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(54) **Package comprising a cylindrical leaflet**

(57) A package made from cardboard, paperboard or other foldable sheet material and containing a blister pack (220) comprises a rolled or wrapped cylindrical leaf-

let (202) having a substantially circular outer circumference received therein, for example at an end of the package or along an edge.

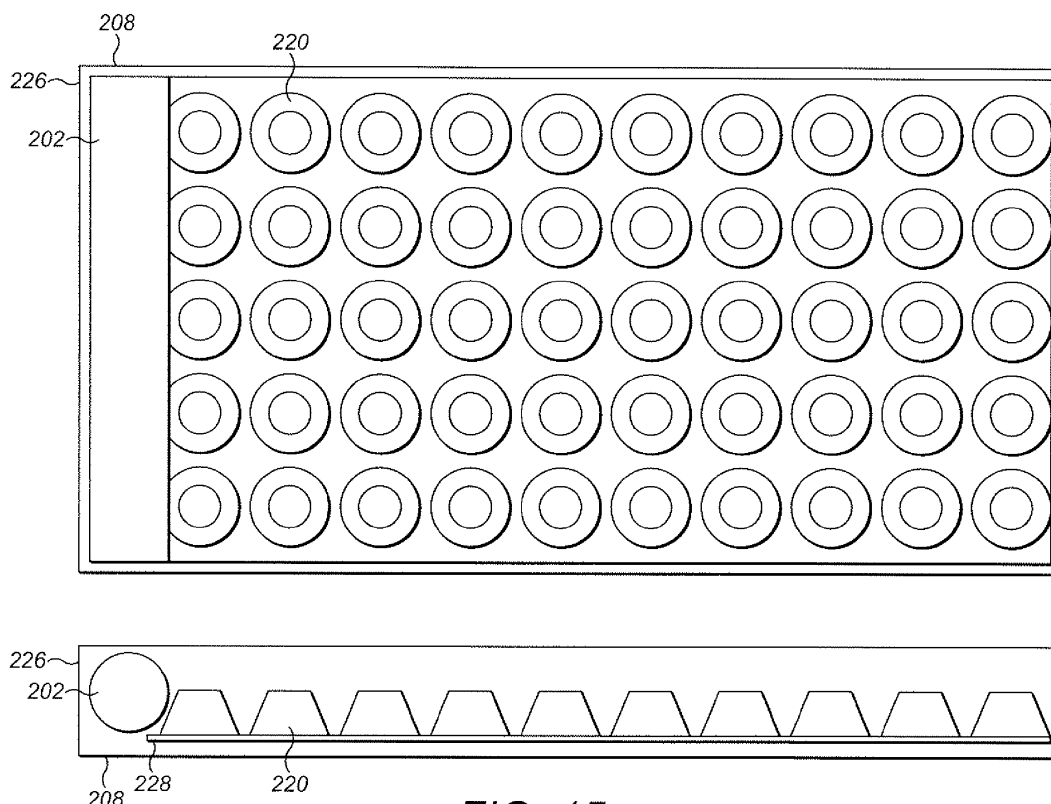


FIG. 15

Description

[0001] The present invention relates to leaflets, for example, patient information leaflets which are widely used with pharmaceutical products in order to convey regulatory and other information to a user. Similar leaflets are used with a wide range of products wherever a large amount of information needs to accompany the product. The invention also relates to packages including leaflets.

[0002] Normally leaflets such as product information leaflets are produced by folding a blank of sheet material, for example of paper or plastics. However, as the amount of regulatory information that has to be presented on such leaflets has grown, and in order to allow the information to be easily read, this presents difficulties. For example, it becomes more difficult to fold the leaflet sufficient times to a size which will allow to fit inside the product carton. Moreover, this degree of folding may leave the leaflet looking untidy. In addition, the leaflet may be so large that it will not fit into the appropriate carton size. Finally, the leaflet can be difficult to handle and insert into the carton.

[0003] To some extent at least, some of these issues arise from air being trapped in the leaflet as it is being folded. This increases the bulk of the leaflet and may lead to variations in thickness of the folded leaflet which in turn can result in problems on automated filling lines. It also means that the leaflet may be relatively bulky, thereby taking up a relatively large amount of space in the package.

[0004] The present invention seeks to overcome or at least mitigate some of the above problems.

[0005] From a first aspect, the invention provides a package comprising a rolled or wrapped cylindrical leaflet having a substantially circular outer circumference received therein.

[0006] Thus in accordance with the invention a cylindrical, substantially circular circumference leaflet is received in a package rather than a folded leaflet. The cylindrical leaflet is not deformed or flattened for reception in the package.

[0007] There are a number of advantages to forming a rolled leaflet rather than folded leaflet. For example, a roll may be easier to handle and insert into a product carton which can improve the line filling speed and therefore operating efficiency. Moreover, a roll is compact and occupies a defined space in the pack. For example, a rolled leaflet can very easily fit into the corners of a carton, which area is frequently wasted space.

[0008] In addition to the above, a rolled leaflet potentially minimises entrapment of air within the leaflet thereby making it more compact. Moreover, the rolled leaflet is more dimensionally stable than a multiple folded leaflet and therefore easier to handle on a packing line.

[0009] In addition rolling a leaflet, rather than folding it, has particular advantages in the context of leaflets made of plastics materials. Such leaflets are becoming more common and offer an alternative to the traditional

paper leaflet and are particularly suited to products that may be used or read in damp environments. Current plastic leaflets are difficult to fold due to static electricity causing feeding problems in the folding equipment. Rolling a plastic leaflet material would potentially eliminate such problems and help create a viable alternative to paper.

[0010] Preferably the package is a carton made from cardboard, paperboard or other foldable sheet material and most preferably a cuboid package.

[0011] The leaflet may be received between the contents of the package and a wall or walls of the carton or within a compartment defined by internal structure of the carton, for example a partition.

[0012] The leaflet may, as mentioned above, advantageously BE received in the corner defined between two adjacent walls of the carton. This would be appropriate for example where the diameter of the leaflet was smaller than the depth or width of the carton. In another arrangement, where the leaflet diameter is nearer to the depth or width of the carton, the leaflet may be received at one end or along side of the carton.

[0013] Typically the carton will contain a product, e.g. a pharmaceutical product, contained in a blister pack. In this event, depending on the shape and size of the leaflet, the leaflet may be retained in a number of different positions. A relatively short length leaflet may be retained at an end of the carton blister pack, while a longer leaflet can be accommodated along a side of the carton (the terms end and side here are intended to denote the shorter and longer of the carton respectively). The leaflet may partially overlap an edge of the blister pack in certain cases.

[0014] The leaflet may be packaged manually or automatically into the carton and this may be done before or after the carton receives the product. The choice will be determined by the position of the leaflet in the carton, and the amount of free space in the carton.

[0015] Leaflet loading may be carried out by any number of processes. For example, the leaflets may be loaded into a bowl feeder which orientates and then loads the leaflet into a loading magazine. Alternatively, the rolls could be placed manually into a magazine. The leaflet may be loaded into a carton from a magazine by, for example, a pusher, a pick and place robot or a timed gravity feed as appropriate.

[0016] The invention thus also extends to a method of filling a package comprising placing a cylindrical leaflet having a substantially circular outer circumference into a package.

[0017] The leaflet may be positioned in any of the various positions discussed above.

[0018] The leaflet may be formed in any suitable manner, using an appropriate rolling or winding machine.

[0019] The leaflet may comprise just a single leaf which may be printed on one or both sides but, with the exception of digital printing, the repeat length limitations would normally be not allow sufficient information to be printed in this way.

[0020] Therefore, more commonly, the leaflet may be formed from a plurality of leaves, each of which may contain different information, for example product information, for example the same information in different languages.

[0021] The leaves are, in certain embodiments, superposed one upon the other so as to, in effect, produce a multi-leaf leaflet blank which can then be fed to a rolling or winding machine. The terms winding and rolling are used synonymously in this specification as meaning a process which produces a wound or rolled body. This can be done in a number of different ways.

[0022] In a first arrangement, a sheet of leaflet material may be printed with, for example, product information or other images, in predetermined positions across or along the sheet. The sheet is then folded, for example in a concertina manner, so as to form superposed leaves each leaf bearing the appropriate information or image. Such folding can be effected either in a machine direction or a cross direction, i.e. along the length of the sheet or across its width. In a simple embodiment, the sheet may be folded just once to form a two leaf arrangement.

[0023] In order to facilitate the folding of the sheet and to allow escape of air from the folded sheet, perforations may be provided, for example, along the edges of the folded blanks, i.e. along one or more fold lines. This can be done by pre-perforating the sheet in the appropriate regions (which may facilitate folding) or after folding.

[0024] In order to produce a crisp fold and reduce the bulk at the fold line, a water folding process may be employed, i.e. water being applied along the prospective fold lines prior to folding. Alternatively or additionally, pressure may be applied along the fold line to produce a crisp fold.

[0025] The folded leaflet blank may then be fed into the rolling or winding machine for forming into a leaflet.

[0026] As an alternative to folding a sheet into a folded leaflet blank, a sheet may be provided with printed information or images as discussed above, but the sheet then slit or cut so as to produce discrete leaves. These leaves are then collated one above the other into a stack so as to form a stacked leaflet blank. Such a blank can also be produced by folding a blank as above and removing the edges so as to produce a stack of discrete leaves.

[0027] This is thought to be a novel and inventive arrangement in its own right, so from a further aspect, the invention provides a multi-leaf cylindrical leaflet formed from a plurality of discrete leaves.

[0028] The invention also extends to a method of forming a leaflet comprising forming a stack of discrete leaves and rolling or winding the stack of discrete leaves into a leaflet.

[0029] As stated above, the stack may be formed by collating discrete leaves or forming a folded blank and removing the folded edges of the folded blank.

[0030] The leaves of the stack may be secured together so as to facilitate the rolling process (to reduce the likelihood of leaves coming loose from the stack during

rolling) and also to keep the leaflet intact during use. However, this may not always be necessary so in certain embodiments the leaves may be left unattached to each other.

[0031] A number of different techniques may be used to join the leaves in a stack. In a first arrangement, adjacent overlapping edges of the respective leaves are adhered to one another, for example, by gluing along that edge. For example, the first 1-3 mm, for example the first 2 mm of each leaf may have glue applied to it such that when superposed the leaves adhere together.

[0032] In an alternative arrangement, an edge of the stack can be formed with a locating opening e.g. by punching, and a locating member such as a pin inserted into the opening taped to hold the stack together.

[0033] In yet another arrangement, adjacent edges of the leaves may be shingled, for example by 1 to 2 mm and then taped together over the shingled region to hold the stack together.

[0034] As discussed above, individual leaves each bearing the entire leaflet image can be produced from a common sheet and collated into a stack. In an alternative arrangement, the respective leaves may not be formed from a common sheet but rather each be formed from separate sheets each being printed with information or an image appropriate to just that one leaf. The leaves of the separate sheets can then be collated into a stack by suitable means, for example using any of the techniques discussed above.

[0035] In the above described arrangements, the leaflet is produced from one or more sheet blanks. In other embodiments, however, it may be advantageous to produce the leaflets from a reel of material.

[0036] This is in itself considered to be a novel proposal, so from a further aspect, the invention provides a method of producing a leaflet comprising feeding one or more webs of material from a reel of material to a rolling or winding machine.

[0037] In a simple embodiment, relevant information or images may be printed onto an unwinding reel. The simplest method for this is to employ digital printing technology, either single sided or double sided. Offering infinite print repeat length, digital printing provides the complete print image along the reel length, with multiple leaflets across the reel. This also allows for an unwinding reel to be digitally printed, and fed directly into a winding machine to be slit into webs of individual leaflet width, rolled and cross cut into individual leaflets.

[0038] In a variant of this technique, the parent reel may be slit first, and multiple print heads provided, one for each leaflet strip. A potential advantage with this arrangement is that different images can be printed on each leaflet strip.

[0039] Alternatively the printing can take place as a separate process and the printed web re-reeled before unwinding for leaflet rolling.

