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Vigunas et al.

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(54) **THERMALLY PRINTABLE ADHESIVE LABEL**

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Related U.S. Application Data

(63) Continuation of application No. 13/858,527, filed on Apr. 8, 2013, now Pat. No. 9,208,699, which is a (Continued)

(51) **Int. Cl.**

B41M 5/42	(2006.01)
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G09F 3/10	(2006.01)
B41J 3/407	(2006.01)
B41J 11/58	(2006.01)

(Continued)

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

CPC ***G09F 3/10*** (2013.01); ***B05D 7/50*** (2013.01); ***B41J 3/4075*** (2013.01); ***B41J 11/58*** (2013.01); ***B41M 5/42*** (2013.01); ***B41M 5/423*** (2013.01); ***B41M 5/44*** (2013.01); *B41M 2205/04* (2013.01); *B41M 2205/32* (2013.01); *B41M 2205/34* (2013.01); *B41M 2205/36* (2013.01); *B41M 2205/38* (2013.01); *B41M 2205/40* (2013.01); *G09F 2003/0241* (2013.01); *Y10T 428/14* (2015.01); *Y10T 428/24934* (2015.01); *Y10T 428/25* (2015.01); *Y10T 428/28* (2015.01); *Y10T 428/2839* (2015.01); *Y10T 428/2843* (2015.01); *Y10T 428/2848* (2015.01); *Y10T 428/2861* (2015.01); *Y10T 428/2891* (2015.01)

(58) **Field of Classification Search**

CPC B41M 5/42; B41M 5/44; B41M 2205/36; B41M 2205/38; B41M 2205/40; G09F 2003/0211; G09F 2003/0241

USPC 503/200–226; 428/211.1; 427/152

See application file for complete search history.

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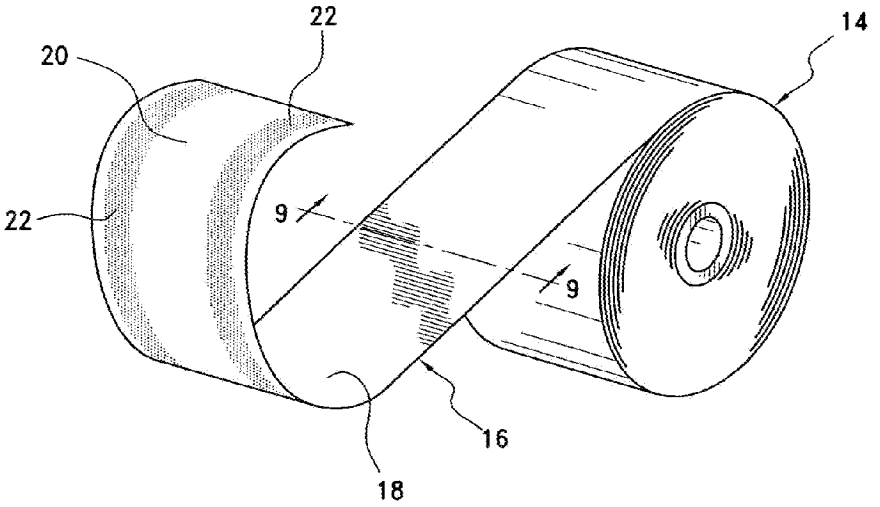
(74) *Attorney, Agent, or Firm* — Harris Beach PLLC

(57) **ABSTRACT**

A linerless label roll of repositionable labels adapted to be printed in varying lengths comprising a web of thermally printable paper wound along a running axis and having a continuous length of adhesive on one side of the web so that when a length of the web is caused to be thermally printed it will have an adhesive on the reverse side thereof that extends in a uninterrupted manner along the entire length of the thermally printed web.

17 Claims, 8 Drawing Sheets



Related U.S. Application Data

continuation of application No. 11/798,975, filed on May 18, 2007, now Pat. No. 8,445,104.

(60) Provisional application No. 60/801,056, filed on May 18, 2006.

(51) **Int. Cl.**

B05D 7/00	(2006.01)
G09F 3/02	(2006.01)

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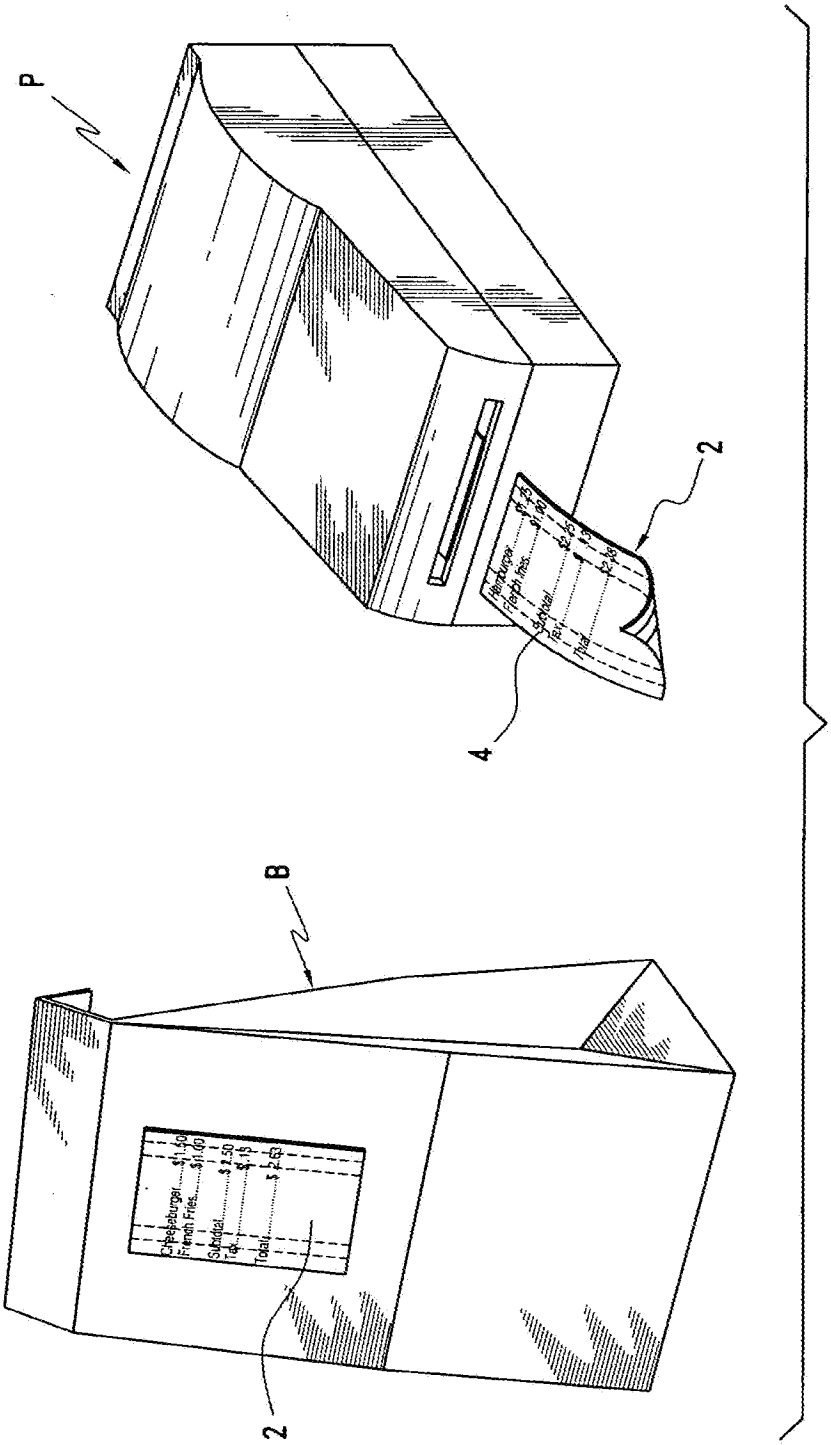


