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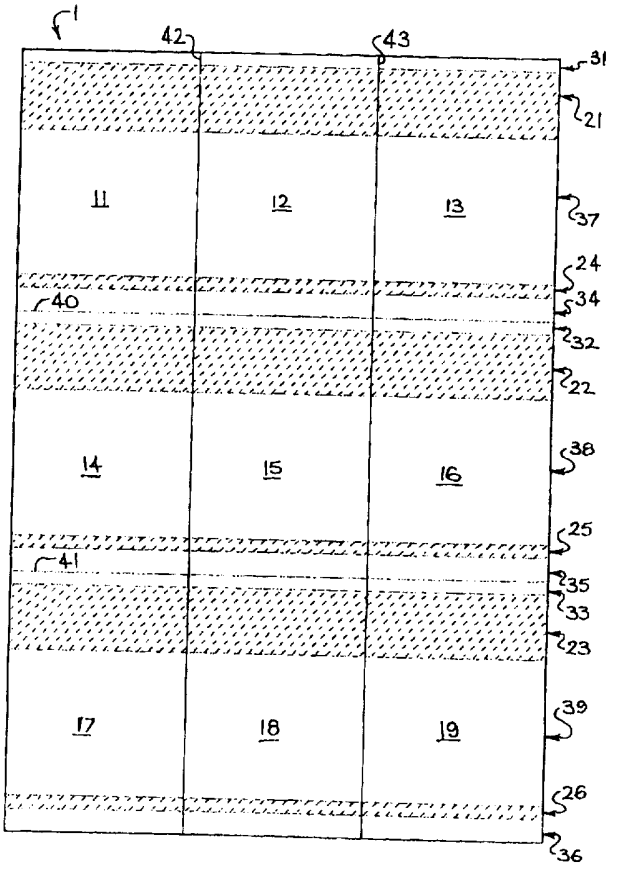
(54) Title: SELF-ADHESIVE LABELS AND METHODS

(57) Abstract

A sheet of self-adhesive labels including a backing sheet (20) and a plurality of individual self-adhesive labels (11-19) overlying the backing sheet (20) and being arranged thereon in side by side and/or top to bottom relationship. Each label (11-19) is secured to the backing sheet (20) by a pressure sensitive adhesive selectively applied to the labels (11-19) such that a first portion of each label (11-19), associated with bands of adhesive (21-26), presents a first level of adhesion and a second portion (31-39) of each label (11-19) presents a second level of adhesion lower than the first level. The second portion (31-39) may be discontinuously coated with adhesive or may be free of adhesive so as to assist a user to remove a label (11-19) from the backing sheet (20) by grasping a respective second portion (31-39). Methods of applying the adhesive and producing self-adhesive labels are also disclosed.



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SELF-ADHESIVE LABELS AND METHODS

Field of the Invention

This invention relates generally to self-adhesive labels. More particularly the invention concerns self-adhesive labels of the type produced in the form of a sheet containing a plurality of labels and methods of producing such labels. The invention is applicable, inter alia, to Point of Purchase (POP) advertising where such labels are used to display product and/or pricing information and it will be convenient to hereinafter describe the invention in relation to that application. It should be understood however that the invention is not limited to that example application and may equally be employed in warehousing or in any other application where self-adhesive labels are used.

Background Art

In the field of POP advertising the term "shelftalker" is used to describe a label applied to the front edge of a shelf on which a product is displayed. The label is used to draw customers' attention to a product and/or re-emphasise the price of a product. Accordingly, the term "shelftalker" as used throughout this specification is intended to have that meaning. The phrase "self-adhesive label" as used throughout this specification is intended to mean a sheet of paper or other material having a layer of pressure sensitive adhesive applied to at least a part of its rear surface. The front surface of the sheet may be used to display written or printed information and may be partially pre-printed with certain indicia prior to delivery to a user.

In supermarkets, department stores and the like usual prices of goods are often indicated on a label or sign mounted on a front edge of a shelf on which the goods are displayed. The label may also include a product description, weight, barcode identification and/or other information. When prices change temporarily, such as when products are put on "sale", a new "sale price" is often displayed by placing a temporary shelftalker over the top of the existing shelf label.

One commonly used shelftalker is produced from a standard sized sheet (eg. International size A4, 297 x 210mm) of paper-backed self-adhesive labels. Typically, a label sheet includes nine individual labels which are separable by

lines of perforations through both the label material and the backing sheet. The sheet of labels can be printed using a standard personal or other computer printer, such as a laser printer, ink jet printer or impact printer, and subsequently separated into individual labels by tearing along the perforation lines. In some prior art shelftalker labels of this type, the sheet of labels is kiss cut from the back such that the backing sheet is severed and each label remains intact. This allows an upper section of the backing sheet of each label to be removed whilst leaving a lower section of the backing sheet attached. A band of adhesive at a corresponding upper section of a label may thus be revealed so that the upper section of the label can be secured to a shelf edge and the lower section of the label, with its backing sheet remaining attached, can hang below the shelf.

If the whole backing sheet is inadvertently removed from one of these prior art labels the lower section of the label tends to curl and stick to the bottom of the shelf or to the merchandise. In this event, potential customers may no longer be able to read the label, resulting in considerable inconvenience.

In a typical supermarket, a batch of shelftalker label sheets is printed using a standard laser or other computer printer. The sheets are then torn apart and applied to shelves throughout the store. This is normally done on a Sunday evening when the store is closed, in readiness for reopening on Monday morning. Because the prior art shelftalker sheets must be torn apart to use the individual labels, distributing the shelftalkers throughout the store becomes a time consuming and cumbersome process, not to mention the inconvenience of the many small pieces of backing sheet that must be disposed of.

A further problem with prior art label sheets is that the adhesive which is applied to the labels is generally of a kind which makes the labels difficult or impossible to remove. Parts of the labels therefore become permanently stuck to the shelves or, if the labels are applied to a non-secure surface such as cardboard, parts of the surface are torn away when the labels are removed.

The present invention is therefore aimed at alleviating at least some of these problems.

Summary of the Invention

The present invention accordingly provides a sheet of self-adhesive labels

including:

a backing sheet;

a plurality of individual self-adhesive labels overlying said backing sheet and being arranged thereon in side by side and/or top to bottom relationship; and

each label being secured to the backing sheet by a pressure sensitive adhesive selectively applied to the labels such that a first portion of each label presents a first level of adhesion and a second portion of each label presents a second level of adhesion lower than said first level.