[0040] The method of the invention can be employed with other printing methods such as conventional litho,

flexo or gravure. If necessary, multiple images may be produced across the width of the reel and the reel then cut, for example slit, to produce individual lengths of reel which may be individually rolled into leaflets. These lengths may be folded as discussed above to produce a multi leaf stack.

[0041] In an alternative arrangement, a printed reel having multiple images formed across its width may be folded continuously in order to produce a reel of superposed sheets each bearing its own relevant information or image. The folding may be effected by a plough folding process for example.

[0042] In addition, a leaflet comprising collated leaves may be produced from multiple parent reels each having respective information or images appropriate to one sheet of the final leaflet printed onto each reel. This may be effected for example by collating individual reels. The individual reels may be fed together such that they are superposed one above the other in suitable registry. The collated web can be fed directly into the rolling machine or alternatively itself reeled for later feeding to the rolling machine.

[0043] Alternatively, a single parent reel may be produced with respective columns of rows of printed material, the reel being slit into a plurality of webs which are then collated in registry one above the other. The alignment of the webs may be effected, for example, by turning bars appropriately arranged.

[0044] Once the leaflet blank is fed to the winding machine, it is wound to an appropriate length and thereafter the loose end of the rolled leaflet then preferably secured in place. This may be done in a number of ways. For example, the loose end may be glued in position, or an adhesive sticker or tag applied over the loose end. Alternatively, a band may be applied around the rolled leaflet. In a further arrangement the topmost leaf of the stacked leaflet blank may be made longer than the others such that its free end may be glued and attached in position to secure the roll. More than one of these techniques can be used if appropriate.

[0045] The individually secured rolls are then ready to be packed into a container, as described above. The leaflet production may take place at the same location as the carton filling or at a different location. In the latter case, the rolled leaflets may be packed into a tray or case, shipped to the packaging site, and unloaded for insertion into cartons.

[0046] Some embodiments of the invention will now be described by way of example only with reference to the accompanying drawings in which:

- Figure 1 illustrates schematically a first leaflet production method;
- Figure 2 illustrates schematically a second leaflet production method;
- Figure 3 illustrates schematically a third leaflet production process;
- Figure 4 illustrates schematically a first leaflet colla-

tion process;

Figure 5 illustrates schematically a second leaflet collation process;

Figure 6 illustrates schematically a further alternative leaflet collation process;

Figure 7 illustrates schematically a further leaflet production process;

Figure 8 illustrates schematically a yet further leaflet production process;

Figure 9 illustrates schematically a yet further leaflet production process;

Figure 10 illustrates schematically a further leaflet production process;

Figure 11 illustrates schematically a yet further leaflet production process;

Figure 12 illustrates schematically a yet further leaflet production process;

Figures 13a to 13c illustrate schematically top, side and end elevations of a leaflet insertion apparatus;

Figure 14 illustrates schematically top and side views of a first carton having a rolled leaflet;

Figure 15 illustrates schematically top and side views of a second carton having a rolled leaflet;

Figure 16 illustrates schematically top and side views of a third carton having a rolled leaflet;

Figure 17 illustrates schematically a fourth carton having a rolled leaflet; and

Figure 18 illustrates schematically a fifth carton having a rolled leaflet.

Referring firstly to Figure 1, a leaflet blank in the form of a sheet 2 is notionally provided with a number of leaves or leaves 4, 6, 8, 10 extending across the width of the sheet 2. In this particular embodiment 4 leaves are provided, although any number may be provided, as required. Appropriate images A, B, C and D (e.g. product or other information) are printed onto the leaves 4, 6, 8, 10 as illustrated. Thus a complete leaflet image is provided on the sheet 2.

[0047] The sheet 2 is then folded in a cross-wise direction in a concertina fashion to produce a folded blank 12. The folding may be effected using a water fold technique which produces better defined folds in the blank 12 thereby leading to a more compact final leaflet. Also, the edges 14, 16, 18 of the folded blank 12 may be perforated in order to facilitate escape of air from the folded blank 12, thereby also leading to a more compact final leaflet. The perforation may be effected either after the folding occurs or while the sheet 2 is as yet unfolded.

[0048] The folded leaflet blank 12 is then fed in a machine direction into a rolling or winding machine. Such machines are known in the art and typically include a mandrel or bar around which the body to be wound is formed. Another known method uses a core held on a mandrel or bar, onto which the leaflet is rolled. Cross cutting may be used to suit the leaflet length required, to produce individually rolled leaflets 20, the leaflets being cylindrical in shape with a circular outer circumference.

[0049] The free end of the leaflet 20 can be secured in a suitable manner to stop the leaflet unravelling. Examples of suitable techniques are described further below.

[0050] After securing the free end of the leaflet 20, it may be further tagged or shrunk wrapped in order to more securely hold the leaflet 20 in shape

[0051] With reference now to Figure 2, this shows an alternative embodiment in which, rather than forming a folded leaflet blank from the sheet 2, the sheet 2 is slit in a machine direction MD to produce separate leaves 24, 26, 28, 30 having the requisite information or images A, B, C, D printed thereon. The leaves 24, 26, 28, 30 are then collated into a stack. The leaves 24, 26, 28, 30 may be aligned at, for example, their narrow edges 32, 34, 36, 38. The respective leaves 24, 26, 28, 30 may be secured together along their aligned edges or be left separate. Techniques for joining the leaves will be described further below.

[0052] Once collated and optionally secured to one another, the collated blank 22 is then fed in a machine direction to a coreless winding machine as described above.

[0053] With reference to Figure 3, a further alternative embodiment is illustrated. This is similar to the embodiment described in Figure 2, but instead of a sheet being printed with different information or images A, B, C, and D on a single sheet which is either folded or cut to provide leaves for collation, in this embodiment, separate sheets 40 are provided, each sheet being provided only with images A, B, C or D. For example, as illustrated, a sheet 40A may be printed with leaves 42, 44, 46, 48 all having image A, and similar sheets 40B, 40C, 40D printed with images B, C, D respectively. The sheets 40A, 40B, 40C, 40D can then be collated to form a stack of sheets which can then be slit so as to form, in this example, four separate stacked leaflet blanks. These can be secured to one another along their narrow edges as discussed above and then fed to a e.g. a coreless rolling machine or winding also as discussed above.

[0054] As discussed above, the collated leaves may be left unattached to one another, but in most embodiments it will be advantageous to join them together in some manner to maintain the integrity of the leaflet.

[0055] Figure 4 illustrates a first technique by which this may be achieved. In this embodiment, each collated stack comprises 5 leaves 50, 52, 54, 56, 58. The narrow ends 62 of the respective leaves are shingled with respect to one another by, for example, 1 or 2 mm and then an adhesive tape or tag 64 applied over the shingled ends. The leaflet strips are typically 40 gsm material which means that the tape or tag 64 will easily be able to deform so as to secure the leaves together.

[0056] With reference to Figure 5, alternatively, the top edge region 66 of each strip 50, 52, 54, 56, 58 may be wet glued together, in effect forming a booklet type stack 68.

[0057] Also as discussed above, the rolled leaflet will

have to be secured after rolling in order to prevent it from unravelling. This could, for example, be achieved by using a label or other tag which secures the loose end of the leaflet to the remainder of the leaflet. However, in a collation process it would be possible as shown in Figure 6 to make the uppermost leaf 58 slightly longer, for example 2 to 4 mm longer, than the other leaves such that when rolled, the overlapping region 70 can be secured, for example by adhesive applied to its lower surface 72 to the adjacent surface of the leaflet 76.

[0058] Turning now to Figure 7, this illustrates a further embodiment of the invention. In this particular embodiment, leaflets are produced from a reel 80 of material which is unwound and then printed, for example, using a digital print unit 82 or a conventional litho or flexo print unit. In the illustrated embodiment, the reel 80 is printed with four columns 84 of information or images A, B, C, D using a single digital print head 82. Each set of printed images A, B, C and D corresponds to a single leaflet. The columns 84 are then slit using a slitting wheel 86 or the like to form respective separated columns continuous strips 88 which are fed into a winding machine and cut to length so as to form individual leaflets 90 each containing images A, B, C and D.

[0059] Of course, the individual columns could be cut to length and the individual sub-leaves of the columns folded, or cut and collated as in the earlier sheet embodiments if so desired.

[0060] An example of such an arrangement is illustrated in Figure 8 in which a reel of material is printed with information A, B, C and D in a repetitive pattern. The reel is then cut into individual sheets 100 having leaves 102, 104, 106, 108, the sheet then being folded, this time in a machine direction, so as to produce a folded leaflet blank 110. As in the earlier embodiments, the edges 112, 114, 116 of the folded blank 110 may be perforated to assist escape of air during the folding process.

[0061] Turning now to Figure 9, a single reel 120 is printed for example using a digital, litho or flexo printing technique so as to provide relevant information or images A, B, C, D on eventual leaves 122, 124, 126, 128. The printed reel is then folded in an inline plough folding process to form a folded web, with the edges of the folded leaves 130, 132, 134 optionally being perforated to assist in the escape of air. The folded web is then fed into the coreless roller to produce individual leaflets. Alternatively, the folded web could be re-reeled in order to be fed into the coreless roller at a later time.

[0062] In an alternative to the folding process illustrated in Figure 9, a collated reel 140 can be produced from a number of satellite reels 142, 144, 146, 148 each of which is printed with respective information or images A, B, C, D in a repeating pattern. The satellite reels 142, 144, 146, 148 are unwound in order to collate the individual webs of material into a registered web which may be fed directly to a coreless winder for leaflet production or can be re-reeled for later feeding.

[0063] In yet a further embodiment, as illustrated in

Figure 11, collation can be achieved by printing a reel 150 with information or images A, B, C, and D arranged across its width. The reel 150 is then slit by slitting wheels 152 so is in effect to produce individual webs 154, 186, 158, 160. These webs 154, 156, 158, 160 are then collated one above the other by use of a series of turning bars 162 which feed the respective webs 154, 156, 158, 180 into a superposed and collated state. The collated web can be re-reeled for later use or fed directly into a coreless winder for leaflet production.

[0064] Figure 12 shows a variation in the embodiment of Figure 7. In this embodiment, rather than printing across a complete reel 80 of parent material using a single print head, the reel 80 is slit into individual strips 84 using slitting wheels 86, each strip then being printed using a separate printing head 82, each strip then being wound and cut into leaflets 92.

[0065] In all of the above embodiments, as stated above, after the leaflet is formed, it should be secured against unwinding, for example by application adhesive, a closing tag, shrink wrapping or bands.

[0066] The insertion of the above leaflets into packages will now be described.

[0067] Figures 13a to 13c show, schematically a leaflet insertion apparatus. The apparatus includes a hopper 200 which receives a plurality of leaflets 202. Leaflets 202 feed by gravity into a delivery chute 204 which feeds the leaflets to an insertion member 206 which pushes the leaflets 202 into a carton 208 which typically will already have received its intended product. Leaflets 202 are fed one at a time to the insertion member 206 by a feed mechanism 210 comprising selectively reciprocable stops 212, an Archimedes screw type arrangement or similar product separation system. Such mechanisms are known to persons skilled in the product feed art and need not be discussed further.

[0068] The lowermost leaflet 202 in the stack of leaflets in the delivery chute 204 is then pushed horizontally out of the leaflet stack into a desired position in the package 208 by the insertion member 206 which can reciprocate towards and away from the package 208. After the leaflet 202 is inserted into the package 208, the package 208 can be closed. The leaflet can be introduced into the carton roll end first or with its longitudinal axis parallel to the open side of the carton, to suit the particular carton style, carton size, leaflet size, filling line configuration etc..

[0069] The position of the leaflet 202 within the carton 208 may be chosen depending on the space available in the carton 208, the arrangement of the product within the carton 208 and the length of the leaflet 202 relative to the dimensions of the carton 208. Different possible positions of a leaflet within a carton are illustrated in Figures 14 to 18.

[0070] Figure 14 shows a carton 208 leaflet which contains a blister pack 220 formed with blisters 220 holding individual tablets, capsules or the like e.g. of pharmaceuticals as is well known in the packaging art. As is also well known in the art, the carton is a cuboid, being folded

and glued from a blank of paperboard, cardboard or other foldable sheet material.

