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(54) **BIB WITH ADHESIVE STRIP AND METHOD OF MANUFACTURE**

LATZ MIT HAFTSTREIFEN UND HERSTELLUNGSVERFAHREN DAFÜR

BAVOIR MUNI D'UN RUBAN ADHESIF ET PROCÉDÉ DE FABRICATION

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EP 1 986 512 B1

Description

Field of the Invention

[0001] The present invention relates to protective coverings for clothing, and more particularly to bibs for adults and children and methods for making.

Background of the Invention

[0002] One common definition of a bib is a small piece of material fastened under a chin to protect the clothing while eating. As a result, bibs have a connotation that typically associates their use with infants and toddlers. In fact, adults are generally much less apt to spill or splatter food onto their clothing compared to children. Nevertheless, there are certain situations in which it is appropriate or desirable for an adult to don a bib. Such a bib may either be a conventional bib or simply a tucked or otherwise secured napkin covering the chest.

[0003] Conventional bibs typically have two strings which tie around the neck to hold the bib in place. Other bibs use snaps, ties, strings, hook and loop fasteners, or the like to attach around the neck. More recently, some bibs have eliminated the strings and ties altogether and have instead used adhesive strips. These strips are located near the shoulder area on the backside of the bib and are used to adhere the bib to the wearer.

[0004] GB 2232340 describes a three-layer bib having a waterproof layer, an intermediate absorbent layer and a filtering layer. The waterproof layer and the absorbent layer are bonded to one another over their entire matched surface areas, and the filter layer is bonded peripherally to the absorbent layer so as to leave an unbonded central area. The bib has repositionable adhesive labels or tabs for attaching the bib to a user's clothes, and may have a pocket at the bottom to capture spills.

[0005] US 6212683 describes a bib-making process in which a sheet of absorbent material is unwound from a roll and laminated on one side with a liquid-resistant laminate. A continuous strip of adhesive is then applied to the laminate, and the sheet is cut to shape and perforated to provide tear-guides for removal of individual bibs. The sheet is rewound onto another roll, to produce a roll of disposable bibs.

[0006] Thus, bibs provided with an adhesive so they can be adhered to a wearer are known from the art. However, such known bibs have various drawbacks, particularly regarding how they are constructed and how they are made.

[0007] Although a wide variety of bib designs can be adequate to protect one's clothing, a bib, regardless of design, has no ability to clean and/or sanitize either a food contacting surface or any portion of the wearer's body. For such cleaning and/or sanitizing, one must separately utilize either an agent (e.g. antibacterial lotion) or item (cleansing wipe). In some situations, it would be beneficial if the agent or item formed a part of or was packaged with the bib.

[0008] A need therefore exists for an improved bib and methods for making same.

Summary of the Invention

[0009] The present invention relates to a method of making a self-sticking bib for protecting a wearer while eating or any other activity that could adversely affect the clothes of a wearer. The foregoing is accomplished by a method that consists of laminating a continuously running web of a plastic web, most preferably, a polyethylene film with a continuously running web of an absorbent paper web, most preferably, a cellular tissue paper, which previously has been printed with a printed decoration or motif. Alternatively, the motif can be applied after the lamination of the sheet.

[0010] The lamination is effected by a heat sealing technique and assisted by the inclusion of an embossing technique as a step of the method. The embossing is carried out so that an array of spaced depressions are made in the tissue web while heating the polyethylene film, so that an array of tissue portions of the tissue web are pressed into the heated film and adhered to the film, but the portions of the tissue web surrounding the pressed tissue portions, i.e. the unpressed portions, are left unaffected and therefore retain their original characteristics for absorption of liquids and other foods.

[0011] The lamination is next followed by a step of applying, preferably by continuously spraying to the moving webs, a biocompatible adhesive or glue to one edge of the exposed polyethylene web in a longitudinal direction, i.e. the direction of travel of the web. The adhesive chosen is one that will adhere to clothes or human skin and yet be easily removed with slight pulling with no adverse effects to the clothes or the skin. Such adhesives are well known in the art. Next, the adhesive stripe applied to the web is covered with a removable sealing tape, a strip of suitable material so that the adhesive is not exposed and is fully covered and yet is easily removed. Such materials are well known for several applications, such as, self-sealing envelopes or Telfa^{tm} bandages. Finally, the moving laminated web is cut transversely at spaced intervals and the resulting cut pieces (now bibs) are stacked. In the preferred embodiment, the webs are 45cm (18 inches) wide and cut at 32.5cm (13 inch) intervals to produce bibs that are 32.5cm (13 inches) wide and 45cm (18 inches) long with the adhesive at the top edge of the bib on the polyethylene film side.

[0012] A second elongated web of absorbent paper may be laminated with the elongated web of plastic film, opposite the elongated web of absorbent paper to form a laminated web by heat sealing the absorbent papers about the plastic film.

[0013] In an improvement of the above described method, the end of the bib opposite the adhesive and cover is folded up with the polyethylene side on the outside of the fold and the paper on the inside of the fold,

and the edges of the folded up portion of the bib is heat sealed along each of the folded up edges to form a pocket in the bottom of the bib to catch any food that falls down on or adjacent to the bib while being worn a user. The folded up portion can be from 2.5 cm to 10 cm (1 to 4 inches) deep to form a suitable pocket to catch the spills or droppings. The folding up of the lower portions of the bibs can take place before the bibs are cut at the transversely spaced intervals with the cutting and the heat sealing of the folded up edges occurring simultaneously. However, it is preferred that the heat sealing of the edges of the pockets takes place before the cutting into individual bibs. Also, the folding up and heat sealing of the folded up edges can occur after the bibs have been cut to size in a separate steps.

[0014] A further improvement consists of using webs that are a multiple of the length of the bib to be made, i.e. 2X, 3X, ...nX, and the adhesive sprayed onto the polyethylene web at appropriate transverse locations across the longitudinally moving web corresponding to the top edges of the finished bibs. After applying the adhesive stripes and covering with a sealing tape or a strip of suitable material, the webs are cut at predetermined transverse intervals, such as 45cm (18 inches) to create longitudinal section that are bib wide. Thereafter, the cut web sections are either cut at longitudinal intervals, such as 32.5 cm (13 inches) or the cut webs are finished by folding to form pockets as described in the foregoing, heat sealed to perfect the pockets and cut at predetermined longitudinal intervals, such as 32.5 cm (13 inches). In either case, the cut bibs are then stacked.

[0015] The present invention also relates to a bib for protecting clothing worn by a wearer. The bib comprises a sheet of laminated material composed of absorbent cellular tissue paper on one side and a plastic film on the opposite side. The sheet has a predetermined shape with a top edge, a bottom edge, absorbent tissue paper exposed on one side and the plastic film exposed on the other side, an adhesive received on the top edge of the plastic film side of the sheet, and a release tape covering the adhesive received on the top edge of the plastic film. The tissue paper is embossed with an array of spaced depressions pressed into and heat sealed to the plastic film, with the portions of the tissue paper surrounding the array of spaced depressions being free, unaffected and retaining their original characteristics for absorption of liquids and other foods.

[0016] The bib may include a pouch located at a bottom portion. The top front surface of the bib may be imprinted with an image.

[0017] In one embodiment, where a sealed package is attached to the sheet, the sheet includes a protective portion and a tear-away portion and the sealed package is positioned on the tear-away portion. The sheet can include perforations for separating the tear-away portion from the protective portion. The tear-away portion can also include a compartment separate from the sealed package. The tear-away portion can be provided with vertical perforations for separating the sealed package from the compartment. The tear-away portion may include a sanitizing agent which may include an anti-bacterial component. The sanitizing agent may be enclosed in a compartment separate from the sealed package.

[0018] In one embodiment, the sealed package is attached to the release strip. The release strip includes first and second faces, with the first face adhered to the adhesive strip and the sealed package attached to the second face. In another embodiment, there is no release strip and the sealed package is attached to the adhesive strip so that the sealed package itself covers the adhesive on the adhesive strip until removal.

[0019] The sealed package may include a towelette containing a cleaning agent.

[0020] Other and further objects and advantages of the present invention will become more apparent form the following detailed descriptions of preferred embodiments of the invention when taken with the appended drawings.

Brief Description of the Drawings

[0021] A more complete understanding of the present invention, and the attendant advantages and features thereof, will be more readily understood by reference to the following detailed description when considered in conjunction with the accompanying drawings wherein:

Figure 1a shows a back side of an embodiment of the bib according to the present invention;

Figure 1b shows the back side of the bib of Figure 1a with a release strip partially removed from an adhesive strip.

Figure 1c shows a front side of the bib of Figure 1a.

Figure 2 depicts a front side of a bib of the present invention.

Figure 3 depicts a back side of the bib of the present invention.

Figure 4 depicts a partial side view of the two-layer bib of a present invention.

Figure 5 shows the front side of a bib with the bottom edge folded up to form a pocket at the bottom of the bib.

Figure 6 shows a side view of the bib shown in Fig. 5.

Figure 7 depicts a back view of a closed pouch formed on the bib of the present invention.

Figure 8 depicts a front view of an open pouch formed on the bib of the present invention.

Figure 9 depicts an isometric view of the open pouch of Figure 8.

Figure 10 shows the back side of the bib of Figure 1a with a first adhesive strip pattern.

Figure 11 shows the back side of the bib of Figure 1a with a second adhesive strip pattern.

Figure 12 shows the back side of the bib of Figure 1a with one embodiment of multiple adhesive strips.

Figure 13 shows the back side of the bib of Figure 1a with another embodiment of multiple adhesive strips.

Figure 14a shows a back side of another embodiment of the bib according to the present invention.

Figure 14b shows a back side of an embodiment of the bib similar to the bib of Figure

Figure 15a shows a back side of another embodiment of the bib according to the present invention.

Figure 15b shows the back side of the bib of Figure 15a with an adhesive strip exposed and a sealed packet separated.

Figure 16a shows a box-type dispenser for the bib of the present invention.

Figure 16b shows a pouch-type dispenser for the bib of the present invention.

