

Clarke, Modet & C^o
COLOMBIA

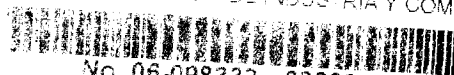
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ESCOBAR - URIBE ASOCIADOS
Intellectual Property

As. 3006/P.

**SUPERINTENDENCIA DE INDUSTRIA
DIVISIÓN DE NUEVAS CREACIONES**

E. S. D.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 06-098332-00003-0000

Fecha: 2007-08-15 10:14:22 Dep. 2020 NUECREACIONES
Pg. 2 PATENTES Pg. 1 REGDEPOSITO
Art. 338 P.D.C.O.N. Pg. 2

Ref.: Expediente No. **06-098.332**
Solicitud de Patente a nombre de
Johnson & Johnson Consumer Companies, Inc.

Yo, **JIMENA ESCOBAR URIBE**, identificada como aparece al pie de mi firma, domiciliada en Bogotá, en la Carrera 11 No. 86-53, piso 6, obrando como apoderada de la sociedad **Johnson & Johnson Consumer Companies, Inc.**, con domicilio en Skillman, New Jersey, Estados Unidos de América, solicitantes de la patente de la referencia, pido a usted que se proceda a examinar si la invención, cuya patente se tramita en el expediente de la referencia, es patentable.

Adjunto al presente memorial el recibo No. 07 - 66,172 de 15 de agosto de 2007, por la suma de \$404.000.00, con lo cual queda cubierta la tasa oficial correspondiente a dicho estudio.

Señor Superintendente,


JIMENA ESCOBAR URIBE
C.C.39.779.452 de Usaquén
T.P. 68.228

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

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SECRETARIA DE INDUSTRIA Y COMERCIO
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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 07 - 66,172
FECHA : AGOSTO 15 DE 2007

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
CLARKE MODET Y CO. COLOMB	CONSIGNACION	BANCO POPULAR	050-00110-6	67350785	15/08/2007	15,566,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01	SOLICITUDES	
		112 PTC CAP-I EXAMEN DE PATENTIBILIDA	404,000.00
		TOTAL :	\$ 404,000.00

SON: CUATROCIENTOS CUATRO MIL PESOS

A

RESPONSABLE : _____

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 06 098332

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **574** DE

FECHA **30 DE MARZO DE 2007** EL TÉRMINO HÁBIL SEÑALADO POR LA LEY

EXPIRA EL **03 DE JULIO DE 2007**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____

NO X

90 90

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIRECCIÓN DE NUEVAS CREACIONES

2020
Bogotá, D.C.,

Abogada
Jimena Escobar U.
(Apoderada)

ASUNTO	Radicación	06 - 98 332
	Trámite	002
	Evento	001
	Actuación	430
	Oficio	036
	Folios	031

Patente de Invención	☒	Patente de Modelo de Utilidad	☐
Vía Nacional	☐		
Vía PCT (fase nacional)	☐	Cap. I	☐
		Cap. II	☐
Solicitud Internacional n.º	_____		
Fecha de Presentación Intrnl.	_____		

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

<u>Descripción:</u>	Folios 7 a 30 como se radicó inicialmente
<u>Reivindicaciones:</u>	Folios 31 a 33 como se radicó inicialmente
<u>Dibujos:</u>	Folios 34 a 38 como se radicó inicialmente
<u>Prioridad:</u>	Folios 41 a 79; 2005-09-29, US, 11/239 515

2. Objeto de la invención

Título de la solicitud: *Dispositivo dental de retención mejorada de un sabor y/o una composición de agente quimioterapéutico*, folio 1.

El objeto de la presente solicitud de patente de invención consiste en suministrar un portador de seda dental, que tiene una cabeza desprendible, con un par de brazos, con una porción de seda dental entre ellos, en donde los brazos tienen por lo menos una cavidad para cargar una composición química.

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El problema planteado en esta solicitud es satisfacer la necesidad de tener disponible una composición de sabor o de agente quimioterapéutico cerca de un portador de seda dental.

Para solucionar este problema técnico la solicitud en estudio proporciona un portador de seda dental provisto de unas cavidades en donde se almacena la composición química.

Clasificación Internacional de Patentes (IPC): A61C 15/04

3. De la solicitud de Patente

Descripción (artículo 28 D. 486)

Durante el análisis del texto de la descripción y de las ilustraciones anexadas, se observaron los siguientes defectos:

1) Tanto dentro del título o nombre de la invención como dentro del texto de la descripción y las reivindicaciones aparece la expresión y/o. Al respecto, el *Diccionario panhispánico de dudas* de la Real Academia Española y de la Asociación de Academias de la Lengua Española, primera edición, octubre de 2005, página 681, dice:

y/o: Hoy es frecuente el empleo conjunto de las conjunciones copulativa y disyuntiva separadas por una barra oblicua, calco del inglés «and/or», con la intención de hacer explícita la posibilidad de elegir entre la suma o la alternativa de dos opciones: «Se necesitan traductores de inglés y/o francés». Se olvida que la conjunción 'o' puede expresar en español ambos valores conjuntamente.

El examinador ha subrayado la última frase porque es particularmente aplicable a este caso.

2) El capítulo descriptivo y el capítulo reivindicatorio tienen un encabezado, en el costado derecho, que no es pertinente, por lo que debe ser suprimido.

3) En la página 2, folio 8, aparece por primera vez una expresión numérica (5, 165, 913) en la cual se le da un pobre empleo a la coma decimal, de uso obligatorio en Colombia.

4) En la misma página 2 se anuncia como *anexa* a la solicitud US 10/805 737. Sin embargo, el solicitante no anexó tal documento. En consecuencia, debe realizarse la respectiva corrección. En la página 3, folio 9, se insiste en que dicha solicitud se encuentra *anexa*.

5) En la página 3, folio 9, aparecen las expresiones *lados laterales*, *lado lateral* que son redundantes.

6) En la página 14, folio 20, aparece la expresión *el reborde preferiblemente contacta por lo menos una porción de la composición* en donde se objeta el uso del verbo *contactar*, porque, según el Diccionario de la Real Academia Española (DRAE), este verbo significa 1. intr. Establecer contacto o comunicación con alguien. Lo que no concuerda con el contexto.

7) En la página 15, folio 21, aparece la expresión *etileno/óxido* en la cual no está muy claro el empleo de la barra -consúltase el apartado BARRA en el *Diccionario panhispánico de dudas* ya citado, páginas 87 y 88-.

8) En la página 16, folio 22, aparecen las expresiones 82 grados C, 60 grados C que deben ser sustituidas por 82 °C, 60 °C, respectivamente, porque el símbolo C corresponde a *coulomb*.

9) En la misma página 16 aparecen las expresiones *sanguinaria*, *estannoso*, *anti-tartar*, *carbowaxes* cuyo uso no parece correcto dentro del contexto.

- 10) En la página 17, folio 23, aparece por primera vez el término *denier*. El solicitante debe dar la correspondiente definición -aunque sea una unidad de uso común dentro del campo de los textiles- porque no se trata de una unidad del Sistema Internacional, de uso obligatorio en Colombia.
- 11) En la página 18, folio 24, aparece por primera vez la expresión *nylon*. El solicitante debe sustituirla por *nailon* o *nilón*, a su gusto.
- 12) En la misma página 18 aparece la expresión *enredados al aire* que, por ser [aparentemente] propia del campo de los textiles, requiere una aclaración dentro del texto.
- 13) En la página 22, folio 28, aparece la expresión *H&R sabor secado por rocío* cuyo significado se desconoce.
- 14) En la página 23, folio 29, aparece la expresión *prensa de enramada* cuyo significado se desconoce.
- 15) En la página 24, folio 30, aparece la expresión *con 5 hasta 50%* en la cual, en primer lugar, se debe acompañar la primera cifra con el calificativo (5%); y, en segundo lugar, se debe aclarar con respecto a qué se mide el porcentaje (peso, volumen, entre otras posibilidades).

La descripción no cumple con los requisitos de claridad y divulgación completa, lo que dificulta o impide su comprensión y ejecución de acuerdo al Art. 28 de la Decisión 486

Reivindicaciones (artículo 30 D 486)

Durante el análisis del texto de las reivindicaciones se observaron los siguientes defectos:

- 1) En el capítulo reivindicatorio se encuentra, encabezando los textos, una expresión que no viene al caso, por lo que debe ser suprimida.
- 2) En la reivindicación 1, folio 31, aparece la expresión *y/o* que fue objetada con relación al título y a la descripción.
- 3) En la misma reivindicación 1 aparecen por primera vez las expresiones *una lengua*, *un retén*, *una depresión*, *un mango* que no se encuentran dentro del texto de la descripción y, por esta causa, la reivindicación 1 carece de definición y, además, de sustento. Estas expresiones vuelven a encontrarse, explícitamente, en la reivindicación 4, folio 32.
- 4) En la reivindicación 4, además, aparecen las expresiones *las proyecciones de ajuste a presión del engranaje*, *la terminal de las depresiones* cuyo significado se desconoce, con relación al contexto.

Debe entenderse que las reivindicaciones dependientes de las reivindicaciones objetadas son, asimismo, objetadas, por razones análogas.

Las reivindicaciones no cumplen con los requisitos de definición, claridad o sustento por la descripción de acuerdo al Art. 30 de la Decisión 486.

Se deben presentar, entonces, nuevos capítulos descriptivo y reivindicatorio, ambos completos, donde se hayan corregido todas las objeciones que se han hecho arriba. Esto con el fin de evitar -cuando solo se presentan algunas páginas sueltas corregidas- que el lector tenga que desplazarse desde un sitio a otro de la solicitud y luego regresar a donde estaba antes sin perder la ilación de la lectura, porque esto produce confusión y afecta negativamente la claridad de dichos capítulos.

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Se le advierte al interesado que las modificaciones sugeridas arriba podrían resultar inconducentes si se mantienen las objeciones a la patentabilidad que se insinúan adelante.

4. Determinación del Estado de la Técnica

La fecha que se ha tenido en cuenta para determinar el Estado de la Técnica es la

Fecha de presentación de la solicitud prioritaria 2005-09-29

Se realizó la búsqueda en el estado de la técnica de documentos relacionados con la solicitud teniendo en cuenta la fecha indicada; y durante la búsqueda de anterioridades se encontraron los siguientes documentos, que forman parte de la familia de patentes de la presente solicitud: Publicación US 2006/0042650 A1 del 2006-03-02; Patente US 7 325 554 B2 del 2008-02-05; publicación EP 1 769 773 A1 del 2007-04-04. Se anexa la copia de las primeras páginas de estos documentos junto con la copia del Informe de Búsqueda Europeo y la copia del capítulo reivindicatorio admitido por la USPTO. También se encontraron los siguientes documentos que forman parte del estado de la técnica más cercano al objeto de la solicitud:

Documento	Título	Fecha de publicación
Publicación US 2005/0205107, cuyo inventor es Harold D. Ochs; corresponde a la solicitud US 10/805 737	«Dental floss head device with a flavor delivery means»(Un dispositivo de cabeza con seda dental y con medios de entrega de sabor)	2005-09-22 ‡
Corresponde, también, a la publicación EP 1 579 822 A2	«Dental floss head device with a flavor delivery means»(Un dispositivo de cabeza con seda dental y con medios de entrega de sabor)	2005-09-28
Asimismo, corresponde a la solicitud CO 05-25 148 publicada en la Gaceta 559, número de publicación 178,	«Dispositivo de cabeza para seda dental con un medio de entrega de sabor»	2005-12-30*

Se anexa la copia de las páginas pertinentes de estos documentos

‡ La solicitud US 10/805 737 del 2004-03-22, sobre la cual se basa esta publicación, fue citada por el solicitante en la página 2, folio 8.

*Esta fecha de publicación es posterior a la fecha de la solicitud US sobre la cual se reclamó prioridad. Se cita este documento porque pertenece a la familia de patentes del documento US y del documento EP citados inmediatamente arriba.

NOTAS: No se realizaron las evaluaciones de los demás requisitos de patentabilidad, porque se hicieron algunas objeciones respecto a la definición, la claridad, la concisión y el sustento por la descripción de las reivindicaciones; esto es, no se pudo practicar un análisis comparativo, por ausencia de materia.