FIG. 1

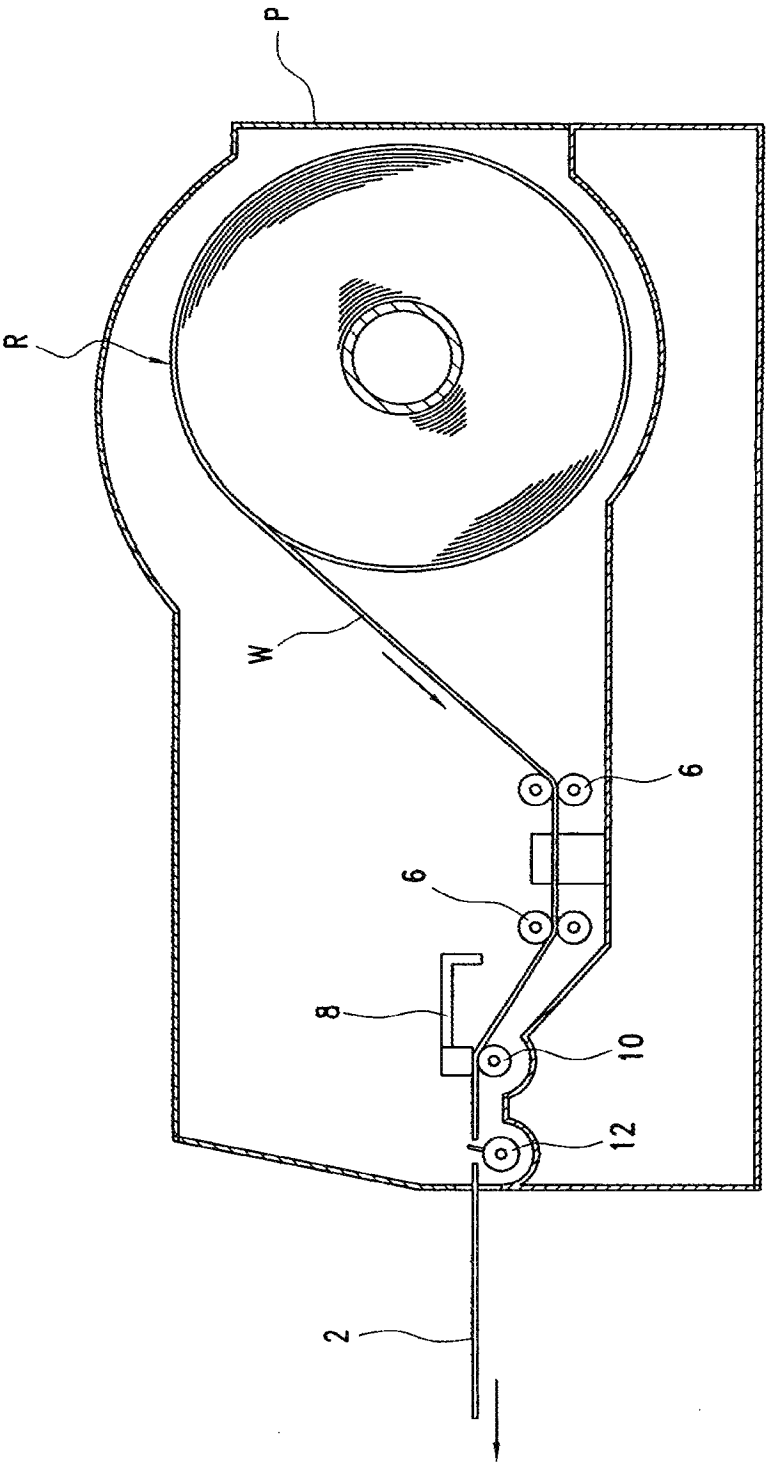


FIG. 2

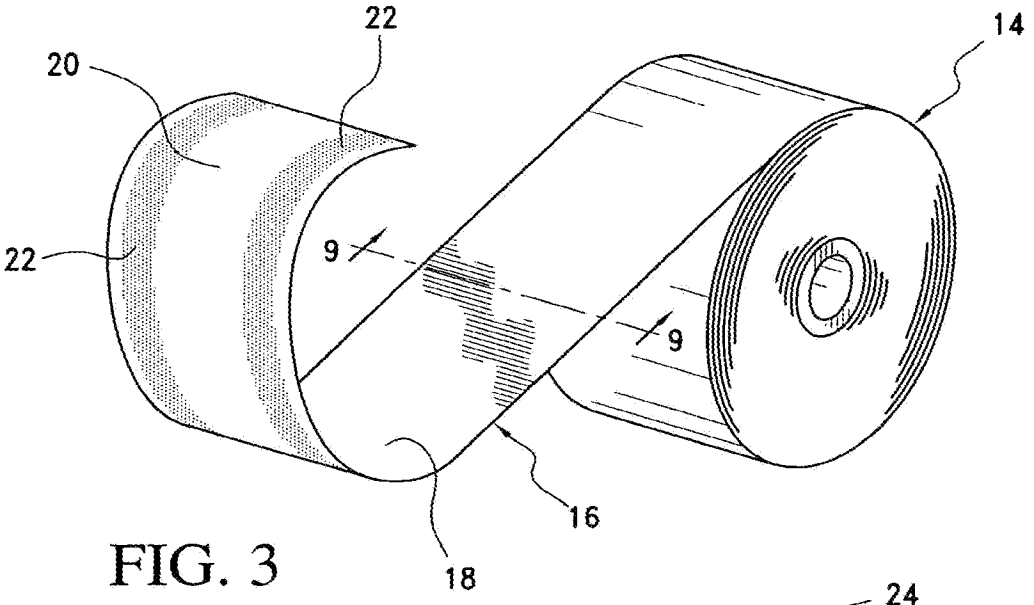


FIG. 3

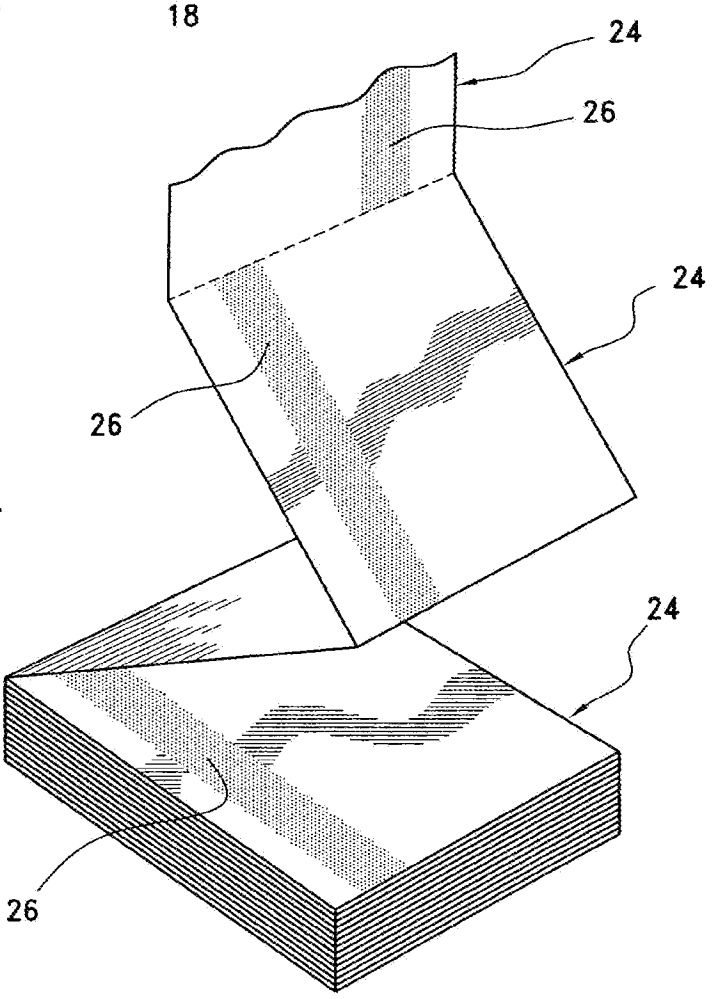


FIG. 4

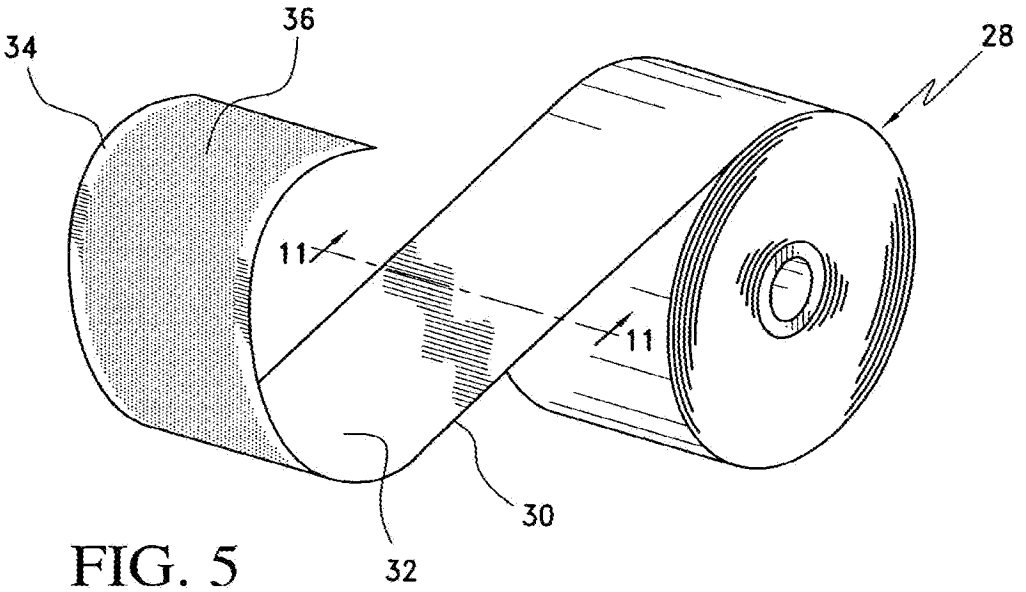


FIG. 5