Figure 17 shows a dispenser that can be used either as a roll-type dispenser or a folded-sheet type dispenser for dispensing the bib of the present invention.

Figure 18 shows a continuous roll of bibs of the present invention.

Figure 19 shows the front side of a bib made according to the present invention.

Figure 20 shows the back side of the bib shown in Fig. 19.

Figure 21 shows in block diagram the method of making the bib of the present invention.

Figures 22a and 22b show schematically the method for making a two layer bib of the present invention.

Figure 23 shows a portion of the method of making the bib of the present invention.

Figure 24 shows a portion of an alternative method of making the bib of the present invention.

Figures 25a and 25b show schematically the method for making a three layer bib of the present invention.

Figure 26 show a kit including the bib of the present invention

Detail Description of the Invention

[0022] Figures 1a-c show a first embodiment of a bib 10 according to the present invention. Bib 10 can have many uses such as protecting the clothing worn by the wearer, providing a sterile barrier, etc. Although bib 10 is shown as a generally rectangular sheet 12, bib 10 could have any suitable shape. For example, bib 10 could be provided with a cutout at the upper edge to accommodate the neck of the wearer. With respect to dimensions, bib 10 can be provided in a wide variety of sizes, designed for the intended use and/or targeted to the intended wearer. In this regard, bib 10 is shown longer than wider. However, bib 10 can be made wider than longer for individuals having a large chest area.

[0023] Bib 10 can be made of any suitable material, such as cloth, plastic, paper or combinations thereof. The present invention contemplates that sheet 12 is composed of multiple layers. For example, a top layer can be made of an absorbent, flexible paper material so that the top layer absorbs and catches any spilled substance, such as food or drink, and prevents it from damaging the clothes of the wearer. A bottom layer can also be made of an absorbent, flexible paper material, which can be identical to the top layer, and thus provides an additional layer of protection. A middle layer is sandwiched in between the top and bottom layers and is made of moisture resistant material, such as a thermoplastic film designed to repel liquid or moisture.

[0024] A back surface or side 14 of sheet 12 includes an adhesive strip 16 that is configured and dimensioned for adhering sheet 12 to the wearer. Adhesive strip 16 is shown near the upper edge of sheet 12, but can be positioned anywhere that once the adhesive is pressed against the wearer or the wearer's clothing, sheet 12 will remain in place. Additionally, adhesive strip 16 can be provided in multiple strips or other shapes or sizes so long as sheet 12 remains in place.

[0025] Until desired for use, a release strip 18 covers adhesive strip 16 and is removable to thereby expose the adhesive on adhesive strip 16. Release strip 18 can be provided in two halves, separated by a gap 20 to facilitate removal. Any other known mechanism to facilitate removal of release strip 18 from adhesive strip 16 can be used as an alternative or in conjunction with gap 20.

[0026] The adhesive used can be of the kind that do not become inactive but remain permanently active, and the adhesive capacity is adjusted depending on the strength properties of sheet 12. An example of a usable

adhesive is the kind used for note pads of the type called POST-IT (trademark) which is a repositionable adhesive, wherein the note pad sheets can be temporarily adhered, removed and repositioned. For stronger adhesive capacity the adhesive used for self-adhesive tape can be used. However, the adhesive used is preferably of the kind that does not mark or otherwise permanently damage the surface to which it is adhered.

[0027] As best seen in Figure 1c, a front surface or side 22 of sheet 12 can include a pocket or pouch 24 for holding or collecting any crumbs or other debris that slides along or fall near front surface 22. Front 22 and/or back surface 14 can include advertising and/or decorative, promotional, or other images or text.

[0028] Referring to Figures 2-4 a multilayer bib 10 is provided. The bib 10 includes first and second layers 13, 15. The first layer 13 can be made of an absorbent, flexible paper material so that the first layer 13 absorbs and catches any spilled substance, such as food or drink, and prevents it from damaging the clothes of the wearer. The second layer 15 is bonded to the first layer 13 and can be made of moisture resistant material, such as a thermoplastic film designed to repel liquid or moisture, protecting the wearer's clothing. The adhesive strip 16 is provided on the second layer 15 for attachment to the wearer's clothing. In this embodiment the first layer 13 forms the front surface 22 of the bib 10 and the second layer 15 forms the back surface 14 of the bib 10.

[0029] The first and second layers 13 and 15 can be heated bonded together, where the bonding temperature is sufficiently low so as not to damage the first and second layers 13 and 15. To aid in the bonding of the first and second layers 13 and 15, the first and second layers 13 and 15 are embossed such that the first and second layers 13 and 15 are held together. The embossing can be along the entire surface of the bib 10, or in the alternative, can be along the edges or any other portion of the bib 10.

[0030] The bib 10 includes a pouch 24 on the front side 22 for holding or collecting any crumbs or other debris that slides along or fall near front surface 22. In Figures 5 and 6, a modified bib is provided with a pocket 24 at the bottom to aid in catching drippings. As shown the bib 10 has the same construction on front and back surfaces 22 and 14. At the bottom, the back surface 14 is folded up and heat sealed at 23 along its folded up edges 21 to form a pocket 24 to catch foods or liquids. The fold is designated as reference numeral 25. By folding up in this manner, the cellular tissue is inside the pocket 42 to assist in containing spills.

[0031] In another embodiment, as shown in Figures 8 and 9, the pouch is formed on the back surface 14 of the bib 10 and inverted to the front surface 22, forming a biased open pouch 24. The pouch 24 is formed by folding over a bottom portion 19 of the bib 10 to the back surface 14, bonding the edges together 21. The top 27 of the noninverted pouch 24 is left open. To form the pouch 24 on the front surface 22, the folded bottom portion 19 is inverted, such that a pouch 24 is formed on the front surface 22 of the bib 10. The inversion of the folded bottom portion 19 forms an open pouch 24, which is automatically biased in an open position for collecting any crumbs or other debris that slides along or fall near front surface 22.

[0032] As previously discussed, the back surface 14 of the bib 10 includes an adhesive strip 16 that is configured and dimensioned to secure the bib 10 to the wearer. Referring to Figures 10-13, the adhesive strip 16 can be provided in any number of different configurations having a single strip or multiple strips. The strip(s) 16 can be formed by a continuous application of the adhesive material, or in the alternative, in intermittent or spectacled patterns.

[0033] Figure 14a shows another embodiment of a bib 26 according to the present invention. In general, most of the structure of bib 26 is like or comparable to the structure of bib 10. Accordingly, discussion of the like components is not believed necessary. Bib 26 has a sheet 28 that includes a back surface 30 and a front surface (not shown). Sealed package 32 is attached to sheet 28 and includes either a cleaning or sanitizing agent for cleaning and/or sanitizing a surface (for example the surface upon which food is to be placed) or a portion of the wearer (for example the hands of the wearer). The agent can be in the form of a wipe or towelette 34 that is premoistened or incorporates a fluid with cleaning or sanitizing properties. The agent could also be in the form of a fluid alone, such as a gel. Such a gel can include an anti-bacterial component.

[0034] In the embodiment of Figure 14a, sheet 28 includes a protective portion 36 and a tear-away portion 38. Protective portion 36 is sized so that when a release strip 40 is removed to expose the adhesive, protective portion 36 is large enough to cover the area to be protected. Sealed package 32 is located on tear-away portion 38 so that tear-away portion 38 can be separated from protective portion 36 and put aside until use of towelette 34 is desired. Perforations 42 can be provided to facilitate separation of tear-away portion 38 from protective portion 36. It should be noted that although sealed package 32 is shown attached to back surface 30 of sheet 28, sealed package 32 could also be attached to the front surface.

[0035] Figure 14b shows an embodiment of a bib 44 in which the sealed package is located on the front surface. In general, most of the structure of bib 44 is like or comparable to the structure of the bibs 10 and 26. Accordingly, discussion of the like components is not believed necessary. Bib 44 has a sheet 46 that includes a front surface 48 and a back surface (not shown). Sheet 46 includes a protective portion 50 and a tear-away portion 52, with perforations 54 provided to facilitate separation. Tear-away portion 52 includes a compartment 56 containing the sanitizing agent and a separate sealed package 58 containing towelette 60 with the cleaning agent. Vertical perforations 62 can be provided to separate the section of tear-away portion 52 that includes

compartment 56 from the section of tear-away portion 52 that includes sealed package 58.

[0036] Figures 15a and 15b show another embodiment of a bib 64 according to the present invention. In general, most of the structure of bib 64 is like or comparable to the structure of bib 10, 26, and 44. Accordingly, discussion of the like components is not believed necessary. Bib 64 comprises a sheet 66 having front 68 and back 70 surfaces. An adhesive strip 72 is located on back surface 70 and is configured and dimensioned for adhering sheet 66 to the wearer. A sealed package 74 is attached to sheet 66 and includes a cleaning or sanitizing agent. In this regard, sealed package 74 can be attached to a release strip 76 with the release strip 76 being removable to thereby expose adhesive on adhesive strip 72. In particular, release strip 76 includes first 78 and second 80 faces, with first face 78 adhered to adhesive strip 72 and sealed package 74 attached to second face 80. Alternatively, the outer surface of sealed package 74 can serve as the release strip, covering the adhesive on adhesive strip 72 until it is removed. As was the case for previous embodiments, sealed package 74 can contain a towelette with the cleaning or sanitizing agent or sealed package 74 can contain a fluid with the cleaning or sanitizing agent.

[0037] It may be advantageous to package the bibs according to the present invention in easy-to-dispense containers. Such containers can be portable, conveniently sized to fit in a diaper bag, hand bag, purse, glove compartment of a vehicle, etc. Such containers can also be attached to a wall or otherwise sized to be located on a desktop, counter surface, or other similar location. The containers can be single use, i.e. disposable when all the bibs are used or refillable with bibs when the supply of bibs is all used.

[0038] Figure 16a shows a box-type dispenser 82 for a supply of bibs 84. Box-type dispenser 82 is akin to any desktop facial tissue box. Figure 16b shows a pouch-type dispenser 86 for a supply of bibs 84. Pouch-type dispenser 86 is akin to the travel size facial tissue packets.

