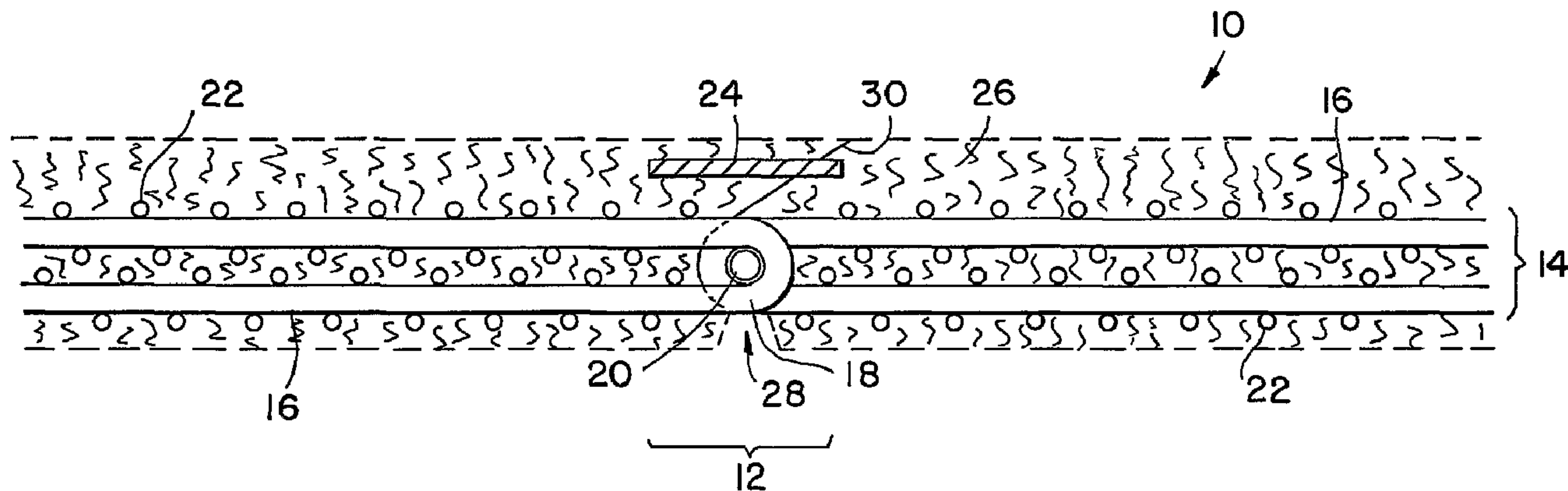




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(57) Abrégé/Abstract:

An on-machine-seamable papermaker's fabric (10) includes a base fabric (14) having seaming loops (18) at its widthwise edges for joining the papermaker's fabric into endless form on a paper machine. The seam formed when the seaming loops are interdigitated and joined to one another with a pintle (20) is covered with a strip (24) of flow-resistant material, or, where the base fabric is a laminated structure having a top layer and a bottom layer, strips of flow-resistant material are placed between the top and bottom layers adjacent to the seam. The flow-resistant material provides the seam region with permeabilities to air and water substantially identical to those of the rest of the papermaker's fabric. At least one layer of staple fiber batt (26) is entangled through the base fabric and flow-resistant material.

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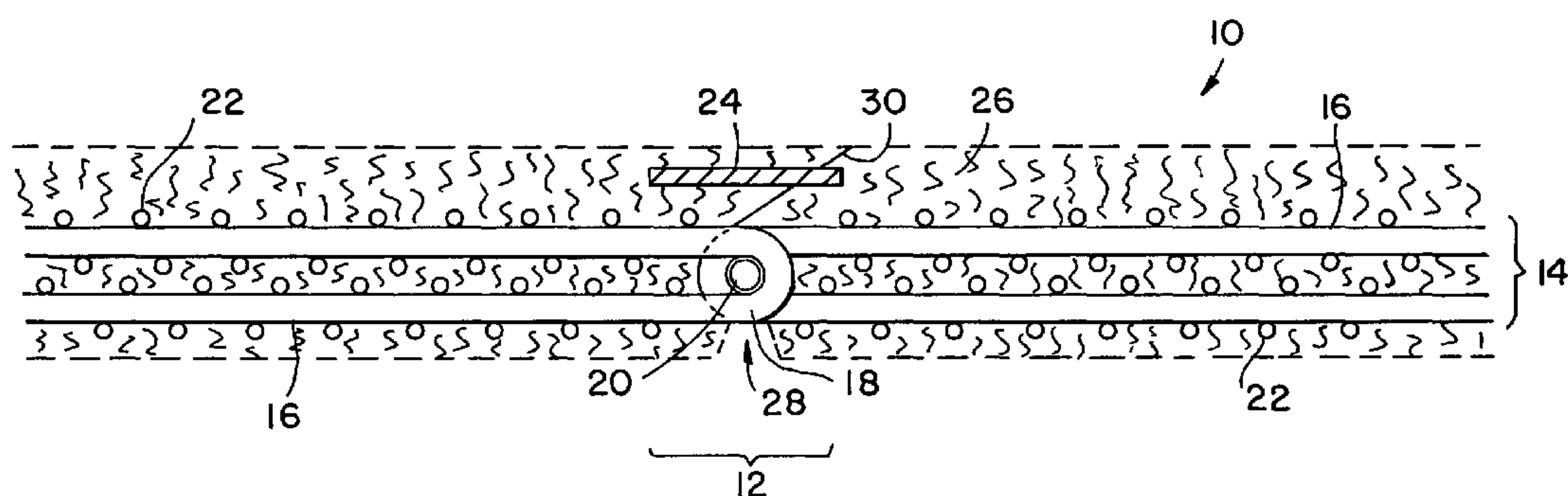
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(54) Title: IMPROVEMENTS FOR SEAMED PAPERMAKER'S FABRICS