A pesar de lo anterior, con base en las enseñanzas de los documentos encontrados hasta ahora y con fundamento en el Informe de Búsqueda Europeo mencionado arriba, se prevén objeciones respecto a la novedad o respecto al nivel inventivo del objeto de la solicitud. Como se determinó arriba, en este

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momento no se puede precisar la naturaleza de las eventuales objeciones por ausencia de materia sobre la cual realizar las comparaciones, pero se puede observar que en los documentos citados se divulga una cabeza portadora para hilo dental que tiene unos medios para soportar y retener una composición química que suministra sabores refrescantes, la misma idea que se sostiene en esta solicitud. Además, en los documentos citados se revela, entre otras cosas, la existencia de una cabeza hecha con un material que es más flexible que el mango; que los brazos de la cabeza portadora del hilo dental tienen cavidades para albergar la composición química; que por lo menos parte de dicha composición es soluble en agua; que la composición puede contener polietilenglicol (PEG 1000 a PEG 5000); y, que el mango tiene una forma de T. Todas estas características son divulgadas, también, en la solicitud en estudio.

5. Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados negativamente por la falta de claridad de la descripción y las reivindicaciones y por la falta de definición, de sustento y de concisión de estas últimas.

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el número 5.2, letra e), del capítulo quinto del título primero de la Circular Única n.º 10 de 2001.


JESÚS FERNEL GARCÍA GARCÍA
Director de Nuevas Creaciones (E)

El anterior requerimiento fue notificado por fijación en lista, de fecha

107 ENE 2010

CONCEPTO TÉCNICO n.º 4410

EXAMINADOR TÉCNICO
Código n.º 202009



US 20060042650A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2006/0042650 A1**
Ochs (43) **Pub. Date: Mar. 2, 2006**

(54) **DENTAL DEVICE WITH IMPROVED
RETENTION OF A FLAVOR AND/OR
CHEMOTHERAPEUTIC AGENT
COMPOSITION**

Publication Classification

(51) **Int. Cl.**
A61C 15/00 (2006.01)
(52) **U.S. Cl.** **132/323**

(76) **Inventor: Harold D. Ochs, Flemington, NJ (US)**

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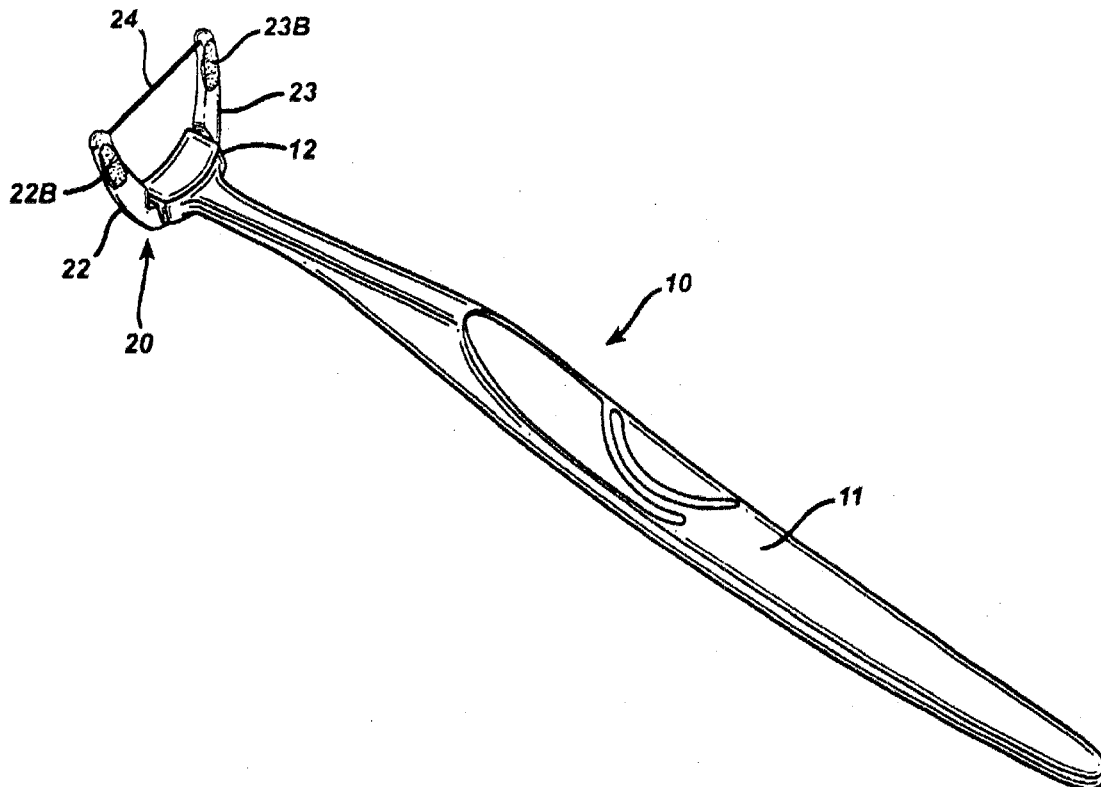
(57) **ABSTRACT**

(21) **Appl. No.: 11/239,515**
(22) **Filed: Sep. 29, 2005**

Related U.S. Application Data

(63) **Continuation-in-part of application No. 11/065,766,**
filed on Feb. 25, 2005, which is a continuation of
application No. 10/805,737, filed on Mar. 22, 2004.

A dental floss holder including: a base portion; a pair of spaced-apart jaws extending from the base portion to accommodate a length of dental floss there-between; the spaced-apart jaws having at least one cavity for loading a composition containing flavor and/or a chemotherapeutic agent; and at least one flange for each cavity is disclosed. The dental floss holder provides an improved means for retaining flavor and or chemotherapeutic compositions within the cavity until the dental floss holder is used.





US00732554B2

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(12) **United States Patent**
Ochs

(10) **Patent No.:** **US 7,325,554 B2**
(45) **Date of Patent:** **Feb. 5, 2008**

(54) **DENTAL DEVICE WITH IMPROVED
RETENTION OF A FLAVOR AND/OR
CHEMOTHERAPEUTIC AGENT
COMPOSITION**

(75) **Inventor:** **Harold D. Ochs**, Flemington, NJ (US)

(73) **Assignee:** **Johnson & Johnson Consumer
Companies, Inc.**, Skillman, NJ (US)

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

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(21) **Appl. No.:** **11/239,515**

(Continued)

(22) **Filed:** **Sep. 29, 2005**

FOREIGN PATENT DOCUMENTS

(65) **Prior Publication Data**
US 2006/0042650 A1 Mar. 2, 2006

EP 0 610 227 B1 8/1994

Related U.S. Application Data

(Continued)

(63) Continuation-in-part of application No. 11/065,766,
filed on Feb. 25, 2005, now abandoned, which is a
continuation of application No. 10/805,737, filed on
Mar. 22, 2004.

OTHER PUBLICATIONS

European search report dated Oct. 27, 2005, for corresponding EP
application 05251711.7.

(51) **Int. Cl.**
A61C 15/00 (2006.01)

Primary Examiner—Todd E. Manahan
Assistant Examiner—Rachel A. Running

(52) **U.S. Cl.** **132/323**

(58) **Field of Classification Search** **132/322 329**
See application file for complete search history.

(57) **ABSTRACT**

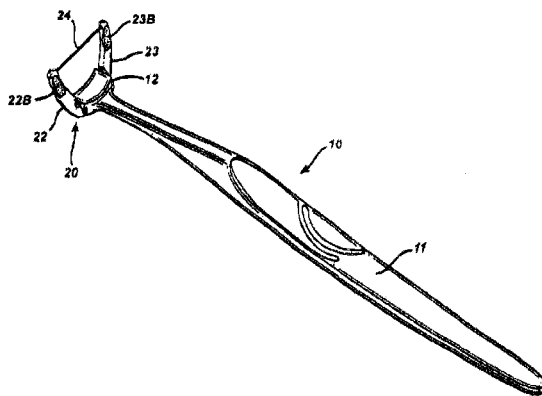
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A dental floss holder including: a base portion; a pair of
spaced-apart jaws extending from the base portion to accom-
modate a length of dental floss there-between; the spaced-
apart jaws having at least one cavity for loading a composi-
tion containing flavor and/or a chemotherapeutic agent;
and at least one flange for each cavity is disclosed. The
dental floss holder provides an improved means for retaining
flavor and or chemotherapeutic compositions within the
cavity until the dental floss holder is used.

14 Claims, 5 Drawing Sheets



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US 7,325,554 B2

Page 2

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FOREIGN PATENT DOCUMENTS

EP 1 579 822 A 9/2005

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cavity with approximately 0.81 mm wide, by 1.59 mm deep and 9.53 mm long extending proximate the line where the floss passed through the head upward along the centerline of the floss holder. The dental floss 24 was 435 denier SPEC-TRA® Fiber 1000 ultra high molecular weight polyethylene, available through Honeywell Incorporated. The cavities were filled with various flavor formulations such as PEG 3350 (68%), IIR spray dried flavor #813581 (28%) and sodium saccharin (4%). Approximately 0.030 grams of flavor were loaded into the cavities. The loading of 0.030 grams of flavor formulation is 40 times greater than what could be delivered from the 19.05 mm length of floss in the head using a conventional delivery system. The cavities were filled by hand, where a spatula was dipped into a melted formula and manually placed into the cavity. The cavities may also be filled by using a mechanized system where miniature pistons pump in the exact amount of flavor into the cavity via a heated nozzle system. The cavity's volume may be at least 0.1343279 cu. mm., more preferably the volume may be 0.026511 cu. mm.

An Arbor Press was used to create the flanges. The molded head was placed into a die to securely hold it. A 15.88 mm diameter rod was mounted to the ram of the press. Mechanical stops were used to stop the ram in varying positions, which in turn created different flange protrusions and lengths.

EXAMPLE 3

Dental Flossing Device

A dental flossing device was assembled by placing the cavity flavored-filled dental floss holder of Example 2 in the head portion of Example 1. The dental flossing device is shown in FIG. 1. The detents of the head portion receive the recesses of the dental floss holder. The recesses of the head portion receive the detents of the dental floss holder. The terminal snap fit recessions of the head portion receive the snap fit projections of the dental floss holder.

EXAMPLE 4

Flavored Dental Floss Device in Use

The dental floss device of Example 3 was assembled and placed in use. The dental floss holder was then given to individuals for an initial trial. The results showed a continuous flavor burst throughout the mouth during flossing of all the teeth. This result further shows that saliva does indeed activate the flavor system to deliver a strong flavor perception. It was found that blending the molecular weights of the polyethylene glycols used as the soluble substance could control the rate of flavor delivery into the oral cavity. Using 100% polyethylene glycol 1000 as the soluble substance provides rapid flavor delivery. The low melting point and high solubility of this substance make it desirable to use polyethylene glycol or polyethylene glycol blends at a higher molecular weight to achieve product survivability under either higher heat or higher humidity conditions, which are often seen in delivering products to the shelf. For this reason a mixture of polyethylene glycol 3350 with 5 to 50% polyethylene glycol 1000 is more desirable. The delivery of flavor into the mouth is longer lasting and the product shelf life significantly lengthened.

EXAMPLE 5

Flavored Dental Floss Device in Use

The dental floss holding device of Example 2 was attached to a handle. Despite being snap-fit into place on the handle, the dental floss holding device retained the flavor composition. In contrast, a prior art dental floss holding device having a similarly shaped cavity filled with a flavor composition, but not having flanges, expelled the flavor composition from the cavity when the device was attached to the handle.

What is claimed:

1. A dental floss holder comprising:

a base portion;

a pair of spaced-apart jaws extending from the base portion to accommodate a length of dental floss therebetween, at least one of the spaced-apart jaws comprising at least one cavity for containing a composition comprising a flavor and/or a chemotherapeutic agent, the cavity comprising at least one flange extending outward from and along a portion of a first side wall of the cavity for retaining said composition within the cavity.

2. A dental floss holder according to claim 1, wherein the base portion defines a tongue having lateral engaging surfaces, each engaging surface having at least one detent and at least one recess, the detent and recess being laterally spaced apart and aligned with a complementary detent and recess on opposite engaging surfaces of a head portion of a handle.

3. A dental floss holder according to claim 2, wherein said handle is integrally connected to the base of the dental floss holder and extends therefrom.