The present invention also provides a method of producing a sheet of self-adhesive labels including the steps of:

providing a sheet of label material;

providing a backing sheet;

selectively applying pressure sensitive adhesive to said label material;

securing said backing sheet to said label material by means of said adhesive; and

severing said sheet of label material into a plurality of individual self-adhesive labels while leaving said backing sheet intact such that a first portion of each label presents a first level of adhesion and a second portion of each label presents a second level of adhesion lower than said first level.

The present invention further provides a method of applying a discontinuous coating of adhesive to a surface, including the steps of:

providing a printing screen having a pattern of open and closed areas, the open areas allowing adhesive to pass through the screen and the closed areas preventing the adhesive from passing through;

positioning the screen against the surface; and

applying the adhesive to the screen such that a distribution of adhesive corresponding to said pattern is applied to the surface.

A plurality of individual labels preferably are contiguously arranged on the backing sheet, side by side and/or top to bottom, such that each edge of each label, other than label edges which overlie an edge of the backing sheet, abuts an adjacent label.

Preferably the sheet of labels is adapted to be printed in a standard printer

of the type used with personal or other computers, for example laser printers, ink jet printers or impact printers, and is accordingly produced in a size suitable to be received by such printers. One preferred size is International size A4, 297 x 210mm, which is accepted by most currently available printers.

In one embodiment, nine individual labels are produced on an A4 sized sheet, in a 3 x 3 array. However any number of labels of the same or different sizes may be produced on a single sheet.

The first portion of each label may comprise a unitary segment of the label or it may be composed of several disconnected segments. In the latter event, each disconnected segment making up the first portion includes adhesive presenting the first level of adhesion. Similarly, the second portion of each label may also comprise a unitary segment of the label or it may be composed of several disconnected segments. Each disconnected segment of the second portion may include adhesive presenting the second level of adhesion. It should be understood however that third and subsequent portions of each label may present further levels of adhesion which may be different to the first and second levels of adhesion.

According to one embodiment, the second or lower level of adhesion may be achieved by way of a discontinuous coating with adhesive. Preferably, the discontinuous coating includes a pattern of dots of adhesive, and those dots may be distributed randomly or according to a regular pattern. The dots may be of any size or shape. The second level of adhesion may be at least sufficient to prevent the label material separating from the backing sheet during handling and printing but may be sufficiently low to assist a user to remove a label from the backing sheet after it is printed, by grasping the second portion. The second level of adhesion may also be insufficient for the second portion to readily adhere to a surface after the label is removed from the backing sheet. Preferably about 2 to 25% of the surface area of the second portion is coated with adhesive, and more preferably about 5% of the surface area is coated. Alternatively, or additionally, the second or lower level of adhesion may be achieved by employing a thinner coating of adhesive or an adhesive which has a lower level of adhesive strength when compared to the adhesive used on the first portion, ie. a less aggressive

adhesive.

According to another embodiment, the second level of adhesion may be substantially zero. In this latter embodiment the second portion may remain substantially free of the backing sheet so as to assist a user to remove the label from the backing sheet by grasping the second portion.

According to another embodiment, the first portion may include a discontinuous coating of adhesive. Preferably, the discontinuous coating includes a pattern of dots of adhesive, which may be randomly or regularly distributed. In this way, the first level of adhesion may be infinitely varied according to the intended use of the labels. The dots of adhesive may be of any size or shape and may be discrete or partially overlapping, or any combination thereof. The higher first level of adhesion associated with the first portion may be achieved by applying a greater number of dots of adhesive per unit area than is applied to the second portion. Alternatively, larger or thicker dots of adhesive may be employed. In one embodiment, about 80-90% of the surface area of the first portion may be coated with adhesive.

Preferably the first portion of each label includes at least one band of adhesive. The or each band may be a full and uniform coating or it may be a discontinuous coating. In the case of a single band of adhesive, that band is applied to the unitary segment of the label corresponding to the first portion. The band may be located adjacent and parallel to a first edge of the label. The band may abut the first edge or it may be spaced away from it. For rectangular labels, the band preferably extends between opposing edges which are normal to the first edge.

Preferably the first edge of each label in a sheet of labels has a like orientation, whereby each label in the sheet is secured to the backing sheet at or near the same edge. This arrangement may facilitate feeding of the sheet into a standard computer printer, by having the secured first edges of the labels leading, so that the labels do not become jammed within the feeding mechanism of the printer. Sheets of labels may thus be printed by an end user and individual labels may subsequently be removed from the backing sheet for application to a surface.

In the case of two or more bands of adhesive, those bands may be applied to disconnected segments of the label corresponding to the first portion. The parts of the label between the disconnected segments of the first portion may comprise the second portion, which itself may include several disconnected segments.

In one embodiment, the first portion of each label includes a primary band of adhesive and a secondary band of adhesive spaced from the primary band. Preferably the primary band is wider than the secondary band. In use as a shelftalker in POP advertising, the primary band may be used to secure the label to a shelf edge or other suitable surface. Preferably the primary band is located adjacent a first edge of the label and, advantageously, the first edge is the top edge of the label as viewed when the label is used as a shelftalker. The primary band may be located slightly away from the first edge of the label or it may abut the first edge.

Preferably the secondary band of adhesive associated with the first portion of a label is located adjacent a second edge of the label opposite the first edge. In use, the second edge may be the bottom edge of the label.

In embodiments where the second level of adhesion is zero, the secondary band may serve to anchor a lower section of the label and prevent it floating free from the backing sheet prior to and during printing, and generally to assist handling of the label sheets. Advantageously, the secondary band includes a relatively thin line of adhesive intended to anchor the lower section of the label to the backing sheet only, and may serve no further purpose once the label is removed from the backing sheet and put into use as a shelftalker on a shelf edge. The secondary band may be near but spaced from the bottom edge of a label so as to leave a small segment of the label below the band free of the backing sheet. The free segment may allow a user to remove the label from the backing sheet more easily by grasping that free segment. Alternatively, the secondary band may abut the bottom edge of a label so that a middle segment of the label remains free of the backing sheet. A user may then grasp the free middle segment to remove the label from the backing sheet.

In embodiments where the second level of adhesion is other than zero, the

secondary band of adhesive associated with the first portion may be dispensed with. Where the second portion corresponds to the lower section of a label, the second level of adhesion may be sufficient to prevent the lower section of the label floating free from the backing sheet.

