Nov. 16, 1954 J. H. FRANCIS 2,694,401

FLUID DISPENSING COMB

Filed Aug. 18, 1952

2 Sheets-Sheet 1

Fig. 1

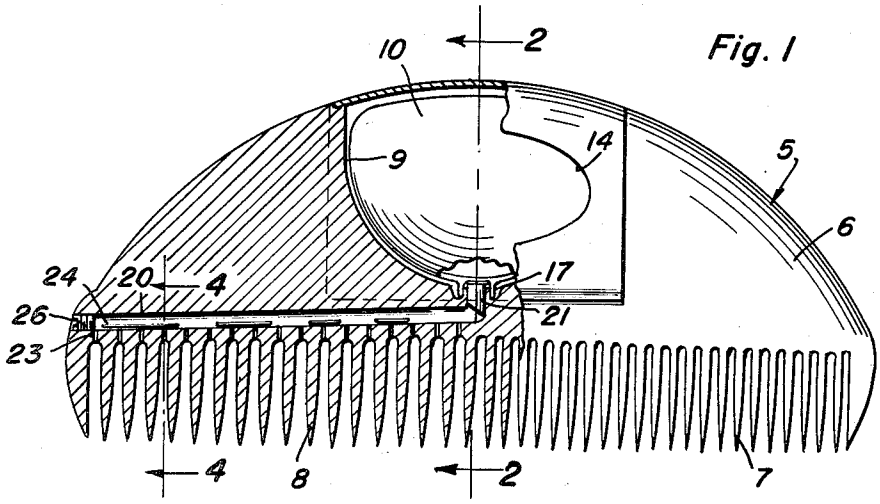


Fig. 4

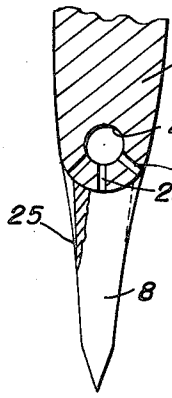


Fig. 5

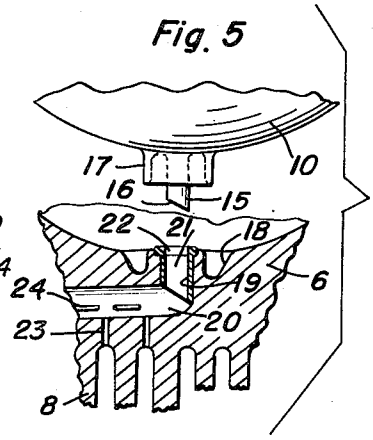


Fig. 2

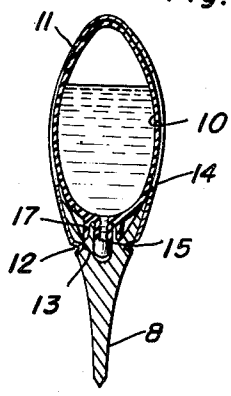
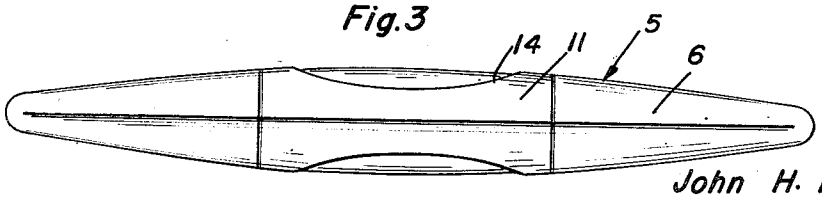