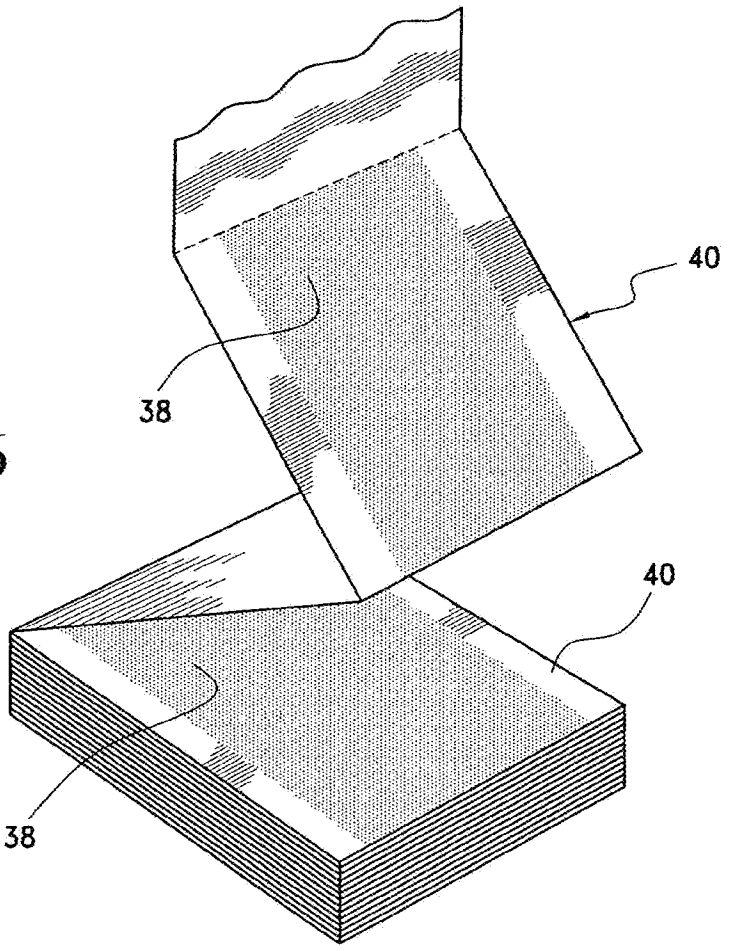


FIG. 6

FIG. 7

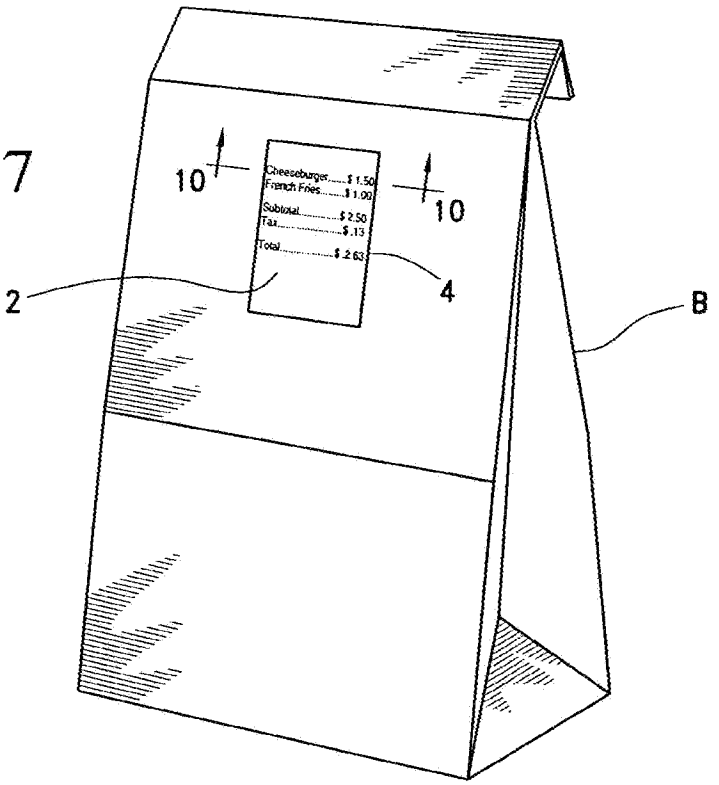
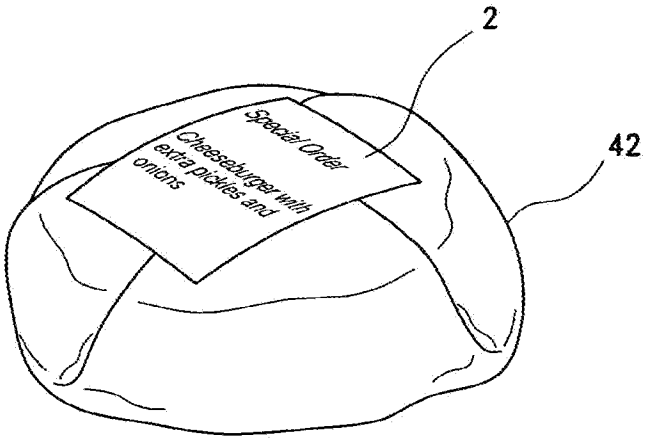

10
10
Cheeseburger.....$ 1.50
French Fries.....$ 1.00
Subtotal.....$ 2.50
Tax.....$ .13
Total.....$ 2.63
2
4
B