(57) Abstract: An on-machine-seamable papermaker's fabric (10) includes a base fabric (14) having seaming loops (18) at its width-wise edges for joining the papermaker's fabric into endless form on a paper machine. The seam formed when the seaming loops are interdigitated and joined to one another with a pintle (20) is covered with a strip (24) of flow-resistant material, or, where the base fabric is a laminated structure having a top layer and a bottom layer, strips of flow-resistant material are placed between the top and bottom layers adjacent to the seam. The flow-resistant material provides the seam region with permeabilities to air and water substantially identical to those of the rest of the papermaker's fabric. At least one layer of staple fiber batt (26) is entangled through the base fabric and flow-resistant material.



WO 02/35000 A1

IMPROVEMENTS FOR SEAMED PAPERMAKER'S FABRICS

Background of the Invention

1. Field of the Invention

The present invention relates to the papermaking arts. More specifically, the present invention is a
5 papermaker's fabric of the on-machine-seamable variety, such as an on-machine-seamable press fabric for the press section of a paper machine.

2. Description of the Prior Art

10 During the papermaking process, a fibrous web is formed by depositing a fibrous slurry, that is, an aqueous dispersion of cellulose fibers, on a moving forming fabric in the forming section of a paper machine. A large amount of water is drained from the
15 slurry through the forming fabric during this process, leaving the fibrous web on the surface of the forming fabric.

The newly formed web proceeds from the forming section to a press section, which includes a series
20 of press nips. The fibrous web passes through the press nips supported by a press fabric, or, as is often the case, between two press fabrics. In the press nips, the fibrous web is subjected to compressive forces which squeeze water therefrom, and
25 which adhere the fibers in the web to one another to turn the fibrous web into a sheet. The water is accepted by the press fabric or fabrics and, ideally,

does not return to the web.

The web finally proceeds to a dryer section, which includes at least one series of rotatable dryer drums or cylinders, which are internally heated by
5 steam. The web, or newly formed paper sheet, itself is directed in a sinuous path sequentially around each in the series of drums by a dryer fabric, which holds the web closely against the surfaces of the drums. The heated drums reduce the water content of
10 the web to a desirable level through evaporation.

It should be appreciated that the forming, press and dryer fabrics all take the form of endless loops on the paper machine and function in the manner of conveyors. It should further be appreciated that
15 paper manufacture is a continuous process which proceeds at considerable speed. That is to say, the fibrous slurry is continuously deposited onto the forming fabric in the forming section, while a newly manufactured paper sheet is continuously wound onto
20 rolls after it exits from the dryer section.

Referring, for the moment, specifically to press fabrics, it should be recalled that, at one time, press fabrics were supplied only in endless form. This is because a newly formed paper sheet is
25 extremely susceptible to marking in the press nip by any nonuniformity in the press fabric or fabrics. An endless, seamless fabric, such as one produced by the process known as endless weaving, has a uniform structure in both its longitudinal (machine) and

transverse (cross-machine) directions. A seam, such as a seam which may be used to close the press fabric into endless form during installation on a paper machine, represents a discontinuity in the uniform
5 structure of the press fabric. The use of a seam, then, greatly increases the likelihood that the paper sheet will be marked in the press nip.

In brief, the seam region of any workable on-machine-seamable, or OMS®, press fabric must behave
10 under load, that is, under compression in the press nip or nips, like the rest of the press fabric, and must have the same permeability to water and to air as the rest of the press fabric, in order to prevent the periodic marking of the paper product being
15 manufactured by the seam region. OMS® is a registered trademark of Albany International Corp.