[0071] In this embodiment, the leaflet 220 is received at one end 224 of the carton 208, between the end wall 228 of the carton 208 and an edge 228 of the blister pack 220. The length of the leaflet 202 is relatively short, allowing it to be received in this position.

[0072] In Figure 15, the leaflet 220 is received in a similar position at the end 224 of the carton 208, but overlapping the edge 228 of the blister pack 220. This results in a more compact arrangement and means that the length of the carton 208 may be reduced slightly compared to the arrangement of Figure 13.

[0073] In Figure 15, again the leaflet is received at one end 224 of the carton 208. In this embodiment, however, a partition 230 is formed across the end 224 of the carton 208 to define a compartment 232 for the leaflet 202, with the advantage that the leaflet can be loaded in advance of the product and held securely to avoid a hindrance to product loading. This partition may be folded up from the carton blank or be formed by a separate element.

[0074] Figures 17 and 18 show alternative arrangements, similar to those shown in Figures 13 and 15, except that in these embodiments, the leaflets 202 are substantially longer than the leaflets 202 shown in the embodiments of Figures 14 and 16.. Accordingly in these embodiments, the leaflets 202 are positioned along a longer side of the 234 of the carton 208, rather than at an end 224 of the carton.

[0075] As shown in Figure 18, a partition 236 may also be provided to create a separate compartment 238 for the leaflet 202.

[0076] In an other arrangement not illustrated, the leaflet 202 may overlap a side edge 240 of the blister pack 220, similarly to the arrangement shown in Figure 15.

[0077] In the described embodiment, the diameter of the leaflet 202 is about the same as the depth of the carton 208 into which it is placed. It will be understood that its diameter may be substantially smaller than the depth of the carton 208, in which case it may be positioned in the corner between two adjacent walls of the carton 208 for example.

[0078] It will be understood that the concept of a cylindrical leaflet formed from a plurality of leaves is not limited to leaflets which have circular external circumferences, but also other shapes e.g. oval or racetrack shaped external circumferences.

Claims

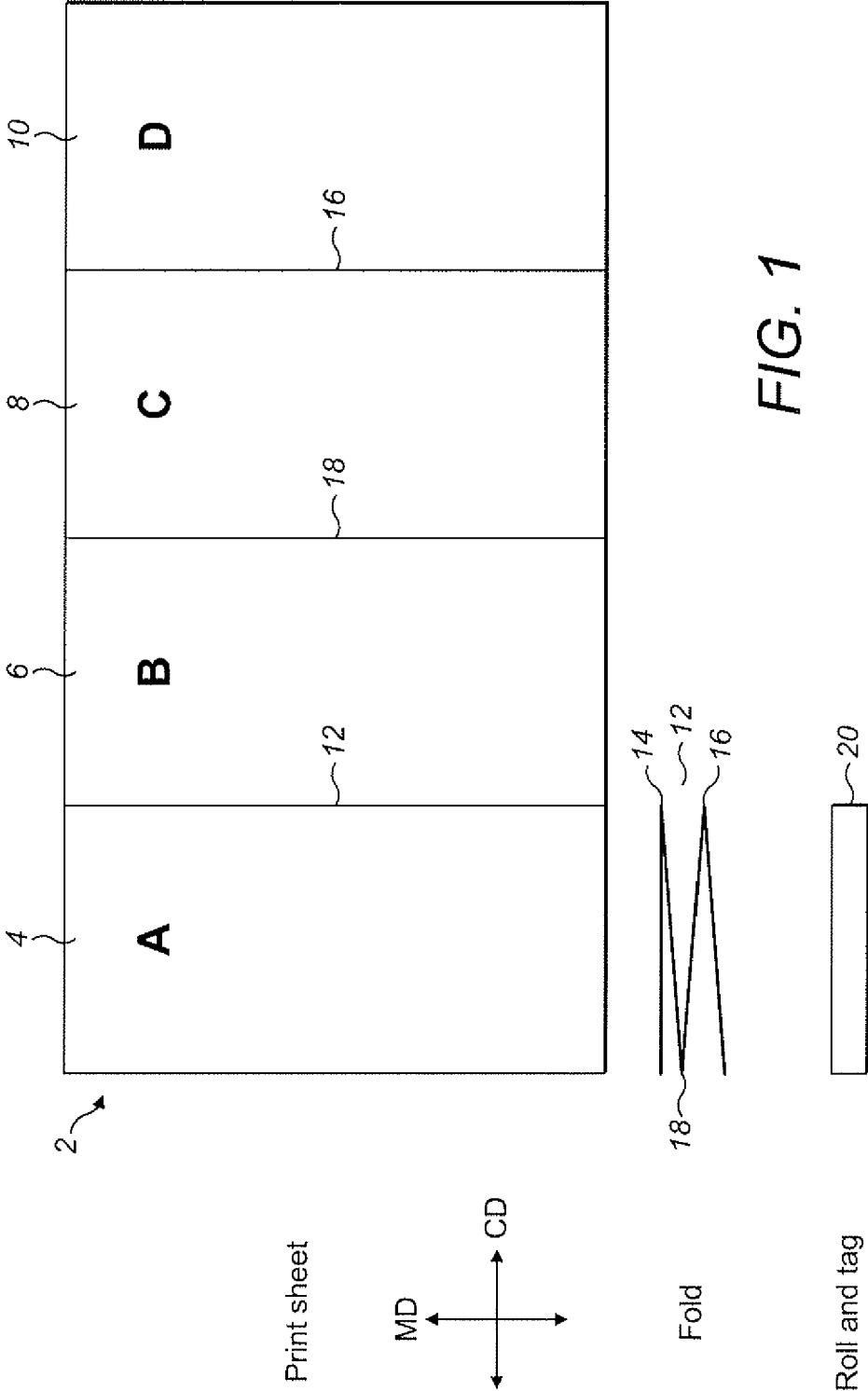
1. A package made from cardboard, paperboard or other foldable sheet material and comprising a rolled or wrapped cylindrical leaflet having a substantially circular outer circumference received therein.
2. A package as claimed in claim 1 wherein the leaflet is received between the contents of the package and

a wall or walls of the package

3. A package as claimed in claim 1 or 2 wherein the leaflet is received within a compartment defined by internal structure of the carton, for example a partition. 5
4. A package as claimed in any preceding claim wherein the leaflet is received in a corner defined between two adjacent walls of the carton. 10
5. A package as claimed in any preceding claim wherein the leaflet is received at one end or along a side of the carton. 15
6. A package as claimed in any preceding claim wherein the package contains a product contained in a blister pack and wherein, optionally, the leaflet at least partially overlaps an edge of the blister pack. 20
7. A method of producing a package as claimed in any preceding claim comprising placing a cylindrical leaflet having a substantially circular outer circumference into the package. 25
8. A method or package as claimed in any preceding claim 7 wherein the leaflet comprises just a single leaf printed on one or both sides or from a plurality of leaves, each of which may contain different information,. 30
9. A method or package as claimed in any preceding claim wherein the leaves are superposed one upon the other so as to produce a multi-leaf leaflet blank. 35
10. A method or package as claimed in claim 9 wherein a sheet of leaflet material is printed in predetermined positions across or along the sheet, the sheet folded in a direction along the length of the sheet or across its width so as to form superposed leaves. 40
11. A method or package as claimed in claim 10 wherein perforations are provided along one or more fold lines. 45
12. A method or package as claimed in claim 10 or 11 wherein water is applied along the prospective fold lines prior to folding and/or wherein pressure is applied along the fold line. 50
13. A method or package as claimed in claim 9 wherein the sheet is printed, then slit or cut so as to produce discrete leaves, the leaves then collated one above the other into a stack so as to form a stacked leaflet blank. 55
14. A method or package as claimed in claim 9 wherein a stacked leaflet blank is produced by folding a blank

and removing the edges so as to produce a stack of discrete leaves.