[0039] Figure 17 shows a dispenser 88 that can be used either as a roll-type dispenser or a folded-sheet type dispenser for dispensing a supply of bibs 84. When dispenser 88 is a folded-sheet type dispenser, it operates analogous to well-known hand towel dispensers in which the hand towels are packaged such that removal of one towel results in the next towel being positioned for removal. When dispenser 88 is a roll-type dispenser, a continuous roll of bibs 90 as shown in Figure 18 can be used. If desired, perforations 92 can separate the bibs. Additionally or as an alternative, the dispenser can include an edge 94 to assist in separating the bib to be used.

[0040] Referring to Figures 19 and 20, the bib 10 is shown consisting of a rectangular configuration composed of two overlying sheets, having a first layer 13 of gram cellular tissue on the front side and second layer 15 of polyethylene on the rear side. The tissue is imprinted with any suitable pattern or motif 96 and has been embossed with small rectangular depressions 98 that have been heat sealed to the polyethylene sheet. On the rear side of the bib 10, the polyethylene sheet has an adhesive 16 coated along its top edge 99 covered with a release tape in the form of a removable cover strip 18, e.g. glassine paper. To use the bib, the cover strip 18 is removed and the bib 10 attached or stuck to the user by the adhesive 16. The cellular tissue sheet is facing outwardly to catch and absorb any food or liquid that may spill.

[0041] Figure 21 shows a block diagram of the novel method of the present invention. In block 100 a web of polyethylene is fed to block 102 where it is laminated with a web of cellular tissue paper by a heated cylinder that impressed an array of spaced small rectangular depressions into the tissue paper to heat seal the tissue paper to the polyethylene web. The depressions may have other geometries.

[0042] The webs are a predetermined width, for example 45cm (18 inches). Next, the laminated web is fed to block 104 where a stripe of glue or adhesive is sprayed onto one edge of the laminated web on the polyethylene side as the web moves past the sprayer. Then, the stripe of glue is covered by a release tape as the web moves past the roll carrying the release tape in block 106. Next, in block 108, the laminated web is cut transversely at a predetermined longitudinal interval equivalent to the width of the finished bib, for example 32.5 cm (13 inches). Finally, the cut bibs are then stacked in block 116. If a multiple of the bib length is used for a web, the longitudinal cutting into appropriate sections is done in block 120.

[0043] In a variation of the method, the cut bibs can then be folded up at their bottoms in a known way in block 110, as described in conjunction with Figures 19 and 20, to produce pockets, as described, and the edges of the pockets heat sealed, as described, in block 112. The bibs with pockets are then collected or stacked in a known way, in block 114. In this variation, it is possible to do the folding before the cutting in block 108, as the mechanism for folding is known, and then to effect the transverse cutting simultaneously with the heat sealing of the edges, or alternatively, the heat sealing of the edges and then the transverse cutting.

[0044] Figures 22a, 22b and 23 show the novel method in more detail and in a schematic manner for making a two layer bib. As shown, a web of polyethylene 130 is fed from roll of polyethylene 132, together with a web of cellular tissue paper 134 from a roll of tissue paper 136, to a laminator 138 that heat seals the paper to the polyethylene. The heat sealing includes the application of an array of spaced rectangular depressions, or other geometry to assist in the bonding of the polyethylene 132 and the paper 136. The array of spaced rectangular depressions can be provided along the entire surface or just the edges.

[0045] The laminated web 140 is then turned counterclockwise 90 degrees, according to the drawing, by roll

142 to present the polyethylene side to a sprayer 144 so that suitable glue or adhesive may be sprayed onto the edge of the laminated web on the polyethylene side. Then, roll 146 turns the laminated web 140 counterclockwise 90 degrees, according to the drawing, so that the polyethylene side is facing upwardly. A suitable release tape 150 from roll 152 is then applied to the web 140 to cover the glue or adhesive. Next, the laminated web is passed onto a conveyor 154 and continued in its longitudinal direction and transversely cut, see Figure 24 reference 170, by transverse cutter 156 at predetermined longitudinal intervals, for example, a preferred 32.5 cm (13 inches) to form the finished bibs, which are then stacked on receiving platform 158.

[0046] The method shown in Fig. 22a can be used with webs having a predetermined width (equal to bib length), such as a preferred 45cm (18 inches), so that the finished bibs are 32.5 cm (13 inches) wide and 45cm (18 inches) long. However, it is possible to use multiples of the finished length of the bibs and cut the webs longitudinally into longitudinal sections having widths that are the desired bib length. To this end, a longitudinal cutter 160 is provided to section the web into 2, 3 .... N sections, each having a width equivalent to the finished bib length. As 45cm (18 inches) is a preferred length, the web can be 90, 135, 180, etc. cm (36, 54, 72, etc. inches) wide. Figure 24 shows a 135cm (54 inch) web that has been cut into three sections 200, 210 and 220. The longitudinal cut lines are referenced 190. The transverse cut lines are referenced 170.

[0047] As a further improvement, the finished bibs can be provided with pockets as previously described. To this end, a folder 162 needs to be added to the method and located either before or after the transverse cutter. Likewise, a heat sealer 164 needs to be added following the folder 162 to heat seal the edges of the pockets formed by the folding. Preferably, the heat sealing takes place before the transverse cutting. The addition of the folder 162 and the heat sealer 164 is shown in Figure 22b. However, if the bibs are first cut to size and then the pockets are formed, then the heat sealing of the edges will take place after the transverse cutting.

[0048] Figures 25a, 25b and 23 show the novel method in more detail and in a schematic manner for making a three layer bib. As shown, a web of polyethylene 130 is fed from roll of polyethylene 132, together with a first and second web of cellular tissue paper 134a and 134b from a first and second roll of tissue paper 136a and 136b, where the polyethylene 132 is sandwiched between the tissue paper 136a and 136b. The sandwiched polyethylene 132 and tissue paper 136a and 136b are fed into a laminator 138 that heat seals the paper 136a and 136b to the polyethylene 132. The heat sealing includes the application of an array of spaced rectangular depressions, or other geometry to assist in the bonding of the polyethylene 132 and the paper 136a and 136b. The array of spaced rectangular depressions can be provided along the entire surface or just the edges.

[0049] The laminated web 140 is then turned counterclockwise 90 degrees, according to the drawing, by roll 142 to present the polyethylene side to a sprayer 144 so that suitable glue or adhesive may be sprayed onto the edge of the laminated web on the polyethylene side. Then, roll 146 turns the laminated web 140 counterclockwise 90 degrees, according to the drawing, so that the polyethylene side is facing upwardly. A suitable release tape 150 from roll 152 is then applied to the web 140 to cover the glue or adhesive. Next, the laminated web is passed onto a conveyor 154 and continued in its longitudinal direction and transversely cut, see Figure 24 reference 170, by transverse cutter 156 at predetermined longitudinal intervals, for example, a preferred 32.5cm (13 inches) to form the finished bibs, which are then stacked on receiving platform 158.

[0050] The method shown in Fig. 25a can be used with webs having a predetermined width (equal to bib length), such as a preferred 45cm (18 inches) so that the finished bibs are 32.5cm (13 inches) wide and 45cm (18 inches) long. However, it is possible to use multiples of the finished length of the bibs and cut the webs longitudinally into longitudinal sections having widths that are the desired bib length. To this end, a longitudinal cutter 160 is provided to section the web into 2, 3 .... N sections, each having a width equivalent to the finished bib length. As 45cm (18 inches) is a preferred length, the web can be 90,135,180, etc. cm (36,54,72, etc. inches) wide. Figure 24 shows a 135cm (54 inch) web that has been cut into three sections 200, 210 and 220. The longitudinal cut lines are referenced 190. The transverse cut lines are referenced 170.

[0051] As a further improvement, the finished bibs can be provided with pockets as previously described. To this end, a folder 162 needs to be added to the method and located either before or after the transverse cutter. Likewise, a heat sealer 164 needs to be added following the folder 162 to heat seal the edges of the pockets formed by the folding. Preferably, the heat sealing takes place before the transverse cutting. The addition of the folder 162 and the heat sealer 164 is shown in Figure 25b. However, if the bibs are first cut to size and then the pockets are formed, then the heat sealing of the edges will take place after the transverse cutting.

[0052] Referring to Figure 26 the bib 10 of the present invention can be provided in a kit 250. The kit 250 can include utensils, such as a fork, knife, and/or spoon. Additionally, the kit 250 can include condiments, such a salt, pepper, ketchup, mustard, etc. The present invention also contemplates, as described above, a sanitary gel or wipe can be provided. The kit 250 can be provided at fast food restaurant, on airlines, trains, concession stands for sporting event, or used for outdoor events.

[0053] All references cited herein are expressly incorporated by reference in their entirety.

[0054] It will be appreciated by persons skilled in the art that the present invention is not limited to what has been particularly shown and described herein above. In

addition, unless mention was made above to the contrary, it should be noted that all of the accompanying drawings are not to scale. A variety of modifications and variations are possible in light of the above teachings without departing from the scope and spirit of the invention. Therefore, it will be understood that the appended claims are intended to cover all such modifications and embodiments which come within the scope of the present invention.

Claims

1. A method of making bibs (10) comprising the steps of

a. laminating by embossing an elongated continuously moving web of absorbent cellular tissue paper (134) with an elongated web of plastic film (138), said embossing being carried out to create an array of spaced depressions in the tissue paper web while heating the plastic film, so that the array of spaced depressions in the tissue paper web are pressed into the heated plastic film and adhered to the plastic film, leaving the portions of the tissue web surrounding the array of spaced depressions unaffected and retaining their original characteristics for absorption of liquids and other foods, thereby forming a continuously moving laminated web (140) having tissue paper on one side and plastic on the other side;
b. continuously spraying in the direction of travel of the laminated web on the plastic film side thereof, a biocompatible adhesive to one edge thereof to form a stripe of adhesive (16) along said edge of the laminated web;
c. covering the stripe of adhesive with a release tape (150);
d. severing the laminated web transversely at predetermined longitudinal intervals to form individual bibs (10); and
e. collecting the severed individual bibs (10).