FIG. 8


2
Special Order
Cheeseburger with
extra pickles and
onions
42

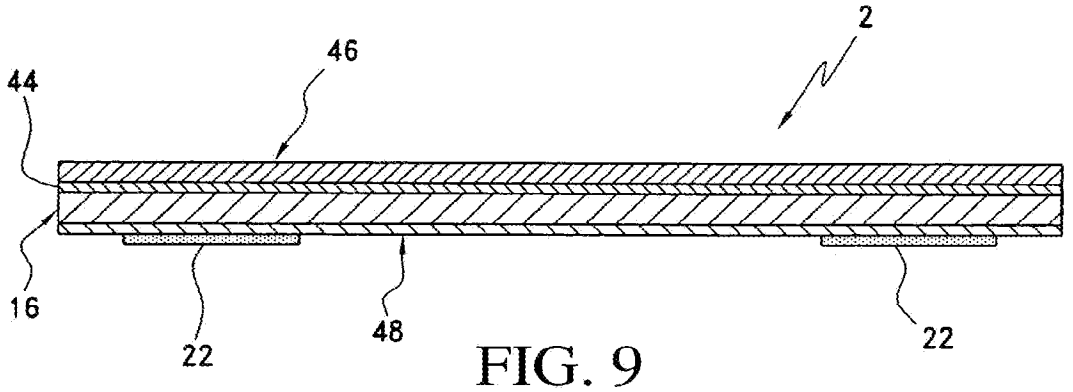


FIG. 9

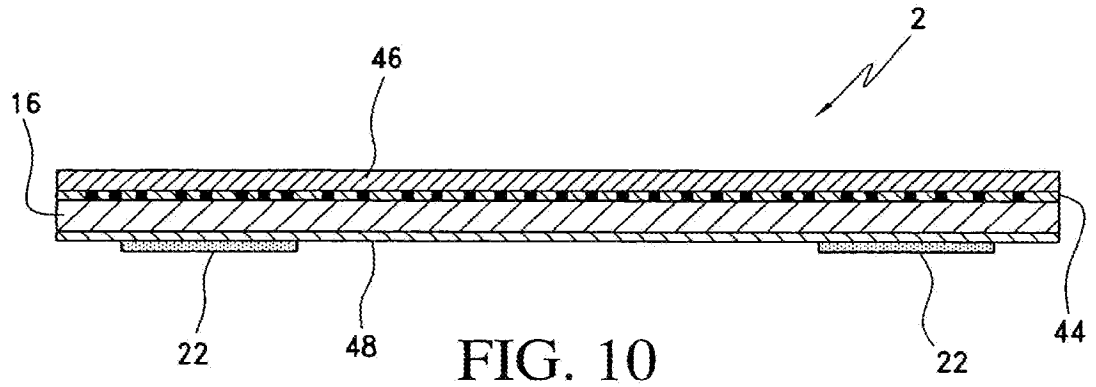


FIG. 10

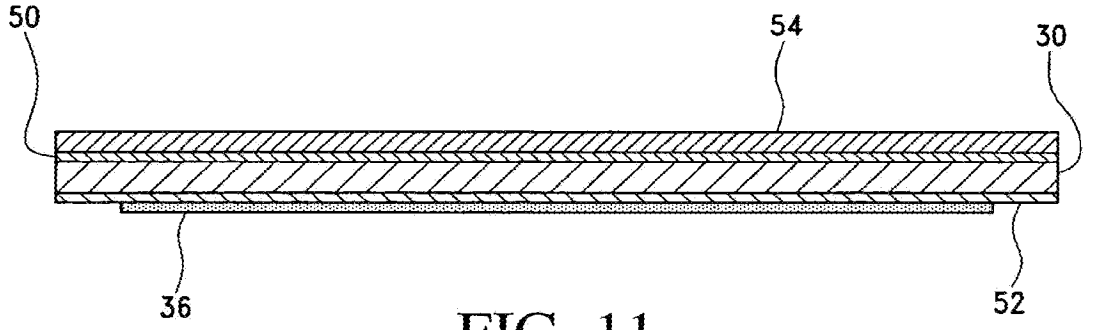


FIG. 11

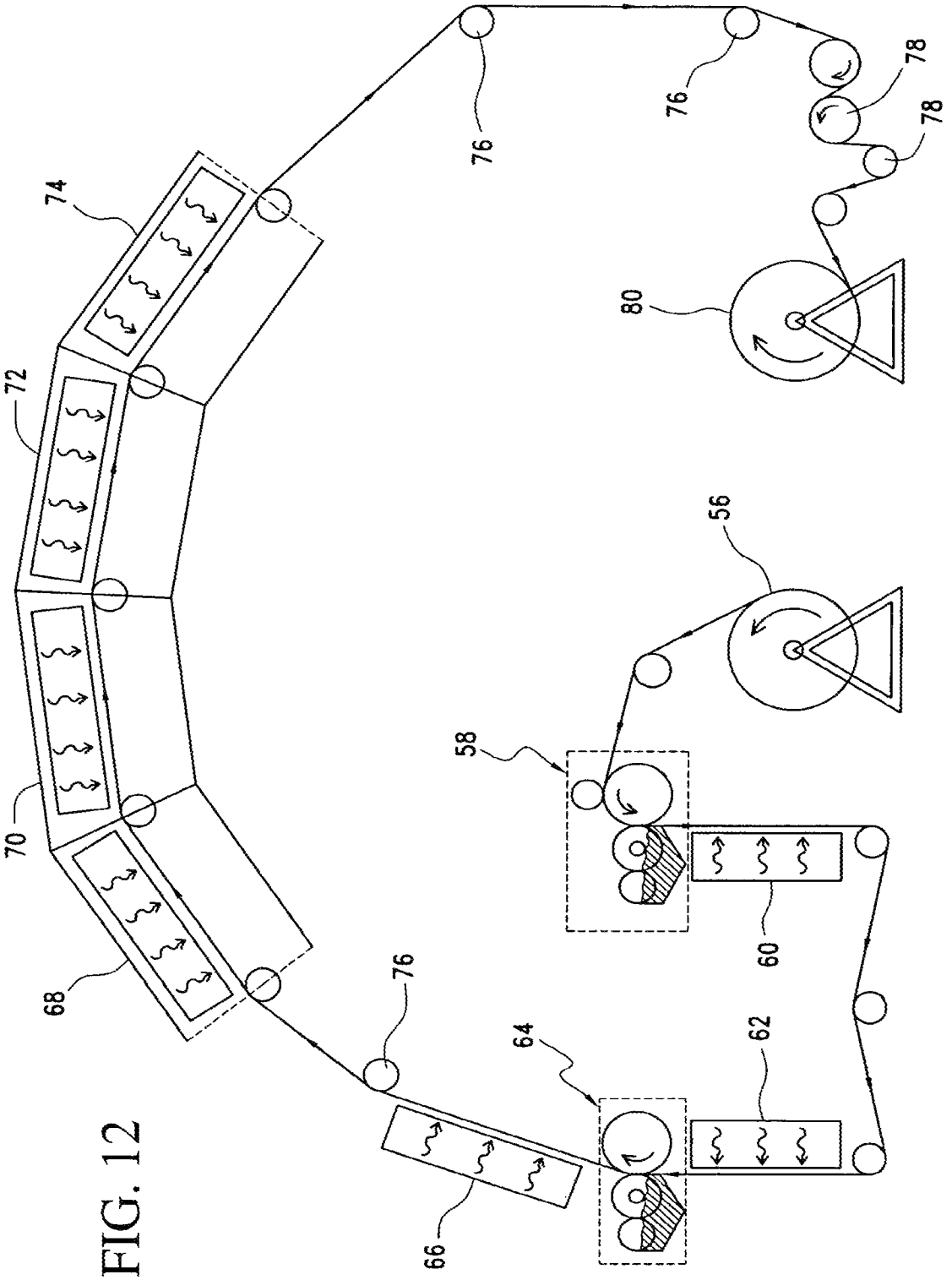


FIG. 12

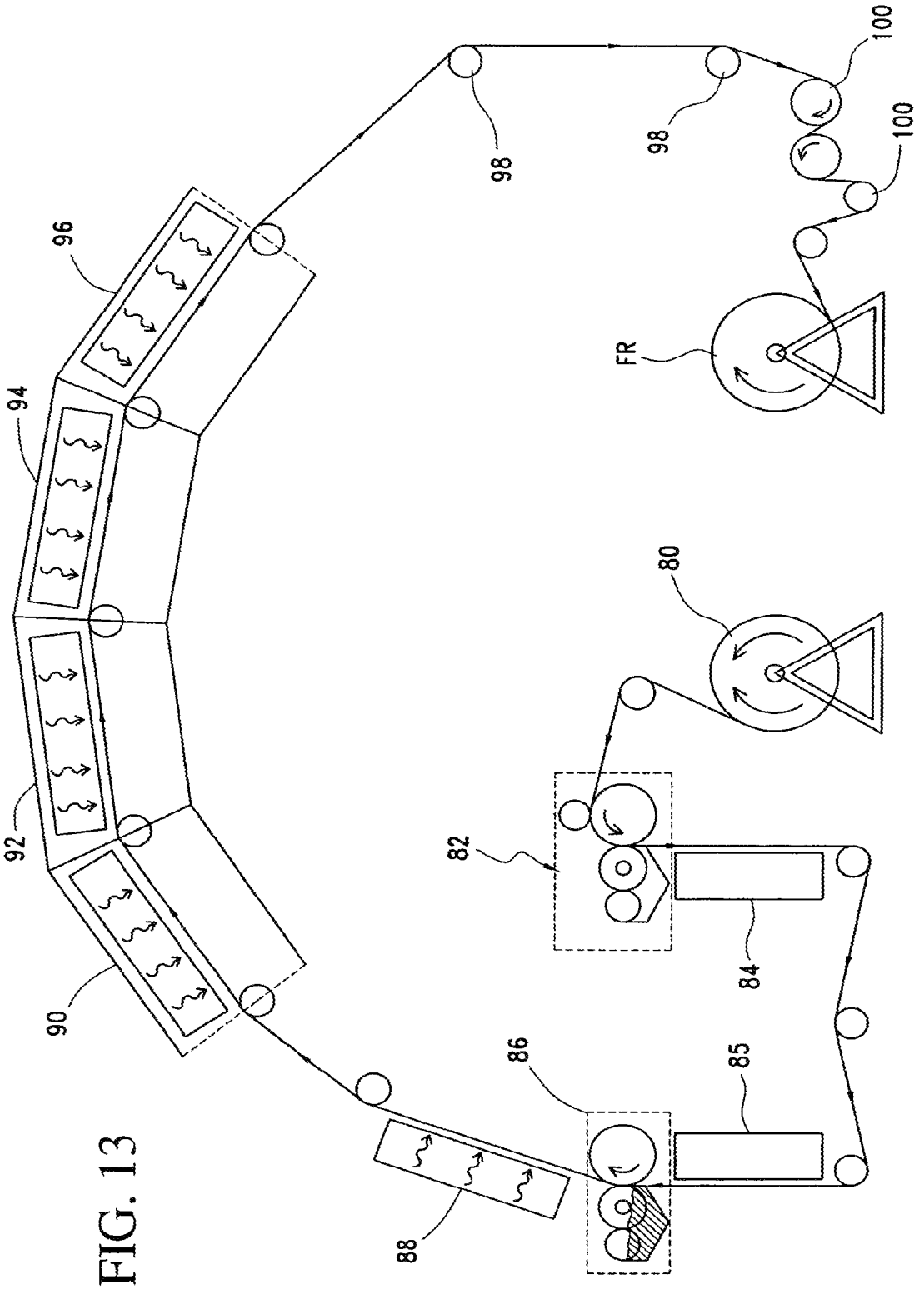


FIG. 13

THERMALLY PRINTABLE ADHESIVE LABEL

FIELD OF THE INVENTION

The present invention relates to adhesive labels and in particular, a repositionable adhesive label having a pressure sensitive adhesive on one side of the label.

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Application Ser. No. 60/801,056 filed on May 18, 2006.

BACKGROUND OF THE INVENTION

Adhesive labels are known and commercially available in a variety of forms depending upon the end use for the label. In one such configuration, a sheet material in the form of a continuous roll or fan-fold stack is provided with a pressure sensitive adhesive on its rear surface and a release coating is provided on the opposite surface of the sheet. The release coating is typically a silicone material that promotes a weak bond to the adhesive so that the sheet may be readily unrolled or otherwise separated from an adjacent sheet as desired. The separated label is adapted to be repositioned or otherwise adhered onto a surface as desired. Such labels are often referred to as linerless or repositionable labels and are adapted to be secured to a first surface and then removed from that surface and selectively applied to a second surface with little to no loss of adhesive properties.