4. A dental floss holder according to claim 3, wherein said handle comprises a head portion and an elongated portion: the head portion having a releasable engagement means between the handle and the dental floss holder for retaining the dental floss holder securely in position on the head portion of the handle during movement of the dental floss device in use;

the head portion further having a portion for receiving said dental floss holder; said head portion having a transversely extending groove defined by a floor, lateral receiving walls, and terminal snap fit recessions, each of said receiving walls having at least one detent and at least one recess, the detent and recess being laterally spaced apart and aligned with a complementary detent and recess on the other receiving wall;

wherein, on assembly, the tongue of the dental floss holder engages the transversely extending groove and the lateral engaging surfaces contact the lateral receiving walls to define the releasable engagement means, and the snap fit projections of the spaced-apart jaws engage the terminal snap fit recessions of the head portion to constitute snap fitting means.

5. A dental floss holder according to claim 3, wherein said handle is made of polypropylene.

6. A dental floss holder according to claim 1, wherein said dental floss holder is made of a co-polyester.

7. A dental floss holder according to claim 1, wherein said cavity contains a flavored composition.

8. A dental floss holder according to claim 1, wherein said cavity contains a chemotherapeutic agent.

9. A dental floss holder according to claim 1, wherein each spaced-apart jaw contains at least one cavity.

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10. A dental floss holder according to claim 9, wherein each cavity contains first and second flanges.

11. A dental floss holder according to claim 10, wherein each of the first and second flanges extends from about 0.05 mm to about 1.02 mm over the composition within the cavity and is from about 0.25 mm to about 1.02 mm in length along the top of the cavity.

12. A dental floss holder according to claim 9, wherein each cavity comprises a second side wall substantially parallel to the first side wall, and further comprises first and second flanges, the first flange extending along a portion of the first side wall and the second flange extending along a portion of the opposite second side wall.

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13. A dental floss holder according to claim 1, wherein the cavity comprises a second side wall substantially parallel to and opposite the first side wall, and further comprises first and second flanges, the first flange extending along a portion of the first side wall and the second flange extending along a portion of the opposite second side wall.

14. A dental floss holder according to claim 1, wherein the cavity comprises a plurality of flanges, each flange extending only along a portion of the length of the cavity.

* * * * *

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(12)

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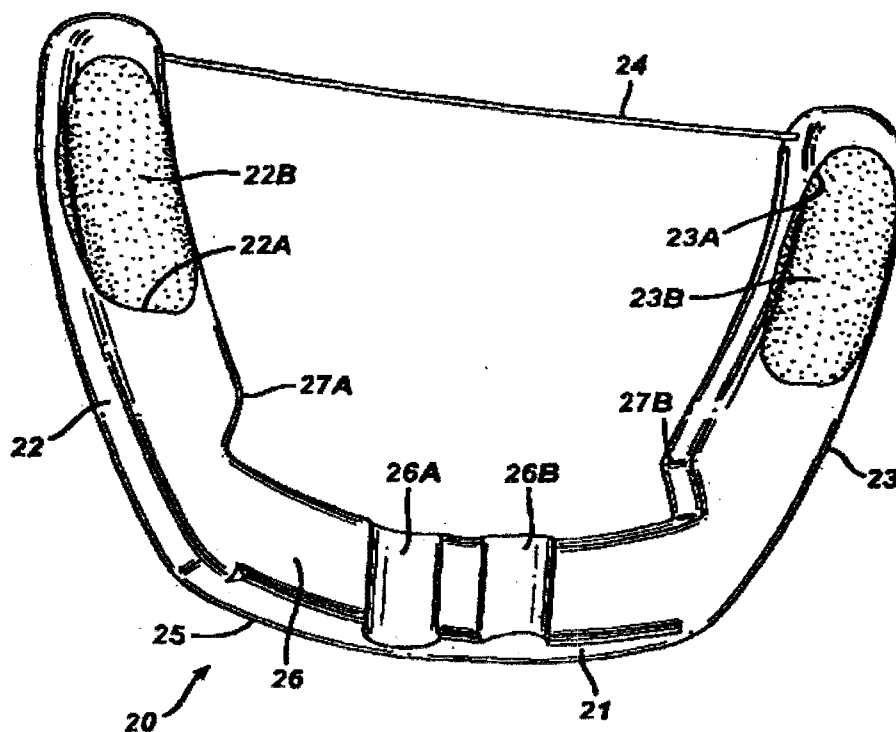
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Skillman, NJ 08558 (US)

(54) Dental device with improved retention of a flavor and/or chemotherapeutic agent composition

(57) A dental floss holder including: a base portion; a pair of spaced-apart jaws extending from the base portion to accommodate a length of dental floss there-between; the spaced-apart jaws having at least one cavity for loading a composition containing flavor and/or a

chemotherapeutic agent; and at least one flange for each cavity is disclosed. The dental floss holder provides an improved means for retaining flavor and or chemotherapeutic compositions within the cavity until the dental floss holder is used.

FIG. 2



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European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 25 5031

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
D,X	EP 1 579 822 A2 (JOHNSON & JOHNSON CONSUMER [US]) 28 September 2005 (2005-09-28) * column 3, lines 15-18 * * paragraph [0015] * * column 5, lines 10-22 * * column 6, lines 5-8 * * paragraph [0029] * * column 8, lines 24-39; figures 1-3,5 * -----	1-10	INV. A61C15/00 A61C15/04
			TECHNICAL FIELDS SEARCHED (IPC)
			A61C A46B A61B A61K
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 10 January 2007	Examiner Roche, Olivier
CATEGORY OF CITED DOCUMENTS			
X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosures P: intermediate document		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document	

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EPO FORM 1503 03-02 (IP/C01)

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ANNEX TO THE EUROPEAN SEARCH REPORT
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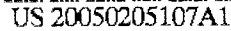
This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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10-01-2007

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82



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(43) **Pub. Date:** **Sep. 22, 2005**

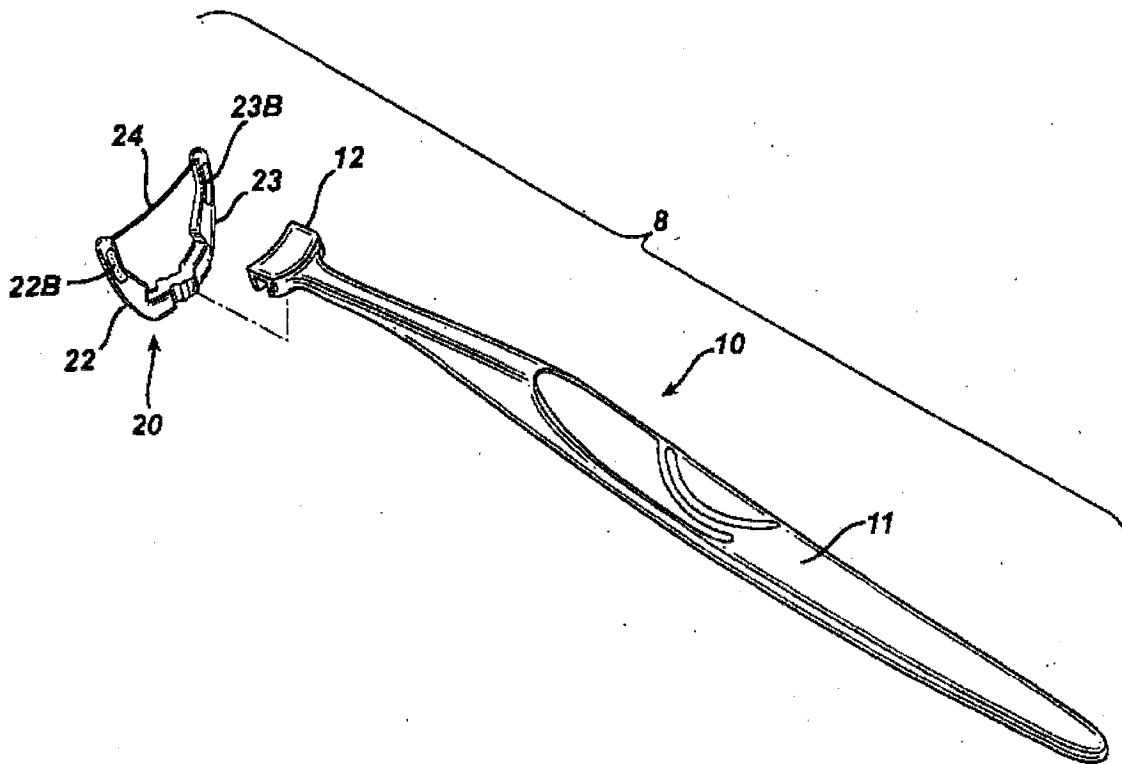
(52) U.S. Cl. 132/323

(57) **ABSTRACT**

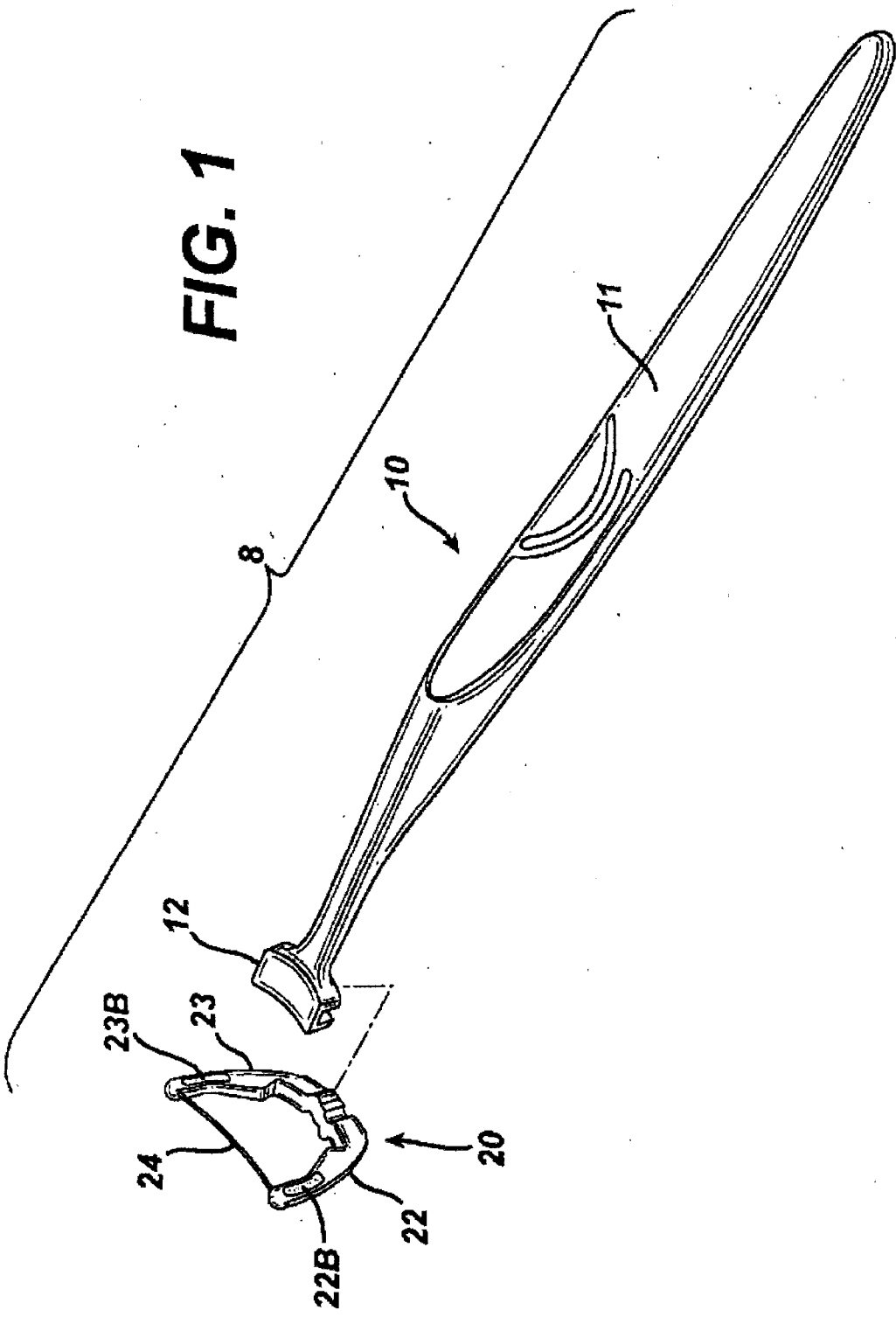
An improved dental floss device, having a new method of delivering flavor and actives to the oral cavity. The dental floss device consists of a dental floss holder and a handle, which are coupled together for a snap-fit connection. The dental floss holder having the floss insert molded in, contains at least one cavity that can be filled with flavors and/or chemotherapeutic agents. Saliva from the user's mouth activates the release of the soluble flavor agent as well as the chemotherapeutic agents, when the floss is passed between teeth. The cavity may also be subdivided to allow for substances that would normally react with each other to be mixed as the flossing device is being used.