2. The method of claim 1 wherein the plastic film is polyethylene.

3. The method of claim 1 wherein the bibs are individuated at 32.scum (13 inch) intervals.

4. The method of claim 1 wherein the webs are 45cm (18 inches) wide.

5. The method of claim 1 wherein the laminated web (140) is a multiple of a predetermined bib length, and includes the further steps of cutting the laminated web into longitudinal sections of a width equal to bib length, and spraying the stripe of adhesive to the edge of each section and covering each stripe of adhesive with a release tape (150).

6. The method of claim 1 including the further steps of folding the edge of each severed individual bib opposite the edge to which the adhesive is applied, to overlie the severed individual bib and heat sealing the overlying edges of the severed individual bib to form a pocket (24) with tissue paper on the inside to absorb drippings and plastic on the outside.

7. The method of claim 1 wherein the absorbent tissue paper is 19 gram tissue paper and the plastic film is polyethylene.

8. The method of claim 1 including imprinting the absorbent paper with a design or motif (96).

9. A bib (10) comprising a sheet of laminated material composed of absorbent cellular tissue paper (13) on one side and a plastic film (15) on the opposite side, the sheet having a predetermined shape with a top edge, a bottom edge, absorbent tissue paper exposed on one side and the plastic film exposed on the other side, an adhesive (16) received on the top edge (99) of the plastic film side of the sheet, and a release tape (18) covering the adhesive received on the top edge of the plastic film,
characterised in that said tissue paper is embossed with an array of spaced depressions (98) pressed into and heat sealed to the plastic film, with the portions of the tissue paper surrounding the array of spaced depressions (98) being free, unaffected and retaining their original characteristics for absorption of liquids and other foods.

10. A bib according to claim 9 wherein the absorbent paper is imprinted with a design (96).

11. A bib according to claim 9 wherein the depressions (98) are rectangular.

12. A bib according to claim 9 wherein the sheet is rectangular 32.5cm (13 inches) wide and 45cm (18 inches) long.

13. A bib according to claim 9 wherein the bottom edge of the sheet is folded over and heat sealed along its edges to form a pocket (24).

14. A bib according to claim 13 wherein the plastic film is polyethylene.

15. A bib according to claim 13 wherein the cellular tissue paper is on interior surfaces of the pocket (24).

16. A bib according to claim 15 wherein the plastic film is on exterior surfaces of the pocket (24).

17. A bib according to claim 16 wherein the plastic film is polyethylene.

18. A bib according to claim 13 wherein the bottom edge (19) of the sheet is folded over such that a first section of the sheet faces a second section of the sheet with the absorbent cellular tissue paper of the first section facing the absorbent cellular tissue paper of the second section.

Patentansprüche

1. Verfahren zur Herstellung von Lätzchen (10), das folgende Schritte umfasst:

a. das Laminieren durch das Gaufrieren einer länglichen, sich kontinuierlich bewegenden Bahn von saugfähigem Zellgewebepapiertuch (134) mit einer länglichen Bahn aus Kunststofffilm (138), wobei das Gaufrieren durchgeführt wird, um eine Anordnung beabstandeter Vertiefungen in der Papiertuchbahn zu erzeugen, während der Kunststofffilm erwärmt wird, sodass die Anordnung von beabstandeten Vertiefungen in der Papiertuchbahn in den erwärmten Kunststofffilm gedrückt werden und an dem Kunststofffilm haften, wobei die Abschnitte der Papiertuchbahn, die die Anordnung beabstandeter Vertiefungen umgeben, unbeeinflusst und ihre ursprünglichen Eigenschaften zum Aufsaugen von Flüssigkeiten und anderen Nahrungsmitteln bestehen gelassen werden, wodurch eine sich kontinuierlich bewegende, laminierte Bahn (140) entsteht, die auf einer Seite Papiertuch und auf der anderen Seite Kunststoff aufweist;
b. das kontinuierliche Aufsprühen eines biologisch verträglichen Haftmittels in Bewegungsrichtung der laminierten Bahn auf deren Kunststofffilmseite auf einen Rand davon zur Ausbildung eines Haftmittelstreifens (16) entlang des Rands der laminierten Bahn;
c. das Abdecken des Haftmittelstreifens mit einem Abziehstreifen (150);
d. das Zuschneiden der laminierten Bahn in Querrichtung in vorbestimmten Längsabständen zur Herstellung einzelner Lätzchen (10) und
e. das Sammeln der zugeschnittenen einzelnen Lätzchen (10).

2. Verfahren nach Anspruch 1, worin der Kunststofffilm Polyethylen ist.

3. Verfahren nach Anspruch 1, worin die Lätzchen in einem Abstand von 32,5 cm (13 Zoll) zu einzelnen Lätzchen zugeschnitten werden.

4. Verfahren nach Anspruch 1, worin die Bahnen 45 cm (18 Zoll) breit sind.

5. Verfahren nach Anspruch 1, worin die laminierte Bahn (140) ein Vielfaches einer vorbestimmten Lätzchenlänge aufweist und das folgende weitere Schritte umfasst: das Zuschneiden der laminierten Bahn in Längsabschnitte mit einer Breite, die der Lätzchenlänge entspricht und das Aufsprühen des Haftmittelstreifens auf den Rand jedes Abschnitts und das Abdecken jedes Haftmittelstreifens mit einem Abziehstreifen (150).

6. Verfahren nach Anspruch 1, das folgende weitere Schritte umfasst: das Falten des Rands jedes zugeschnittenen einzelnen Lätzchens, der dem Rand, auf den das Haftmittel aufgebracht wird, gegenüberliegt, so dass dieser über dem zugeschnittenen einzelnen Lätzchen liegt, und das Heißversiegeln der übereinander liegenden Ränder des zugeschnittenen einzelnen Lätzchens zur Ausbildung einer Tasche (24), in deren Innerem Papiertuch zum Aufsaugen von Tropfen und an deren Äußerem Kunststoff vorliegt.

7. Verfahren nach Anspruch 1, worin das saugfähige Papiertuch 19-g-Papiertuch ist und der Kunststoff Polyethylen ist.

8. Verfahren nach Anspruch 1, einschließlich das Aufdruckens eines Designs oder Motivs (96) auf das saugfähige Papier.

9. Lätzchen (10), das eine Bahn aus laminiertem Material umfasst, die aus saugfähigem Papiertuch (13) auf einer Seite und einen Kunststofffilm (15) auf der entgegengesetzten Seite umfasst, wobei die Bahn eine vorbestimmte Form mit einer Oberkante und einer Unterkante aufweist, wobei das saugfähige Papiertuch an einer Seite frei liegt und der Kunststofffilm auf der anderen Seite frei liegt, ein Haftmittel (16) an Oberkante (99) auf der Seite der Bahn mit dem Kunststofffilm aufgenommen wird und einen Abziehstreifen (18), der das an der Oberkante des Kunststofffilms aufgenommene Haftmittel abdeckt, **dadurch gekennzeichnet, dass** das Papiertuch, das mit einer Anordnung beabstandeter Vertiefungen (98) gaufriert ist, in den Kunststofffilm gedrückt und mit diesem heißversiegelt wird, wobei die Abschnitte des Papiertuchs, die die Anordnung beabstandeter Vertiefungen (98) umgeben, frei und unbeeinflusst sind und ihre ursprünglichen Eigenschaften zum Aufsaugen von Flüssigkeiten und anderen Nahrungsmitteln beibehalten.

10. Lätzchen nach Anspruch 9, worin das saugfähige Papier mit einem Design (96) bedruckt ist.

11. Lätzchen nach Anspruch 9, worin die Vertiefungen

(98) rechteckig sind.

12. Lätzchen nach Anspruch 9, worin die Bahn rechtekkig und 32,5 cm (13 Zoll) breit und 45 cm (18 Zoll) lang ist.

13. Lätzchen nach Anspruch 9, worin die Unterkante der Bahn umgefaltet und entlang ihrer Ränder zur Bildung einer Tasche (24) heißversiegelt wird.

14. Lätzchen nach Anspruch 13, worin der Kunststofffilm Polyethylen ist.

15. Lätzchen nach Anspruch 13, worin das Papiertuch auf den Innenflächen der Tasche (24) vorliegt.

16. Lätzchen nach Anspruch 15, worin der Kunststofffilm auf den Au βenoberflächen der Tasche (24) vorliegt.

17. Lätzchen nach Anspruch 16, worin der Kunststofffilm Polyethylen ist.

18. Lätzchen nach Anspruch 13, worin die Unterkante (19) der Bahn so umgefaltet wird, dass ein erster Abschnitt der Bahn einem zweiten Abschnitt der Bahn zugewandt ist, wobei das saugfähige Papiertuch des ersten Abschnitts dem saugfähigen Papiertuch des zweiten Abschnitts zugewandt ist.

Revendications

1. Procédé de fabrication de bavoirs (10) comprenant les étapes de

a. laminer par bosselage une bande oblongue continuellement mobile en papier absorbant cellulaire (134) avec une bande oblongue de film plastique (138), ledit bosselage étant exécuté pour créer une rangée de creux espacés dans la bande de papier absorbant tout en chauffant le film plastique de sorte que la rangée de creux espacés dans la bande de papier absorbant sont pressés dans le film plastique chauffé et adhèrent au film plastique, en laissant les portions de la bande absorbante entourant la rangée de creux espacés non affectées et en gardant leurs caractéristiques initiales pour l'absorption de liquides et autres aliments, en formant ainsi une bande laminée continuellement mobile (140) ayant du papier absorbant sur un côté et du plastique sur l'autre côté;
b. pulvériser en continu dans la direction de déplacement de la bande laminée sur le côté du film plastique de celle-ci un adhésif biocompatible sur un bord de celle-ci pour former un ruban d'adhésif (16) le long dudit bord de la bande laminée;
c. couvrir le ruban d'adhésif avec une bande de libération (150);
d. couper la bande laminée transversalement à des intervalles longitudinaux prédéterminés pour former des bavoirs individuels (10); et
e. recueillir les bavoirs individuels coupés (10).