In a preferred method of producing label sheets according to the invention a sheet of label material is secured to a backing sheet by bands of adhesive to produce a composite sheet assembly. The bands of adhesive may include a full coating of adhesive or a discontinuous coating. The discontinuous coating may be made up of a pattern of dots of adhesive. The parts of the label material between the bands of adhesive may also include a discontinuous coating of adhesive, which may also be made up of a pattern of dots of adhesive. The composite sheet may then be kiss cut such that the label material is severed into individual labels while the backing sheet is left intact.

A sheet of label material may be pre-printed with any desired artwork such as slogans or borders. The artwork preferably is arranged such that a discrete design appears on each individual label.

Various pressure sensitive adhesives are known in the art and may be suitably used in making labels according to the invention. Preferably the adhesive is of a kind which makes the labels relatively easy to remove after they have been put into use. This may allow the labels to be removed from a surface without leaving behind unwanted residue or otherwise adversely affecting the surface. Preferably, the adhesive is a respositionable adhesive and advantageously includes a micro-encapsulated adhesive. The adhesive may include a blend of micro-encapsulated adhesives, as this may allow the levels of adhesion to be further varied according to the intended use of the labels.

In one embodiment the backing sheet includes a sheet of paper or paper-based material. The backing sheet is preferably coated with a release agent to reduce adhesion of the labels and allow them to be more easily removed. The coating preferably includes a silicon based release agent, however any other known release agent may alternatively be used.

The method of applying adhesive of the invention allows any desired level of adhesion to be achieved by altering the pattern of open and closed areas of

the printing screen. The more open the screen, the greater will be the surface area which is coated with adhesive, and the greater will be the level of adhesion. Preferably the pattern includes a plurality of open areas arranged such that a corresponding plurality of dots of adhesive is applied to the surface. The dots of adhesive may be randomly or regularly distributed and may be of any size or shape. In one embodiment of the method, the screen is cylindrical and a rotary screen printer is used to apply the adhesive. However, any other suitable printing method may be used, for example, letterpress, intaglio, silk screen, etc.

The self-adhesive labels of the invention allow a user to print information onto individual labels relatively cheaply and with high quality using a standard computer printer, such as a laser, ink jet or impact printer. All of the labels on a sheet may be printed at the same time, or only a selected few. Any unused labels may be printed at a later time by inserting the sheet into the printer again.

It will be convenient to hereinafter describe the invention by reference to the accompanying drawings which illustrate preferred embodiments of the invention. Other embodiments are possible within the scope of the invention, and consequently the particularity of the accompanying drawings is not to be understood as superseding the generality of the proceeding description of the invention.

Brief Description of the Drawings

In the drawings:

Figure 1 shows an exploded perspective view of a sheet of self-adhesive labels according to an embodiment of the present invention;

Figure 2 shows a plan view of the sheet of self-adhesive labels of Figure 1;

Figure 3 shows a plan view of a sheet of self-adhesive labels according to an alternative embodiment of the present invention; and

Figures 4a-4c show various examples of screen patterns suitable for applying discontinuous coatings of adhesive.

Detailed Description of Preferred Embodiments

Referring to the drawings, Figure 1 shows an exploded view of an

embodiment of a finished A4 sized sheet (297 x 210mm) of self-adhesive labels 1 including nine individual labels 11 - 19 overlying a backing sheet 20. Labels 11 - 19 are produced by severing a sheet of label material 10 having pressure sensitive adhesive selectively applied to the back thereof such that each individual label 11 - 19 is secured to backing sheet 20.

In the embodiment shown in Figure 1, respective first portions of the labels 11 - 19 have bands of adhesive 21 - 26 and respective second portions comprise those parts of each label between the bands 21 - 26.

The first portion of each label presents a first level of adhesion and the second portion of each label presents a second level of adhesion lower than the first level of adhesion. In the embodiment shown in Figure 1, the second portion does not include adhesive and the second level of adhesion is therefore zero.

Labels 11 - 19 may be pre-printed with any desired artwork according to the application to which they are being put. Alternatively the labels may be left free of artwork at the time of manufacture, so that they can be printed solely by the end user.

Figure 2 illustrates a plan view of the sheet of self-adhesive labels 1 showing, in broken lines, the bands of adhesive 21 - 26 applied to the back of the sheet of label material 10. The bands of adhesive 21 - 26 are positioned such that the groups of labels 11 - 13, 14 - 16 and 17 - 19 are provided with respective primary bands of adhesive 21 - 23 and secondary bands of adhesive 24 - 26.

It will be convenient to refer to the labels 11 - 19 in an orientation in which they will normally be used as shelftalkers in POP advertising. In this application, the labels will generally hang vertically from an edge of a shelf and can thus be considered to have a top edge, a bottom edge and two lateral edges. In Figure 2, the top edges of the labels are shown towards the top of the figure.

The primary bands of adhesive 21 - 23 are relatively wide and are positioned at or near the top edge of each label 11 - 19. The primary bands 21 - 23 serve to removably secure the labels 11 - 19 to the backing sheet 20 and, in use, serve to removably secure the labels to a surface such as a shelf edge. The primary bands 21 - 23 are positioned near the top edges of the labels so that the sheet of labels 1 can be fed through a standard computer printer without

becoming jammed in the feeding mechanism of the printer. To this end, the sheet of labels 1 is fed through the printer such that the top edge is leading.

In an embodiment where the primary bands 21 - 23 are positioned away from the top edges of the labels, unsecured segments 31 - 33 are created at leading edges of the groups of labels 11-13, 14-16 and 17-19. The unsecured segments 31-33 are preferably made sufficiently small to prevent jamming within the printer.

The secondary bands of adhesive 24 - 26 are provided near the bottom of each label 11 -19 so as to anchor the lower section of the labels to the backing sheet 20 and prevent them from floating free. The secondary bands 24 - 26 are relatively narrow compared to the primary bands 21 - 23 because they play no significant role once the labels are in use. Secondary bands 24 - 26 are provided to assist handling of the label sheets 1 before, during or after printing by the user.

In the embodiment shown, the secondary bands 24 - 26 are spaced from the bottom edges of labels 11 - 19 so as to leave segments 34 - 36 at the bottom of the groups of labels 11 - 13, 14 - 16 and 17 - 19 free to separate from the backing sheet 20. When the sheet of labels 1 is fed through a printer with the top edge leading, the free segments 34 - 36 are at the trailing edge of the labels and present little risk of jamming the printer.

Between the primary bands 21-23 and secondary bands 24-26 of the groups of labels 11-13, 14-16 and 17-19 are formed middle segments 37-39 which, in the embodiment shown, are free from the backing sheet 20. These free middle segments 37-39 present little risk of jamming the printer.