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FIG. 2

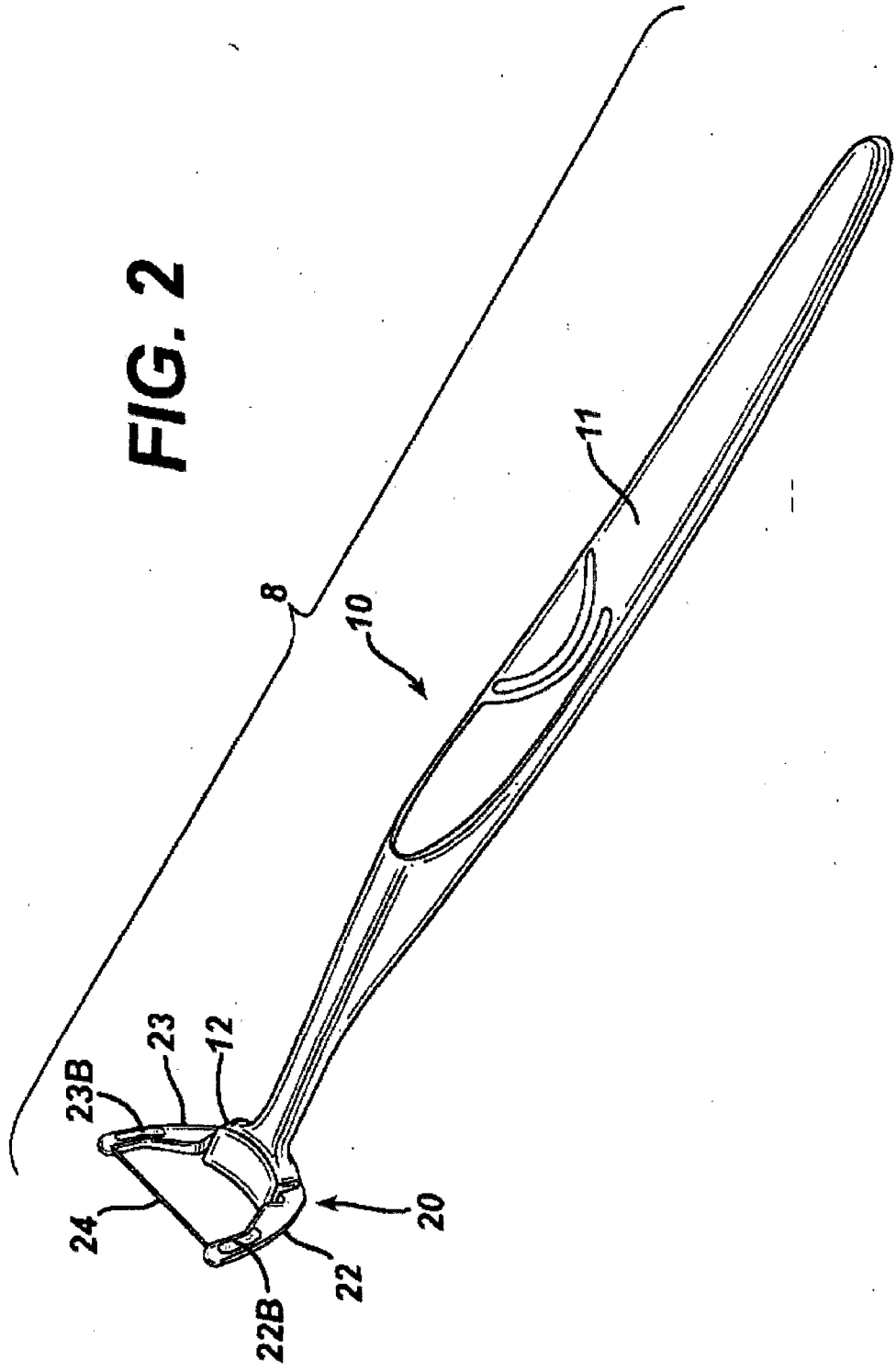
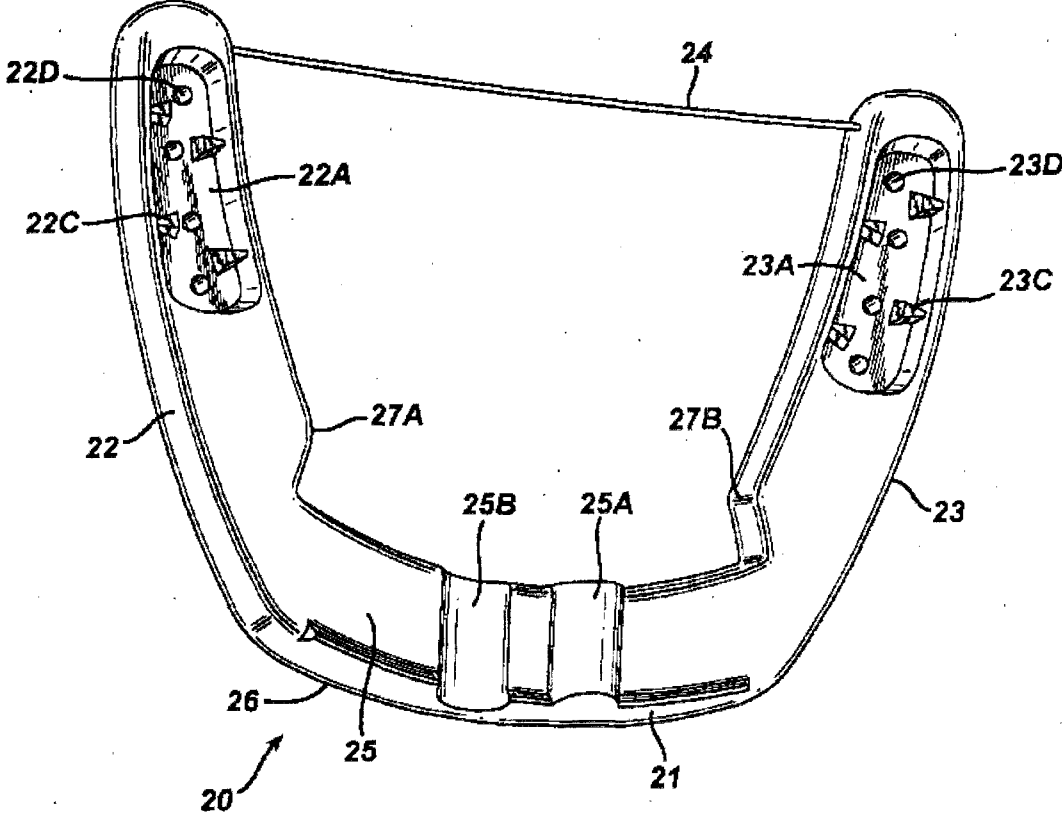


