Dec. 29, 1970 W. J. GRUBER 3,550,160

CAP CONSTRUCTION

Filed Sept. 19, 1969 2 Sheets-Sheet 1

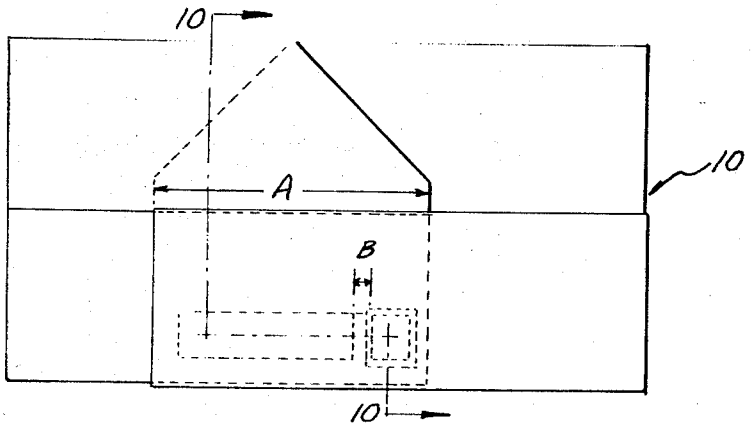
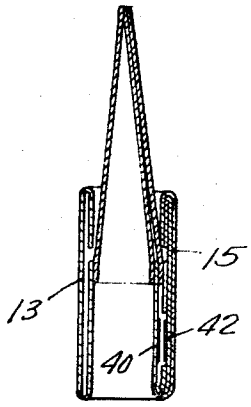


FIG. 9.

FIG. 10.



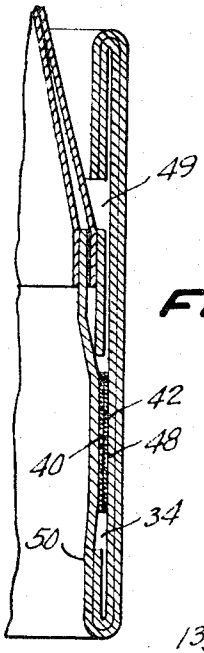


FIG. 12.

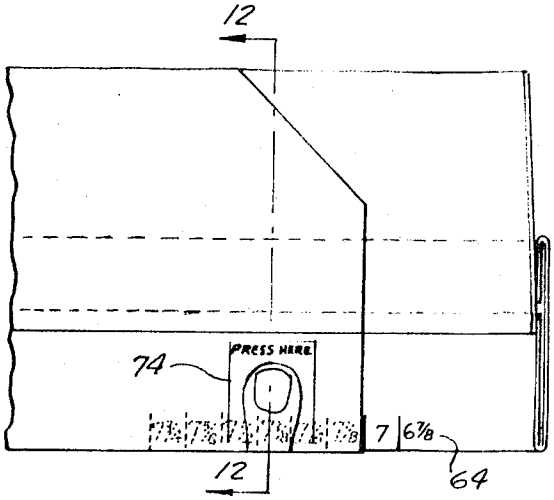


FIG. 11.

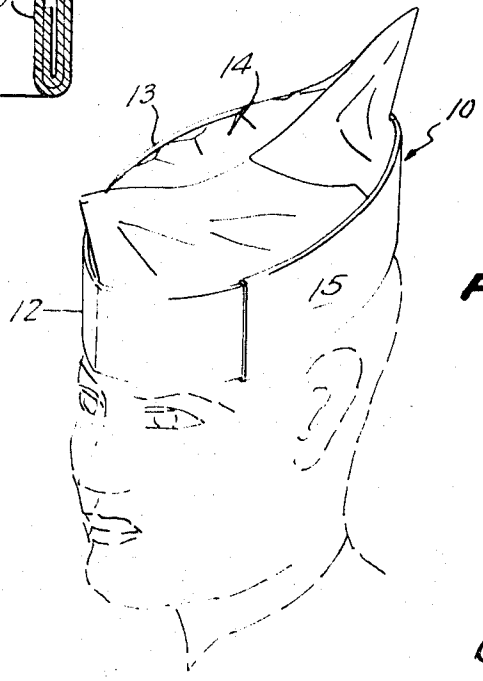


FIG. 1.

