/056649**

§ 371 (c)(1),

(2) Date: **Apr. 24, 2018**

(87) PCT Pub. No.: **WO2017/077498**

PCT Pub. Date: **May 11, 2017**

(65) **Prior Publication Data**

US 2019/0059560 A1 Feb. 28, 2019

Related U.S. Application Data

(60) Provisional application No. 62/251,099, filed on Nov. 4, 2015.

(51) **Int. Cl.**

A45D 44/00 (2006.01)

A45D 19/00 (2006.01)

(Continued)

(57) **ABSTRACT**

Systems and methods for computing a hair-coloring composition (HCC) or for dispensing ingredients for the HCC are disclosed herein. In some embodiments, the system comprises a hair-treatment objective-prioritization user interface (HTOP UI) for receiving multi-objective relative-importance data describing a relative importance of different hair-treatment objectives (e.g. immediate post-treatment accuracy versus auxiliary goals, or one auxiliary goal versus another) for a potential hair-coloring treatment. In some embodiments, a hair-coloring-composition (HCC) prediction-engine is responsive to input received via the HTOP UI to compute, from the initial hair-state data and from the target color-state, a customized hair-coloring composition

(Continued)

(52) **U.S. Cl.**

CPC **A45D 44/005** (2013.01); **A45D 19/0008** (2013.01); **G01J 3/50** (2013.01);

(Continued)