Despite the considerable technical obstacles presented by these requirements, it remained highly desirable to develop an on-machine-seamable press
20 fabric, because of the comparative ease and safety with which it could be installed on the press section. Ultimately, these obstacles were overcome with the development of press fabrics having seams formed by providing seaming loops on the crosswise
25 edges of the two ends of the fabric. The seaming loops themselves are formed by the machine-direction (MD) yarns of the fabric. A seam is formed by bringing the two ends of the press fabric together, by interdigitating the seaming loops at the two ends
30 of the fabric, and by directing a so-called pin, or pintle, through the passage defined by the

interdigitated seaming loops to lock the two ends of the fabric together. Needless to say, it is much easier and far less time-consuming to install an on-machine-seamable press fabric, than it is to install
5 an endless press fabric, on a paper machine.

There are several methods for producing a press fabric that can be joined on the paper machine with such a seam. One method is to flat-weave the fabric, in which case the warp yarns are the machine-
10 direction (MD) yarns of the press fabric. To form the seaming loops, the warp ends are woven some distance back into the fabric body in a direction parallel to the warp yarns. Another technique, far more preferable, is a modified form of endless
15 weaving, which normally is used to produce an endless loop of fabric. In modified endless weaving, the weft, or filling, yarns are continuously woven back and forth across the loom, in each passage forming a loop on one of the edges of the fabric being woven by
20 passing around a loop-forming pin. As the weft yarn, or filling yarn, which ultimately becomes the MD yarn in the press fabric, is continuous, the seaming loops obtained in this manner are stronger than any that can be produced by weaving the warp ends back into
25 the ends of a flat-woven fabric. In still another method, a fabric is woven endless, and the endless loop of fabric thereby obtained is flattened and given the form of two fabric layers joined to one another at two widthwise ends of the flattened loop.
30 One or more widthwise yarns are then removed from

each of the two widthwise ends to produce a short gap defined by the freed, that is, the newly unwoven portions of, lengthwise yarns at each end. These unwoven portions of the lengthwise yarns are then
5 used as seaming loops when the two widthwise ends are brought together as described above.

Alternate approaches toward manufacturing a laminated fabric like that made according to the preceding method are shown in two recently issued
10 U.S. patents. In commonly assigned U.S. Patent No. 5,732,749 to Fargeout, a laminated integrally woven on-machine-seamable papermaker's fabric includes two single-layer woven fabric plies sharing a common machine-direction (MD) yarn. The
15 common MD yarn, which is the weft yarn on the loom during the weaving of the fabric by a modified endless weaving technique, forms seaming loops which join the plies to one another at the ends thereof. During the weaving of the press fabric, solvent-
20 removable binder yarns join the two plies, which are accordingly integrally woven. When the weaving is completed, the solvent-removable binder yarn are removed through dissolution with an appropriate solvent, separating the plies and yielding the
25 laminated structure.

In commonly assigned U.S. Patent No. 5,939,176, an on-machine-seamable multiaxial press fabric for the press section of a paper machine is

made from a base fabric layer assembled by spirally winding a fabric strip in a plurality of contiguous turns, each of which abuts against and is attached to those adjacent thereto. The resulting endless base
5 fabric layer is flattened to produce first and second fabric plies joined to one another at folds along their widthwise edges. Crosswise yarns are removed from each turn of the fabric strip at the folds to produce seaming loops. The press fabric is joined
10 into endless form during installation on a paper machine by directing a pintle through the passage formed by the interdigitation of the seaming loops.

Generally, the manufacture of an on-machine-seamable press fabric includes the attachment of a
15 staple fiber batt to one or both sides thereof. The attachment may be effected by a process called needling (fiber locking) or hydroentangling, while the fabric is joined into endless form. Once the desired amount of staple fiber batt has been
20 attached, the loop-forming pin or pintle is removed to place the press fabric into flat form for shipment and eventual installation on a paper machine. At this time, the staple fiber batt must be cut in the vicinity of the seam to completely separate the two
25 ends of the press fabric from one another. Often, the staple fiber batt is cut in a manner that enables it to form a flap over the seaming loops when the press fabric is rejoined into endless form. In this way, the seam region is practically indistinguishable
30 from the rest of the paper-supporting side of the

press fabric.

On the other side, the "roll" side, of the press fabric, however, some staple fiber batt must be removed from the seaming loops to facilitate the
5 later passage of a pintle therethrough. The removal of this generally small amount of staple fiber batt, nevertheless, makes the seam region slightly more permeable to air and water than the rest of the press fabric. This difference in water permeability, or
10 flow resistance, perhaps ever so slight, is enough to cause sheet marking in some situations. Moreover, the difference tends to become more pronounced with time as more batt fiber is lost from the "roll" side of the press fabric as it runs on the paper machine.

15 Several approaches to solve this problem have been taken. One approach involves the use of stuffer yarns with the pintle when the press fabric is being joined into endless form on the paper machine.