2. Procédé selon la revendication 1, dans lequel le film plastique est le polyéthylène.

3. Procédé selon la revendication 1, dans lequel les bavoirs sont individualisés à des intervalles de 32,5 cm (13 pouces).

4. Procédé selon la revendication 1, dans lequel les bandes ont une largeur de 45cm (18 pouces).

5. Procédé selon la revendication 1, dans lequel la bande laminée (140) est un multiple d'une longueur de bavoir prédéterminée et comprend les autres étapes consistant à couper la bande laminée en sections longitudinales d'une largeur égale à la longueur du bavoir, et la projection du ruban d'adhésif sur le bord de chaque section et le recouvrement de chaque ruban d'adhésif avec une bande de libération (150).

6. Procédé selon la revendication 1, incluant les autres étapes consistant à plier le bord de chaque bavoir individuel coupé opposé au bord auquel l'adhésif est appliqué, pour reposer sur le bavoir individuel coupé, et thermosouder les bords de recouvrement du bavoir individuel coupé pour former une poche (24) avec du papier absorbant sur l'intérieur pour absorber des gouttelettes et du plastique sur l'extérieur.

7. Procédé selon la revendication 1, dans lequel le papier absorbant est un papier absorbant de 19 grammes, et le film plastique est le polyéthylène.

8. Procédé selon la revendication 1, comprenant l'impression du papier absorbant avec un design ou motif (96).

9. Bavoir (10) comprenant une feuille de matériau laminé composée de papier cellulaire absorbant (13) sur un côté et d'un film plastique (15) sur l'autre côté, la feuille ayant une forme prédéterminée avec un bord supérieur, un bord inférieur, du papier absorbant exposé sur un côté et le film plastique exposé sur l'autre côté, un adhésif (16) reçu sur le bord supérieur (99) du côté du film plastique de la feuille, et une bande de libération (18) couvrant l'adhésif reçue sur le bord supérieur du film plastique,
caractérisé en ce que ledit papier absorbant est bosselé avec une rangée de creux espacés (98) pressés dans et thermosoudés au film plastique, les portions du papier absorbant entourant la rangée de creux espacés (98) étant libres, non affectées et gar-

dent leurs caractéristiques initiales pour l'absorption de liquides et autres aliments.

10. Bavoir selon la revendication 9, dans lequel un design (96) est imprimé sur le papier absorbant.

11. Bavoir selon la revendication 9, dans lequel les creux (98) sont rectangulaires.

12. Bavoir selon la revendication 9, dans lequel la feuille est rectangulaire avec une largeur de 32,5 cm (13 pouces) et une longueur de 45 cm (18 pouces).

13. Bavoir selon la revendication 9, dans lequel le bord inférieur de la feuille est replié et thermosoudé le long de ses bords pour former une poche (24).

14. Bavoir selon la revendication 13, dans lequel le film plastique est du polyéthylène.

15. Bavoir selon la revendication 13, dans lequel le papier absorbant cellulaire se trouve sur les surfaces intérieures de la poche (24).

16. Bavoir selon la revendication 15, dans lequel le film plastique se trouve sur les surfaces extérieures de la poche (24).

17. Bavoir selon la revendication 16, dans lequel le film plastique est du polyéthylène.

18. Bavoir selon la revendication 13, où le bord inférieur (19) de la feuille est replié de telle sorte qu'une première section de la feuille soit orientée vers une seconde section de la feuille, le papier cellulaire absorbant de la première section faisant face au papier cellulaire absorbant de la seconde section.