Once the sheet of labels 1 has been printed, any one of the individual labels 11 - 19 may be easily removed from the backing sheet 20 by grasping the respective one of the free segments 34 - 36 at its bottom edge. The backing sheet 20 may be bent rearwardly at the junction between labels to cause the respective one of the free segments 34 - 36 to lift away from the backing sheet 20, thereby allowing it to be grasped more easily.

It will be appreciated that while the secondary bands of adhesive 24 - 26 are intended to prevent the bottom of the labels floating free from the backing sheet, they may not be required in all circumstances. For example, the individual

labels may be made of any size and any number of labels may be produced on a given sized sheet. Relatively small labels may only require primary bands of adhesive and may not require secondary bands. Some labels may require a relatively wide primary band, for example covering 50 percent or more of the label area. In these circumstances secondary bands may not be required.

In some embodiments, more than two bands of adhesive may be desirable. For example, a relatively large label may require a third band of adhesive to anchor the middle section of the label to the backing sheet. Any number of bands of adhesive may be applied to the label and those bands may be of any suitable width and may be located in any suitable position on the label according to its intended use. By positioning bands of adhesive immediately adjacent the top and bottom edges of the labels, the sheet of labels may be fed through a printer in either direction without risk of jamming.

Figure 3 shows a plan view of another embodiment of the invention wherein the second portion of each label may be lightly held to the backing sheet by a lower but non-zero level of adhesion. Like reference numerals are used in Figure 3 to denote like features shown in Figures 1 and 2. The first portions of the groups of labels 11-13, 14-16 and 17-19 include respective primary bands 21-23 and secondary bands 24-26. The second portions of the groups of labels 11-13, 14-16 and 17-19 include respective leading segments 31-33, respective trailing segments 34-36 and respective middle segments 37-39.

In this embodiment, the whole of each label may remain adequately anchored to the backing sheet to prevent separation during handling and printing. The lower level of adhesion associated with the second portion should preferably be insufficient for that portion to readily adhere to a surface after being removed from the backing sheet. The lower level of adhesion may be provided by a discontinuous coating, whereby adhesive is applied only to a relatively small percentage of the surface area of the second portion of the label. Preferably about 2-25% of the surface area is coated with adhesive, and more preferably about 5% of the surface area is coated.

According to a further embodiment of the invention, the first portion of each label may also include a discontinuous coating of adhesive. Referring to Figure

3, the bands of adhesive 21-26 may, according to such an embodiment, each include a discontinuous coating of adhesive. Preferably about 80-90% of the surface area of the bands 21-26 may be coated with adhesive.

Figures 4a and 4b show, at a scale of approximately four times actual size, screen patterns employed to produce a 5% and 25% coverage of adhesive, respectively, as may be used for the second portion of the labels. In the figures, the black areas represent those areas of a label to receive an adhesive coating. Figure 4c shows, at the same scale, a screen pattern employed to produce an 80% coverage of adhesive, as may be used for the first portion of the labels. In each example shown, a discontinuous coating of adhesive is created by a pattern of randomly distributed dots. The number of dots of adhesive within a given area of a label may be varied so as to vary the amount of adhesive applied within that area and hence the level of adhesion presented by that area. In alternative embodiments (not shown), the level of adhesion may be varied by varying the size of each dot or the thickness of adhesive in each dot.

In order to make the labels removable and repositionable, a family of adhesives known as "micro-encapsulated" adhesive may be used. These adhesives may be blended so as to provide further control over the levels of adhesion, or degrees of sticking power, according to the type of surface to which the labels are to be applied. The thickness of the adhesive layer may also be varied.

The backing sheet 20 (Figure 1) may be a sheet of paper or card of suitable thickness. It is preferably coated with a release agent to limit the extent of its adhesion to the labels. The type and blend of release coating selected for the backing sheet may depend upon the type and blend of adhesive which is used on the labels. A balance may therefore exist between the strength of the adhesive used on the labels and the type of release coating used on the backing sheet. Achieving this balance is a matter of routine experiment involving trial and error. This is considered to be within the ability of those skilled in the art and need not therefore be explained further. The inventor has found that silicon based release coatings or the like are particularly suitable for use in the present invention.

In producing sheets of self-adhesive labels 1 according to a preferred method of the invention a reel of label material 10 may be initially printed with the desired artwork, if any, on its front surface. The printed reel is then fed through a rotary screen printer and bands of adhesive 21 - 26 are applied to the back surface of the label material 10 using an appropriate screen head to locate the desired positions and spacings between bands.

Preferably a cylindrical nickel mesh screen is employed in the rotary screen printer. In embodiments having discontinuous coatings of adhesive sections of the screen may be partially closed so as to restrict the amount of adhesive passing through the screen to the label material. In an embodiment utilizing the pattern shown in Figure 4a 95% of the screen area is closed, therefore preventing adhesive being applied to approximately 95% the label material, and a pattern of randomly distributed areas, amounting to 5% of the screen area, is open (the black areas in the figure representing open areas of the screen). This screen therefore provides an adhesive coating of approximately 5% of the surface area of the corresponding portion of the label material. Screens having patterns as shown in Figure 4b and 4c will produce 25% and 80% coatings of adhesive respectively.

Screens for applying discontinuous coatings of adhesive may be made by coating a nickel mesh screen with an emulsion to initially close all areas of the screen. Selected areas of the emulsion are then removed by a laser engraving process to leave a desired pattern of open areas in the screen which will allow adhesive to pass through.

A higher level of adhesion of a portion of the label material may be created by increasing the number of dots of adhesive applied to that portion. This may be achieved by engraving the corresponding portion of the screen such that a greater number of open areas are created. This is the preferred method of controlling the amount of adhesive to be applied to the label material. In one embodiment, each open area corresponds to an individual hole in the mesh used for the screen. It should be understood however that an alternative method within the scope of the invention is to increase the size of each dot of adhesive, instead of the number of dots. This may be done by engraving the screen such that each

open area of the screen is larger. In either method, a greater proportion of the surface area of the relevant portion of the label material becomes coated with adhesive, thereby increasing the level of adhesion presented by that portion. Any selected level of adhesion may thus be achieved by varying the proportion of open and closed areas of the screen.

Further control over the levels of adhesion may be attained by altering the size or number of holes in the mesh used for the screen. The more open the screen, the greater will be the amount of adhesive applied to the label material.