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CAP CONSTRUCTION

Filed Sept. 19, 1969 2 Sheets-Sheet 2

FIG. 2.

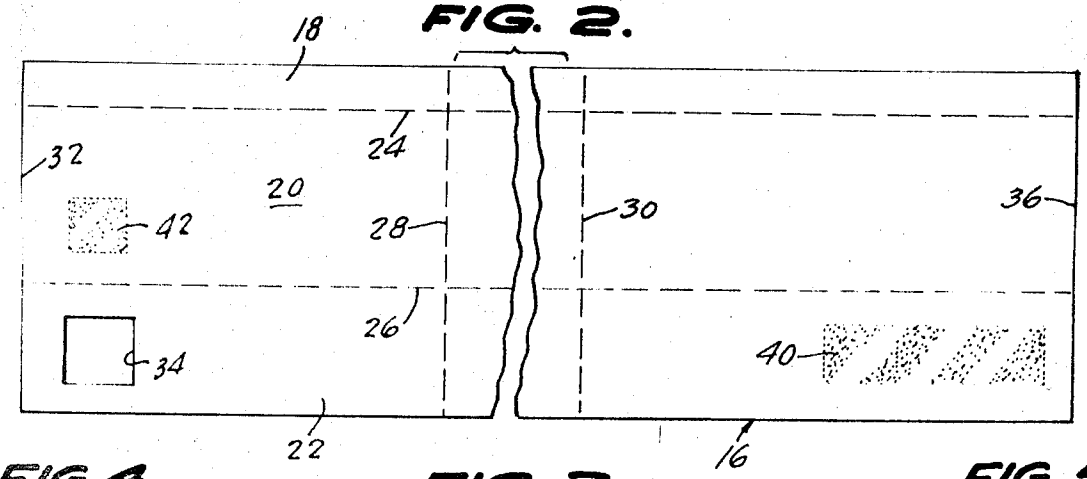


FIG. 4.

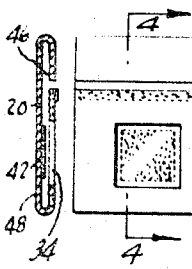


FIG. 3.

FIG. 5.

FIG. 6.

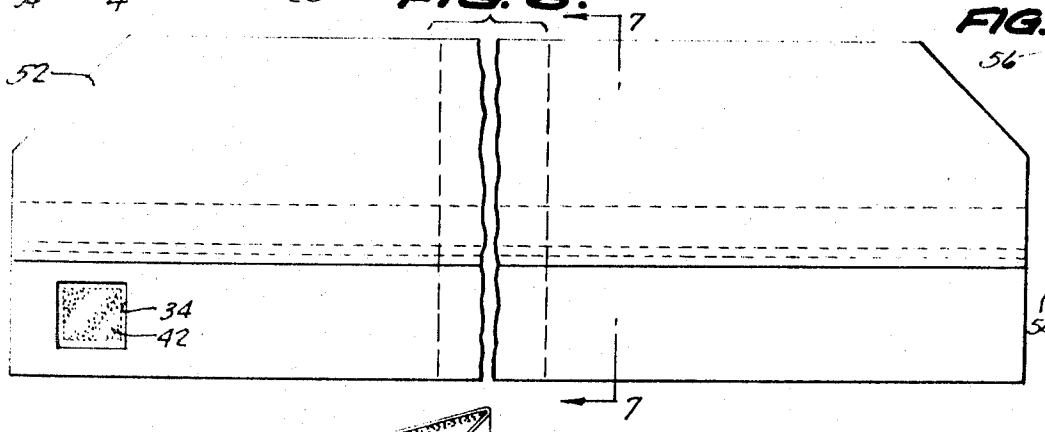


FIG. 7.