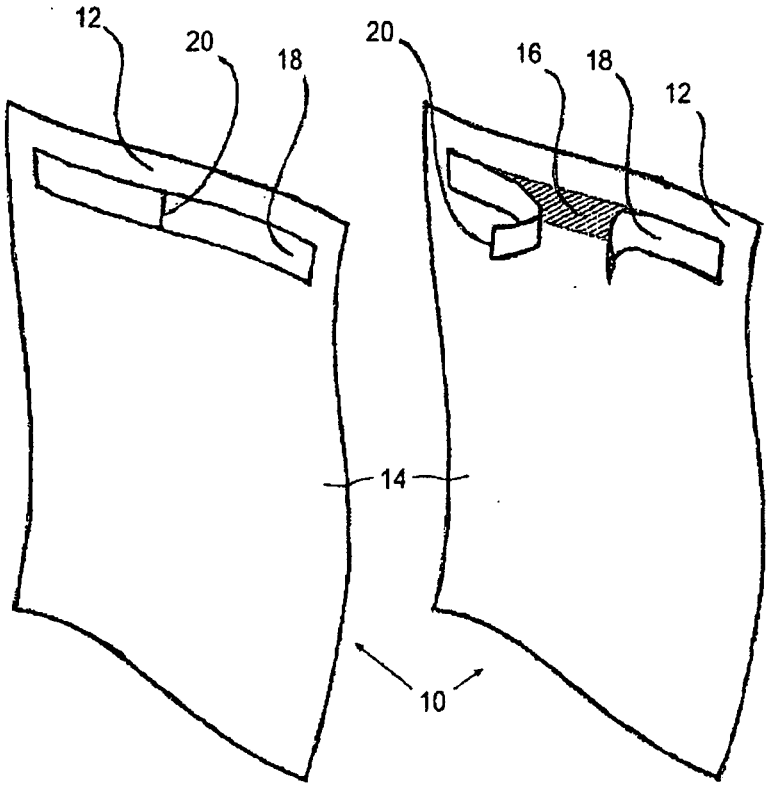


Figure 1a

Figure 1b

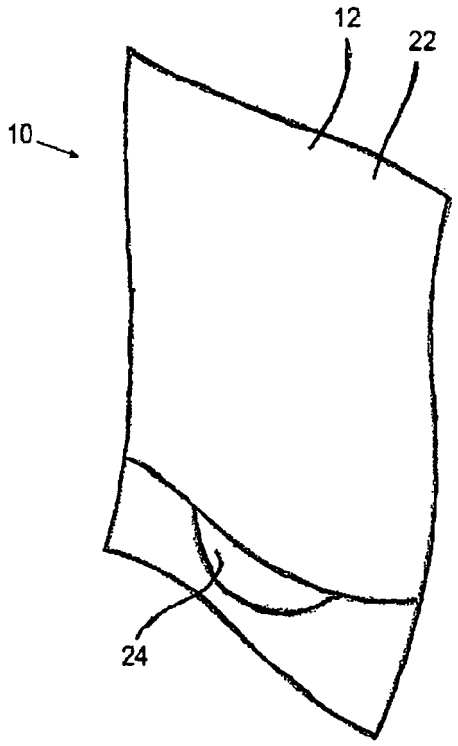


Figure 1c

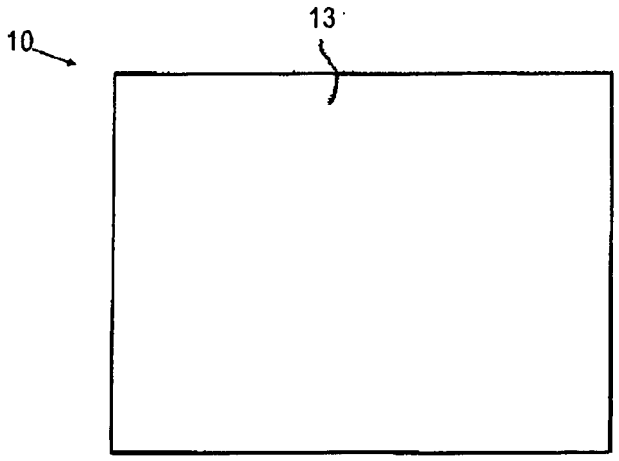


Figure 2

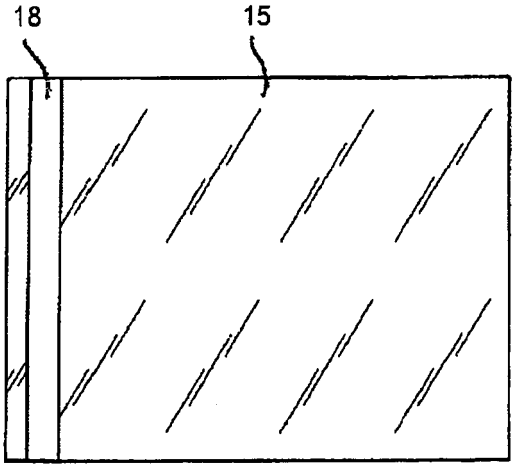


Figure 3

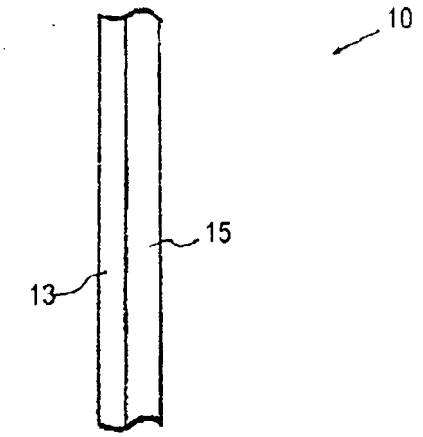


Figure 4

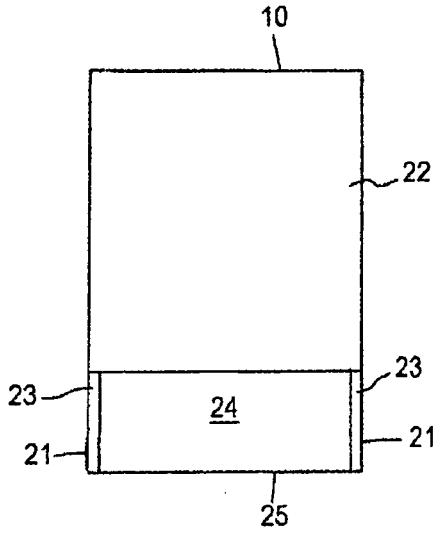


Figure 5

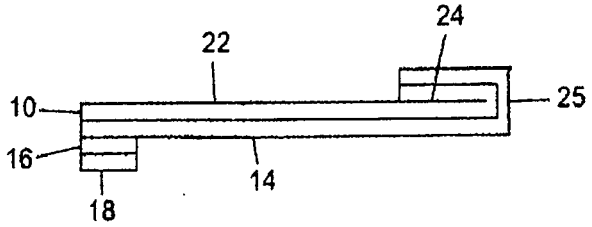


Figure 6

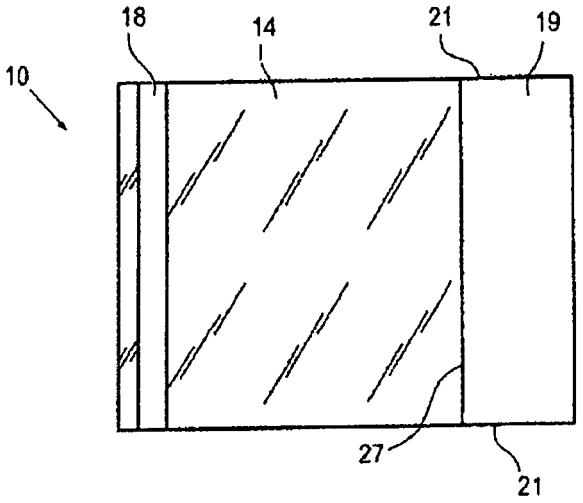


Figure 7

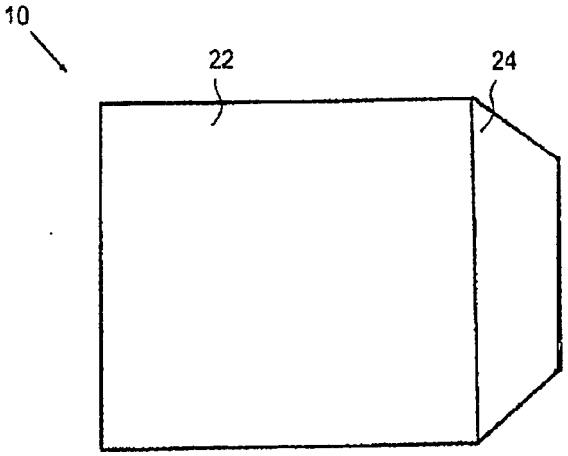


Figure 8

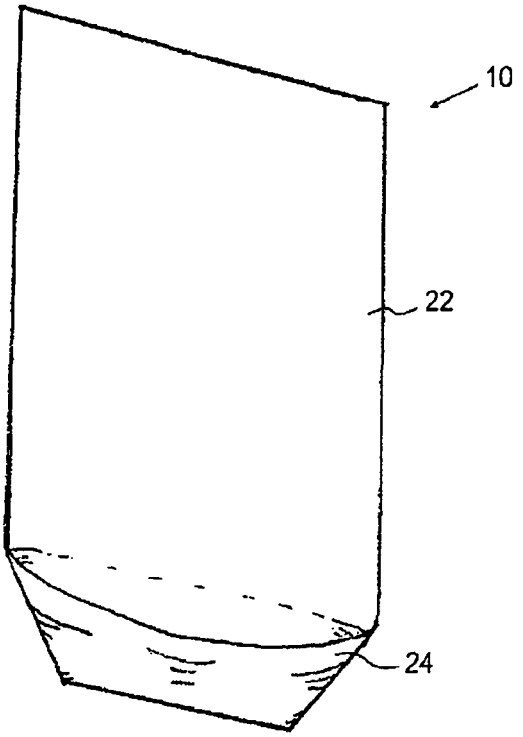


Figure 9

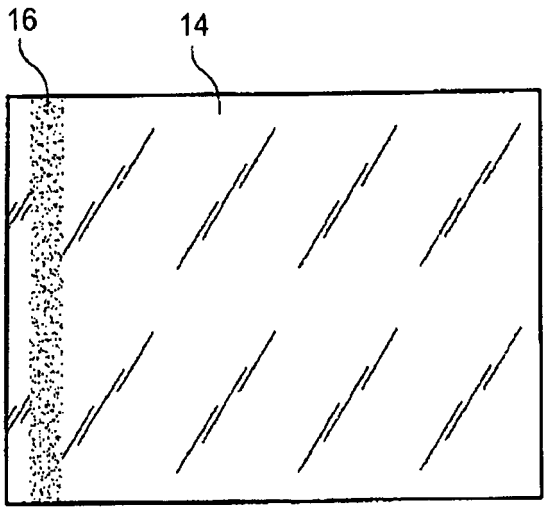


Figure 10

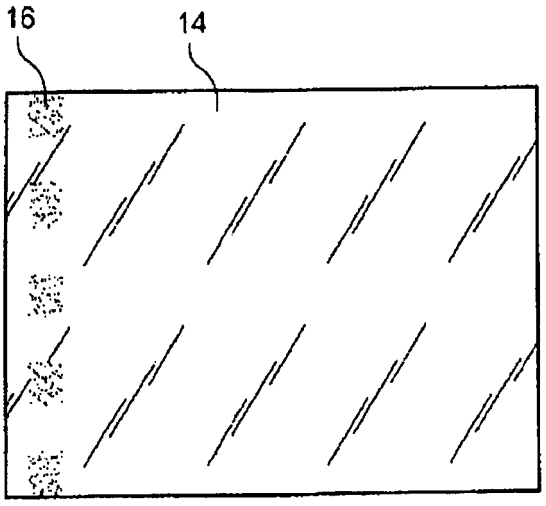


Figure 11

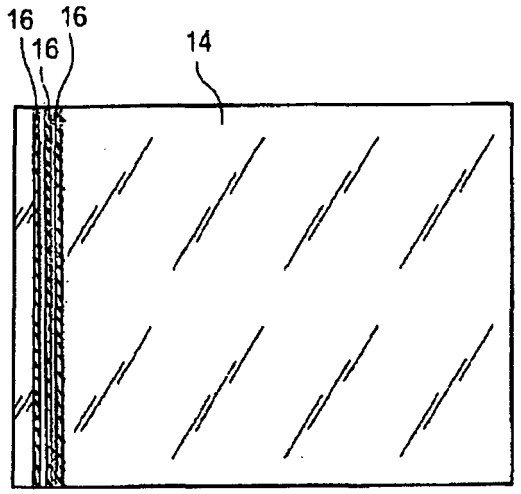


Figure 12

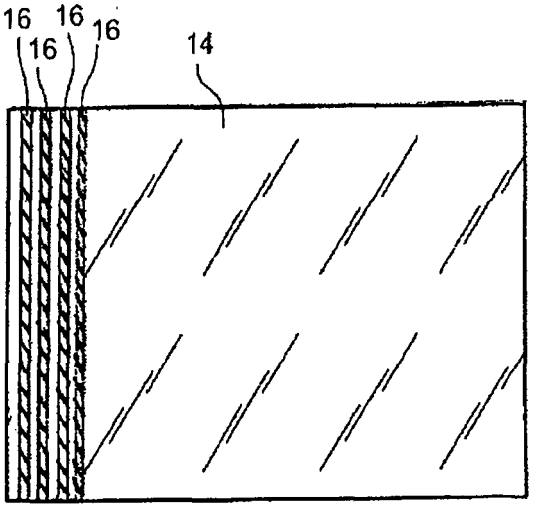


Figure 13

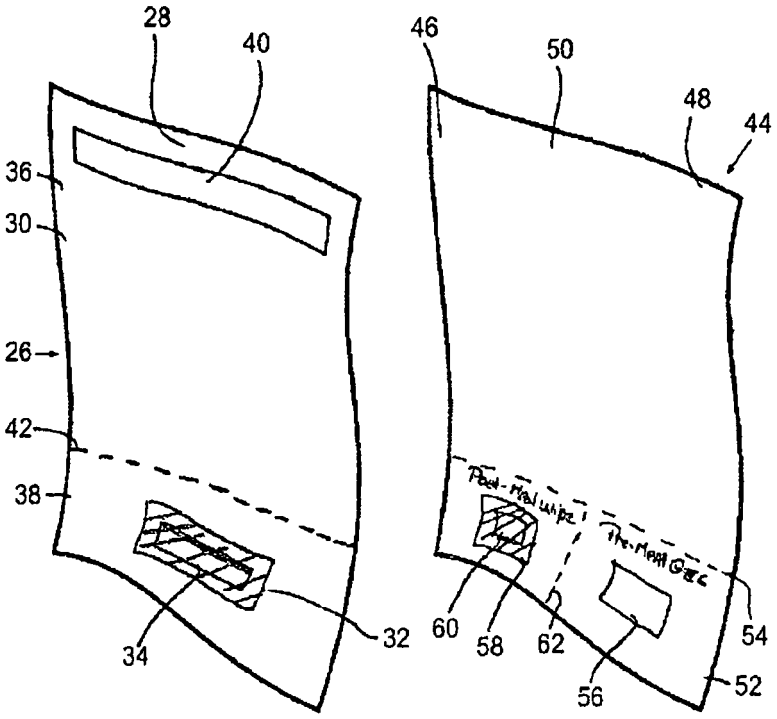


Figure ~~15a~~ 14a

Figure ~~15b~~ 14b