15. A multi-leaf cylindrical leaflet formed from a stack comprising a plurality of discrete leaves.



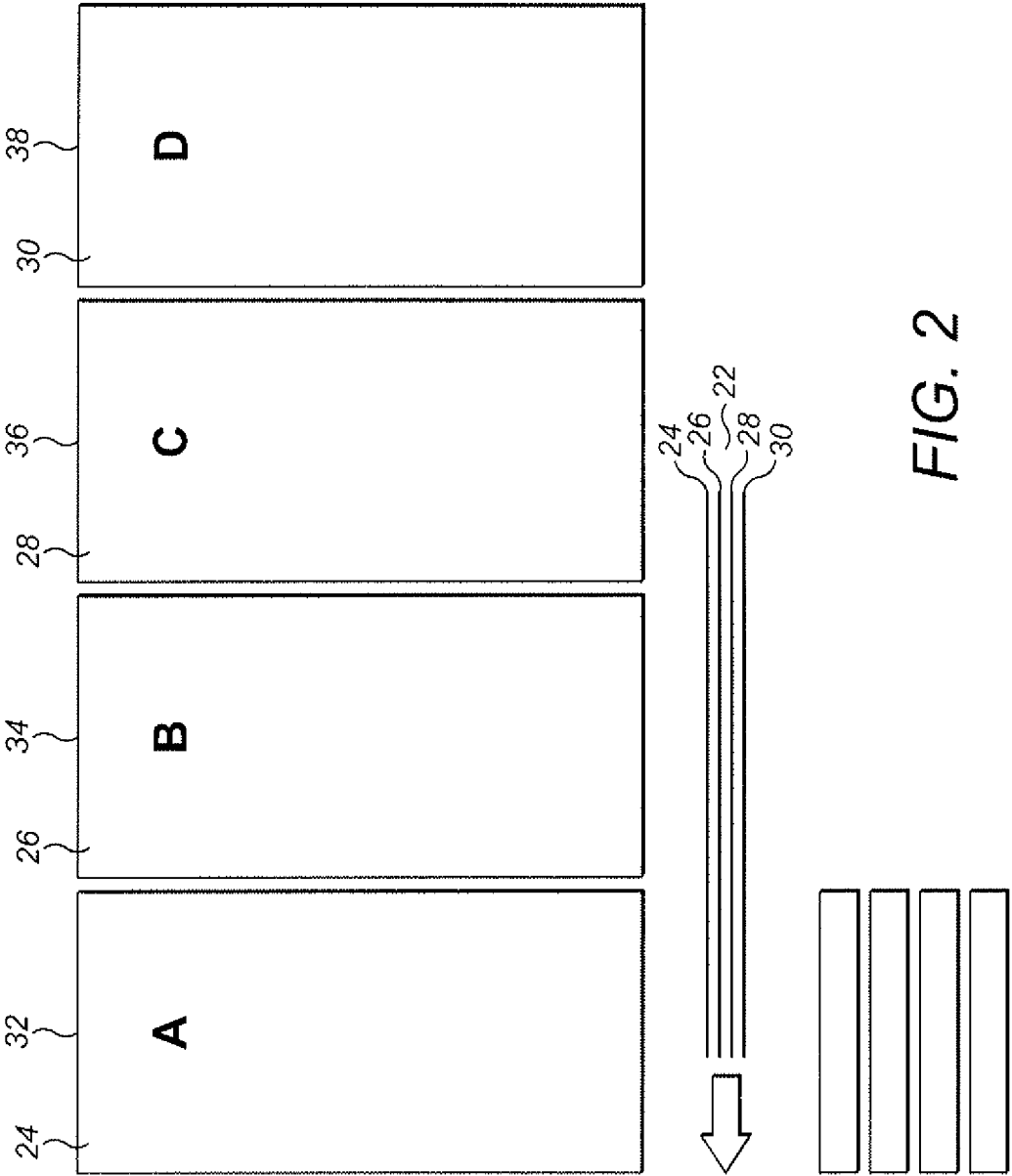
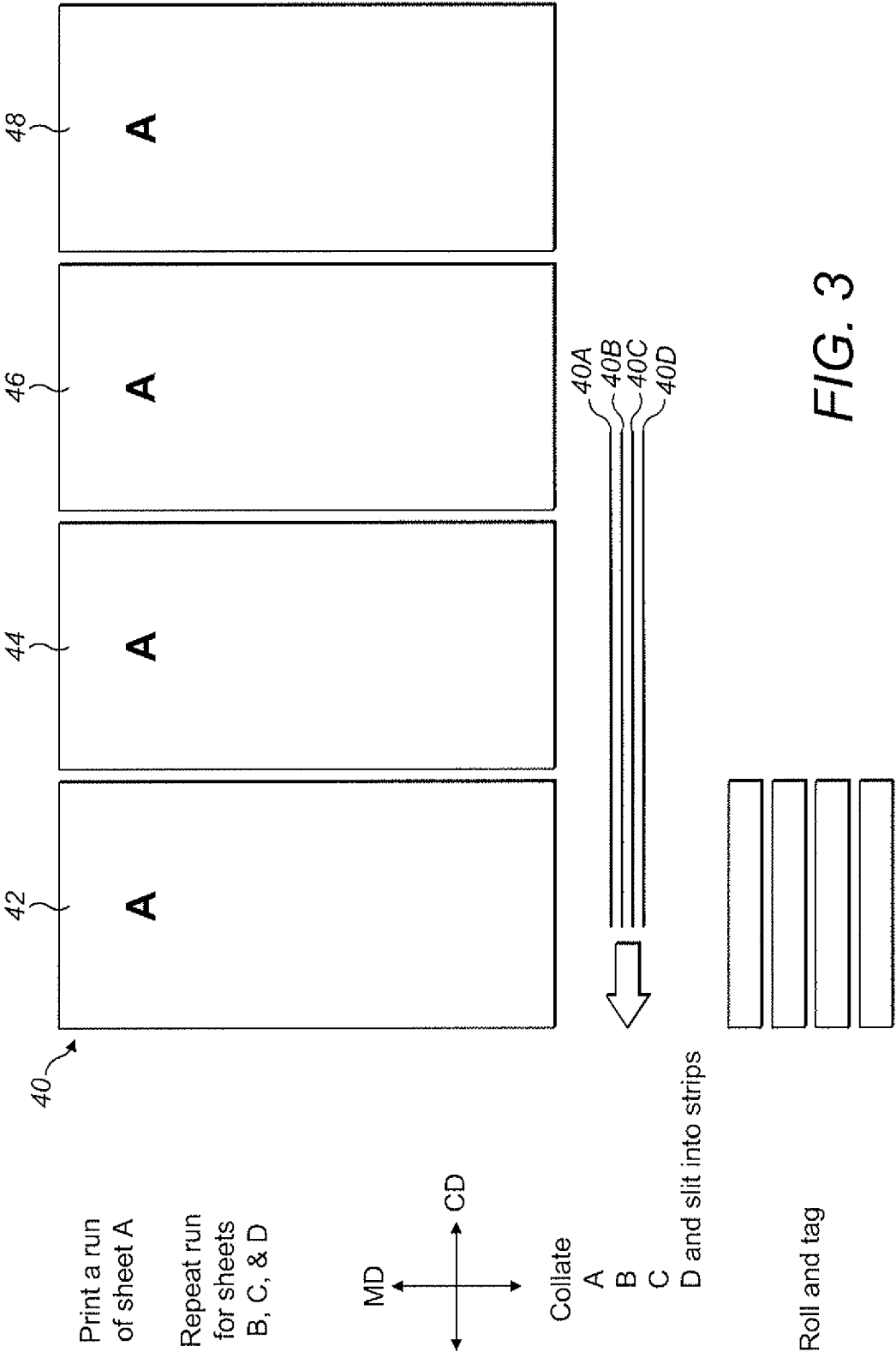
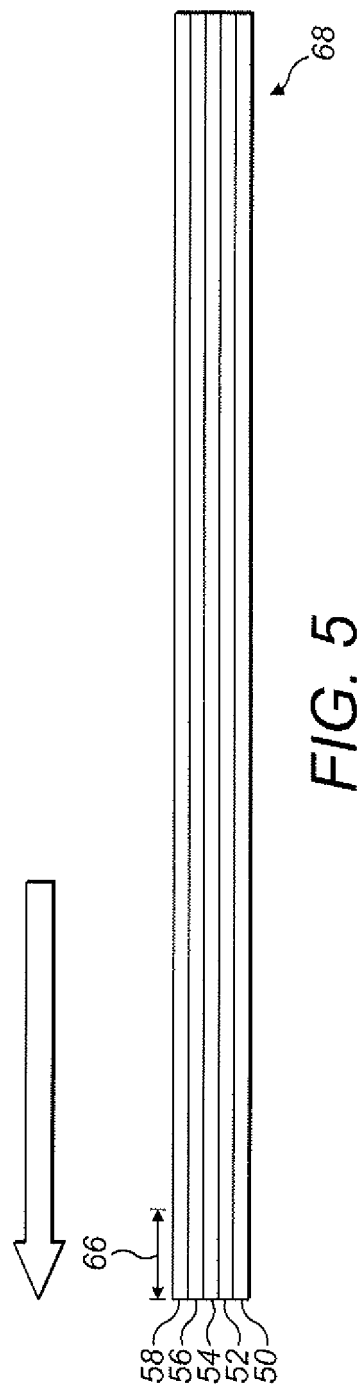
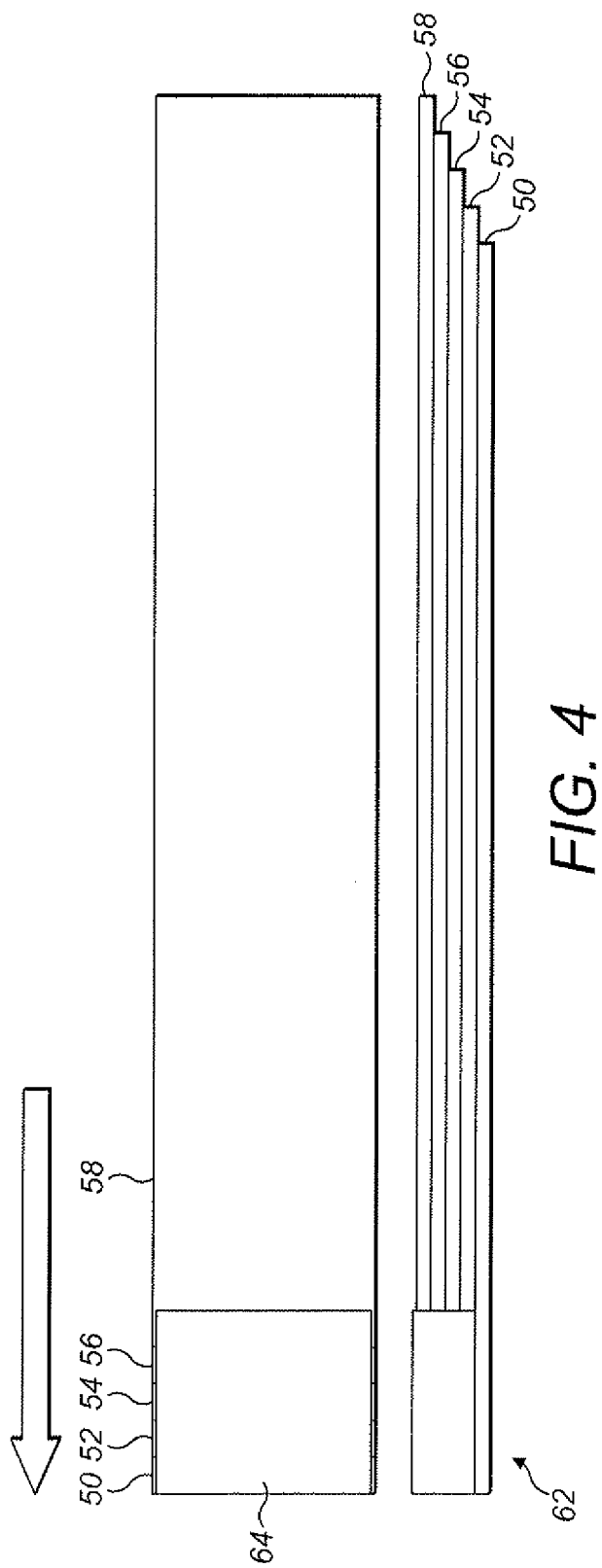