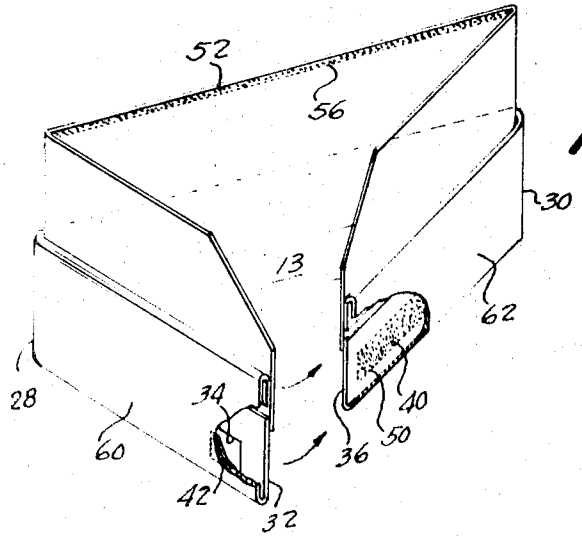


FIG. 8.

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3,550,160

CAP CONSTRUCTION

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Int. Cl. A42b 1/02, 1/04
U.S. Cl. 2—197 10 Claims

ABSTRACT OF THE DISCLOSURE

An improved cap construction of the disposable type formed of paper materials or the like, comprising an upper crown and a head band having front and rear panels, a pair of flaps in one panel having opposing free ends telescopically slidable within each other thereby providing means for head-size adjustment, and size locking means which comprises a pressure-sensitive adhesive placed behind an open window near the free end of one of the flaps. When the flaps are interengaged to an adjusted position finger pressure applied to the non-sticky side of the adhesive brings the adhesive on one flap into contact with the other flap for immediate securement thereto. For additional securement, a second pressure-sensitive adhesive mounted on the second flap, opposite the window in the first flap, is provided.

BACKGROUND OF THE INVENTION

This invention relates to an improved article of headwear and more particularly to an inexpensive disposable cap construction having means for fixedly adjusting the head size.

Participants in the food service industry, such as restaurants, bakeries, supermarkets, etc. find it customary or necessary to wear a head covering in order to maintain the required sanitary conditions when handling foodstuffs or the like. Such headwear is desired to prevent or minimize the hair of the wearer from falling and mingling with the food being processed or served. Certain industries other than the food industry also require adherence to strict sanitary regulations. For example, the so called "white room" facilities found in space-oriented industries impose more stringent housekeeping and sanitation provisions than generally found in the food industry. Since head coverings are generally provided it has been found economically desirable to provide inexpensive headwear of the disposable type rather than having to launder and maintain the more permanent variety of headwear previously used.

SUMMARY OF THE INVENTION

This invention deals primarily with an attractive disposable cap or headwear formed completely of paper or paper-like materials offering an adequate measure of sanitary protection in use. Because of its low cost the cap may be discarded after limited use or when the cap is soiled. The economics of discarding are favorable when compared to the substantially higher initial cost of a cap made of a more permanent material such as cloth or the like when cleaning and maintenance costs are included therein.

It is, therefore, a primary object of the present invention to provide an inexpensive disposable cap designed for manufacture at low cost to be discarded after limited use and thereafter replaced by a new cap.

Another object of this invention is to provide a disposable cap having means for head size adjustment for accommodating wide ranges of sizes thereby reducing the inventory requirements of the consumer.

A further object of this invention is to provide a disposable cap of the character indicated having means for

securing the adjusted headband so that it remains stationary after repeated use.

Still another object of this invention is to provide inexpensive locking means of the pressure-sensitive adhesive type which is hidden from view but when pressed externally is brought into contact with an opposing slidable flap thereby fixedly securing the headband.