In another approach, a press fabric comprises
20 two on-machine-seamable base fabrics, one fitting inside the loop of the other, laminated to one another during the needling process. The seam regions of the inner and outer base fabrics are offset slightly with respect to one another, so that
25 the seam region of each will coincide with a non-seam region of the other.

All of these approaches are designed to compensate for the differences between the water permeability or flow resistance of the seam region of
30 an OMS® press fabric and the rest or body of the

press fabric. However, none of these approaches have yielded completely satisfactory results for all press types and positions and for all paper grades.

The present invention represents an alternative
5 approach toward solving this problem.

Summary of the Invention

Accordingly, the present invention is an on-machine-seamable papermaker's fabric having flow-
10 resistant material applied over or adjacent to its seam to compensate for differences between the permeabilities to air and water of the seam and of the rest of the papermaker's fabric.

In a first embodiment of the papermaker's
15 fabric, an on-machine-seamable base fabric has a system of longitudinal yarns and a system of transverse yarns, the former being substantially in the machine direction and the latter being substantially in the cross-machine direction. The
20 yarns of the system of longitudinal yarns are interwoven with the yarns of the system of transverse yarns to form the base fabric in a rectangular shape with a length, a width, two lengthwise edges and two widthwise edges. The longitudinal yarns form seaming
25 loops along each of the two widthwise edges. The seaming loops are interdigitated and joined together with a pintle to form a seam.

A strip of flow-resistant material overlies the seam and is attached thereto. The flow-resistant
30 material provides the seam with permeabilities to air

and water substantially identical to that of the rest of the papermaker's fabric. At least one layer of staple fiber batt is entangled through the base fabric.

5 In an alternate embodiment of the invention, the on-machine seamable papermaker's fabric has a base fabric with a laminated structure of a top layer and a bottom layer. These two layers are joined directly to one another only at their two widthwise edges by
10 longitudinal yarns, which form seaming loops there. As above, a strip of flow-resistant material may be placed over the seam formed when the seaming loops are interdigitated with one another and joined together with a pintle. Alternatively, strips of
15 flow-resistant material may be placed between the top layer and the bottom layer adjacent to and on each side of the seam. As above, the flow-resistant material provides the seam with permeabilities to air and water substantially identical to that of the rest
20 of the papermaker's fabric. At least one layer of staple fiber batt is entangled through the base fabric to join the two layers to one another.

The present invention will now be described in more complete detail with frequent reference being
25 made to the drawing figures identified below.

Brief Description of the Drawings

Figure 1 is a cross-sectional view of a first embodiment of the present invention;

30 Figure 2 is a cross-sectional view of a second

embodiment of the present invention;

Figure 3 is a perspective view of an endless woven fabric which may be used to practice a third embodiment of the present invention;

5 Figure 4 is a perspective view of an endless base fabric, assembled by spirally winding a woven fabric strip, which may also be used to practice a third embodiment of the present invention; and

Figure 5 is a cross-sectional view of a third
10 embodiment of the present invention.

Detailed Description of the Preferred Embodiments

Referring, now, more specifically to these drawing figures, a first embodiment of the present
15 invention is shown in Figure 1, a cross-sectional view of the seam region 12 of an on-machine-seamable press fabric 10.

Press fabric 10 comprises a base fabric 14 which is woven from monofilament yarns in a two-
20 layer, or duplex, weave. Machine-direction yarns 16, which are weft yarns in the on-machine-seamable base fabric 14, form seaming loops 18 which are interdigitated to create a passage through which a pintle 20 is directed to join the base fabric 14
25 into endless form. Cross-machine direction yarns 22, which are the warp yarns during the weaving of the base fabric 14, are, like the machine-direction yarns 16, monofilament yarns.

A strip 24 of flow-resistant material, suitable
30 examples of which will be provided hereinbelow, is

disposed over the seam region 12, straddling it by an amount in the range from 0.5 to 2.0 inches (1.27 to 5.08 cm) on its top side, and is attached thereto by sewing or by an adhesive. A batt 26 of staple
5 fiber material is driven into the base fabric 14, including the seam region 12, by needling or hydroentanglement at least from the top side, or, optionally, from both sides. Batt 26 is subsequently cleared away from the seaming loops 18
10 on the bottom side of the base fabric 14, as indicated by gap 28, to provide access thereto for seaming the press fabric 10 into endless form on a paper machine. On the top side of the press fabric 10, a slit 30 is cut obliquely through the batt 26
15 and strip 24 of flow-resistant material to provide a flap 32 covering the seam region 12.

In an alternate embodiment, shown in Figure 2, a cross-sectional view of the seam region 42 of an on-machine-seamable press fabric 40, press fabric 40
20 comprises a primary base fabric 44 of the same variety as base fabric 14 of Figure 1. As such, primary base fabric 44 is woven from monofilament yarns in a two-layer, or duplex, weave. Machine-direction yarns 46, which are weft yarns in the on-
25 machine-seamable primary base fabric 44, form seaming loops 48 which are interdigitated to create a passage through which a pintle 50 is directed to join the primary base fabric 44 into endless form. Cross-machine direction yarns 52, which are the warp
30 yarns during the weaving of the primary base fabric

44, are, like the machine-direction yarns 46, monofilament yarns.