It should be appreciated that the above described method of applying adhesive may equally be used on surfaces other than label material. The method is thus suitable to any application in which the level of adhesion, of any type of adhesive coating, must be controlled.

Returning to the method of producing self-adhesive labels according to the invention, the adhesive coating applied to the label material 10 may be rapidly dried by any known means. Immediately before the label material 10 is re-reeled a backing sheet 20 may be fed in to produce a reel of a composite sheet comprising label material and backing sheet. The composite reel may then be sheeted using a rotary blade cutter to produce discreet uniformly sized composite sheets, for example, international size A3 or A4. A form cutter may be used to kiss cut the composite sheets such that the label material is severed at lines 40-43 into individual labels 11 - 19 whilst the backing sheet 20 is left intact.

The positions of the lines of severing 40-43 may be selected such that a primary band of adhesive 21 - 23 is positioned at or near the top of each label 11 - 19 (refer figure 2), to secure labels 11 - 19 to backing sheet 20, and a secondary band of adhesive 24 - 26 is positioned near the bottom of each label, to anchor the lower section of labels 11 - 19 to backing sheet 20.

The relationship between the pattern of bands on the screen printing head used for applying the adhesive and the position of the lines of severing of the form cutter may determine the position of the bands of adhesive 21 - 26 relative to the individual labels 11 - 19.

The present invention therefore provides a sheet of self-adhesive labels which may be fed through a standard computer printer, eg. laser, ink jet, etc, and

from which individual labels may be removed for application to a surface. In Point of Purchase advertising or in warehousing, such labels are particularly useful as shelftalkers because individual labels may be easily removed from the label sheet without tearing up the entire sheet.

Although preferred embodiments of the invention are described herein in detail it will be understood by those skilled in the art that variations may be made thereto without departing from the spirit or scope of the invention as defined in the appended claims.

CLAIMS:

1. A sheet of self-adhesive labels including:

a backing sheet;

a plurality of individual self-adhesive labels overlying said backing sheet and being arranged thereon in side by side and/or top to bottom relationship; and

each label being secured to the backing sheet by a pressure sensitive adhesive selectively applied to the labels such that a first portion of each label presents a first level of adhesion and a second portion of each label presents a second level of adhesion lower than said first level.

2. A sheet of self-adhesive labels as defined in claim 1 wherein the first portion includes at least one band of adhesive.

3. A sheet of self-adhesive labels as defined in claim 2 wherein the first portion includes a primary band of adhesive and a secondary band of adhesive, the primary band being spaced from the secondary band.

4. A sheet of self-adhesive labels as defined in claim 3 wherein the primary band is wider than the secondary band.

5. A sheet of self-adhesive labels as defined in claim 4 wherein the primary band is located adjacent a first edge of the label.

6. A sheet of self-adhesive labels as defined in claim 5 wherein the primary band abuts the the first edge of the label.

7. A sheet of self-adhesive labels as defined in claim 5 wherein the secondary band is located adjacent a second edge of the label opposite the first edge.

8. A sheet of self-adhesive labels as defined in claim 7 wherein the

secondary band abuts the second edge of the label.

9. A sheet of self-adhesive labels as defined in any one of the preceding claims wherein the second level of adhesion is substantially zero.

10. A sheet of self-adhesive labels as defined in any one of claims 1-8 wherein the second portion includes a discontinuous coating of adhesive.

11. A sheet of self-adhesive labels as defined in claim 10 wherein the discontinuous coating of adhesive of the second portion includes a pattern of dots.

12. A sheet of self-adhesive labels as defined in claim 11 wherein the dots of the second portion are randomly distributed.

13. A sheet of self-adhesive labels as defined in any one of claims 10-12 wherein substantially 2 to 25% of the surface area of the second portion is coated with adhesive.

14. A sheet of self-adhesive labels as defined in claim 13 wherein substantially 5% of the surface area of the second portion is coated with adhesive.

15. A sheet of self-adhesive labels as defined in any one of claims 1-8 and 10-14 wherein the first portion includes a discontinuous coating of adhesive.

16. A sheet of self-adhesive labels as defined in claim 15 wherein the discontinuous coating of adhesive of the first portion includes a pattern of dots.

17. A sheet of self-adhesive labels as defined in claim 16 wherein the dots of the first portion are randomly distributed.

18. A sheet of self-adhesive labels as defined in any one of claims 15-17 wherein substantially 80-90% of the surface area of the first portion is coated with

adhesive.

19. A sheet of self-adhesive labels as defined in any one of the preceding claims wherein the adhesive is a repositionable adhesive.

20. A sheet of self-adhesive labels as defined in claim 19 wherein the adhesive includes a micro-encapsulated adhesive.

21. A sheet of self-adhesive labels as defined in any one of the preceding claims wherein the backing sheet is coated with a silicon-based release agent.

22. A sheet of self-adhesive labels as defined in any one of the preceding claims wherein the labels are contiguously arranged on the backing sheet such that an edge of each label abuts an adjacent label.

23. A sheet of self-adhesive labels including:

a backing sheet;

a plurality of labels overlying said backing sheet and being arranged thereon in side by side and/or top to bottom relationship; and

each label having a first portion removably secured to said backing sheet and a second portion which remains free of said backing sheet to assist a user to remove the or each label from the backing sheet by grasping said second portion thereof.

24. A sheet of self-adhesive labels as defined in claim 23 wherein the first portion includes a primary band of adhesive and a secondary band of adhesive, the primary band being spaced from the secondary band and being wider than the secondary band.

25. A sheet of self-adhesive labels as defined in any one of claims 23-25 wherein the primary band abuts a first edge of the label and the secondary band abuts a second edge of the label opposite the first edge.

26. A sheet of self-adhesive labels as defined in claim 25 wherein the adhesive is a repositionable adhesive.

27. A method of producing a sheet of self-adhesive labels including the steps of:

providing a sheet of label material;

providing a backing sheet;

selectively applying pressure sensitive adhesive to said label material;

securing said backing sheet to said label material by means of said adhesive; and

severing said sheet of label material into a plurality of individual self-adhesive labels while leaving said backing sheet intact such that a first portion of each label presents a first level of adhesion and a second portion of each label presents a second level of adhesion lower than said first level.

28. A method as defined in claim 27 wherein the step of selectively applying adhesive includes a step of applying at least one band of adhesive to the label material and wherein the severing step is performed such that the first portion of each label includes at least a part of said at least one band of adhesive.