In the fast food industry, it is known to generate a customer receipt for a transaction using a conventional thermal printer that contains a roll of thermosensitive paper.

Thermal printers typically contain a print head or bar having small heated elements that are individually controlled via digital input from a computer. When a thermosensitive or thermoreactive recording material is passed under the print head or print bar of the printer and selected heated elements activated, the thermosensitive or thermoreactive color forming layers on the recording material are activated and a desired print or indicia is generated on the recording material. Thermal printers are widely used to create business forms or records.

Attempts have been made in the prior art to provide a thermally printed customer receipt having adhesive on the reverse side so that the receipt may be repositioned or secured to a surface. Such efforts attempt to reduce or eliminate adhesive buildup within the printer which can adversely affect the performance of the printer.

One prior art linerless label roll includes a series of index marks uniformly spaced longitudinally apart. A series of adhesive patches runs along the web, with differently sized adhesive-free zones therebetween in register with the index marks. This type of prior art linerless label roll is incapable of providing a repositionable label of varying length and is limited to the distance between the index marks. Further, this prior art roll requires use of an optical sensor be provided in the printer to detect the location of the index marks.

Prior art linerless label rolls which provide a continuous strip of adhesive on the reverse side of the sheet have the disadvantage in that the adhesive tends to accumulate on the moving parts of the printer and otherwise cause a feed jam.

BRIEF SUMMARY OF THE INVENTION

The invention is a repositionable label roll for use in a thermal printer comprising a web of thermal paper having a top surface and a bottom surface wound into a roll, a barrier coat provided on the bottom surface, at least one adhesive strip provided on the barrier coat, the adhesive strip extending in a substantially uninterrupted manner along a running axis of the web and a release coat provided on the top surface, the release coat extending along the running axis of the web and behind the adhesive strip so that when a selected length of the thermal paper is caused to be thermally printed, the adhesive will extend in a continuous manner along the length of the thermally printed paper. The invention includes a fan fold version of the above described label roll.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG. **1** illustrates a thermal printer which has printed a repositionable label according to the present invention and showing the printed label applied to a food bag;

FIG. **2** is a side elevational view of the printer shown in FIG. **1** and showing the feedpath for moving a roll of linerless labels according to the present invention;

FIG. **3** illustrates a roll of repositionable labels according to one embodiment of the present invention for use within a conventional thermal printer of the type shown in FIG. **1**;

FIG. **4** illustrates the repositionable labels according to another embodiment of the present invention and in the form of a continuous folded web;

FIG. **5** illustrates a roll of repositionable labels according to still another embodiment of the present invention for use within a conventional thermal printer of the type shown in FIG. **1**;

FIG. **6** illustrates the repositionable labels according to yet another embodiment of the present invention and in the form of a continuous folded web;

FIG. **7** illustrates a separated label according to the present invention and in the form of a printed receipt that has been secured to a bag;

FIG. **8** illustrates a separate label according to the present invention and shown in the form of a printed receipt shown secured the wrapping to a foodstuff;

FIG. **9** is a cross-sectional view of a label shown in FIG. **3** and taken along lines **9-9**;

FIG. **10** is cross-sectional view of the thermally printed label shown in FIG. **7** and taken along lines **10-10**;

FIG. **11** is a cross-sectional view of a label shown in FIG. **5** and taken along lines **11-11**;

FIG. **12** is a schematic drawing illustrating stage one of the manufacturing process for the present invention; and

FIG. **13** is a schematic drawing illustrating stage two of the manufacturing process for the present invention.

DETAILED DESCRIPTION OF THE INVENTION

FIG. **1** illustrates a conventional thermal printer P for printing a customer receipt shown in the figure as a printed linerless label **2**. For example, within the restaurant industry, a printed label **2** containing indicia **4** would be generated to record a customer order or to provide a redeemable coupon or some other promotional information to the customer. After exiting the printer P, the label **2** according to the present invention is adapted to be secured to a bag B containing the customer order in the manner as shown in FIG. **1**.

FIG. **2** generally illustrates a feedpath within printer P that may be a direct thermal printer or a thermal transfer printer. Thermal printers are commonly used to create business forms or records.

A thermal printer will typically include a print head or bar having small heated elements that are individually controlled via digital input to a computer. When a thermosensitive sheet is passed under the print head and selected heated elements activated, the thermoreactive color forming layers within the sheet are activated and a desired print is generated on the sheet of recording material.

As best shown in FIG. **2**, the feedpath of the printer P includes a plurality of components between which a web of recording material will travel. The web W of thermosensitive recording material is unwound from a roll R in a longitudinal direction along the running axis of the web and between various guide rollers **6** until it reaches a printing head **8** which cooperates with guide roller **10**. The printing head may be a thermal head assembly for use in direct thermal printing of the web that is formed from suitable thermosensitive paper stock. A thermal transfer ribbon is within the scope of the present invention.

At the outlet of the printer P is a cutter or tear bar **12** for allowing the user to tear or otherwise separate a printed label **2** from the continuous web of thermosensitive recording material. Various other cutting or tearing apparatus are within the scope of the present invention.

FIG. **3** illustrates a roll of thermally printable adhesive labels **14** according to the present invention which is adapted to be inserted within a conventional thermal printer of the type shown in FIG. **2**. The substrate or sheet material **16** is shown to comprise a first or upper surface **18** and a second or underside surface **20**. Generally speaking the substrate **16** may be any high quality paper or other cellulosic or synthetic sheet material readily adapted to receive a thermosensitive coating or thermoreactive coating. Such papers are well known in the art. Continuous strips of adhesive coatings **22** are provided on the underside surface **20** and extend in an uninterrupted manner along the longitudinal axis of the web.

FIG. **4** illustrates another embodiment of the present invention in the form of a folded web of thermally printable adhesive labels with an adhesive coating **26** applied to the underside of the individual sheets **24** and in disposed in an alternating relation.

FIG. **5** illustrates a roll of thermally printable adhesive labels **28** according to another embodiment of the present invention and which is adapted to be inserted within a conventional thermal printer of the type shown in FIG. **2**. The substrate or sheet material **30** is shown to comprise a first or upper surface **32** and a second or underside surface **34**. Generally speaking the substrate **30** may be any high quality paper or other cellulosic or synthetic sheet material readily adapted to receive a thermosensitive coating or thermoreactive coating. Such papers are well known in the art. A continuous adhesive coating **36** is provided to substantially the entire underside surface **34** and extend in an uninterrupted manner along the longitudinal axis of the web.

FIG. **6** illustrates another embodiment of the present invention in the form of a folded web of thermally printable adhesive labels with an adhesive coating **38** applied to substantially the entire underside of alternating individual sheets **40**.

FIG. **7** illustrates a printed label **2** secured to a bag B containing a customer order whereas FIG. **8** illustrates the printed label **2** used to secure a wrapping paper **42** around a food product and when the label is in the form of a receipt, to identify the contents of the same.

Turning to FIG. **9**, a label **2** formed from thermosensitive recording material according to the present invention is shown to comprise a substrate **44** in the form of a sheet material having first and second surfaces. Generally speaking, the substrate **44** may be any high quality paper or other cellulosic or synthetic sheet material readily adapted to receive a thermosensitive or thermoreactive coating. Such papers are well known in the art.