A secondary base fabric 54 is attached to the outside of the primary base fabric 44. That is to
5 say, more specifically, secondary base fabric 54 is attached to the outer surface of the endless loop formed by the primary base fabric 44 when the latter has been seamed into that form.

Secondary base fabric 54 is of a single-layer
10 weave, such as a plain weave, and may be joined into endless form by a woven seam, or may be woven endless. Secondary base fabric 54 is woven from machine-direction yarns 56 and cross-machine yarns 58, both of which may be monofilament yarns.

15 Secondary base fabric 54 is placed on top of primary base fabric 44. In other words, the endless loop formed by primary base fabric 44 is placed within the endless loop formed by the secondary base fabric 54. The primary base fabric 44 and the
20 secondary base fabric 54 may then be attached to one another by needling an initial layer of staple fiber batt material therethrough to keep them from shifting relative to one another.

A portion, having a width in a range from 0.5
25 to 2.0 inches (1.27 to 5.08 cm), of the secondary base fabric 54 straddling the seam region 52 is then cut, removed and replaced by a strip 60 of flow-resistant material, which is attached thereto by sewing or by an adhesive. The desired amount of
30 batt 62 of staple fiber material is then driven into

the primary base fabric 44, secondary base fabric 54 and any initial layer of staple fiber batt material, including the seam region 42 and strip 60, by needling or hydroentanglement at least from the top
5 side, or, optionally from both sides. Batt 62 is subsequently cleared away from the seaming loops 48 on the bottom side of primary base fabric 44, as indicated by gap 64, to provide access thereto for seaming the press fabric 40 into endless form on a
10 paper machine. On the top side of the press fabric 40, a slit 66 is cut obliquely through the batt 62 and strip 60 of flow-resistant material to provide a flap 68 covering the seam region 42.

It should be noted that base fabric 14 of
15 Figure 1 and primary base fabric 44 of Figure 2 are both woven in a two-layer, or duplex, weave using a modified endless weaving technique, as described above. As further noted above, an on-machine-seamable fabric may also be manufactured by weaving
20 an endless loop of fabric, as shown in a perspective view in Figure 3.

Base fabric 70 of Figure 3 has been woven endless, and is subsequently flattened to produce a top layer 72 overlying a bottom layer 74. Each end
25 of the flattened base fabric 70 is defined by a fold 76. One or more widthwise yarns, which are the warp yarns during the weaving process, are then removed from each of the folds at the two widthwise ends of the flattened base fabric 70. Their removal leaves
30 a short gap defined by the freed, that is, the newly

unwoven portions of, lengthwise yarns at each fold 76. The newly unwoven portions of the lengthwise yarns may then be used as seaming loops when the two widthwise ends are brought together. A similar
5 laminated base fabric results from the practice of the invention disclosed in U.S. Patent No. 5,732,749, as described above.

In a variation of this process, described in U.S. Patent No. 5,939,176, an endless base fabric 80
10 is assembled by spirally winding a fabric strip in a plurality of contiguous turns, each of which abuts against and is attached to those adjacent thereto. The spiral winding is carried out until the width desired for the assembly has been reached, and the
15 lateral edges of the assembly are trimmed in a direction parallel to the lengthwise direction thereof. The resulting endless base fabric 80 is shown in a perspective view in Figure 4.

Base fabric 80 of Figure 4 comprises a
20 plurality of contiguous turns of a spirally wound fabric strip 82, whose lengthwise and crosswise yarns are at slight angles, typically less than 10°, relative to the lengthwise and crosswise directions respectively, of the base fabric 80 itself. Base
25 fabric 80 is subsequently flattened to produce a top layer 84 overlying a bottom layer 86. Each end of the flattened base fabric 80 is defined by a fold 88. One or more crosswise yarns are removed from each turn of the fabric strip 82 at the folds 88 to
30 produce seaming loops from the newly unwoven

portions of the lengthwise yarns of the fabric strip 82.

Laminated on-machine-seamable base fabrics 70, 80 of the types shown in Figures 3 and 4, as well as 5 that obtained by practicing the invention disclosed in U.S. Patent No. 5,732,749, may be used to practice the inventions shown in Figures 1 and 2. However, because each is laminated, and comprises a top fabric layer 72, 84 and a bottom fabric layer 10 74, 86, each may be used to practice the alternate embodiment of the invention shown in a cross-sectional view in Figure 5.