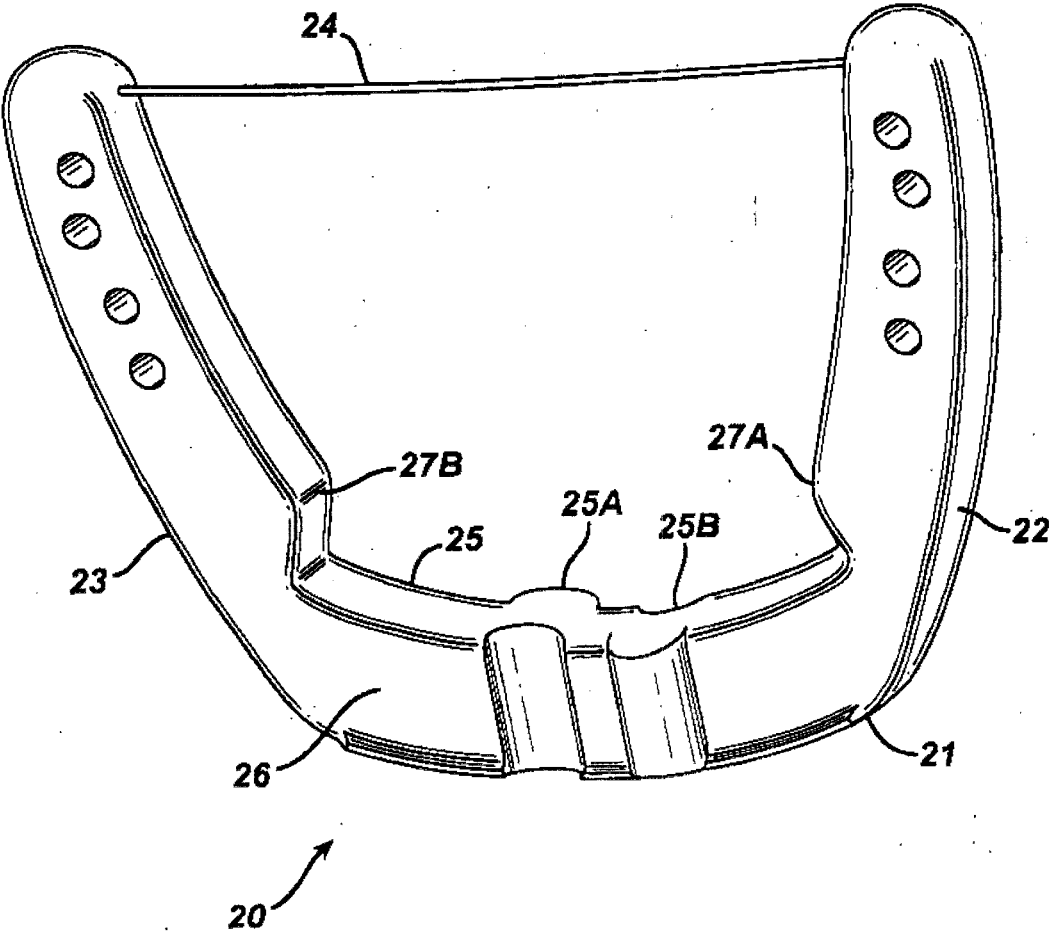
FIG. 3



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FIG. 4



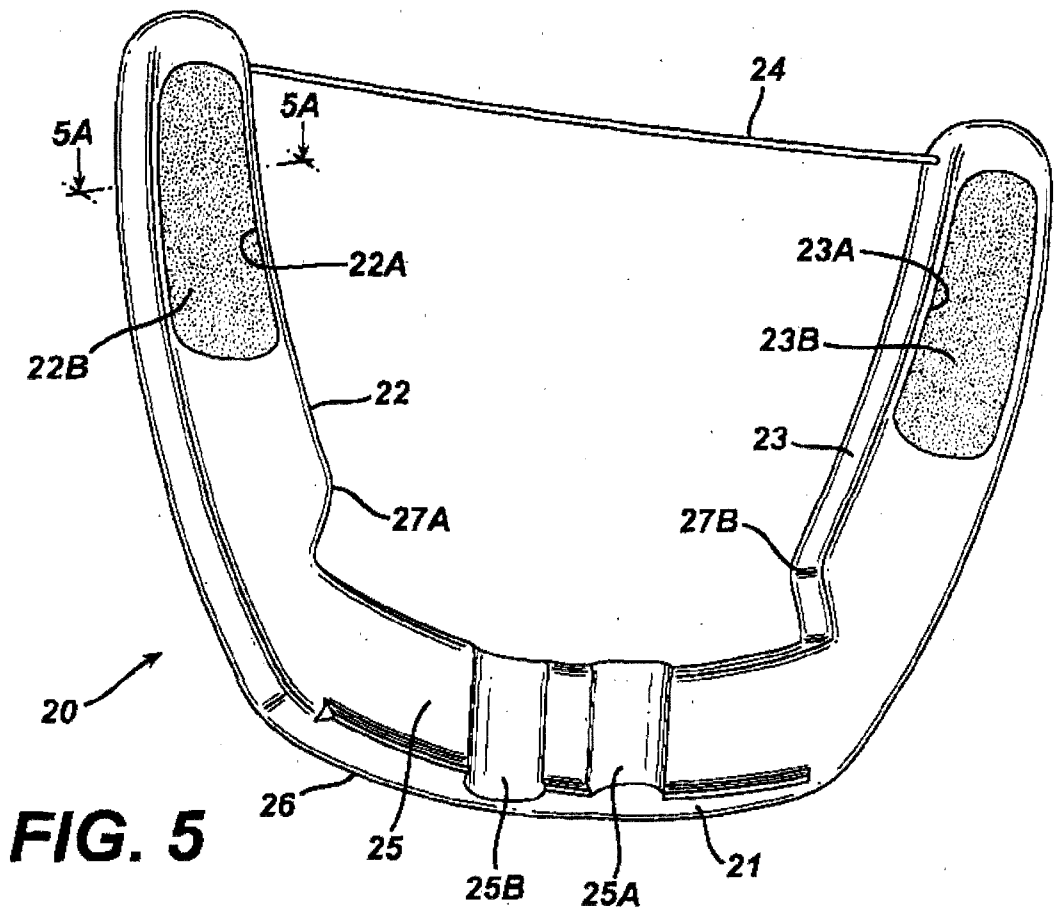


FIG. 5A

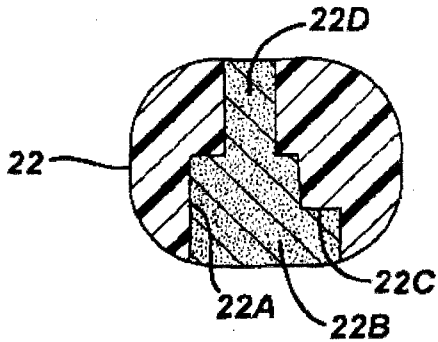
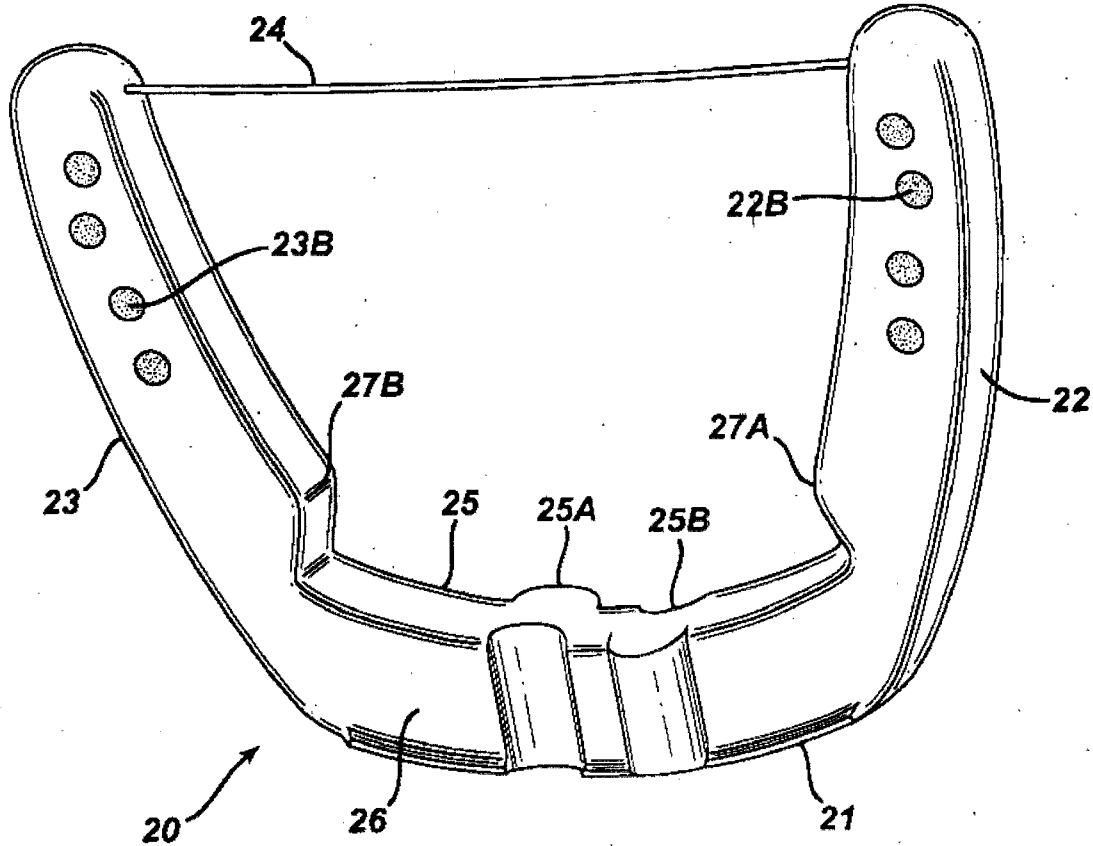


FIG. 6



DENTAL FLOSS HEAD DEVICE WITH A FLAVOR DELIVERY MEANS**BACKGROUND OF THE INVENTION****[0001] 1. Field of the Invention**

[0002] The present invention relates to a dental floss device that is adapted to deliver flavor and/or chemotherapeutic agents to the mouth.

[0003] 2. Description of the Prior Art

[0004] The desire for adding flavor to the mouth and teeth while flossing has lead to the development of flavored dental floss coatings. Dental flosses having flavoring applied directly to the floss are well known in the art. In use, flavored dental floss is inserted between teeth. The dental floss leaves a light flavoring in the mouth as the floss is passed between teeth.

[0005] Flavored dental floss is typically packaged and sold in lots of twenty-four or thirty-six units. The process for making flavored dental floss typically involves placing a traditional flavor system including flavor such as spray dried flavor in a coating such as a microcrystalline wax, then applying the coating to a fiber substrate to generate a dental floss. Dental floss holders have recently become a popular way of flossing between teeth. If these wax-coated dental flosses are used in an injection molding process for making dental floss holders, the coating will eventually clog the injection mold and cause the molding machine to jam. Furthermore, the amount of flavor available is small and thus only a hint of flavor can be provided through this technique.

[0006] U.S. Pat. No. 5,165,913 discloses A CONTROLLED RELEASE INTERPROXIMAL DELIVERY SYSTEM, wherein the dental floss contains surfactant and silicone preparations with added chemotherapeutic agents. Unlike the present invention, the '913 patent provides flavor only to the floss, allowing for just a small amount of flavoring to be inserted into a user's mouth.

[0007] In U.S. Pat. No. 6,591,844, ELASTOMERIC MONOFILAMENT DENTAL TAPES are disclosed. In the '844 patent dental tape has saliva soluble coatings, which are directly on the floss. By contrast, the present invention has a floss head device with floss extending there-between, wherein the head device contains cavities, which hold a larger amount of flavoring.

[0008] In another U.S. Pat. No. 5,098,711, a METHOD OF TREATING THE ORAL CAVITY WITH DENTAL FLOSS CONTAINING CHEMOTHERAPEUTIC AGENTS is disclosed. In the '711 patent, the dental floss uses a surfactant, silicone and chemotherapeutic agent, which are released from the dental floss unlike the present invention's release mechanism, delivering only a small amount of flavoring and/or other chemicals.

[0009] Dental floss devices with flavoring or chemicals attached to the floss itself are difficult to process and only deliver a small amount of flavoring. The provision of a flavored dental floss device head would simplify processing and would improve flavor delivery to a user's mouth. None of the above inventions and patents, taken either singly or in combination is seen to describe the instant invention as claimed. Therefore, there is a need for a dental floss head device having an improved flavor-delivery feature.

SUMMARY OF THE INVENTION

[0010] In accordance with a first embodiment of the present invention there has been provided a dental floss device including a handle having a head portion and a flavored dental floss holder, which is adapted to be releasably connected to the head portion for subsequent use. The dental floss device further comprises releasable engagement means for releasably securing the dental floss holder to the handle during use. The head portion extends transversely of the longitudinal axis of the gripping portion, as a result of which the handle has a generally T-shaped configuration. The head portion includes a generally U-shaped channel for releasably receiving the above-described dental floss holder. The U-shaped channel comprises a floor and two spaced apart walls. A first of the two walls comprises at least one protrusion and at least one indentation spaced laterally therefrom. The second of the two walls defining the U-shaped channel also comprises at least one protrusion and at least one indentation spaced laterally therefrom. The protrusion on the first of the two walls is located opposite the indentation on the second of the two walls. The indentation on the first of the two walls is located opposite the indentation on the second of the two walls. The indentation on the first of the two walls is located opposite the protrusion on the second of the two walls. The protrusions and indentations on the two walls defining the U-shaped channel of the head portion are sized and arranged to receive in frictional engagement the indentations and protrusions on the lateral sides of the base portion of the aforementioned dental floss holder. The dental floss holder has a base portion and a pair of spaced-apart arms extending from the base portion to accommodate a length of dental floss therebetween. The base portion comprises a pair of lateral sides. Each lateral side comprises at least one protrusion and at least one indentation spaced laterally therefrom. The protrusion on the first lateral side is located opposite the indentation on the second lateral side. The indentation on the first lateral side is located opposite the protrusion on the second lateral side. Preferably, the spaced-apart arms include snap fit projections for engagement with the head portion of the handle. The spaced-apart arms have snap fit projections extending inwardly there from. Each of the spaced-apart arms has at least one cavity defined therein. Each cavity may consist of a through hole or a concavity capable of holding flavoring and/or actives. In use, the floss holder is attached to the handle at its head portion, a user would then place the floss holder portion in their mouth to begin flossing. Once the floss from the floss holder is inserted between the user's teeth and saliva contacts the flavoring and/or actives stored in each arm's cavity, the flavoring and/or actives will disperse throughout the user's mouth.

[0011] In accordance with a second embodiment of the present invention, there has been provided a dental floss device having a dental floss holder and handle. The dental floss holder comprises a base portion and a pair of spaced-apart arms extending from the base portion to accommodate a length of dental floss there between. At least one of the spaced apart arms has at least one cavity defined therein. Each cavity may consist of a through hole or a concavity capable of containing flavoring and/or actives. The base portion comprises a pair of lateral sides. The handle integrally extends from the base portion of the dental floss holder. In use, the floss holder has an integrally attached handle at its base portion, a user would then place the floss

holder portion in their mouth to begin flossing. Once the floss from the floss holder is inserted between the user's teeth and saliva contacts the flavoring and/or actives stored in each arm's cavity, the flavoring and/or actives will disperse throughout the user's mouth.

[0012] In accordance with another embodiment of the present invention, there has been provided a dental floss holder device comprising a base portion and a pair of spaced-apart arms extending from the base portion. A length of dental floss is secured between the distal ends of the spaced-apart arms. The base portion comprises a pair of lateral sides and may optionally further comprise means for releasable engagement for attachment to a handle. Each lateral side may comprise of at least one protrusion and at least one indentation spaced laterally therefrom. The protrusion on the first lateral side is located opposite the indentation on the second lateral side. The indentation on the first lateral side is located opposite the protrusion on the second lateral side. At least one of the spaced-apart arms has a cavity. The cavity can be a through hole or a concaved area and is adapted to contain a flavoring and/or an active loaded therein. Once flossing begins flavoring and/or actives will disperse throughout the mouth as each cavity filled with flavoring contacts saliva from the user's mouth.

[0013] In accordance with another embodiment of the present invention, there has been provided a dental article having means for delivering a flavor and/or a chemotherapeutic substance to the oral cavity in use, said article being formed from an injection molded plastic, said article having at least one cavity, said at least one cavity being filled with a heat meltable polymer which is solid at room temperature and capable of melting when placed in the mouth and contacted with saliva whereby said flavor and/or chemotherapeutic substance is delivered to the oral cavity.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 is an exploded perspective view of one embodiment of a dental floss holder device in accordance with the present invention;

[0015] FIG. 2 is a perspective view of the dental floss holder in FIG. 1, in accordance with the present invention;

[0016] FIG. 3 is a front view of a dental floss holder device in accordance with the present invention;

[0017] FIG. 4 is a rear view of the dental floss holder in accordance with the present invention;

[0018] FIG. 5 is another embodiment of FIG. 3 in accordance with the present invention;

[0019] FIG. 5A is a cross-sectional view of FIG. 5 at line 5A-5A; and

[0020] FIG. 6 is another embodiment of FIG. 4 in accordance with the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0021] The present invention is directed to a dental floss device having a base portion; and a pair of spaced-apart arms extending from the base portion to accommodate a length of dental floss therebetween. Each of said pair of spaced-apart arms has a surface and the surface of at least one of said arms

is provided with a cavity capable of containing a flavored substance, an active or a combination of a flavored substance and an active. In one embodiment of the invention, the dental floss device includes a handle and a dental floss holder. The handle and dental floss holder may be formed as an integral, unitary structure or alternatively, the dental floss holder may be separable from the handle and formed as discrete units. When the dental floss holder is formed as a discrete unit, it is preferably stackable, that is, easily capable of being stacked, one on top of an adjacent unit in substantially parallel fashion.