29. A method as defined in claim 28 wherein the severing step is performed such that the first portion includes a primary band of adhesive and a secondary band of adhesive, the primary band being spaced from the secondary band.

30. A method as defined in claim 29 wherein the primary band is located adjacent a first edge of a group of labels and the secondary band is located adjacent a second edge of the group of labels opposite the first edge.

31. A method as defined in any one of claims 27-30 wherein the second level of adhesion is substantially zero.

32. A method as defined in any one of claims 27-30 wherein the step of

selectively applying adhesive is performed such that the second portion of each label is discontinuously coated with adhesive.

33 A method as defined in claim 32 wherein a pattern of dots of adhesive is applied to the second portion of each label.

34. A method as defined in claim 32 or 33 wherein substantially 2 to 25% of the surface area of the second portion is coated with adhesive.

35. A method as defined in any one of claims 27-30 and 32-34 wherein the step of selectively applying adhesive is performed such that the first portion of each label is discontinuously coated with adhesive.

36. A method as defined in claim 35 wherein a pattern of dots of adhesive is applied to the first portion of each label.

37. A method as defined in claim 35 or 36 wherein substantially 80-90% of the surface area of the first portion is coated with adhesive.

38. A method as defined in any one of claims 27-37 wherein the adhesive includes a micro-encapsulated repositionable adhesive.

39. A method of applying a discontinuous coating of adhesive to a surface, including the steps of:

providing a printing screen having a pattern of open and closed areas, the open areas allowing adhesive to pass through the screen and the closed areas preventing the adhesive from passing through;

positioning the screen against the surface; and

applying the adhesive to the screen such that a distribution of adhesive corresponding to said pattern is applied to the surface.

40. A method as defined in claim 39 wherein the proportion of open to closed

areas of the screen corresponds to a selected level of adhesion for the surface.

41. A method as defined in claim 39 or 40 wherein the surface is a sheet of label material, the screen is cylindrical and the method is performed by means of a rotary screen printer.

42. A method as defined in any one of claims 39-41 wherein the screen pattern includes a plurality of open areas arranged such that a corresponding plurality of dots of adhesive is applied to the surface.

43. A method as defined in claim 42 wherein the dots are randomly distributed.

44. A method as defined in any one of claims 39-43 wherein substantially 2-25% of the surface area of the screen is open.

45. A method as defined in any one of claims 39-43 wherein substantially 80-90% of the surface area of the screen is open.

46. A method as defined in any one of claims 39-45 wherein the adhesive is a repositionable adhesive.

47. A method as defined in claim 46 wherein the adhesive includes a micro-encapsulated adhesive.

48. A sheet of self-adhesive labels substantially as herein described with reference to the accompanying drawings.

49. A method of producing a sheet of self-adhesive labels substantially as herein described with reference to the accompanying drawings.

50. A method of applying a discontinuous coating of adhesive to a surface substantially as herein described with reference to the accompanying drawings.

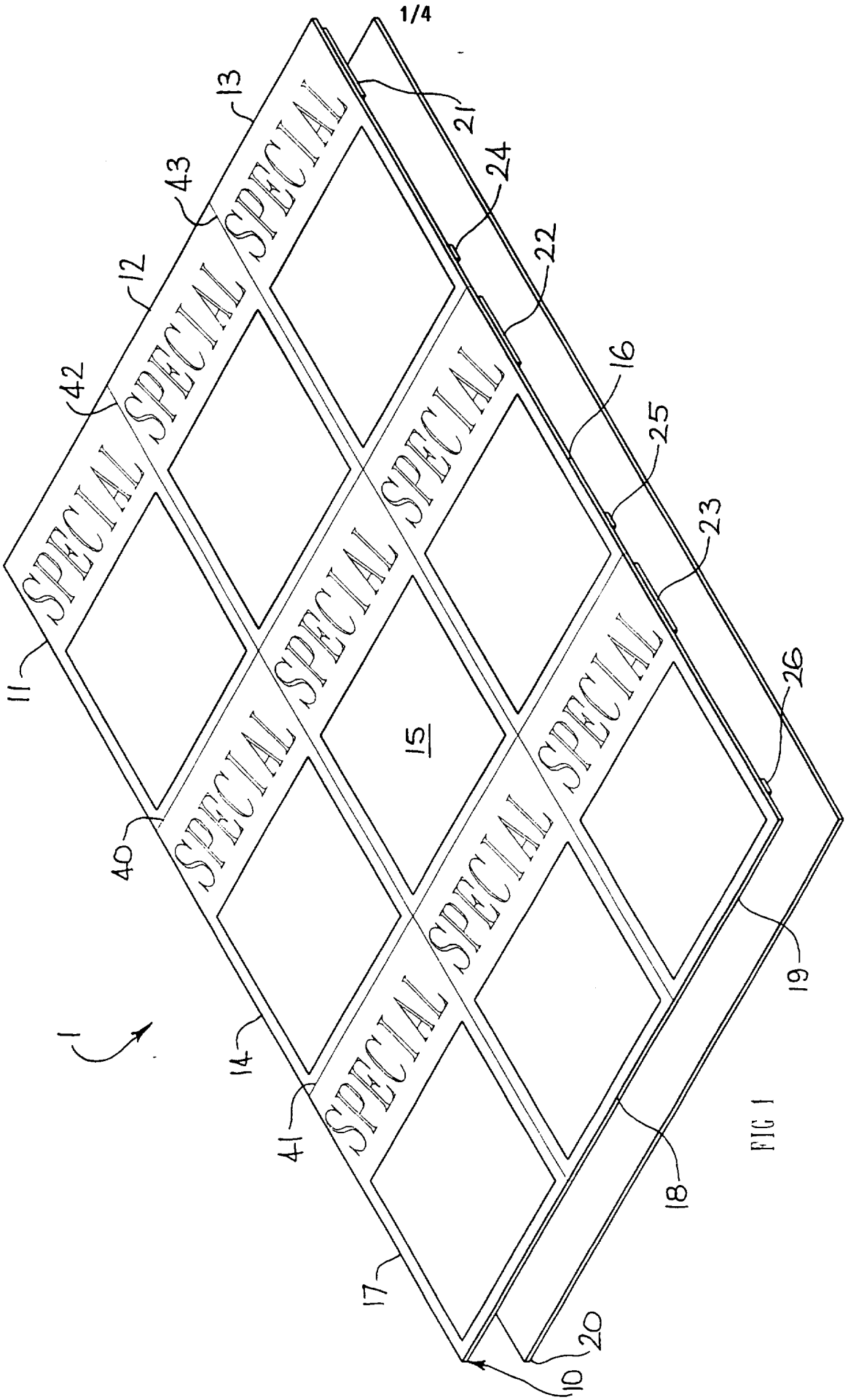
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FIG 1