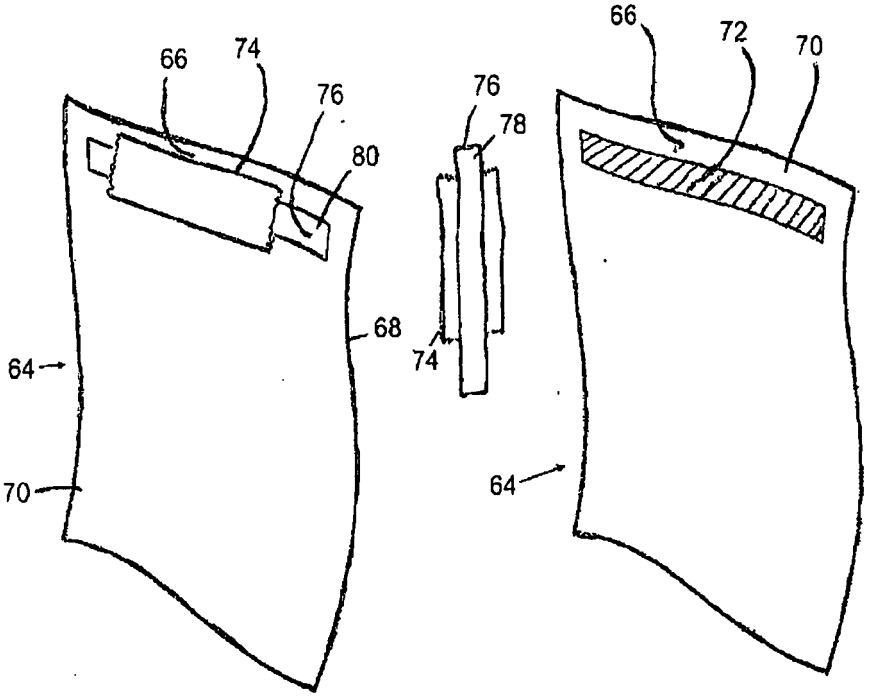


Figure ~~16a~~ 15a

Figure ~~16b~~ 15b

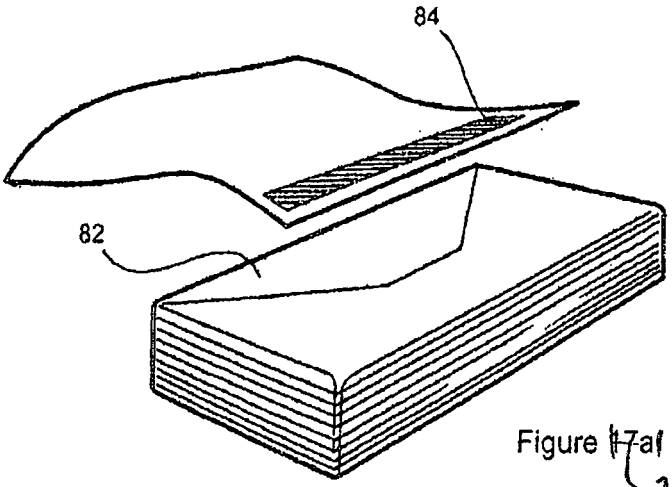


Figure ~~17a~~ 16a

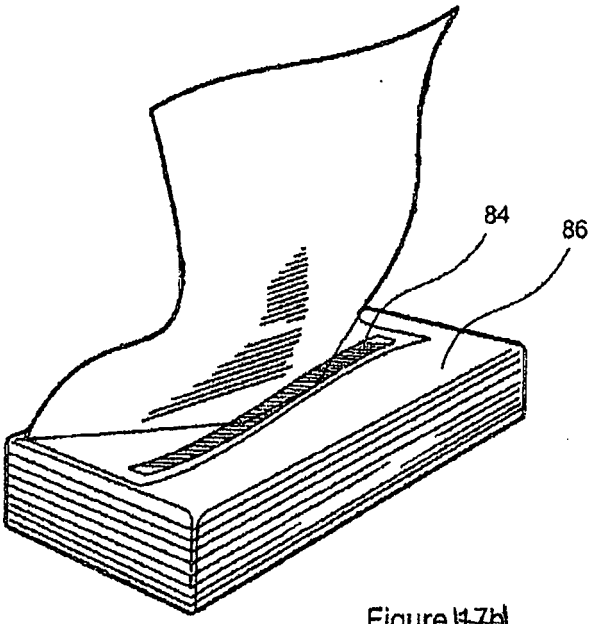


Figure ~~17b~~ 16b

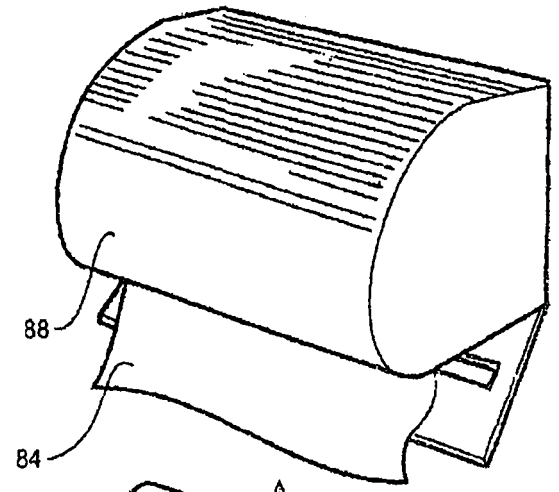


Figure ~~18~~ 17

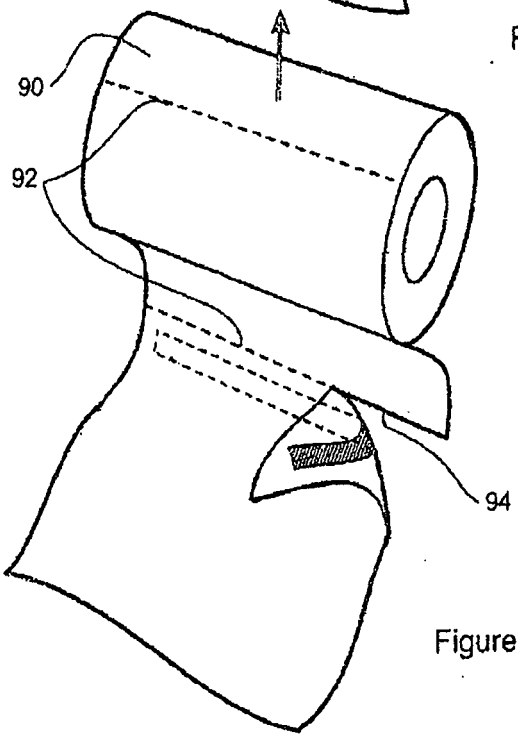


Figure ~~19~~ 18

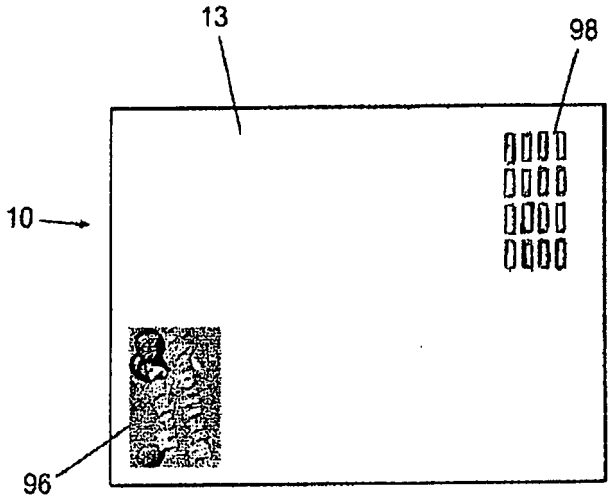


Figure 19

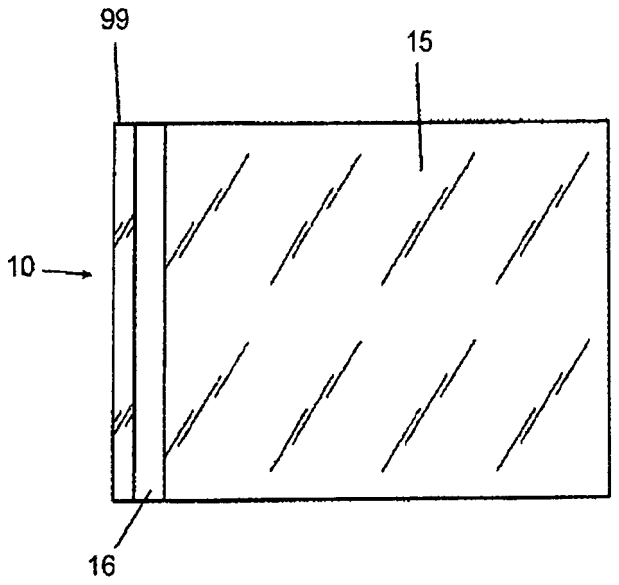


Figure 20

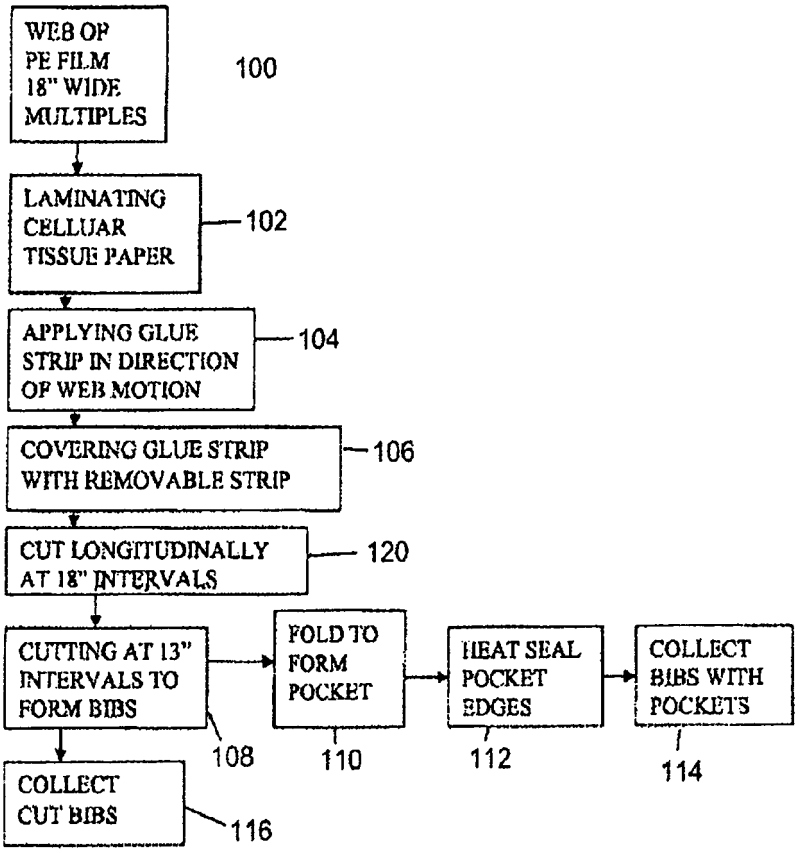

WEB OF PE FILM 18" WIDE MULTIPLES
100
LAMINATING CELLUAR TISSUE PAPER
102
APPLYING GLUE STRIP IN DIRECTION OF WEB MOTION
104
COVERING GLUE STRIP WITH REMOVABLE STRIP
106
CUT LONGITUDINALLY AT 18" INTERVALS
120
CUTTING AT 13" INTERVALS TO FORM BIBS
108
FOLD TO FORM POCKET
110
HEAT SEAL POCKET EDGES
112
COLLECT BIBS WITH POCKETS
114
COLLECT CUT BIBS
116