A first or upper surface of substrate **16** is provided with a thermosensitive or thermoreactive coating **44** comprising initially colorless color formers and color developers. Suitable thermally imagable coatings include, for example, the thermosensitive and thermoreactive coatings described in U.S. Pat. No. 6,258,746 the relevant portions of which are incorporated herein by reference. It is within the scope of the present invention to provide a stock thermal paper for use as substrate **16**. Stock thermal papers are pre-coated with a thermosensitive or thermoreactive coating and may further include various other ingredients designed to protect the thermal imaging properties of the thermosensitive coating prior to and following thermal printing. Stock thermal papers are commercially available from a variety of manufacturers including, for example, Appleton Papers, Kanzaki Specialty Papers and Ricoh. Stock thermal papers which are available from other sources are within the scope of the present invention so long as they are adapted to receive the additional coatings and layers as further described below.

A second or underside surface of the substrate **16** is provided with a base coat preparation **48** that is coated onto the substrate **16** and then cured by heat or some other curing means. The base coat preparation **48** functions as a barrier to prevent migration of a subsequently applied adhesive into the substrate **16**. The base coat preparation will also prevent the adhesive from contacting the substrate **16** and in particular, the thermal imaging coating **44**. This ensures there is no premature activation or damage to the pigments within the thermal imaging coating **44**. The base coat preparation **48** additionally functions to secure the adhesive to the label **2** so that it cannot be dislodged from the surface of the label during unrolling of the web. Suitable base coat preparations within the scope of the present invention are disclosed in U.S. Pat. No. 5,157,012, U.S. Pat. No. 5,071,821 and U.S. Pat. No. 4,870,047, the relevant portions of which are incorporated herein by reference.

A top surface coat **46** is provided over thermoreactive layer **44**. The top surface coat **46** is preferably a starch or cellulose coating or a combination of starch and cellulose. The top surface coat functions as a type of release liner when the continuous web is in a roll form. That is, it enables the roll to be easily unwound despite the presence of an adhesive layer while at the same time it will not damage or otherwise deteriorate the adhesion characteristics of the pressure sensitive adhesive coating as the roll is unwound. In other words, the top surface coat **46** counteracts the pressure sensitive nature of the adhesive. The top surface coat is not damaged by the adhesive or otherwise separated from the recording material as the roll is unwound. A suitable composition for use as a top surface coat of the present invention is an aqueous modified maltodextrin dispersion marketed under the name SECOAT R 51 and manufactured by Omnova Solutions, Inc. of Chester, S.C. Other compositions for the top surface coat are within the scope of the present invention so long as it functions as a release liner in the manner described above and enables the roll to be easily unwound despite the presence of an adhesive layer and does not deteriorate the adhesion characteristics of the pressure sensitive adhesive coating as the roll is unwound.

An adhesive coating **22** is applied by printing or other means onto the base coat **48** and is best shown in FIG. **3** to comprise two parallel, continuous and uninterrupted lengths that extend along the longitudinal axis of the web of labels.

As is apparent, the adhesive is not limited to the locations shown in FIG. **3** but may extend substantially over the entire surface of the underside of the substrate **16** and in a continuous and uninterrupted manner as best shown in FIG. **5**.

The adhesive according to the present invention comprises clusters of tacky, elastomeric, solvent-insoluble, polymeric microparticles or microspheres or a combination of microparticles and microspheres that have been prepared by aqueous emulsion polymerization. Polymerization is initiated by reacting an aqueous suspension comprising monomers having at least one substantially water insoluble ester of alkyl acrylate or methacrylate, a stabilizer and an emulsifier together with a water-soluble redox polymerization initiator to produce clusters of elastomeric microparticles. During the polymerization, the monomers will form microparticles and/or microspheres that gradually coagulate to form clusters. Preferably, the polymerized microparticles form clusters having an average size about 300 microns, preferable between about 300 and 2,000 microns. The microparticles are spherical and have diameters in the range of from about 5 to about 200 microns.

A water-soluble redox system initiator comprises a pair of oxidizing and reducing agents is employed during polymerization. The oxidizing agent is preferably a persulfate such as ammonium persulfate, although a sodium persulfate or others may be used. The concentration of the persulfate is from about 0.25% to about 1.0% by weight of the monomers and preferably 0.75% by weight of the monomers. The reducing agent is ethylenedinitrilotetraacetic acid sodium ion (+3) salt (EDTA-Fe(3+)) that must be reduced by a second reducing agent, such as sodium formaldehyde sulfoxylate. The concentration of EDTA-Fe(3+) and sodium formaldehyde sulfoxylate is about 0.05 percent and about 0.5 percent by weight of the monomers, respectively.

In one embodiment of the present invention, the adhesive coating **22** of the present invention is prepared in the presence of a protective colloid casein. The microspheres or microparticles forming the adhesive are prepared via aqueous suspension polymerization of: (1) from 70 to 99.9 percent by weight of one or more monomers selected from the group consisting of alkyl acrylate esters and alkyl(meth) acrylate esters, (2) from 0.1 to 10 percent by weight of one or more alpha-mono-olefin carboxylic acids (crotonic acid) and (3) from 0 to about 29.9 percent by weight of one or more vinyl monomers other than those identified above as (1) and (2).

The above described acrylate copolymer adhesive displays an aggressive initial tack but with low adhesion peel properties and eliminates the prior art need for a release liner or other silicone layer to protect the adhesive. The acrylate copolymer adhesive of the present invention permits a printed label **2** of the present invention to be repeatedly removed and re-adhered i.e. repositioned onto any suitable surface, for example a customer bag B as shown in FIG. **7** or to secure the wrapping **42** around a foodstuff as shown in FIG. **8** and when the label is in the form of a receipt, it also functions to identify the contents of the wrapping or bag. The acrylate copolymer adhesive of the present invention has does not result in adhesive buildup on the moving parts of the thermal printer which, as noted earlier, can adversely affect the performance of the printer and the cutter bar. As a result, the adhesive of the present invention need not be applied to the web in limited areas in an effort to reduce adhesive buildup within the printer. The label according to the present invention therefore provides superior adhesion due to the relatively large surface area of the adhesive and the continuous and uninterrupted extent of the adhesive along the entire length of the printed label.

FIG. **10** illustrates a printed label **2** shown in FIG. **7** and where the thermoreactive coating or layer **44** has been heat activated so that indicia in the form of print is visible.

FIG. **11** illustrates a cross-section of the sheet material **30** shown in FIG. **5** and wherein the substrate **30** is provided with a thermoreactive layer **50**, a base coat **52**, a top coat **54** all of which as described above and where the continuous uninterrupted layer of the adhesive **36** extends substantially the width of the second surface of the substrate **30**.

Turning to FIG. **12**, a two station, roll to roll coating line is shown for stage one of the method of manufacture of the present invention whereas FIG. **13** illustrates stage two of the process.