Referring specifically to Figure 5, on-machine-seamable press fabric 90 comprises a laminated base 15 fabric 92 having a top fabric layer 94 and a bottom fabric layer 96 formed by flattening an endless base fabric like those shown in Figures 3 and 4, and by removing some crosswise yarns from the vicinity of the folds to produce seaming loops 98 from the newly 20 unwoven lengthwise yarns 100. It should be understood that where laminated base fabric 92 is one made from a spirally wound fabric strip, the cross-sectional view given in Figure 5 would have to have been taken at a slight angle with respect to 25 the machine direction of the on-machine-seamable press fabric 90.

Seaming loops 98 are interdigitated to create a passage through which a pintle 102 is directed to join the base fabric 92 into endless form. Machine- 30 direction yarns 100 and cross-machine-direction

yarns 104 may both be monofilament yarns.

A strip 106 of flow-resistant material is disposed on each side of the seam region 108 between the top and bottom fabric layers 94, 96, and may be
5 attached there by sewing or by an adhesive. A batt 110 of staple fiber material is driven into the base fabric 92, including the seam region 108, by needling or hydroentanglement at least from the top side, or, optionally, from both sides. Batt 110 is
10 subsequently cleared away from the seaming loops 98 on the bottom side of the base fabric 92, as indicated by gap 112, to provide access thereto for seaming the press fabric 90 into endless form on a paper machine. On the top side of the press fabric
15 90, a slit 114 is cut obliquely through the batt 110 to provide a flap 116 covering the seam region 108.

The strips 24, 60, 106 of flow-resistant material compensate for any inadequate flow resistance in seams 12, 42, 108 due to loss of batt
20 fiber. The flow-resistant material may be a ribbon of fine woven or nonwoven material, or a ribbon of porous polymeric membrane applied to the seam area by sewing or adhesive prior to needling with batt fiber, or inserted between the layers of a laminated
25 fabric, such as that shown in Figure 5, on each side of the seam region and attached there by sewing or adhesion prior to needling with batt fiber. Polymeric foams or liquid resins may alternatively be applied instead of a ribbon or ribbons of the
30 above-identified materials and cured to provide a

desired additional flow resistance. Further alternatives will readily be apparent to those of ordinary skill in the art.

Modifications to the above would also be
5 obvious to those of ordinary skill in the art, but would not bring the invention so modified beyond the scope of the appended claims. For example, the present invention may be practiced on on-machine-seamable press fabrics which comprise two separate
10 on-machine-seamable base fabrics, one of which is inside the loop formed by the other. The two base fabrics are laminated to one another during the needling process, and the seam regions of the inner and outer base fabrics may be offset slightly with
15 respect to one another, so that the seam region of each will coincide with a non-seam region of the other. The present invention would be applied to the outer of the two base fabrics, that being closer to the paper web when the press fabric is in use on
20 a paper machine.

What Is Claimed Is:

1. An on-machine-seamable papermaker's fabric comprising:

a base fabric, said base fabric having a system of longitudinal yarns and a system of transverse
5 yarns, said longitudinal yarns being substantially in the machine direction of said base fabric and said transverse yarns being substantially in the cross-machine direction of said base fabric, said yarns of said system of longitudinal yarns being interwoven
10 with said yarns of said system of transverse yarns to form said base fabric in a rectangular shape with a length, a width, two lengthwise edges and two widthwise edges, said longitudinal yarns forming seaming loops along each of said two widthwise edges,
15 said seaming loops being interdigitated and joined together with a pintle to form a seam;

a strip of flow-resistant material over said seam and attached thereto, said flow-resistant material providing said seam with permeabilities to
20 air and water substantially identical to those of the rest of said papermaker's fabric; and

at least one layer of staple fiber batt entangled through said base fabric.

2. An on-machine-seamable papermaker's fabric as claimed in claim 1 wherein said base fabric comprises a top layer and a bottom layer, said yarns of said system of longitudinal yarns being interwoven with
5 some of said yarns of said system of transverse yarns

to form said top layer and with the remainder of said yarns of said system of transverse yarns to form said bottom layer, said yarns of said system of longitudinal yarns alternating from said top layer to
10 said bottom layer, and vice versa, at said two widthwise edges, when so alternating, forming said seaming loops, said base fabric thereby being a laminated structure having two woven plies joined to one another by said seaming loops along said two
15 widthwise edges, and wherein said at least one layer of staple fiber batt joins said top layer to said bottom layer.