Figure 21

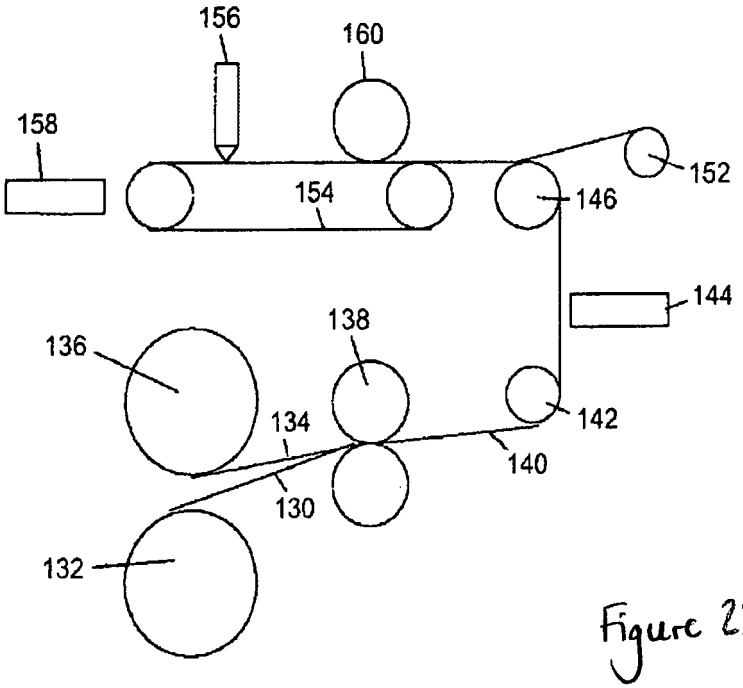


Figure 22a

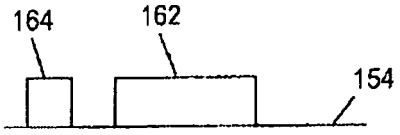


Figure 22b

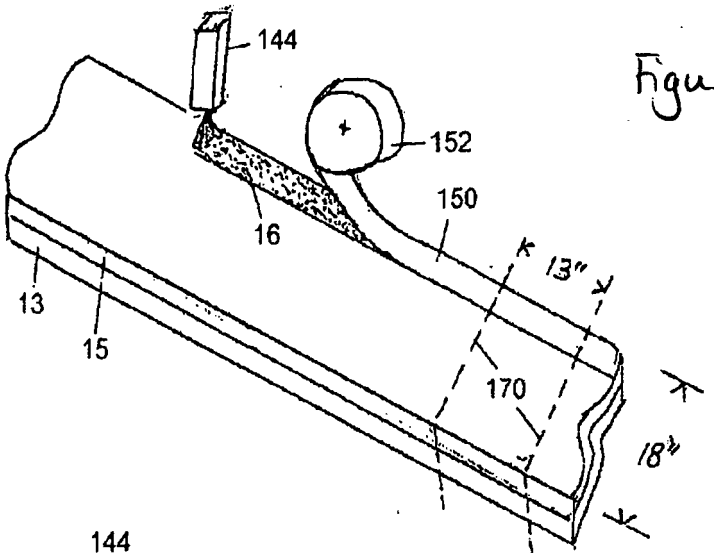


Figure 23

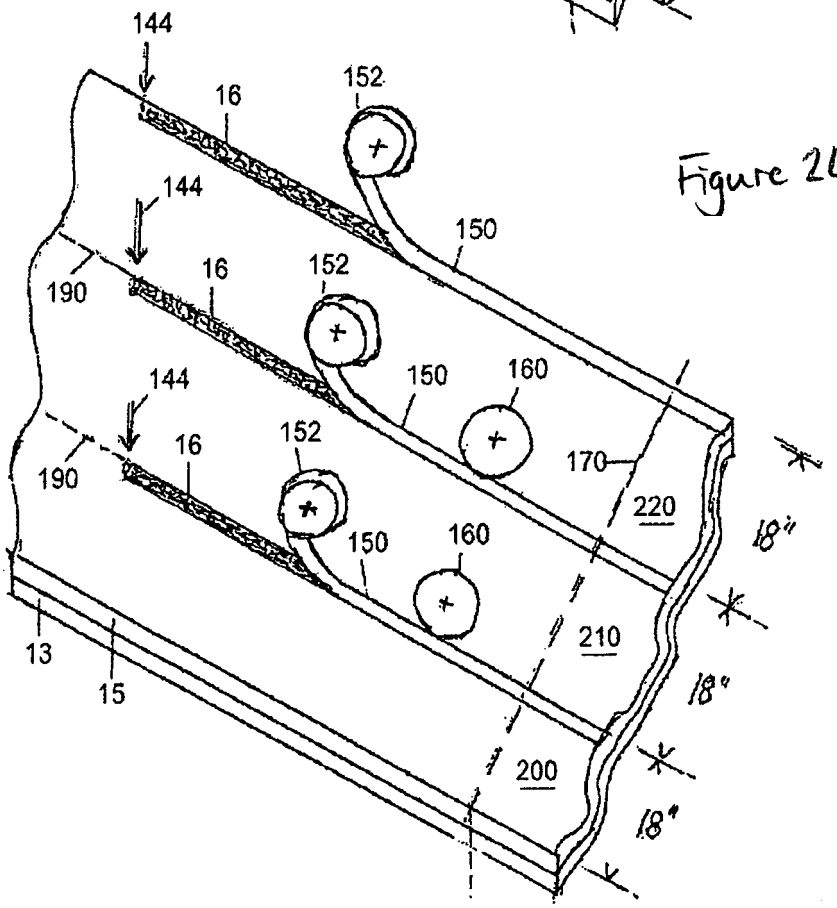


Figure 24

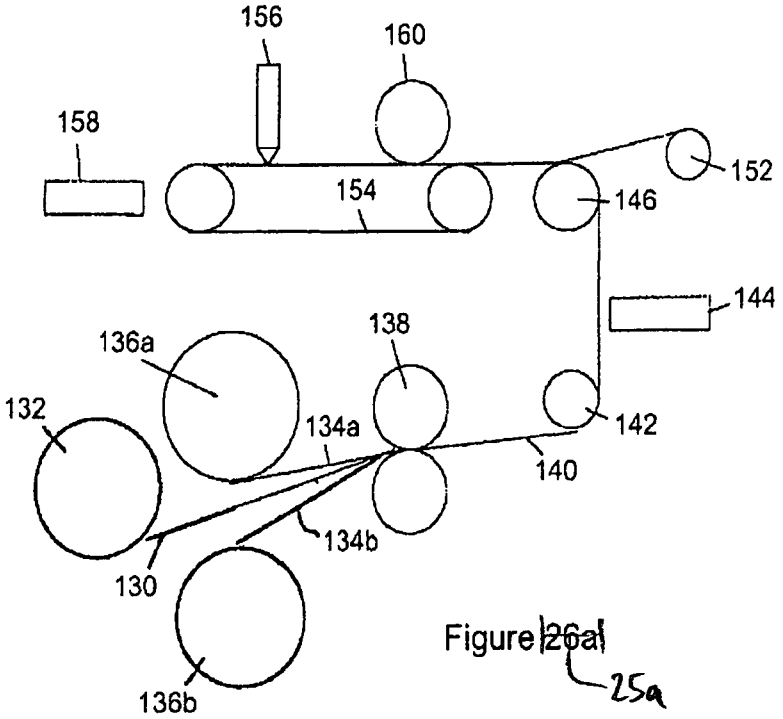


Figure 26a

25a

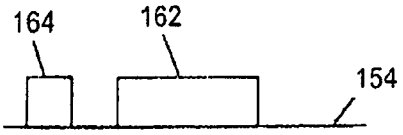


Figure 26b

25b

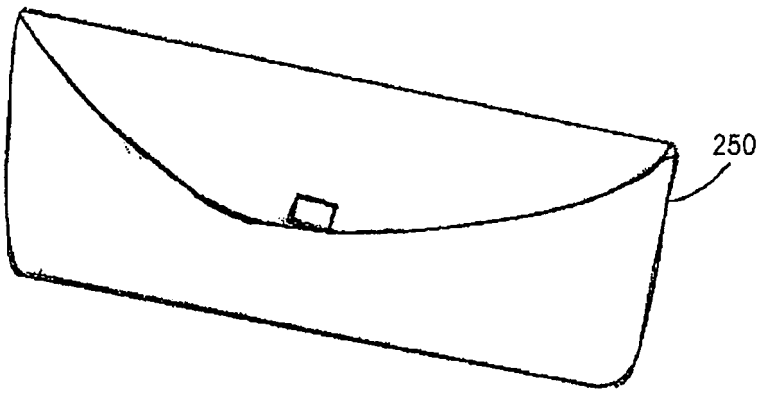


Figure ~~27~~ 26

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Patent documents cited in the description

- GB 2232340 A **[0004]**
- US 6212683 B **[0005]**