BRIEF DESCRIPTION OF THE DRAWINGS

Further objects and advantages of the invention will become apparent from the following description and claims and from the accompanying drawings wherein:

FIG. 1 is a perspective view of a cap construction in use comprising the subject matter of the present invention;

FIG. 2 is a plan view of a sheet of paper, or blank, from which the headband of said cap is fashioned;

FIG. 3 shows the blank of FIG. 2 in horizontally folded condition with a glue line added;

FIG. 4 shows the folded blank of FIG. 3 in cross-sectional end view on a plane indicated by line **4—4** of FIG. 3, and specifically illustrates the overlying relationship between the pressure-sensitive adhesive and open window comprising the size locking means provided therein;

FIG. 5 shows the folded blank of FIG. 3 in cross-sectional end view from the end opposite to that shown in FIG. 4, taken substantially along the plane indicated by line **5—5** of FIG. 3 and illustrates the position of a second pressure-sensitive adhesive provided in a second flap for added securement of the headband;

FIG. 6 illustrates the horizontally folded headband of FIG. 3 with a tissue paper crown attached along the glue line provided at the upper portion of the headband;

FIG. 7 is an end view in cross-section, taken along the plane indicated by line **7—7** of FIG. 6.

FIG. 8 is a perspective view with the flap portions cut away to reveal the pressure-sensitive adhesive, open window and internal construction; further illustrating the relationship of the flap members prior to telescopically interengagement of the flaps;

FIG. 9 is an elevational view of the assembled cap comprising the subject matter of this invention;

FIG. 10 is the cap of FIG. 9, in cross-section, taken substantially along the plane indicated by lines **10—10** of FIG. 9.

FIG. 11 is a partial sectional view of the interior of the cap is adjusted condition showing cap size indicia printed thereon with instructions for fixing same; and

FIG. 12 is an enlarged view, in cross-section, taken substantially along the plane indicated by line **12—12** of FIG. 11 and illustrates the spatial arrangement of the size adjusting means and size locking means provided therein.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings in detail, wherein like numerals indicate like elements throughout the several views, the cap comprising the subject matter of the present invention is shown in perspective in FIG. 1 by the numeral **10**. The cap includes a paper headband **12** and a crown **14** of tissue paper or the like. Although not shown, any suitable decorative design or indicia may be applied externally to headband **12** for advertising or decorative purposes. Headband **12** comprises spaced rear and front panels **13** and **15** respectively joined at their longitudinal ends. When the panels are opened a substantially continuous perimeter for receiving the wearer's head is provided.

Now referring particularly to FIGS. 2 and 3, headband **12** of the cap **10** may be readily formed from a pliable sheet or blank **16** made preferably of a relatively

heavy grade of paper. The blank **16** is generally rectangular in shape having upper, intermediate and lower portions **18**, **20** and **22** respectively, extending horizontally across the entire length with the upper and intermediate portions **18** and **20** being separated by a horizontal fold line **24**, and the intermediate and lower portions **20** and **22** being separated by a second horizontal fold line **26**; each of the portions **18**, **20** and **22** being vertically subdivided by vertical fold lines **28** and **30**.

In the subdivided area of the lower portion **22** bounded by fold line **28** and left edge **32**, a substantially square opening or window **34** is formed near the left edge **32**, the purpose of which will be more fully described hereinafter. Near the right edge **36** of lower portion **22** in the area bounded by fold line **30** and right edge **36**, a pressure-sensitive adhesive strip **40** may be adhesively secured to blank **16** in substantial horizontal alignment with window **34**. Adhesive **40** is preferably of the pressure-sensitive strip type having tacky surfaces on both sides. Such material is commonly known as "double-back" tape and is commercially available in art supply stores or the like.

Above window **34** in the intermediate portion **20** another pressure-sensitive adhesive strip **42**, also of the double-back variety is provided in substantial vertical alignment with the window **34**. Thus, when lower portion **22** is folded about horizontal fold line **26** to a position shown in FIG. 3, the window **34** will overlie and circumscribe adhesive **42** in a manner which prevents the premature adhering of adhesive strip **42** during the size adjustment of headband **12**, as will be later described.

It should be understood that although adhesives **40**, **42** are preferably of the strip type any tacky latex adhesive may be used.