3. An on-machine-seamable papermaker's fabric as claimed in claim 1 wherein said base fabric comprises a top layer and a bottom layer fashioned from an endless base fabric layer comprising a fabric strip
5 having a first lateral edge, a second lateral edge, a plurality of longitudinal yarns and a plurality of transverse yarns, said fabric strip being spirally wound in a plurality of contiguous turns wherein said first lateral edge in a given turn of said fabric
10 strip abuts said second lateral edge of an adjacent turn thereof, thereby forming a helically continuous seam separating adjacent turns of said fabric strip, said helically continuous seam being closed by attaching abutting first and second lateral edges of
15 said fabric strip to one another, thereby providing said base fabric layer in the form of an endless loop having a machine direction and a cross-machine

direction, said endless base fabric layer being flattened to produce said top layer and said bottom
20 layer having two widthwise edges, said top layer and said bottom layer being connected to one another at folds along said two widthwise edges, at least one transverse yarn in each of said turns of said fabric strip being removed at each of said folds at said two
25 widthwise edges to provide unbound sections of longitudinal yarns of said fabric strip at said folds, said unbound sections being said seaming loops, said base fabric thereby being a laminated structure having two layers joined to one another by
30 said seaming loops along said two widthwise edges, and wherein said at least one layer of staple fiber batt joins said top layer to said bottom layer.

4. An on-machine-seamable papermaker's fabric as claimed in claim 1 wherein said flow-resistant material is a ribbon of woven material.

5. An on-machine-seamable papermaker's fabric as claimed in claim 1 wherein said flow-resistant material is a ribbon of nonwoven material.

6. An on-machine-seamable papermaker's fabric as claimed in claim 1 wherein said flow-resistant material is a ribbon of polymeric film.

7. An on-machine-seamable papermaker's fabric as

claimed in claim 1 wherein said flow resistant material is a polymeric foam.

8. An on-machine-seamable papermaker's fabric as claimed in claim 1 wherein said flow-resistant material is a cured liquid resin.

9. An on-machine-seamable papermaker's fabric comprising:

a base fabric, said base fabric having a rectangular shape with a length, a width, two lengthwise edges, and two widthwise edges, said base fabric having a system of longitudinal yarns and a system of transverse yarns, said longitudinal yarns being substantially in the machine direction of said base fabric and said transverse yarns being substantially in the cross-machine direction of said base fabric, said base fabric having a top layer and a bottom layer joined to one another only at said two widthwise edges by said longitudinal yarns, said longitudinal yarns forming seaming loops along each of said two widthwise edges, said seaming loops being interdigitated and joined together with a pintle to form a seam;

a strip of flow-resistant material between said top layer and said bottom layer on at least one side of said seam, said flow-resistant material providing said seam with permeabilities to air and water substantially identical to that of the rest of said press fabric; and

at least one layer of staple fiber batt
25 entangled through said base fabric and joining said
top layer to said bottom layer.

10. An on-machine-seamable papermaker's fabric as
claimed in claim 9 wherein said yarns of said system
of longitudinal yarns are interwoven with some of
said yarns of said system of transverse yarns to
5 form said top layer and with the remainder of said
yarns of said system of transverse yarns to form said
bottom layer, said yarns of said system of
longitudinal yarns alternating from said top layer to
said bottom layer, and vice versa, at said two
10 widthwise edges, when so alternating, forming said
seaming loops.

11. An on-machine-seamable papermaker's fabric as
claimed in claim 9 wherein said base fabric is
fashioned from an endless base fabric layer
comprising a fabric strip having a first lateral
5 edge, a second lateral edge, a plurality of
longitudinal yarns and a plurality of transverse
yarns, said fabric strip being spirally wound in a
plurality of contiguous turns wherein said first
lateral edge in a given turn of said fabric strip
10 abuts said second lateral edge of an adjacent turn
thereof, thereby forming a helically continuous seam
separating adjacent turns of said fabric strip, said
helically continuous seam being closed by attaching
abutting first and second lateral edges of said

15 fabric strip to one another, thereby providing said
base fabric layer in the form of an endless loop
having a machine direction and a cross-machine
direction, said endless base fabric layer being
flattened to produce said top layer and said bottom
20 layer having two widthwise edges, said top layer and
said bottom layer being connected to one another at
folds along said two widthwise edges, at least one
transverse yarn in each of said turns of said fabric
strip being removed at each of said folds at said two
25 widthwise edges to provide unbound sections of
longitudinal yarns of said fabric strip at said
folds, said unbound sections being said seaming
loops.

12. An on-machine-seamable papermaker's fabric as
claimed in claim 9 wherein said flow-resistant
material is a ribbon of woven material.

13. An on-machine-seamable papermaker's fabric as
claimed in claim 9 wherein said flow-resistant
material is a ribbon of nonwoven material.

14. An on-machine-seamable papermaker's fabric as
claimed in claim 9 wherein said flow-resistant
material is a ribbon of polymeric film.

15. An on-machine-seamable papermaker's fabric as
claimed in claim 9 wherein said flow-resistant
material is a polymeric foam.

16. An on-machine-seamable papermaker's fabric as claimed in claim 9 wherein said flow-resistant material is a cured liquid resin.