Fig. 3



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Fig. 6

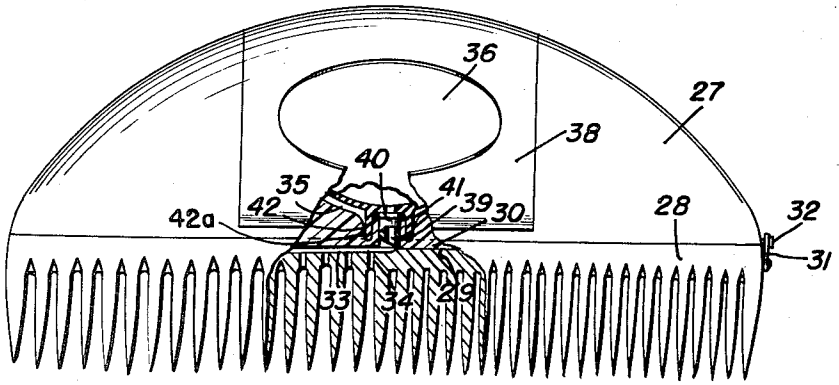


Fig. 7

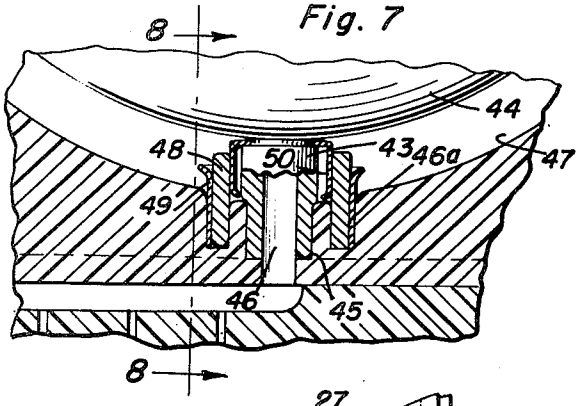


Fig. 8

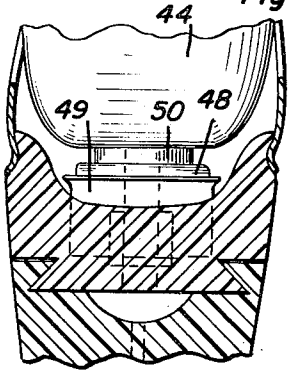


Fig. 9

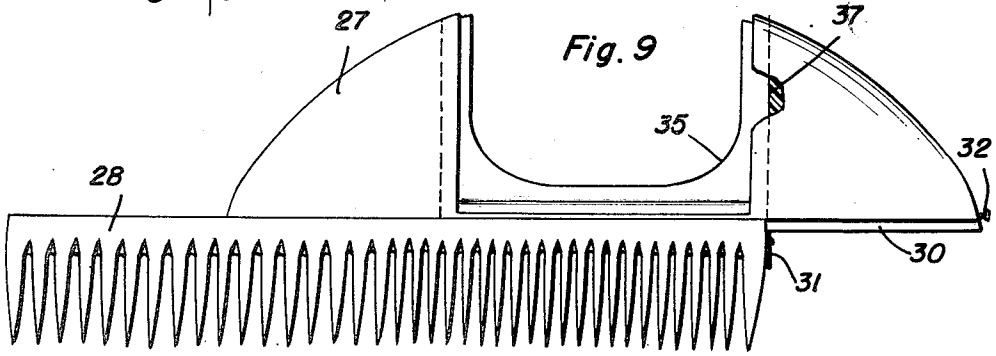
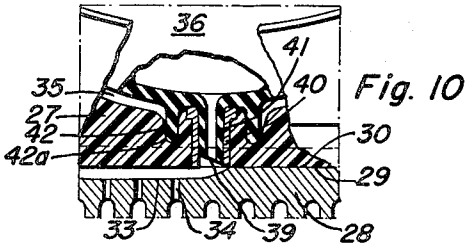


Fig. 10



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FLUID DISPENSING COMB

John H. Francis, Vista, Calif.

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6 Claims. (Cl. 132—116)

The present invention relates to new and useful improvements in fountain combs and has for its primary object to provide a replaceable reservoir or cartridge adapted for connection with channels or passages in the comb leading to the teeth thereof.

Another important object of this invention is to provide a replaceable cartridge adapted for mounting in a chamber in the back of the comb and constructing the cartridge of flexible or resilient material to permit squeezing or contracting thereof to force liquid from the cartridge to the teeth of the comb.

A further object of this invention is to provide a novel connection and seal between the cartridge and the main passage or channel in the comb to prevent leakage and loss of the contents of the cartridge.