A parent roll **56** of a stock thermosensitive sheet material is first provided with the cellulosic top or release coat at station **58** and then is passed by a first dryer **60** and second dryer **62** before entering coating station **64** where the base coat preparation discussed earlier is applied to the underside of the sheet material. The underside coated material is then passed by a dryer before entering four independently adjustable drying regions **68**, **70**, **72** and **74** which are enclosed drying ovens. The thus coated and dried web is passed though a series of idler rollers **76** and/or non-nipping web drive rollers **78** before being reloaded onto a new parent roll **80**.

The new parent roll **80** is then allowed to sit and cure under ambient room temperature for not less than about twenty four hours.

Turning to FIG. **13**, stage two of the manufacture process is shown. New parent roll **80** unwinds and is conveyed into a first coating station **82** but no coating is applied nor is dryer **84** and **85** operated. At second coating station **86** and pressure sensitive adhesive is applied to the coated underside of the web and in a continuous and uninterrupted manner as described earlier. The adhesive coated web is then passed through first dryer **88** and the dried adhesive coated web passes into four independent drying ovens **90**, **92**, **94** and **96** which are independently adjustable in the manner described earlier. The over dried web passes through idler rollers **98** and/or pinch rollers **100** before the finished roll FR is wound onto a mandrel.

While this invention has been described as having a preferred design, it is understood that it is capable of further modifications, and uses and adaptations of the invention following in general the principle of the invention and including such departures from the present disclosure as come within the known or customary practice in the art to which the invention pertains, and as may be applied to the central features described above and falling within the scope of the invention or limits of the attached claims.

What is claimed is:

1. A method for making a linerless label media suitable for use in a thermal printer having a cutting mechanism, said method comprising:

providing a substrate having a first side and a second side opposite the first side and a longitudinal axis, said first side of the substrate having a thermosensitive coating;

applying a base coat on the second side of the substrate;

applying an adhesive layer over the base coat on the second side of the substrate, wherein the adhesive layer is substantially continuous along the longitudinal axis of the substrate such that substantially any lateral cut of the substrate by a printer intersects with the adhesive layer and wherein the base coat prevents migration of the adhesive layer into the substrate; and

applying a release layer over the thermally sensitive coating on the first side of the substrate.

2. The method of claim **1**, wherein said adhesive layer is variably patterned to include areas with adhesive and areas without adhesive to vary locations of contact between the adhesive layer and a cutting mechanism making variably located lateral cuts across the width of the substrate.

3. The method of claim **2**, wherein the areas without adhesive comprise adhesive-free lanes arranged along the longitudinal axis of the substrate.

4. The method of claim **1** comprising configuring the adhesive to be applied to the second side of the substrate via a banded gravure cylinder coating device.

5. The method of claim **1** wherein the adhesive comprises acrylate copolymer formed into microparticles, microspheres or combinations thereof.

6. The method of claim **1**, wherein said release layer is selected from the group consisting of starches, cellulose, maltodextrin and combinations thereof.

7. The method of claim **1**, wherein the base coat comprises polyvinyl alcohol, starch, modified starches, gelatin, latex, styrene-butadiene rubber latex, styrene maleic anhydride salts, polyacrylate, polyvinylacetate, polystyrene, methyl cellulose, carboxymethyl cellulose, hydroxyethyl cellulose, or hydroxypropylmethyl cellulose or a derivative thereof.

8. The method of claim **1**, comprising configuring the areas with adhesive on the second side to repeat at intervals that exceed lengths associated with individual labels cut therefrom.

9. A method for making a linerless, repositionable label, comprising:

providing a roll of media having a front portion including thermally sensitive ink, a back portion having a barrier coat and a layer of pressure sensitive adhesive material coated thereon in a substantially continuous pattern, and said roll of media having a longitudinal axis; and

cutting a linerless, repositionable label from the roll of media, wherein the length of said label is cut by a thermal printer at varying custom lengths, the front portion displaying information for a transaction when the ink is activated by the thermal printer and the back portion permitting the label to be affixed to an object via the adhesive material, the pattern of the adhesive material configured on the back portion to minimize build-up of adhesive on a cutter blade of the thermal printer from the successive cutting of labels from the roll of the media.

10. A method for making a liner-free, repositionable label for use in a thermal point-of-sale printer having an auto-cutting mechanism comprising:

providing a web of thermal paper having a top surface, a bottom surface and a length without preset tear areas thereon;

coating the bottom surface with a base coat capable of preventing any subsequently applied adhesive from migrating into the web of thermal paper;

applying an adhesive layer in a pattern on the bottom surface over the base coat, the adhesive layer extending the length of the web in a substantially uninterrupted manner such that substantially any lateral cut of the web across the length of the web intersects the adhesive layer and wherein the base coat secures the adhesive layer to the bottom surface to prevent fouling of the auto-cutting mechanism of the point of sale printer and wherein the adhesive layer comprises acrylate copolymer formed into microparticles, microspheres or combinations thereof; and

providing a release coat on the top surface, the release coat extending along the length of the web.

11. The method of claim **10**, wherein said release layer is selected from the group consisting of starches, cellulose, maltodextrin and combinations thereof.

12. The method of claim **10**, wherein the base coat comprises polyvinyl alcohol, starch, modified starches, gelatin, latex, styrene-butadiene rubber latex, styrene maleic anhydride salts, polyacrylate, polyvinylacetate, polystyrene, methyl cellulose, carboxymethyl cellulose, hydroxyethyl cellulose, or hydroxypropylmethyl cellulose or a derivative thereof.

13. The method of claim **10**, wherein the adhesive layer comprises an adhesive strip on the bottom surface, wherein the base coat secures the adhesive of the adhesive strip to the bottom surface to prevent fouling of the auto-cutting mechanism of the point of sale printer.

14. The method of claim **13**, wherein the adhesive layer comprises a plurality of adhesive strips.

15. A liner-free repositionable label for use in a thermal point-of-sale printer having an auto-cutting mechanism comprising:

a) a web of thermal paper having a top surface, a bottom surface and a length without preset tear areas thereon;

b) a base coat provided on the bottom surface;

c) at least one adhesive pattern provided on the bottom surface, the adhesive pattern extending the length of the web in a substantially uninterrupted manner such that a lateral cut of the web across the length of the web intersects the adhesive pattern and wherein the base coat secures the adhesive of the at least one adhesive pattern to the bottom surface to prevent fouling of the auto-cutting mechanism of the point of sale printer and wherein the adhesive of the at least one adhesive pattern comprises acrylate copolymer formed into microparticles, microspheres or combinations thereof; and

d) a release coat provided on the top surface, the release coat extending along the length of the web and behind the at least one adhesive pattern so that when the web of thermal paper is caused to be thermally printed and cut by the auto-cutting mechanism to a variable length determined by the amount of printing on the web, the adhesive pattern will extend along the length of the thermally printed paper to form a repositionable label.

16. Paper, suitable for use as repositionable labels, comprising:

a paper substrate, a width extending between lateral edges, a longitudinal axis extending along the center of the width, a first side and a second side, the first side supporting a release layer;

the second side supporting an adhesive layer extending the length of the paper substrate in a substantially uninterrupted manner; and

a base coat layer between the adhesive layer and the paper substrate, wherein said base coat layer prevents migration of adhesive into the paper substrate and secures the adhesive layer to the paper substrate when the labels are being printed.

17. The paper of claim **16**, wherein the adhesive layer comprises a plurality of substantially discrete adhesive areas.

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