FIG. 2





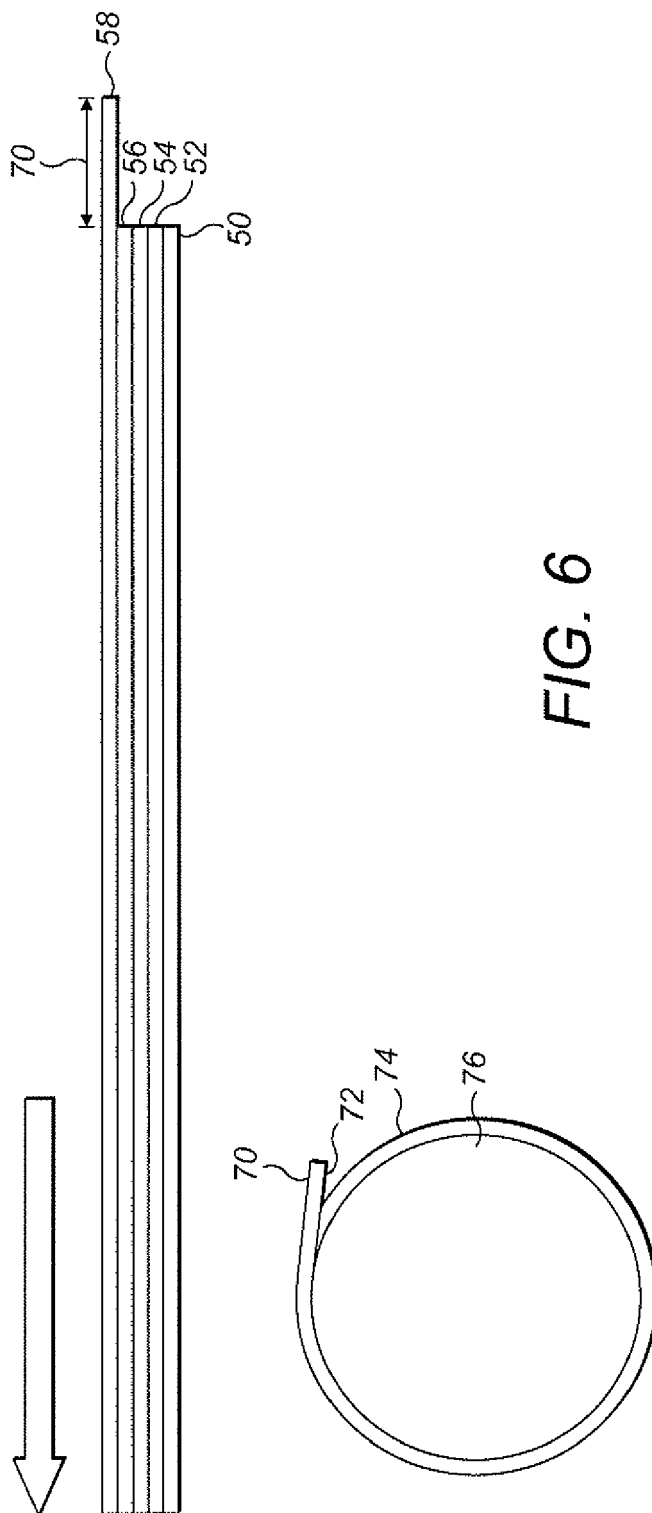


FIG. 6

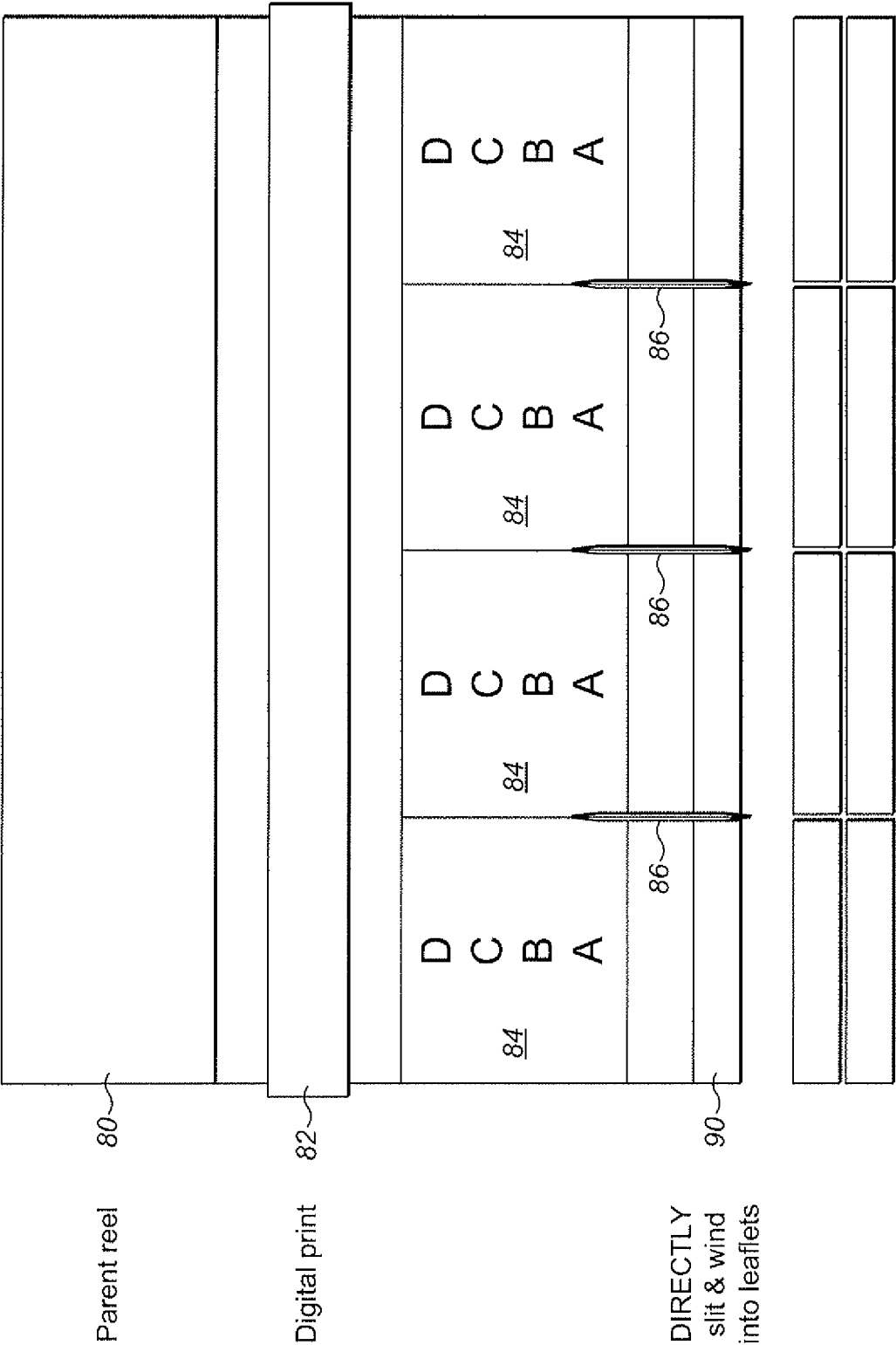


FIG. 7

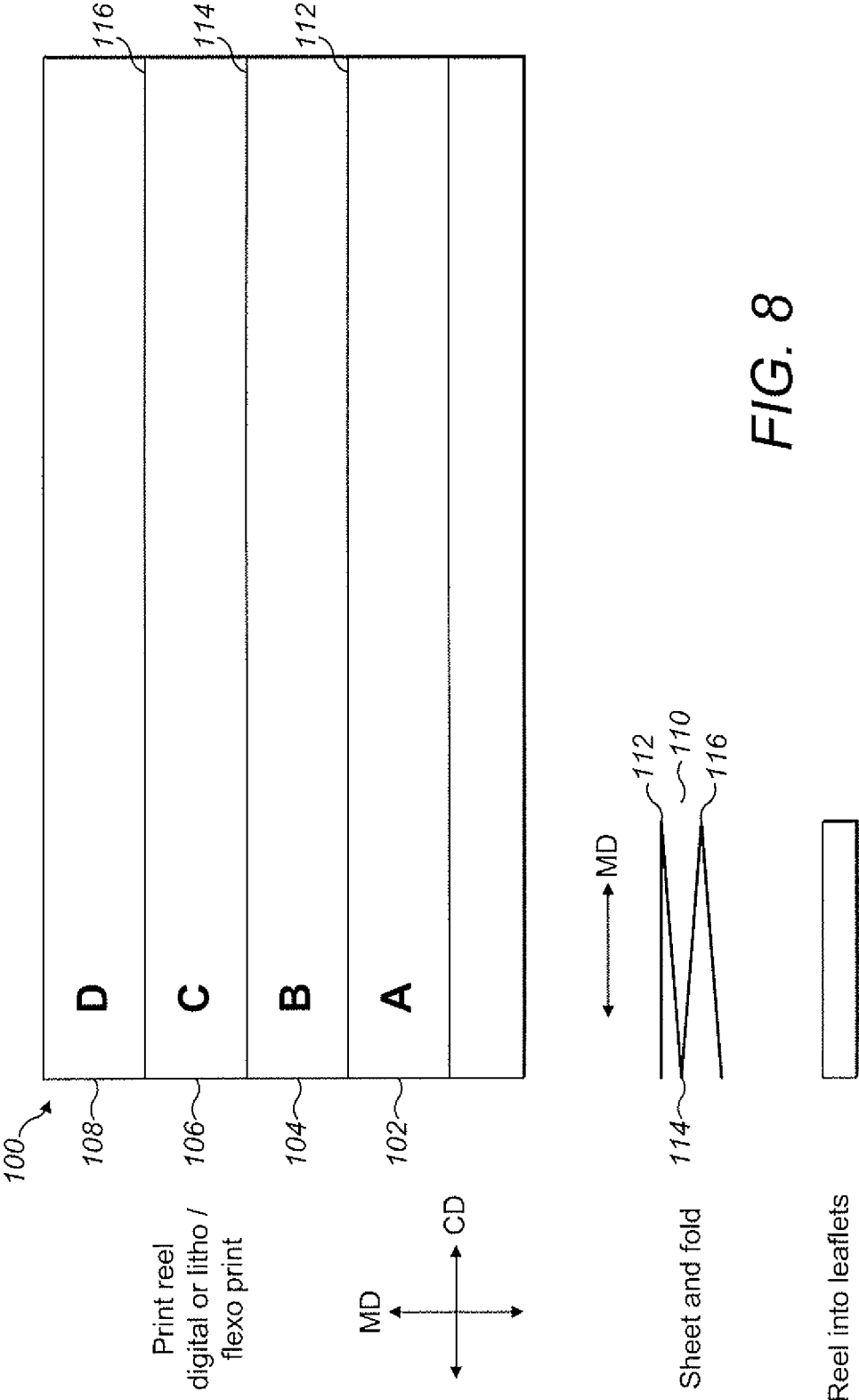


FIG. 8