[0022] The handle and flavored stackable dental floss holder comprising the dental floss device of the present invention may be made of any suitable material known in the art. Suitable materials include polymers such as, but not limited to, acrylics, such as poly methyl methacrylate; polyolefins, such as polyethylene and polypropylene; polyesters, such as polycaprolactone; co-polyesters; polycarbonate; and mixtures thereof.

[0023] The handle and dental floss holder may be made of the same material or different materials. Preferably, the flavored dental floss holder (exclusive of the dental floss material) is made of a material that is softer than the material from which the handle is made. In a preferred embodiment, the dental floss holder is made from a polypropylene material and the handle is made of co-polyester material.

[0024] The handle and stackable dental floss holder of the present invention may be made by any suitable process known in the art. Injection molding is preferred.

[0025] The flavored dental floss holder includes two spaced-apart arms having at least one cavity positioned thereon. Each cavity can be extended through the arm or closed to one side. In use, each cavity contains flavoring and/or chemotherapeutic agents therein. The shape of the cavity is not critical and may be in the form of a square, circle, triangle or any shape formed therein. The cavity will preferably contain mechanisms that will help retain a flavor system in place. These will typically be a roughened surface (in contrast to a smooth surface), protrusions extending into the cavity or above the cavity for keeping the flavor system from becoming loose within the cavity, or in the case where the cavity is closed on one side, through holes extending from the underside surface of the cavity through to the other side of the floss holder. The holes preferably contain a tapered section that increases in diameter as you move away the cavity surface. This way when melted material flows into the hole and solidifies, a lock will be formed which holds the flavor system in place. The dental floss holder retains a length of dental floss for cleaning between teeth. Any dental floss material known in the art may be used in the dental floss holder of the present invention. The dental floss material may be a monofilament or a multi-filament yarn comprising a plurality of such monofilaments.

[0026] Flavoring in the form of a water soluble or water insoluble substance may be filled into the cavity of the floss holder's arms. The substance would be water soluble preferably, in which flavor droplets, sweeteners and actives are dispersed. The substance may also contain commercially available spray dried flavors. Suitable water soluble substances include, but are not limited to, polyethylene glycols (such as PEG 1000 to PEG 5000), ethylene oxide/propylene oxide copolymers, such as those commercially available

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(84) Designated Contracting States: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR Designated Extension States: AL BA HR LV MK YU (30) Priority: 22.03.2004 US 805737 (71) Applicant: JOHNSON & JOHNSON CONSUMER COMPANIES, INC. NJ 08558 (US)	(72) Inventor: Ochs, Harold D. Flemington, NJ 08622 (US) (74) Representative: Mercer, Christopher Paul et al Carpmaels & Ransford, 43-45 Bloomsbury Square London WC1A 2RA (GB)
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(54)

Dental floss head device with a flavor delivery means

(57) An improved dental floss device, having a new method of delivering flavor and actives to the oral cavity. The dental floss device consists of a dental floss holder and a handle, which are coupled together for a snap-fit connection. The dental floss holder having the floss insert molded in, contains at least one cavity that can be filled with flavors and/or chemotherapeutic agents. Saliva from the user's mouth activates the release of the soluble flavor agent as well as the chemotherapeutic agents, when the floss is passed between teeth. The cavity may also be subdivided to allow for substances that would normally react with each other to be mixed as the flossing device is being used.

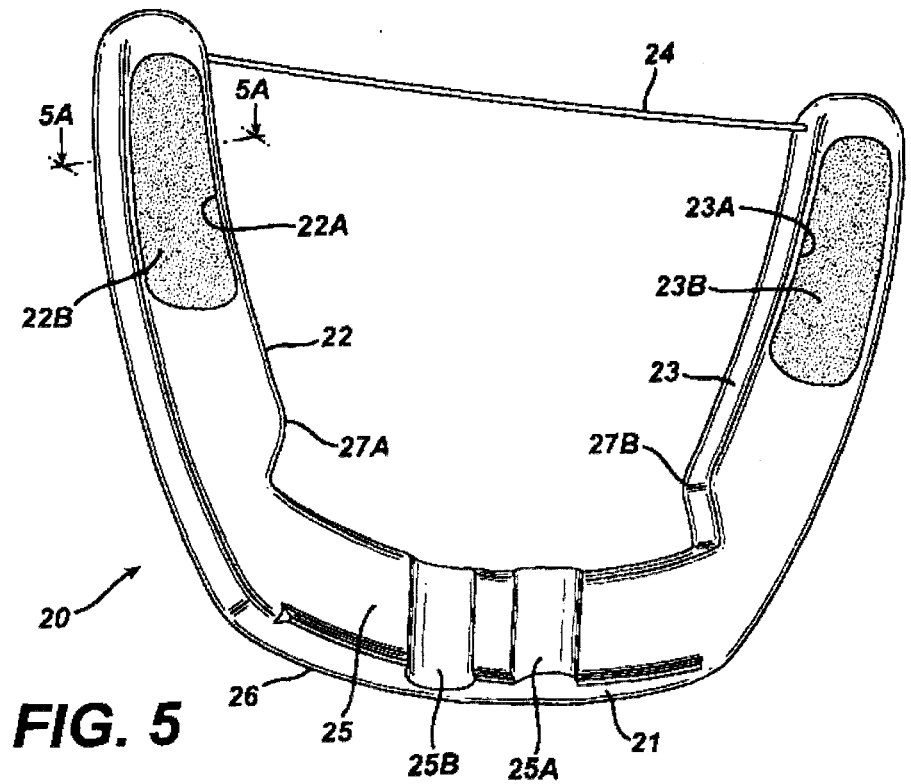
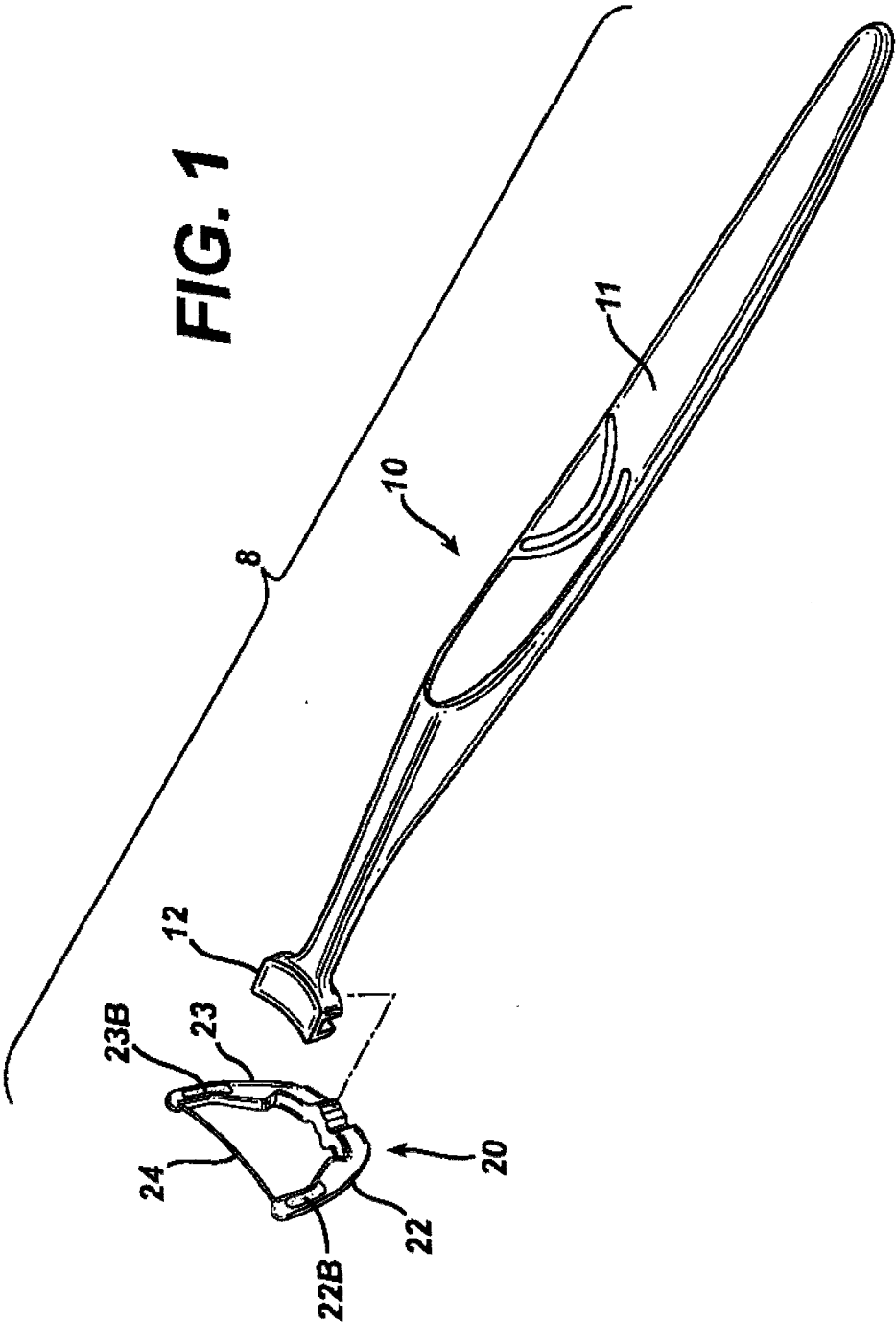


FIG. 5

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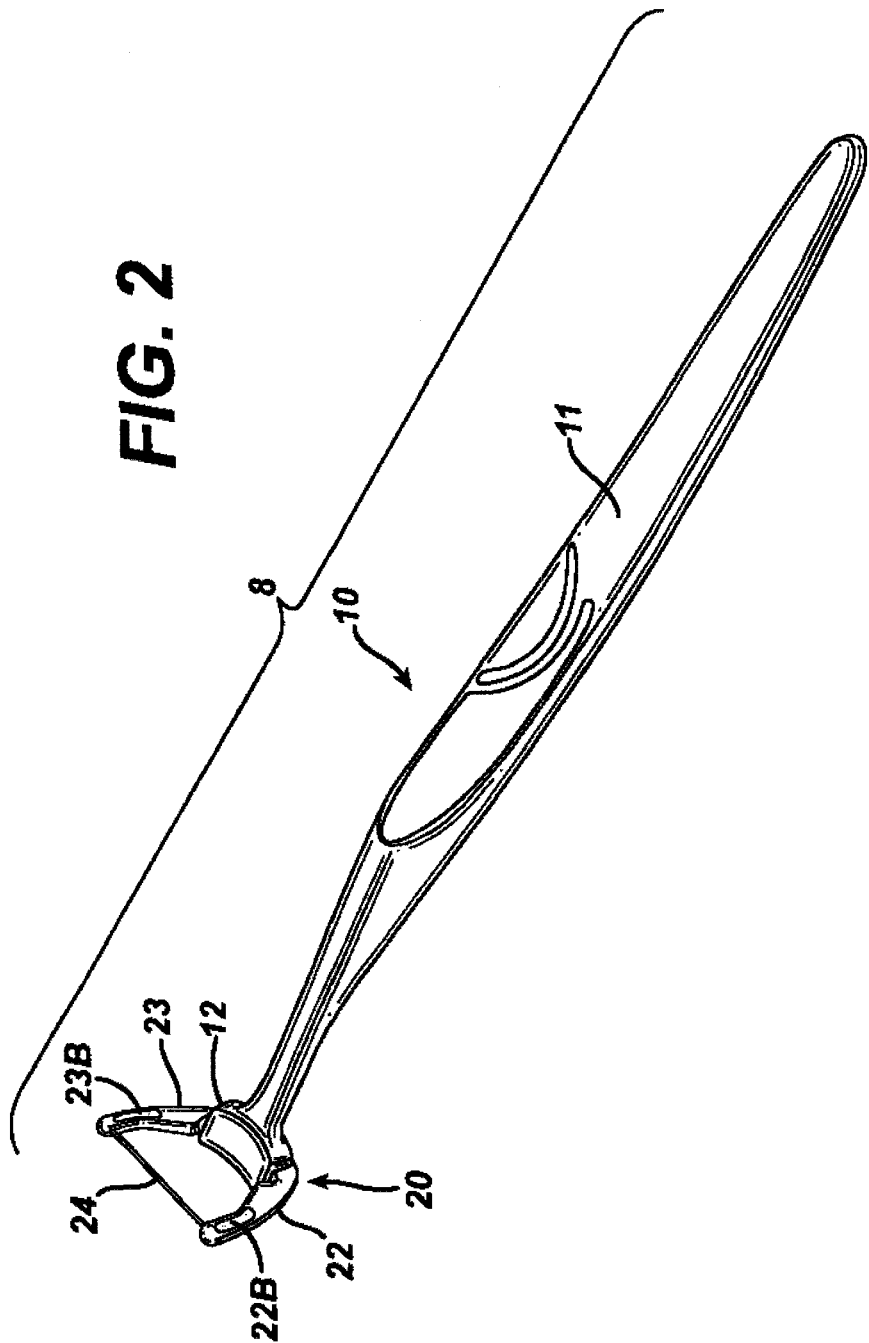
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FIG. 1