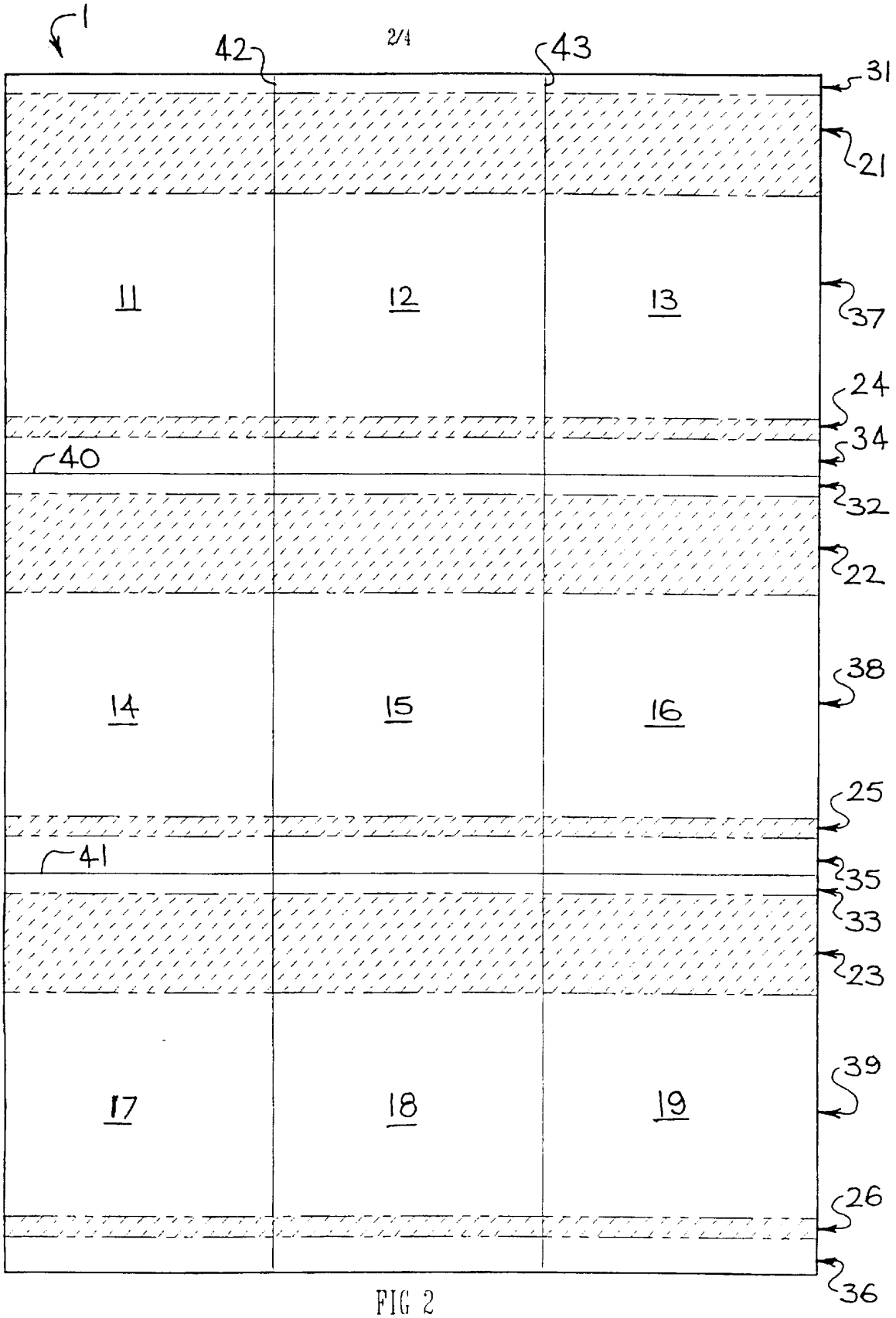
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FIG 2

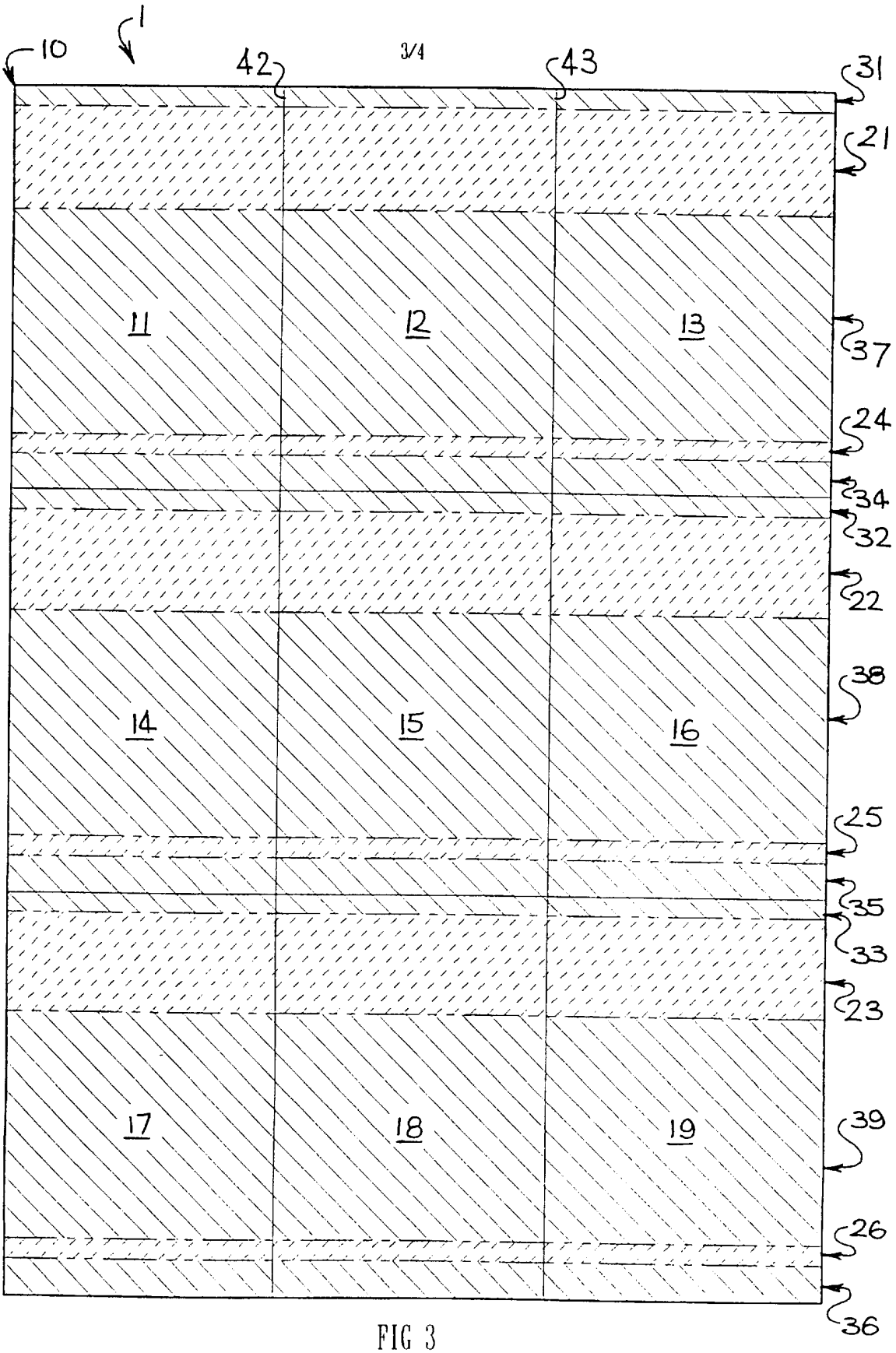
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FIG 3