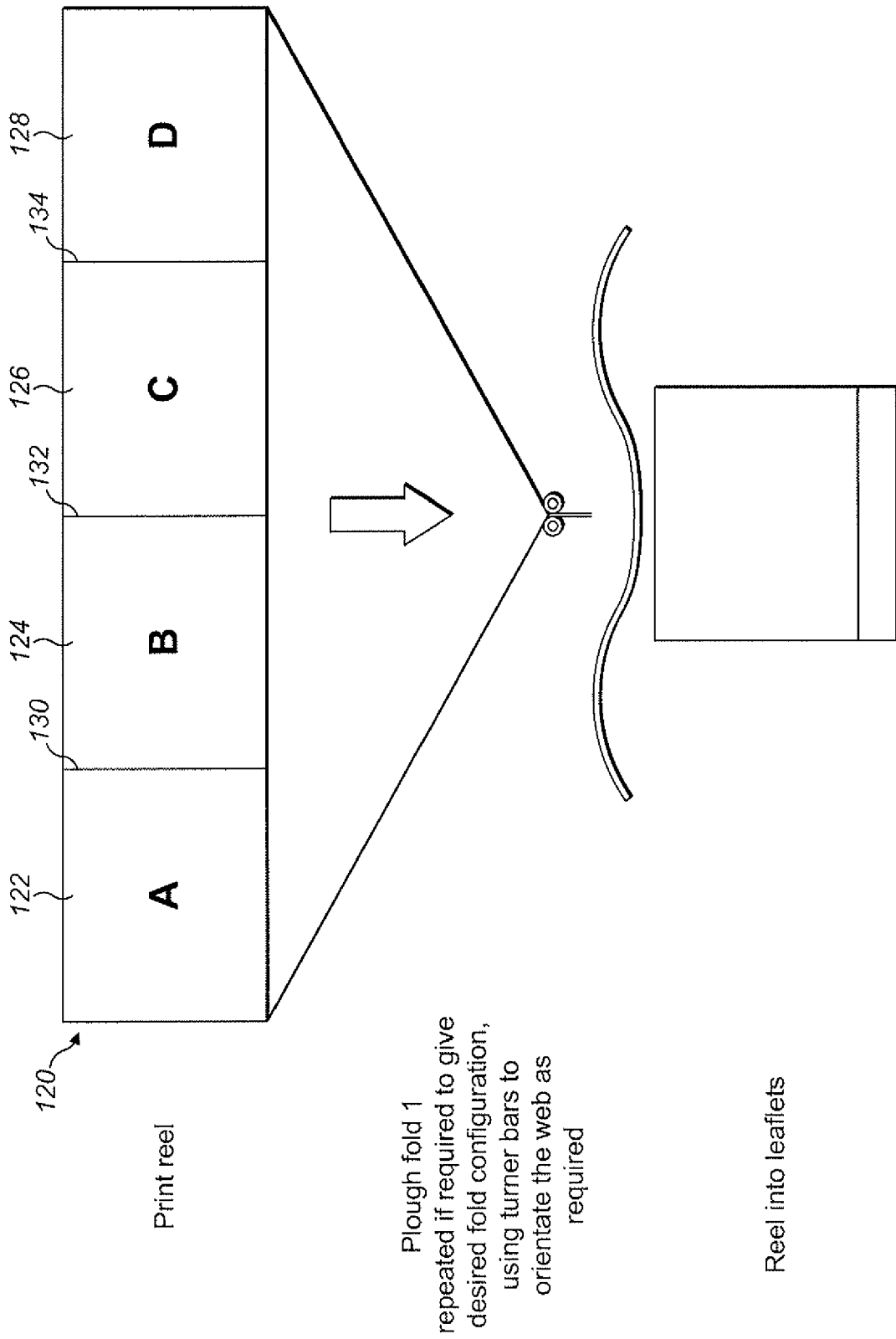


FIG. 9

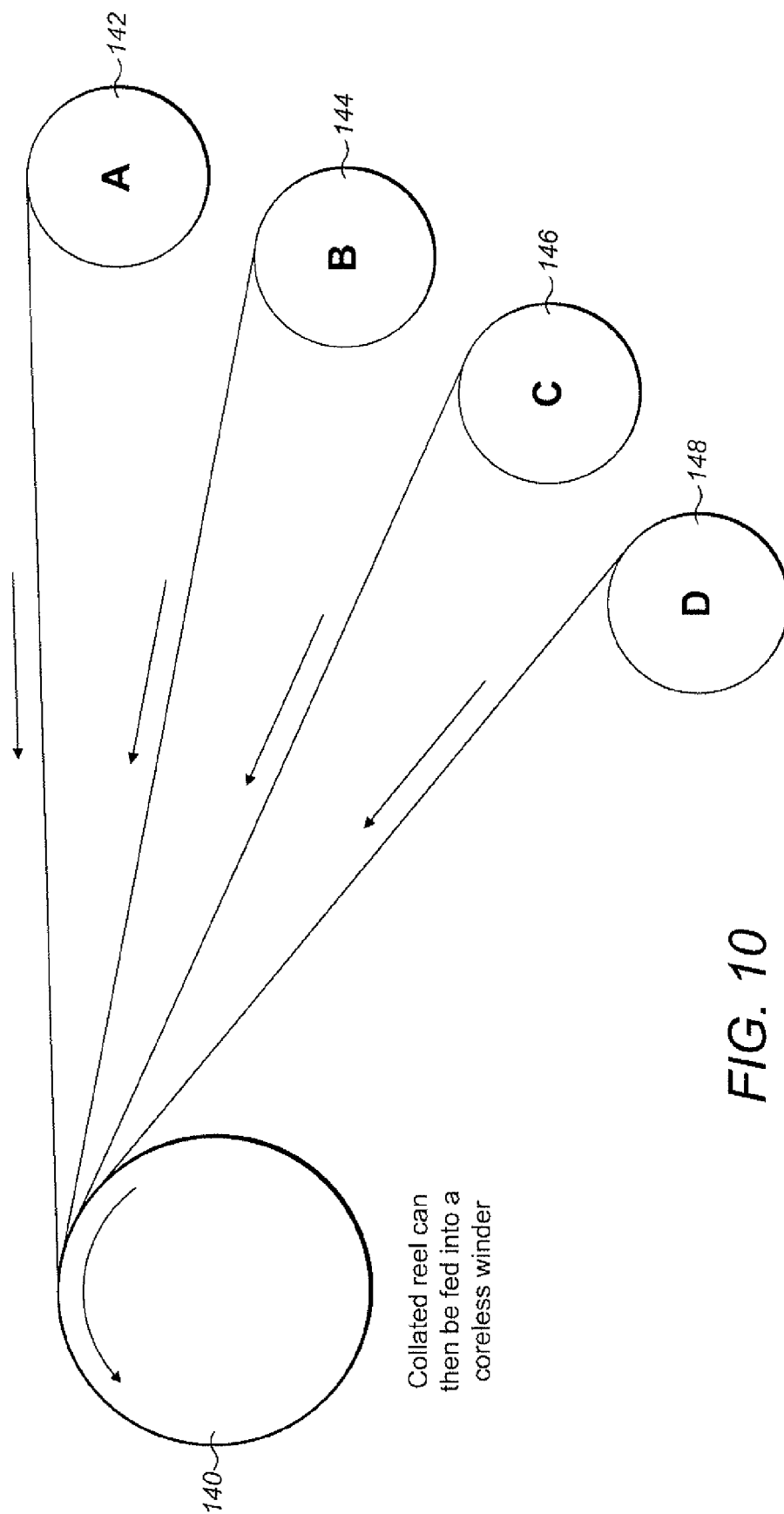
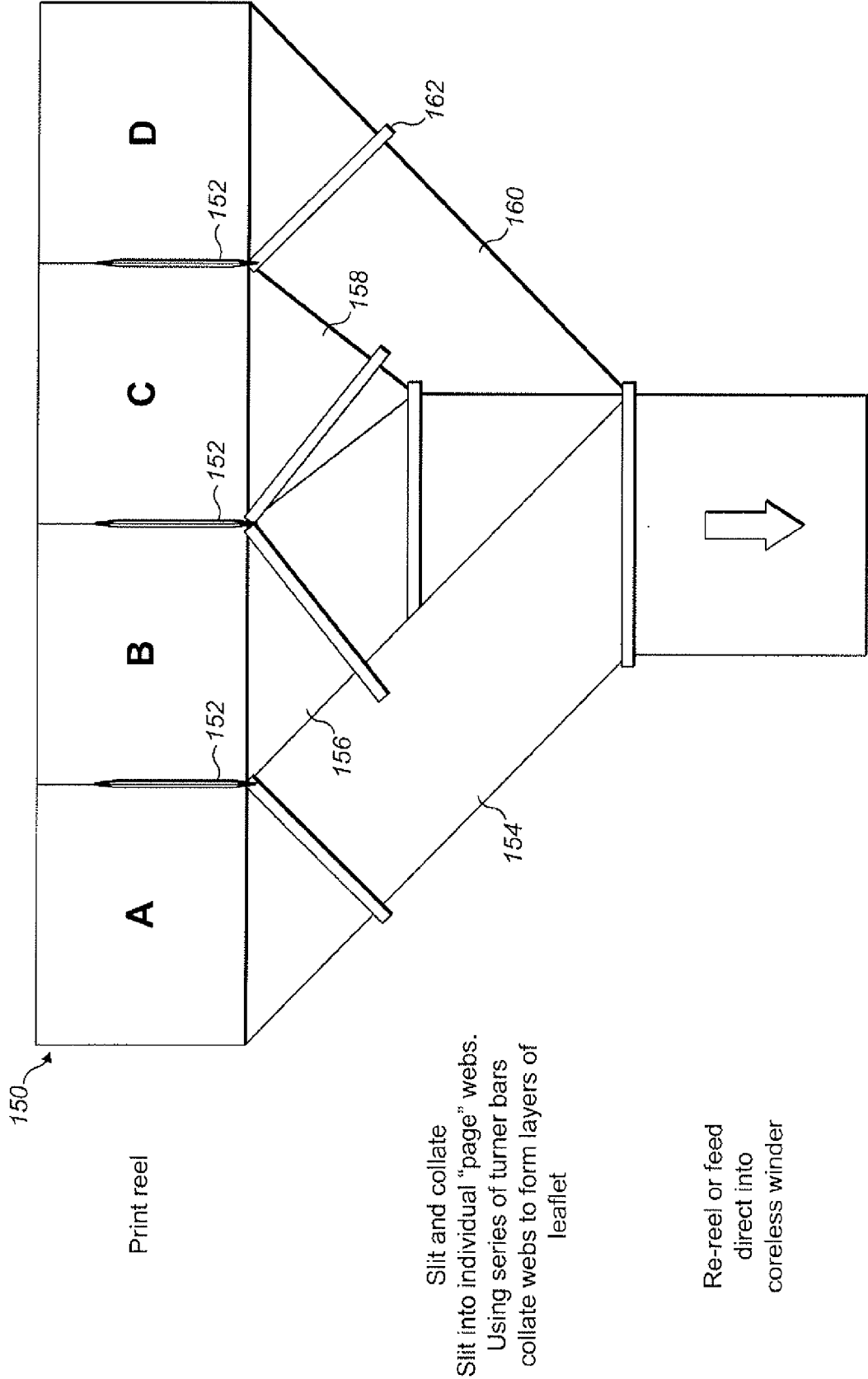
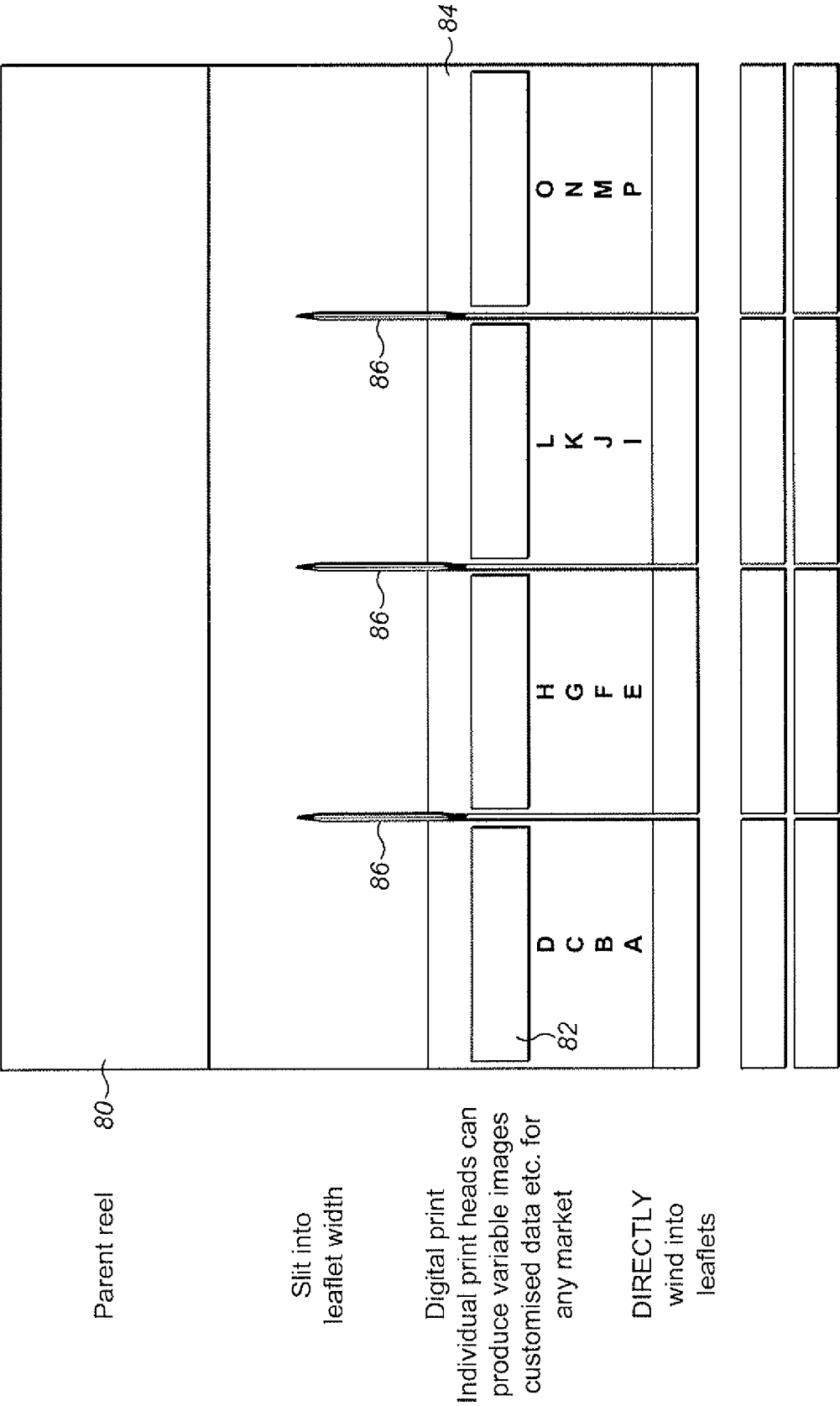