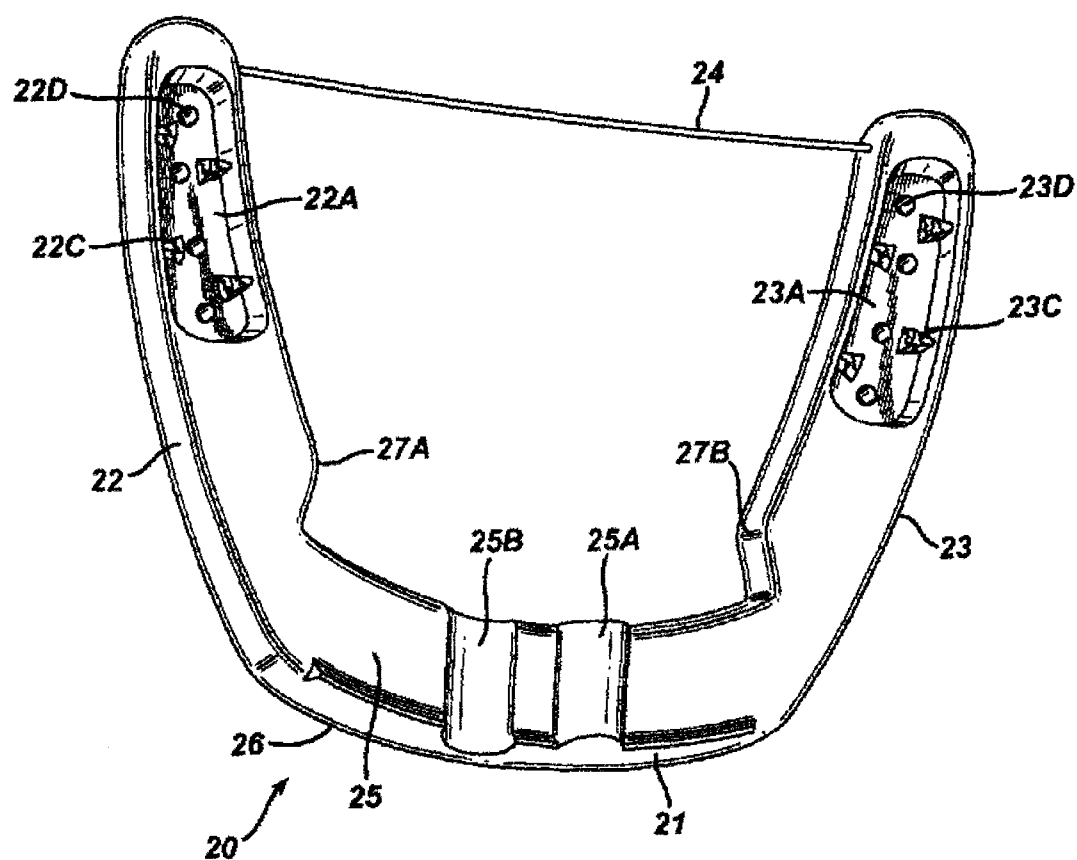
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FIG. 2

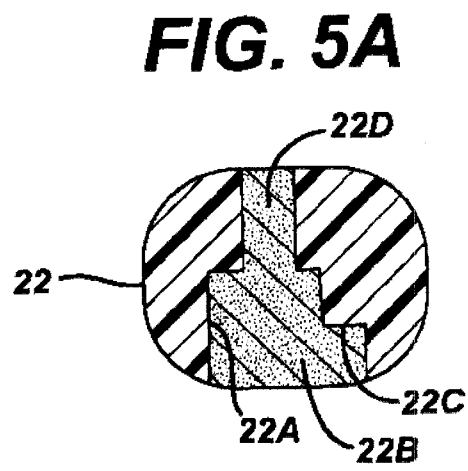
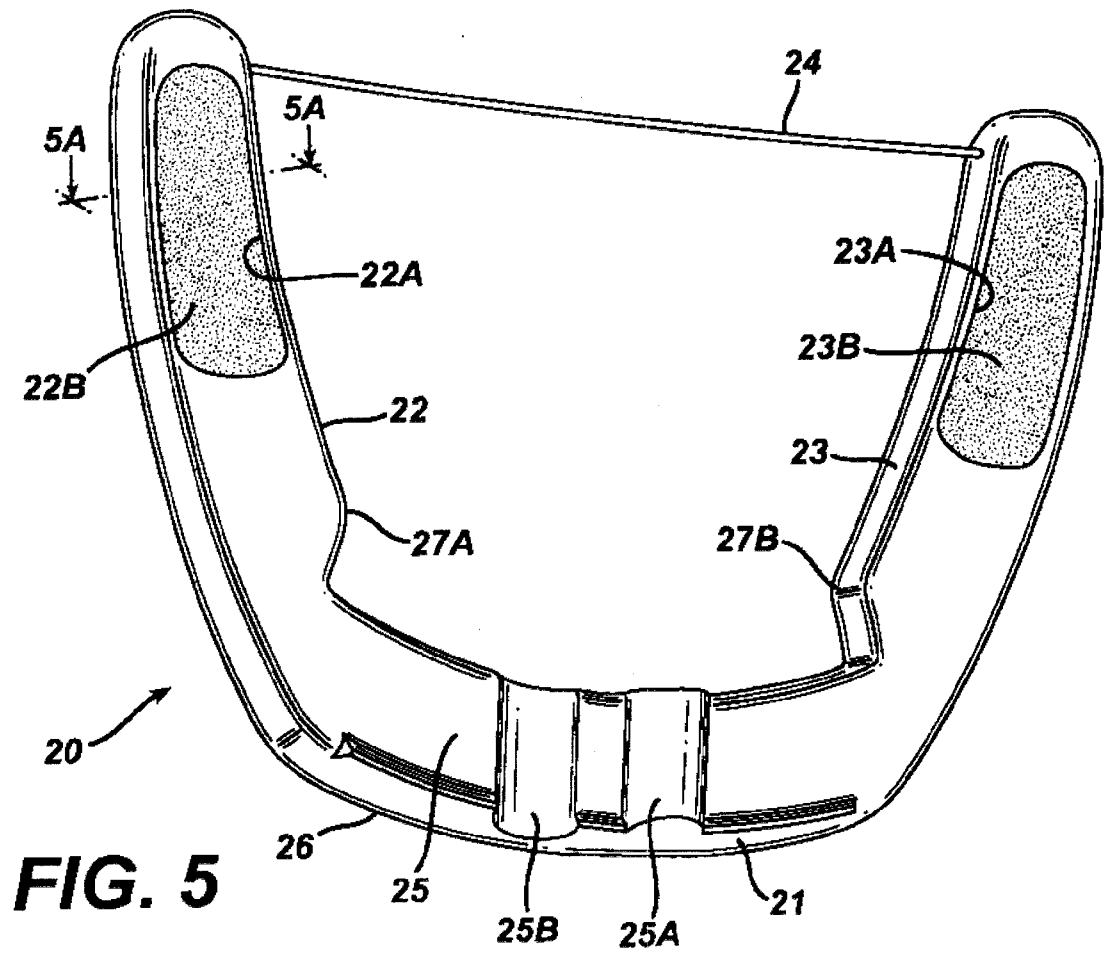


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FIG. 3



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discrete units. When the dental floss holder is formed as a discrete unit, it is preferably stackable, that is, easily capable of being stacked, one on top of an adjacent unit in substantially parallel fashion.

[0011] The handle and flavored stackable dental floss holder comprising the dental floss device of the present invention may be made of any suitable material known in the art. Suitable materials include polymers such as, but not limited to, acrylics, such as poly methyl methacrylate; polyolefins, such as polyethylene and polypropylene; polyesters, such as polycaprolactone; co-polyesters; polycarbonate; and mixtures thereof.

[0012] The handle and dental floss holder may be made of the same material or different materials. Preferably, the flavored dental floss holder (exclusive of the dental floss material) is made of a material that is softer than the material from which the handle is made. In a preferred embodiment, the dental floss holder is made from a polypropylene material and the handle is made of co-polyester material.

[0013] The handle and stackable dental floss holder of the present invention may be made by any suitable process known in the art. Injection molding is preferred.

[0014] The flavored dental floss holder includes two spaced-apart arms having at least one cavity positioned thereon. Each cavity can be extended through the arm or closed to one side. In use, each cavity contains flavoring and/or chemotherapeutic agents therein. The shape of the cavity is not critical and may be in the form of a square, circle, triangle or any shape formed therein. The cavity will preferably contain mechanisms that will help retain a flavor system in place. These will typically be a roughened surface (in contrast to a smooth surface), protrusions extending into the cavity or above the cavity for keeping the flavor system from becoming loose within the cavity, or in the case where the cavity is closed on one side, through holes extending from the underside surface of the cavity through to the other side of the floss holder. The holes preferably contain a tapered section that increases in diameter as you move away the cavity surface. This way when melted material flows into the hole and solidifies, a lock will be formed which holds the flavor system in place. The dental floss holder retains a length of dental floss for cleaning between teeth. Any dental floss material known in the art may be used in the dental floss holder of the present invention. The dental floss material may be a monofilament or a multi-filament yarn comprising a plurality of such monofilaments.

[0015] Flavoring in the form of a water soluble or water insoluble substance may be filled into the cavity of the floss holder's arms. The substance would be water soluble preferably, in which flavor droplets, sweeteners and actives are dispersed. The substance may also contain commercially available spray dried flavors. Suitable water soluble substances include, but are not limited to, polyethylene glycols (such as PEG 1000 to PEG 5000), ethylene oxide/propylene oxide copolymers, such as those commercially available under the trade name PLURON-

IC® and polyvinyl alcohols. These substances may be heated and flavor oil may be added to homogenized the flavor system. This homogenization breaks up the flavor into droplets and disperses it into the substance. The substance and flavor droplets may be filled into the cavity (s) of the arms where it may cool, solidify and bond. Suitable water insoluble substances include, but are not limited to, an emulsion of oil and water soluble substances with flavor immersed therein and microcrystalline wax. The water insoluble substance preferably has a low melting point, e.g., below 82 degrees C (180 degrees F) and more preferably, e.g., below 60 degrees C (140 degrees F). Typically, spray dried flavor is used in conjunction with insoluble substances. It should be noted that water insoluble substances yield low flavor delivery when used this way. The water soluble or insoluble substance flavorant is generally known as a flavor system.

[0016] An "active", as used herein, may be any agent that is capable of delivering a health or cleansing benefit to the oral cavity. In a preferred embodiment the active is a chemotherapeutic agent. Suitable chemotherapeutic agents include, but are not limited to, anti-microbials of ionic and non-ionic such as alkyl trimethyl ammonium bromide, chlorohexisdenine, sanguinaria, triclosan, zinc sulfate, antibiotics such as tetracycline, antioxidants desensitizers such as potassium nitrate, remineralizing agents such as compounds of fluoride such as sodium fluoride or stannous fluoride, anti-tartar agents such as tetra sodium pyrophosphate (TSPP), plaque control agents such as cetyl pyridinium chloride, cleaning substances such as surfactants and emulsifiers such as sodium lauryl sulfate, sodium lauryl sacosinate, surfactants such as block co-polymers, coating substances such as silicones, carbowaxes, silicone glycol copolymers and polydimethylsiloxane teeth whitening and bleaching agents such as calcium peroxide, pH buffering agents such as buffered or acidulated phosphofluoride, sodium monofluorophosphate antifungal agents and hemostatic agents such as vitamin K and calcium ions in the form of water-soluble calcium salts.