The headband **12** is formed by first folding blank **16** along the horizontal fold lines **24** and **26** to form a substantially C-shaped channel **46** extending the length of the blank **16**, best seen in FIGS. 4 and 5. The resultant folded blank may be characterized as having an outer wall formed from the intermediate portion **20** and a spaced inner wall formed by upper and lower portions **18** and **22**, the inner wall having a separation or slot shown at **49**, the purpose of which will be later clarified. Thus, adhesive strip **42** is adhesively secured to the inner surface **48** of the intermediate portion **20** of headband **12** with its unsecured tacky surface facing inwardly towards the open window **34**. The adhesive strip **40**, however, is positioned on the inner surface **50** of the lower portion **22** of headband **12** with its unsecured tacky surface facing outwardly as best seen in FIG. 5.

The crown **52** preferably formed from a trapezoidal shaped tissue blank is adhesively secured adjacent its bottom inner edge to the headband **12** at a glue line **54** which is applied to headband **12** at **54**. Alternatively, a glue line can be provided on crown **52**. Any suitable glue or adhesive of the remoistening or latex variety may be used. Crown **52** is also provided with a glue line **56** along its upper end for sealing the crown after final assembly of the cap.

As shown in FIGS. 6 and 8 the horizontally folded blank **16** with the crown **52** secured thereto is then folded about the vertical fold lines **28** and **30**, forming a substantially flat rectangular rear panel **13** with the remaining portions forming flaps **60** and **62**. Flaps **60** and **62**, when finally formed constitutes the perviously described inner panel **15** which together with outer panel **13** form headband **12**. The flap **60** may be slidably telescoped within the flap **62** by inserting the one free end **32** passed end **36** into the C-shaped channel adapted to freely receive same. Flap **60** is provided with sufficient length to prevent inadvertent removal from the channel **46** prior to locking. The added length enables any size adjustment to be readily accomplished by changing the inner perimeter of the headband **12**.

As shown in FIG. **11**, indicia **64** may be provided along the inner portions of the cap as an aid in adjusting the

cap size. Referring now to FIG. 12 it will be seen that the telescopic movement of the respective flaps **60**, **62** is possible with crown **14** secured to headband **12** because of the slot **49** provided in channel **46**. By this arrangement the crown **52** can slide obliquely through the opening **49** without interference.

FIGS. 9 and 10 illustrate the finally assembled cap with the flaps in telescopically interengaged condition and with crown **14** sealed along its upper edge at glue line **56**. An overlapping unsecured crown portion designated as A, is provided with the flaps **60**, **62** permitting sufficient expansion of the crown when the flaps are adjusted for size. However, since the top of the crown is secured, the center will depress downwardly as the size of the hat increases, as seen in FIG. 1, resulting in a pleasing overseas cap appearance.

As initially assembled, seen in FIG. 9, headband **12** is provided with an adhesive-free area intermediate opposing adhesive strips **40**, **42** and generally designated as B. As the flaps **60**, **62** move outwardly in the direction increasing the hat size adhesive **40** and **42** are brought in to opposing relationship wherein subsequent contact can be effected. Thus, any restraint imposed by the secured crown portion in opposition to such expansion can be effectively absorbed by the opposing adhesive strips, after securement. The enlarged sectional view of such securement is shown in FIG. 12. Such securement or locking is easily achieved by merely pressing the flaps together at the position shown at **74** of FIG. 11 thereby bringing in contact adhesives **40** and **42**.

It should be emphasized that window **34** plays an important roll in separating the tacky surfaces of the adhesives, thereby permitting slidable engagement of the flaps. Headband **12** is generally constructed of heavy gauge material so that its thickness is considerably larger than that of adhesive strip **42**. Since the adhesive strip **42** is placed behind the window **34** it will not extend beyond the thickness of the window until it is pushed inwardly or the opposite surface is pushed outwardly toward it. In FIG. 12 the adhesive strip **42** is brought into adhesive contact with adhesive strip **40** when finger pressure is applied at **74**. If the window **34** was not provided or was of insufficient thickness the telescopic size adjustment would be impeded with premature locking of the flaps occurring.

Further, adhesive strip **40** may be entirely eliminated where the strength or holding power of adhesive strip **42** is sufficient to permit locking of the flaps **60**, **62** by the securing action of adhesive strip **42** on inner surface **50** of the flap **62**.