A still further object is to provide a device of this character of simple and practical construction, which is efficient and reliable in operation, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view of the comb with parts broken away and shown in section;

Figure 2 is a transverse sectional view taken on a line 2—2 of Figure 1;

Figure 3 is a top plan view;

Figure 4 is an enlarged vertical sectional view, taken on a line 4—4 of Figure 1;

Figure 5 is an enlarged fragmentary sectional view showing the sealing connection for the neck of the cartridge with the passage or channel of the comb.

Figure 6 is a side elevational view of a modified construction embodying a two-part comb with parts shown in section;

Figure 7 is an enlarged fragmentary sectional view illustrating a further modification of the sealing means for the cartridge;

Figure 8 is a sectional view taken on a line 8—8 of Figure 7;

Figure 9 is a side elevational view showing the sliding connection for the back and teeth of the comb, and

Figure 10 is an enlarged fragmentary sectional view of the sealing means for the cartridge illustrated in Figure 6.

Referring now to the accompanying drawings in detail, wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention, the numeral 5 designates the comb generally and includes a relative narrow arched back 6 and from the lower edge of which a group of relatively fine teeth 7 projects at one end of the comb and a group of relatively coarse teeth 8 projects at its opposite end.

The back of the comb is formed with a chamber 9 adapted to receive a replaceable cartridge 10 which is preferably constructed of rubber, resilient plastic or other suitable expansible and contractible material, the sides of the chamber 9 being open to expose the sides of the cartridge 10 and the cartridge is held in position in the chamber by means of a substantially U-shaped cover of resilient metal or other suitable material which straddles the back of the comb and formed at its end portions with inwardly projecting lips 12 adapted to enter longitudinally extending grooves 13 in the sides of the comb

with a snapping action to hold the cover in position thereon. The sides of the cover 11 are formed with openings 14 to receive the fingers of a person to engage and contract the cartridge by a squeezing action.

A neck 15 extends downwardly from the bottom of the cartridge 10 and is formed with an inclined or bevelled lower end 16 whereby contents of the cartridge will have a tendency to be discharged laterally with respect to the neck 15. A sealing ring 17 which may be molded with or cemented to the bottom of the cartridge 10 surrounds the neck 15 in spaced circumferential relation with respect thereto and the ring is adapted to enter an annular channel or groove 18 in the back portion 6 of the comb at the base of chamber 9 while the neck 15 is adapted to enter the vertical inner end portion of a channel or passage 20 formed in the back 6 of the comb and extending longitudinally toward one end of the comb above the coarse teeth 8 of the comb.

A pipe or tube 21 is closely fitted or molded in the comb material in the vertical inner end portion 19 of channel or passage 20 in which the neck 15 of the cartridge is telescopically received and the upper end of the pipe or tube 21 is formed with a beading 22 to facilitate guiding of the neck 15 therein and to provide an effective seal with the ring 17.

Vertical passages 23 extend from the longitudinally extending passage or channel 20 to the base of the teeth 8 and inclined passages 24 also lead from the channel passage 20 to vertical grooves 25 in the side edges of the teeth.

The outer end of longitudinal passage or channel 20 is closed by a plug 26 to facilitate cleaning of the several passages.

In the operation of the device, the replaceable expansible and contractible cartridge 10 filled with hair tonic or other liquid is placed in chamber 9 and with neck 15 inserted in pipe or tube 21 in the inner vertical end 19 of channel 20 and the neck is sealed by the close fitting of ring 17 in the annular groove 18. Cover 11 is then placed over the cartridge and the lips 12 snapped in the grooves 13 of the comb.

Pressure subjected to the sides of the cartridge will discharge the liquid through neck 15 into channel or main passage 20 and from which the liquid is fed to the teeth 8 by way of the passages 23 and 24.

Figures 6 to 9 inclusive illustrate a modified comb construction embodying two parts, namely a back part 27 and tooth part 28 detachably connected to each other by a longitudinal dove-tail groove 29 in the tooth part slidably receiving a longitudinal rib or tongue 30 on the back part. The back and tooth parts are locked in assembled relation by a swinging catch 31 carried by one part engaging a button 32 on the other part.

Groove 29 at the coarse end of the comb is formed with a channel 33 leading to the passages 34 between the teeth.