FIG. 10





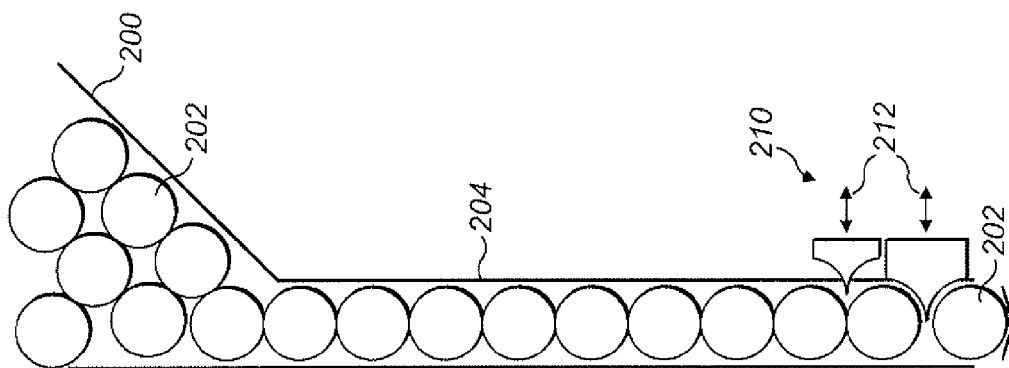


FIG. 13a

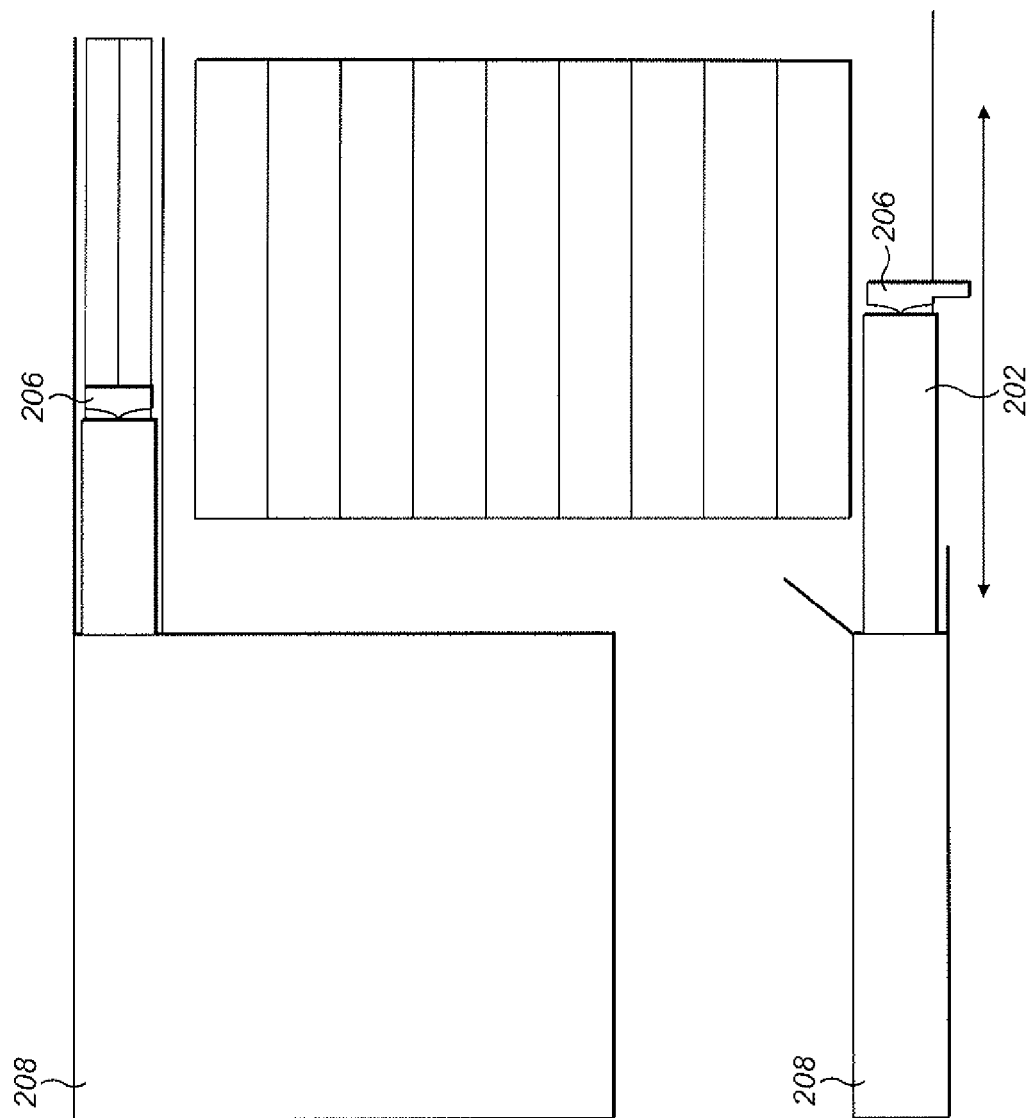


FIG. 13b

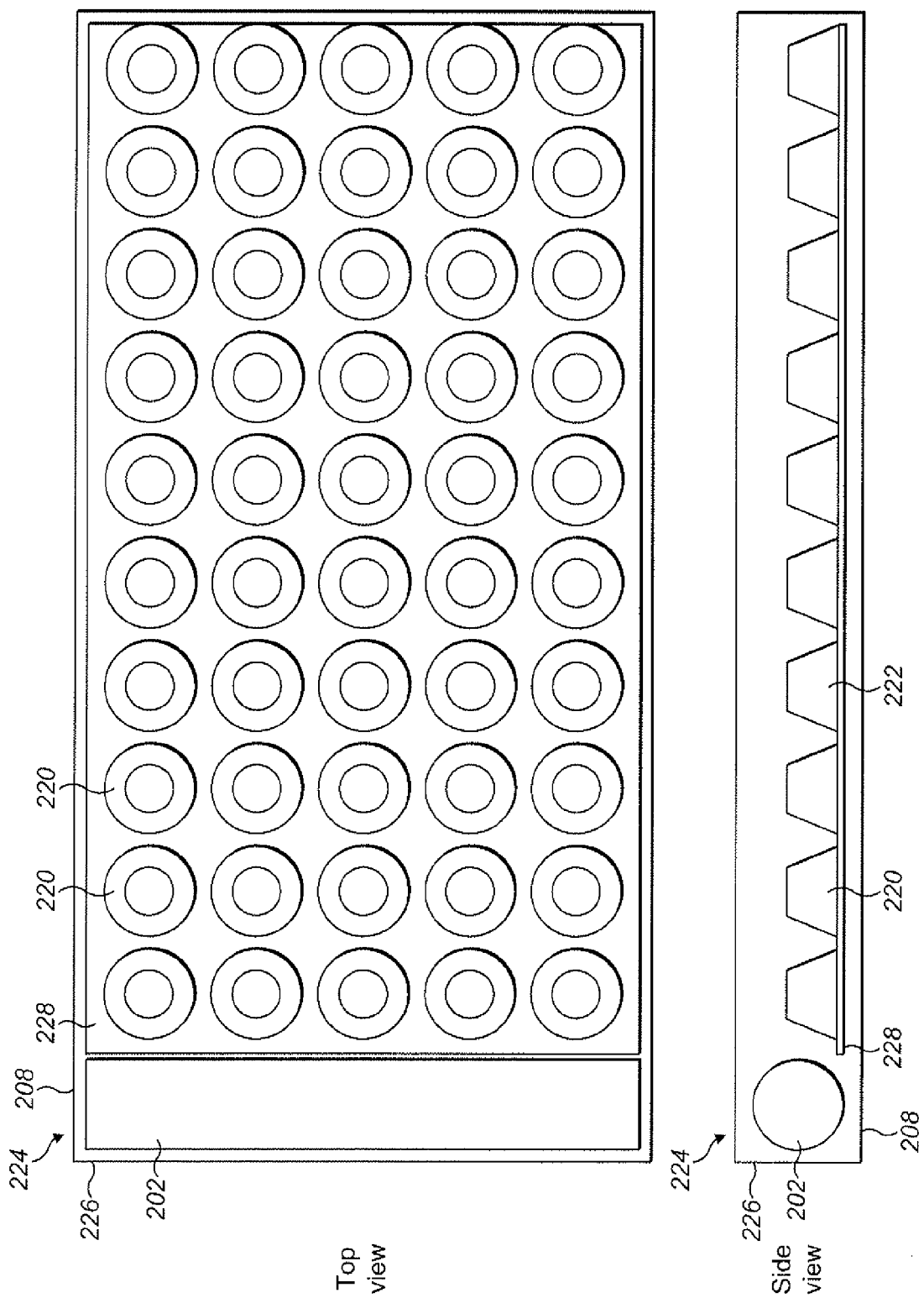


FIG. 14

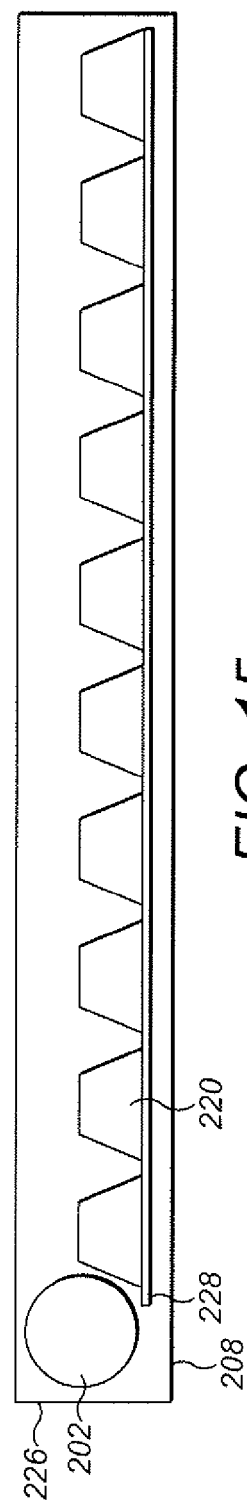
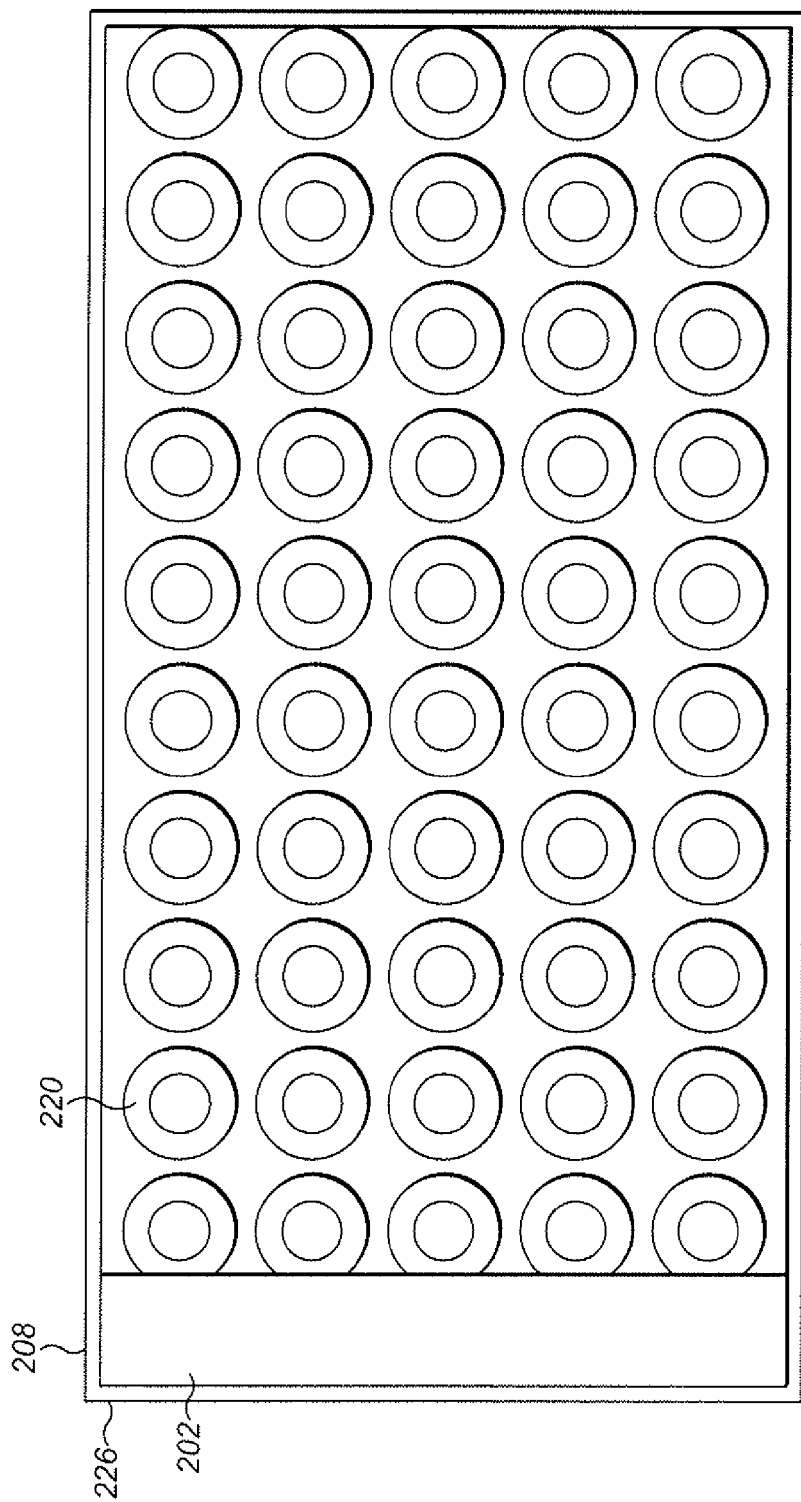