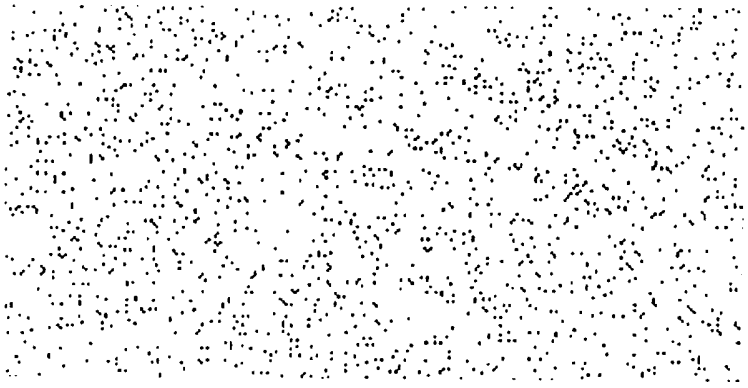

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FIG 4a

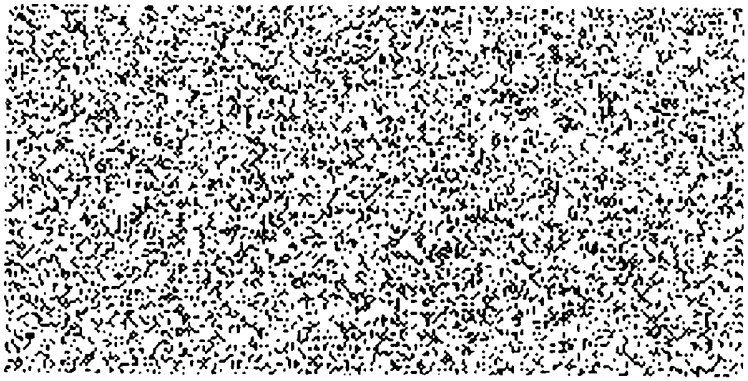

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FIG 4b

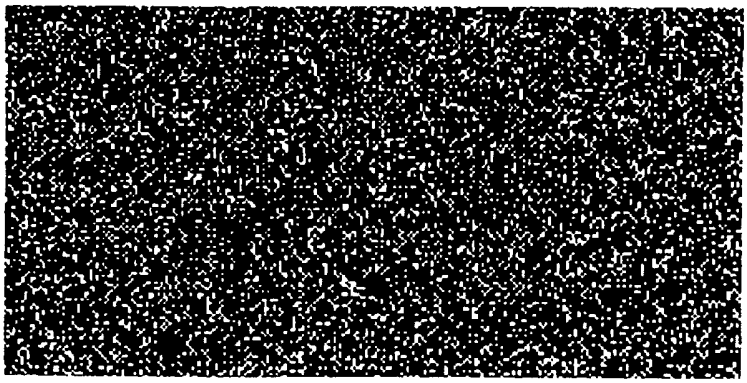

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FIG 4c

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/AU 97/00281

A. CLASSIFICATION OF SUBJECT MATTER

Int Cl[6]: G09F 3/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC : G09F 3/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU : IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5283091 A (DARVELL et al) 1 February 1994	1-38
X	AU 62482/90 (609023) B (ZAMPOGNA) 18 April 1991	1-38
X	US 4907825 A (MILES et al) 13 March 1990	1-38
X	GB 2224691 A (FKB GROUP PLC) 16 May 1990	1-38
X	US 4895746 A (MERTENS) 23 January 1990	1-38
X	EP 309107 A (MOORE BUSINESS FORMS, INC) 29 March 1989	1-38

[X] Further documents are listed in the continuation of Box C

[X] See patent family annex

* Special categories of cited documents:

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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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Date of the actual completion of the international search
26 May 1997

Date of mailing of the international search report
30 MAY 1997

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INTERNATIONAL SEARCH REPORT

International Application No.
PCT/AU 97/00281

C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2045718 A (BURKITT et al) 5 November 1980	23-26
X	US 4201403 A (TURNER) 6 May 1980	1-38
X	US 3914483 A (STIPEK, JR) 21 October 1975	1-38

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/AU 97/00281

Information on patent family members

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
US	5283091	AU	25035/92	DE	69214664	EP	607169
		ES	2093845	WO	9307604		
AU	62482/90	GB	2248598	JP	4256995		
US	4907825	AT	55194	AT	67332	AU	34081/89
		AU	621879	BR	8807541	CA	1318703
		DE	3860388	DE	3864823	EP	338028
		EP	365055	JP	4504004	KR	9610768
		US	4770320	WO	8809983		
US	4895746	AU	49141/90	AU	622762	CA	2009157
		DE	69019041	EP	385647	ES	2071760
		JP	2283436				
EP	309107	AT	91463	CA	1312889	DE	3882316
		DK	5250/88	FI	884386	NO	884233
		PT	88587				
US	4201403	CA	1101666	DE	2847040	GB	2006683

END OF ANNEX