Back part 27 is formed with a chamber 35 to receive an expansible and contractible cartridge 36 and the ends of the chamber are formed with vertical grooves 37 to guide the cartridge therein and the cartridge is held in position by a resilient apertured cover 38, in a manner as heretofore described.

In this construction a vertical passage 39 is formed under chamber 35 which passes through rib 30 to channel 33 and a flanged or beaded pipe 40 is fitted in this passage to receive the neck 41 of the cartridge, while the sealing ring 42 which surrounds the neck enters an annular groove 42*a* at the base of chamber 35 substantially similar to the construction illustrated in Figure 5 for the one piece comb.

In Figures 7 and 8 I have illustrated a further modified sealing construction for the neck 43 of the cartridge 44 which comprises a counterbore 45 for passage 46 to receive the neck and an annular groove 46*a* is formed in the base of chamber 47 in which a sealing ring 48 is removably fitted and frictionally held in said groove by a resilient ring 49 also fitted in the groove on the outer side of the sealing ring 48.

A second resilient ring 50 surrounds neck 43 and is fitted inside sealing ring 48.

In view of the foregoing description taken in conjunc-

tion with the accompanying drawings it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the invention as claimed.

Having described the invention, what is claimed as new is:

1. A fountain comb including a back portion and a group of teeth at the front edge thereof, said back portion having a chamber therein, a passage leading from the chamber to at least one of the teeth, a replaceable collapsible cartridge positioned in the chamber and having a discharge neck communicating with the passage, said chamber being open at its side and top portions, and a cover removably secured to the comb in protective position over the cartridge and having an opening affording contracting access to the cartridge.

2. A fountain comb including a back portion and a group of teeth at the front edge thereof, said back portion having a chamber therein, a passage leading from the chamber to at least one of the teeth, a replaceable cartridge positioned in the chamber, a discharge neck on the cartridge adapted to enter the passage, an annular groove in the base of the chamber surrounding the inner end of the passage, and a sealing ring carried by the cartridge and surrounding the neck and having sealing engagement in said groove.

3. The combination of claim 1 wherein said cover is constructed of resilient material and of U-shape in cross section and mounted in inverted position over the chamber for enclosing the top and sides of the cartridge and said cover having openings in its sides affording contracting access to the cartridge, and fastening means for the cover having snapping engagement with the comb.

4. A two-part fountain comb comprising a back part and a tooth part, said back part having a longitudinal dove-tail rib and said tooth part having a longitudinal dove-tail groove in which the rib is slidable to connect said back part to the tooth part, a longitudinal channel in said groove, vertical passages leading from the channel to the teeth of said tooth part, a chamber in the back part, a replaceable collapsible cartridge in the chamber and having a discharge neck communicating with the channel, said chamber being open at its side and top portions, and a cover removably secured to said back part of the comb in a protective position over the cartridge and having an opening therein affording contracting access to the cartridge.

5. A two-part fountain comb comprising a back part and a tooth part, said back part having a longitudinal dove-tail rib and said tooth part having a longitudinal dove-tail groove in which the rib is slidable to connect said back part to the tooth part, a longitudinal channel in said groove, vertical passages leading from the channel to the teeth of said tooth part, a chamber in the back part, a replaceable collapsible cartridge in the chamber and having a discharge neck, a vertical passage in the back part leading to the channel and in which the neck is received, sealing means between the neck and said last named passage, said chamber being open at its side and top portions, and a cover removably secured to said back part of the comb in a protective position over the cartridge and having an opening therein affording contracting access to the cartridge.

6. A fountain comb including a back part and a tooth part, said back part having a chamber therein and said back and tooth parts having connected passages leading to at least one of the teeth of said tooth part, said passage including a vertical portion immediately adjacent the chamber, a replaceable collapsible cartridge in the chamber and having a discharge neck inserted in the vertical portion of the passage, an annular groove at the base of the chamber surrounding the vertical portion of the passage, a sealing ring in the annular groove, an outer resilient ring in the annular groove surrounding the sealing ring in frictional engagement therewith, an inner resilient ring carried by the neck and frictionally engaged internally of the sealing ring, said chamber being open at its side and top portions, and a cover removably secured to said back part of the comb in a protective position over the cartridge and having an opening therein affording contracting access to the cartridge.

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