FIG. 15

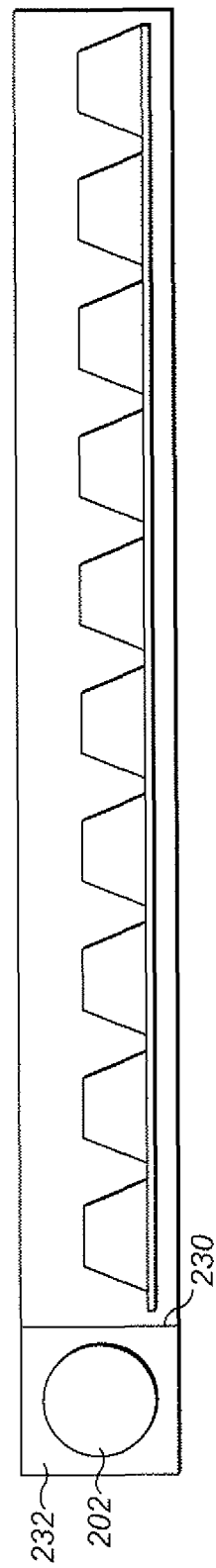
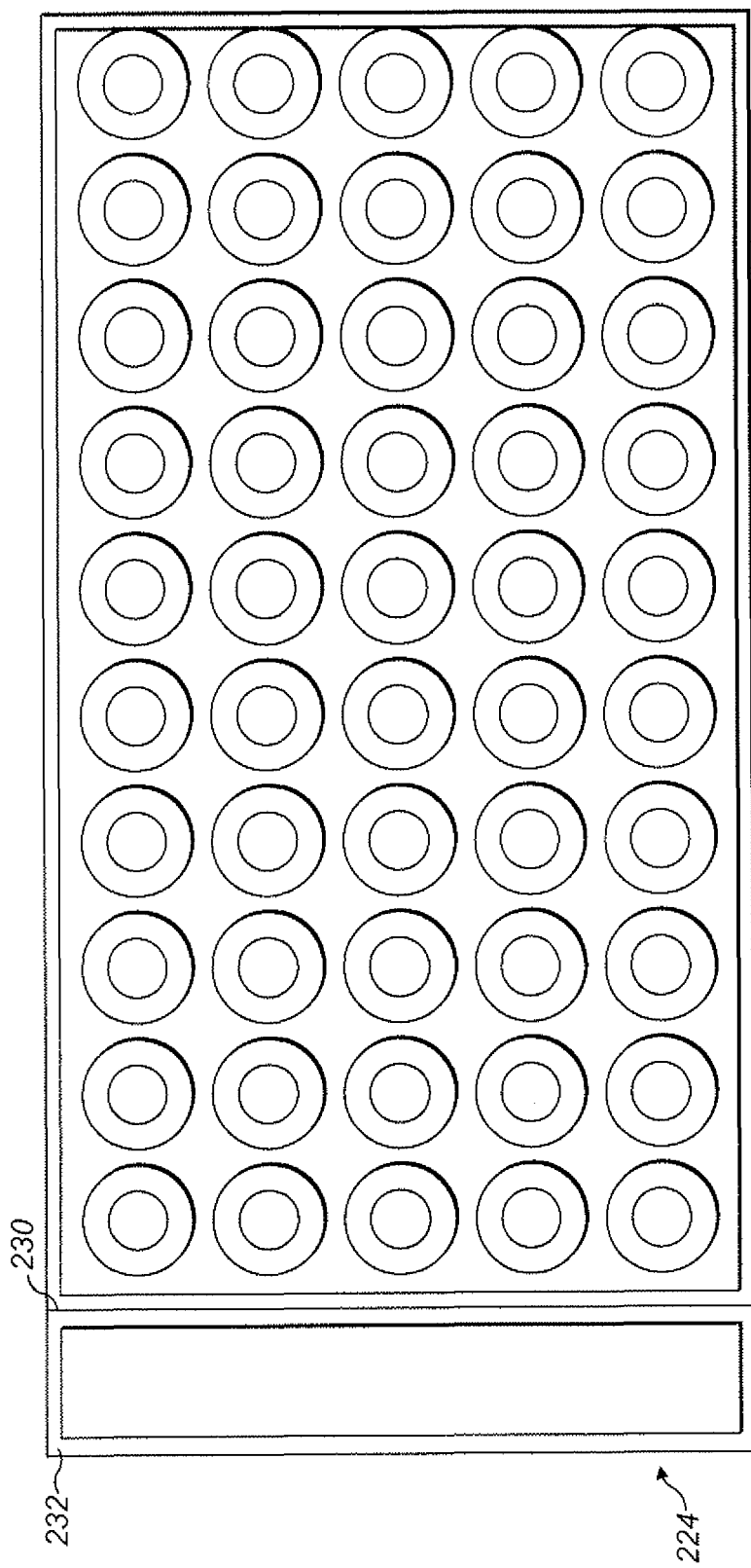
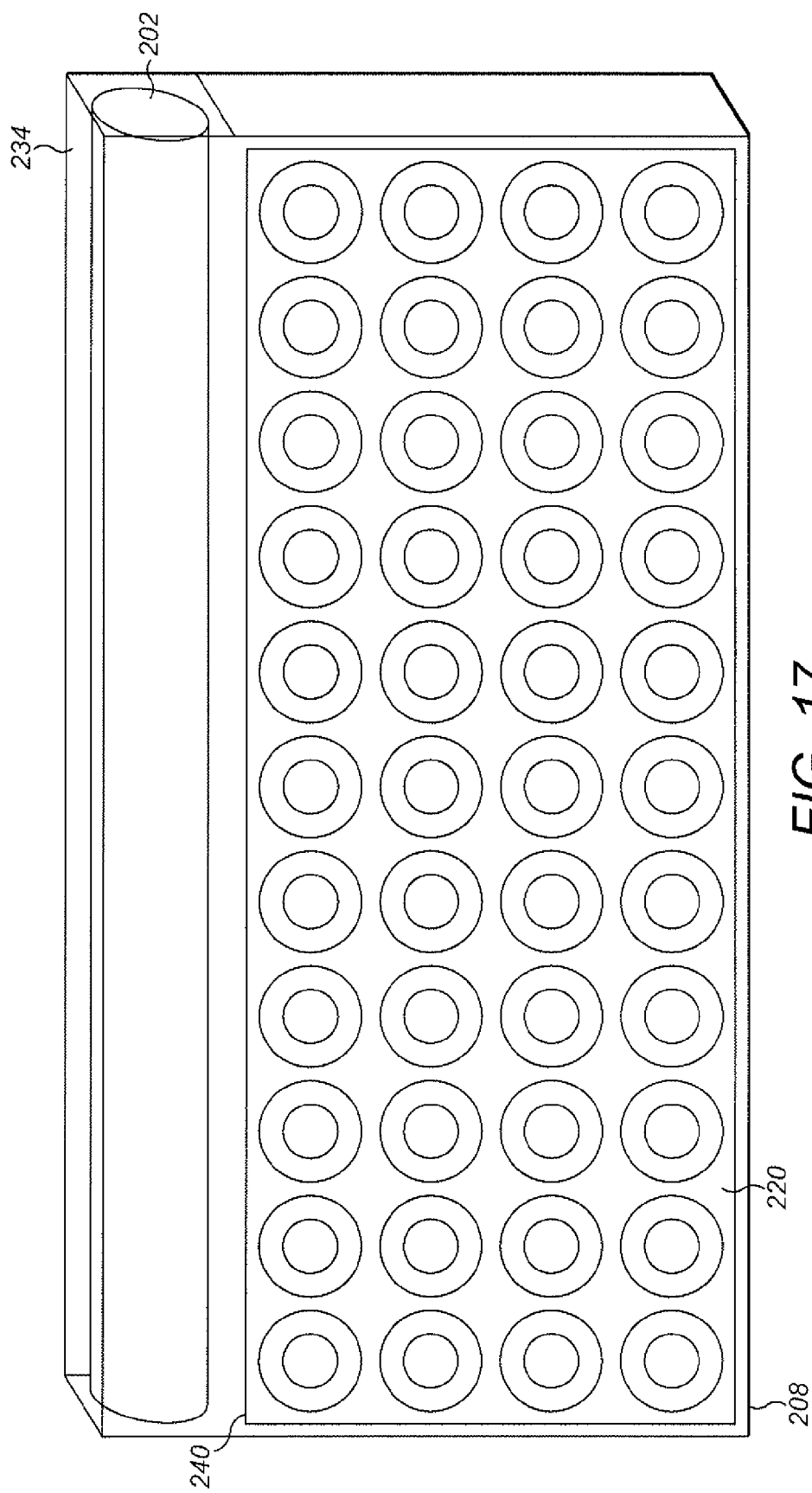


FIG. 16



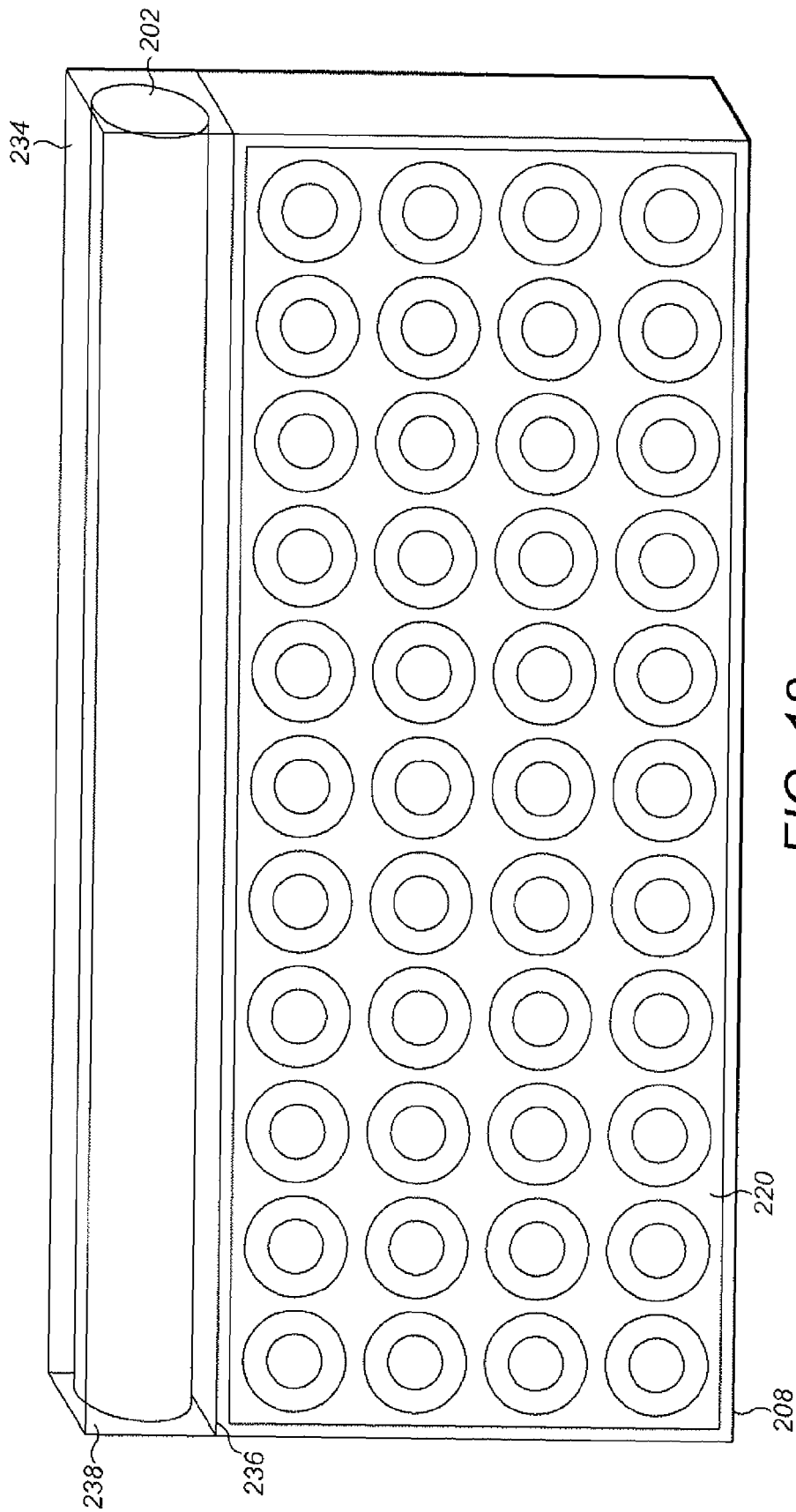


FIG. 18



EUROPEAN SEARCH REPORT

Application Number
EP 11 17 2531

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 13 September 2011	Examiner Ngo Si Xuyen, G
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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