From the foregoing description, it may be seen that a novel principle of telescopic adjustment and locking has been introduced into the headband of the present invention. This combination is especially important where the crown is without pleats or the like for expansion provided therewith tending to restore the flap to the unadjusted state. The locking means provided are hidden from view and of simple construction such that by merely pressing on the inside of the headband securement is rapid and effective. Hence, the cap comprising the present invention represents a step forward in the art of disposable headwear.

It should be understood that materials other than paper may be employed in the practice of the present invention, however, the cap is preferably formed from paper material, since cost is a primary consideration. No laundering or maintenance is therefore required. Due to the non-complicated blank for both the headband and crown and the simple folding operations employed in constructing the cap, high speed automatic machinery may be readily used in producing this product.

What is claimed is:

1. An improved cap construction which comprises a crown, a headband depending therefrom and formed from foldable material having front and rear panels joined at

their outermost ends and spaced apart intermediate the ends thereby providing an opening therebetween for receiving the head of a wearer; one of said panels includes size adjustment means comprising a pair of slidable flaps, one of said flaps being adapted to telescopically receive the other flap for adjustment of the inner periphery of the headband; size locking means disposed near the free end of one of said flaps including an open window and a pressure-sensitive adhesive mounted immediately behind said window permitting non-impeded slidable adjustment of said flaps, said locking means being activated by finger pressure exerted on the cap inner periphery whereby said adhesive is brought into contact with the opposite flap through said window.

2. A cap in accordance with claim 1 wherein a second pressure-sensitive adhesive is provided on the flap opposite the window and first adhesive positioned to adheringly receive the first adhesive when said headband is expanded.

3. A cap construction in accordance with claim 1 wherein each panel includes outer and inner walls formed by first horizontally folding the upper portion of the headband blank downwardly and the lower portion of said blank upwardly thereby forming a substantially C-shaped channel cross-section and having a slot extending the length thereof for receiving said crown therethrough, said flaps being formed in overlapping fashion by folding said outer and inner walls about spaced vertical lines intermediate the ends thereof, the free end of one flap being adapted to slidably telescope into the free end of the other thereby forming said front panel.

4. A cap construction in accordance with claim 1 wherein said crown is formed from a tissue-like material and secured adjacent bottom edge to said headband, the upper edge of said crown being closed.

5. A cap construction in accordance with claim 3, said window being provided in the inner wall of one of said flaps with said adhesive being located on the inside surface of said outer wall directly behind said window.

6. A cap construction in accordance with claim 5 wherein said second pressure-sensitive adhesive is disposed in substantially horizontal alignment with the window on the opposing flap having its tacky side in position to contact the first adhesive.

7. The headband blank adapted for use with the cap construction of claim 1, comprising a substantially rectangular foldable material having upper, intermediate and lower portions each of which is separated by horizontal fold lines, said lower portion being provided with a window cut therethrough near one end thereof, said intermediate portion being provided with a pressure-sensitive adhesive in substantially vertical alignment with said window which after folding is located directly behind said window and adapted to contact an opposing slidable surface for locking purposes by the application of pressure.

8. The headband blank of claim 7 including a second pressure-sensitive adhesive disposed on said lower portion near the end opposite of said window and in substantial horizontal alignment with said window, said second adhesive being adapted for contact with said first adhesive after the blank is formed into a cap.

9. A headband blank in accordance with claim 7 wherein said blank includes a rear panel formed from the central portion of said blank between the spaced vertical fold lines, and a front panel formed from the remainder of said blank including flaps, each having a free end in overlapping relationship for providing size adjustment means.

10. A headband blank in accordance with claim 9 which when folded includes a C-shaped channel in cross-section, adapted to slidably receive the free end of one of said flaps therein for length adjustment of said headband.

References Cited

UNITED STATES PATENTS

1,955,098	4/1934	Shaffer et al.	2—197
2,669,725	2/1954	Haegele	2—197
2,856,608	10/1958	Wagenfeld	2—197
3,027,564	4/1962	Wagenfeld	2—181
3,082,430	3/1963	Wagenfeld	2—197

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