[0017] Dental flosses in the form of a multi-filament yarn may be circular in cross section or flat, and typically have a denier ranging from about 22 g/km (200 denier) to about 156 g/km (1400 denier). The denier of the individual fibers typically ranges from about 1 denier to about 6, although other deniers may be used in some circumstances if desired. The yarn may be twisted or untwisted as well as coated with substances to prevent fraying and provide ease of sliding between teeth.

[0018] Pseudo-monofilament yarns may also be used as dental floss material in the present invention. Pseudo-monofilament yarns are made by extruding bi-component fibers, each fiber comprising a core of one polymer and a sheath of a different polymer, then either partially or totally melting the sheaths of the fibers to bond or fuse the fibers, resulting in a monofilament look and feel. One example of a suitable bi-component fiber for making pseudo-monofilament yarn is a core of nylon 6 with a

sheath of PEBAX® brand polyether/amide copolymer. Other materials besides nylon can be used for the core of the bi-component fibers and other polymeric materials besides polyether/amide copolymer may be used as the sheath material.

[0019] Other dental floss materials which may be used in the present invention include, but are not limited to, nylon 6-6, nylon 6, polypropylene, polyethylene, high molecular weight polyethylene, ultra high molecular weight polyethylene, monofilament polytetrafluoroethylene, and the like materials. Combinations of such materials are also acceptable as long as they provide the floss with strength and resistance to fraying. Ultra high molecular weight polyethylene is a preferred dental floss material.

[0020] The individual monofilaments comprising a multifilament dental floss yarn may, if desired, be air entangled. If the yarn is air entangled, the air entanglement nodes may be from about 1.25 cm to about 5.2 cm apart, preferably from 2 cm to 3 cm apart. One type of air entangled yarn is described in U.S. Patent 5,908,039.

[0021] As is known in the art, the dental floss may be twisted. If the dental floss is twisted, it is preferable to have less than 6 turns per 2.54 cm, and more preferably less than 5 turns per 2.54 cm.

[0022] As is known in the art, the dental floss may be coated with waxes, flavorants, active ingredients, and the like.

[0023] The U.S. Patent 5,538,023 to Oczkowski et al. discloses one process of manufacturing dental floss holders, includes feeding dental floss through a multi-cavity mold and injecting plastic into the mold to form the holders. After completion of the injection-molding step, the floss may then be cut and tied at the ends. Alternatively, the ends are heated to form spheres and retain the floss material in place. The floss in the dental floss holder typically has some slack. In use, it is preferred that the dental floss be taut.

[0024] The relationship between the snap fit projections on the dental floss holder and the terminal snap fit recessions of the head portion may be adapted to make the floss material taut when the dental floss device is assembled for use. The length of the head portion is sized so that when the dental floss holder is secured in the U-shaped channel of the head portion, the distance between the arms of the dental floss holder is increased, thus making the floss material taut. The distance by which the arms of the dental floss holder is increased when the dental floss holder is brought into engagement with the head portion of the handle depends on the amount of slack in the dental floss material when the dental floss holder is out of engagement with the head portion. Typically, this distance ranges from about 0.13 mm (0.005 inch) to about 1.53 mm (0.06 inch), preferably from about 0.25 mm (0.01 inch) to about 0.51 mm (0.02 inch).

[0025] Examples are provided below to further illustrate the dental floss devices of the present invention. The invention should not be construed as being limited to the specific details set forth herein.

Example 1 - Handle

[0026] A co-polyester handle according to the present invention was made by injection molding. Referring now to the appended drawings, handle 10 comprises an elongated gripping portion 11 and a head portion 12 at its distal end. Head portion 12 extends transversely of the longitudinal axis of gripping portion 11, as a result of which handle 10 has a generally T-shaped configuration. Head portion 12 includes a generally U-shaped channel for releasably receiving a dental floss holder of the type mentioned hereinabove and in Example 2. The U-shaped channel comprises a convex floor and two spaced apart walls, and First wall comprises a protrusion and an indentation spaced laterally therefrom. Second defining the U-shaped channel comprises a protrusion and an indentation spaced laterally therefrom. on first wall is located opposite indentation in second wall Indentation on first wall is located opposite protrusion on second wall Protrusions and indentations on walls are sized and arranged to receive in frictional engagement mating indentations and protrusions on lateral sides 25, 26 of base portion 21 of the aforementioned dental floss holder 20. See also Example 2 hereinafter. Sides of head portion 12 engage snap fit projections 27A, 27B of dental floss holder 20 when the floss device is assembled for use.

Example 2 - Flavored Dental Floss Holder

[0027] A polypropylene flavored dental floss holder according to the present invention was made by injection molding with Eastman EASTAR® BR003 co-polyester. As is seen in Figure 3, dental floss holder 20 comprises a base portion 21 and a pair of spaced-apart arms 22 and 23 extending from the base portion to accommodate a length of dental floss 24 therebetween. Base portion 21 comprised a pair of lateral sides 25, 26. Lateral side 25 comprised a protrusion 25A and an indentation 25B spaced laterally therefrom. Protrusion 25A on first lateral side 25 was located opposite indentation 25B on second lateral side 26. The indentation 25B on first lateral side 25 was located opposite protrusion 25A on second lateral side 26. The spaced-apart arms included snap fit projections 27A, 27B for engagement with sides 13, 15 of head portion 12 of handle 10. The spaced-apart arms 22 and 23 also had at least one cavity 22A, 23A defined therein for containing a flavoring and/or actives 22B, 23B. Each cavity 22A, 23A contains protrusions 22C, 23C and through holes 22D, 23D placed therein. The floss holder was machined out to provide each cavity with approximately 0.79 mm (1/32") wide, by 1.59 (1/16") deep and 9.53 mm (3/8") long extending proximate the line where the floss passed through the head upward along the centerline of the floss holder. The dental floss 24 was 48.3 g/km (435 denier) SPECTRA® Fiber 1000 ultra high molecular weight polyethylene, available through Honeywell Incorporated. The cavities were filled with various flavor formulations such as PEG 3350 (68%), H&R spray dried

flavor #813581 (28%) and sodium saccharin (4%). Approximately 0.030 grams of flavor were loaded into the cavities. The loading of 0.030 grams of flavor formulation is 40 times greater than what could be delivered from the 19.0 mm (3/4") length of floss in the head using a conventional delivery system. The cavities were filled by hand, where a spatula was dipped into a melted formula and manually placed into the cavity. The cavities may also be filled by using a mechanized system where miniature pistons pump in the exact amount of flavor into the cavity via a heated nozzle system. The cavity's volume may be at least 0.08552 cm³ (0.00521885 cu. in.), more preferably the volume may be 0.01710 cm³ (0.00104377 cu. in.)

Example 3 - Dental Flossing Device

[0028] A dental flossing device was assembled by placing the cavity flavored-filled dental floss holder of Example 2 in the head portion of Example 1. The dental flossing device is shown in Figure 2. The detents of the head portion receive the recesses of the dental floss holder. The recesses of the head portion receive the detents of the dental floss holder. The terminal snap fit recessions of the head portion receive the snap fit projections of the dental floss holder.

Example 4 - Flavored Dental Floss Device in use

[0029] The dental floss device of example 3 was assembled and placed in use. The dental floss holder was then given to individuals for an initial trial. The results showed a continuous flavor burst throughout the mouth during flossing of all the teeth. This result further shows that saliva does indeed activate the flavor system to deliver a strong flavor perception. It was found that blending the molecular weights of the polyethylene glycols used as the soluble substance could control the rate of flavor delivery into the oral cavity. Using 100% polyethylene glycol 1000 as the soluble substance provides rapid flavor delivery. The low melting point and high solubility of this substance make it desirable to use polyethylene glycol or polyethylene glycol blends at a higher molecular weight to achieve product survivability under either higher heat or higher humidity conditions, which are often seen in delivering products to the shelf. For this reason a mixture of polyethylene glycol 3350 with 5 to 50% polyethylene glycol 1000 is more desirable. The delivery of flavor into the mouth is longer lasting and the product shelf life significantly lengthened.

Claims

- 1. A dental floss holder (20) comprising:
 - a base portion (21); and
 - a pair of spaced-apart arms (22,23) extending

from the base portion (21) to accommodate a length of dental floss (24) therebetween, each of said pair of spaced-apart arms (22,23) having a surface, the surface of at least one of said arms comprising a cavity (22A,22B), characterized in that:

said cavity contains a composition selected from a flavored substance, an active or a combination of a flavored substance and an active; and
said cavity comprises a mechanism to help retain said composition in place, said mechanism comprising a roughened surface, protrusions (22C,23C) extending into the cavity or above the cavity for keeping the composition from becoming loose within the cavity, or in the case where the cavity (22A, 22B) is closed on one side, through holes (22D,23D) extending from an underside surface of the cavity through to the other side of the floss holder.

- 2. A dental floss device comprising a dental floss holder according to claim 1, and a handle integrally connected to said base portion (21) and extending therefrom.
- 3. A dental floss device comprising a dental floss holder (20) according to claim 1 and a handle (10) having a gripping portion (11) and a head portion (12), said head portion having opposite engaging surfaces, wherein said base portion (21) of the dental floss holder has a mating portion that is releasably engaged with said engaging surfaces of said handle.
- 4. A dental floss device according to claim 3, wherein the base portion (21) defines a tongue having lateral engaging surfaces (25,26), each engaging surface having at least one detent (25A) and at least one recess (25B), the detent and recess being laterally spaced apart and aligned with a complementary detent and recess on the opposite engaging surfaces of the head portion (12) of the handle.
- 5. A dental floss device according to claim 4, having a releasable engagement means between the handle (10) and the floss holder for retaining the dental floss holder securely in position on the head portion (12) of the handle during movement of the dental floss device in use, wherein:

said handle comprises a head portion (12) and an elongated portion, the head portion (12) having a transversely extending groove defined by a floor, lateral receiving walls, and terminal snap fit recessions, each of said receiving walls having at least one detent and at least one recess,

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Expediente: Oprima aquí para ver el detalle del expediente

Resumen:

1.- Un dispositivo para seda dental que comprende:

un mango; y

un porta-seda dental;

dicho mango que tiene una porción de agarre y una porción de cabeza; dicha porción de cabeza que tiene superficies opuestas que enganchan;

dicho porta-seda dental que tiene una porción de base y un par de mandíbulas separadamente espaciadas que se extienden desde la porción de base para acomodar una longitud de seda dental entre ellas, las mandíbulas separadamente espaciadas que tienen por lo menos una cavidad para adicionar sustancias, la porción base que tiene por lo menos una porción que casa para enganchar de manera liberable a dicho mango.

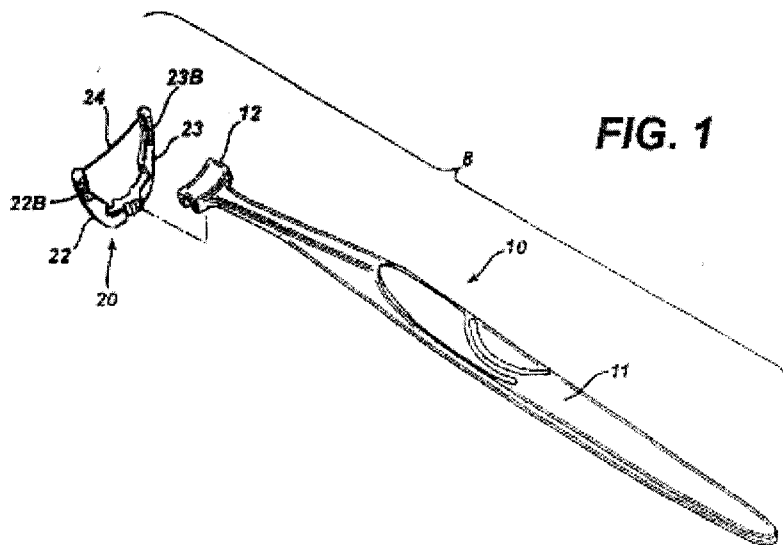


FIG. 1