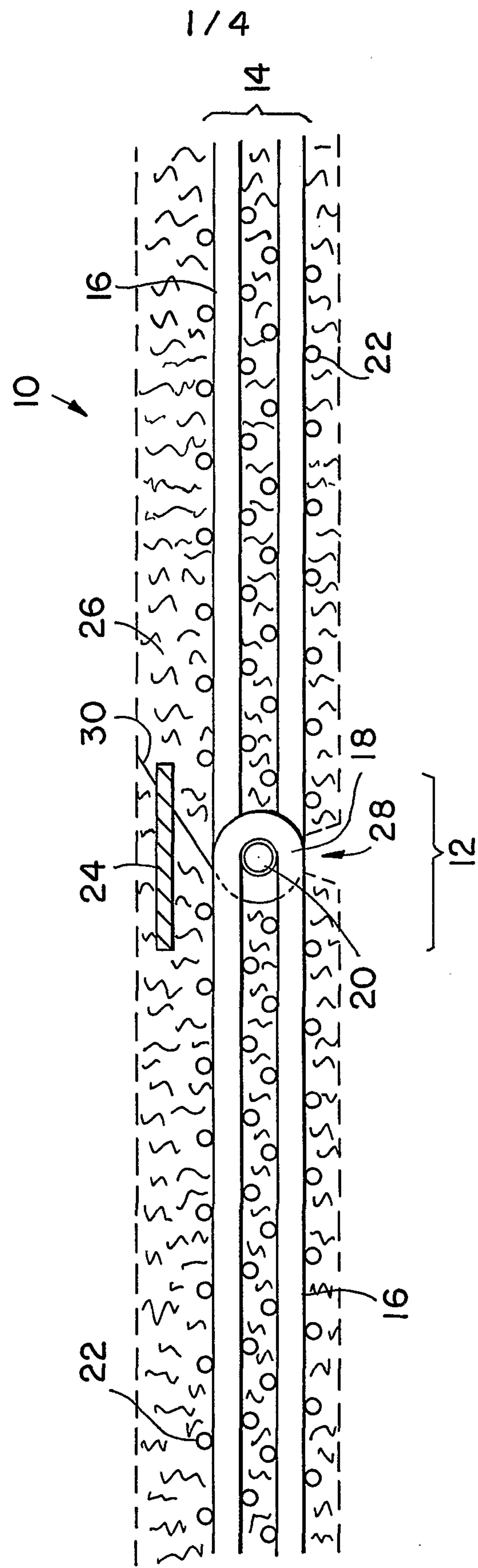


FIG. 1

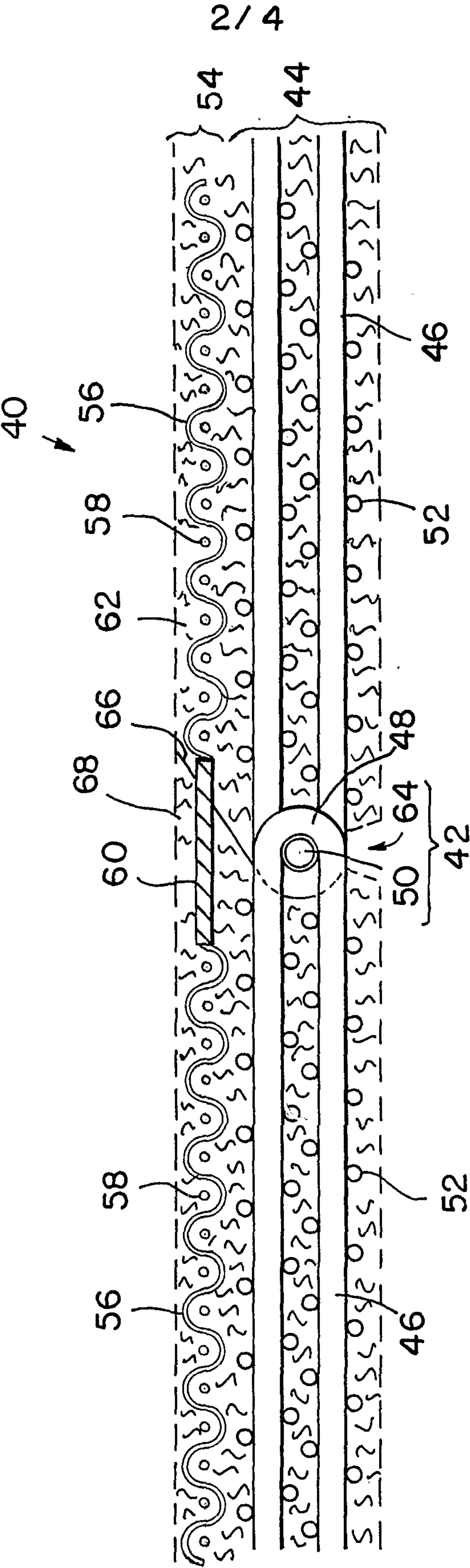
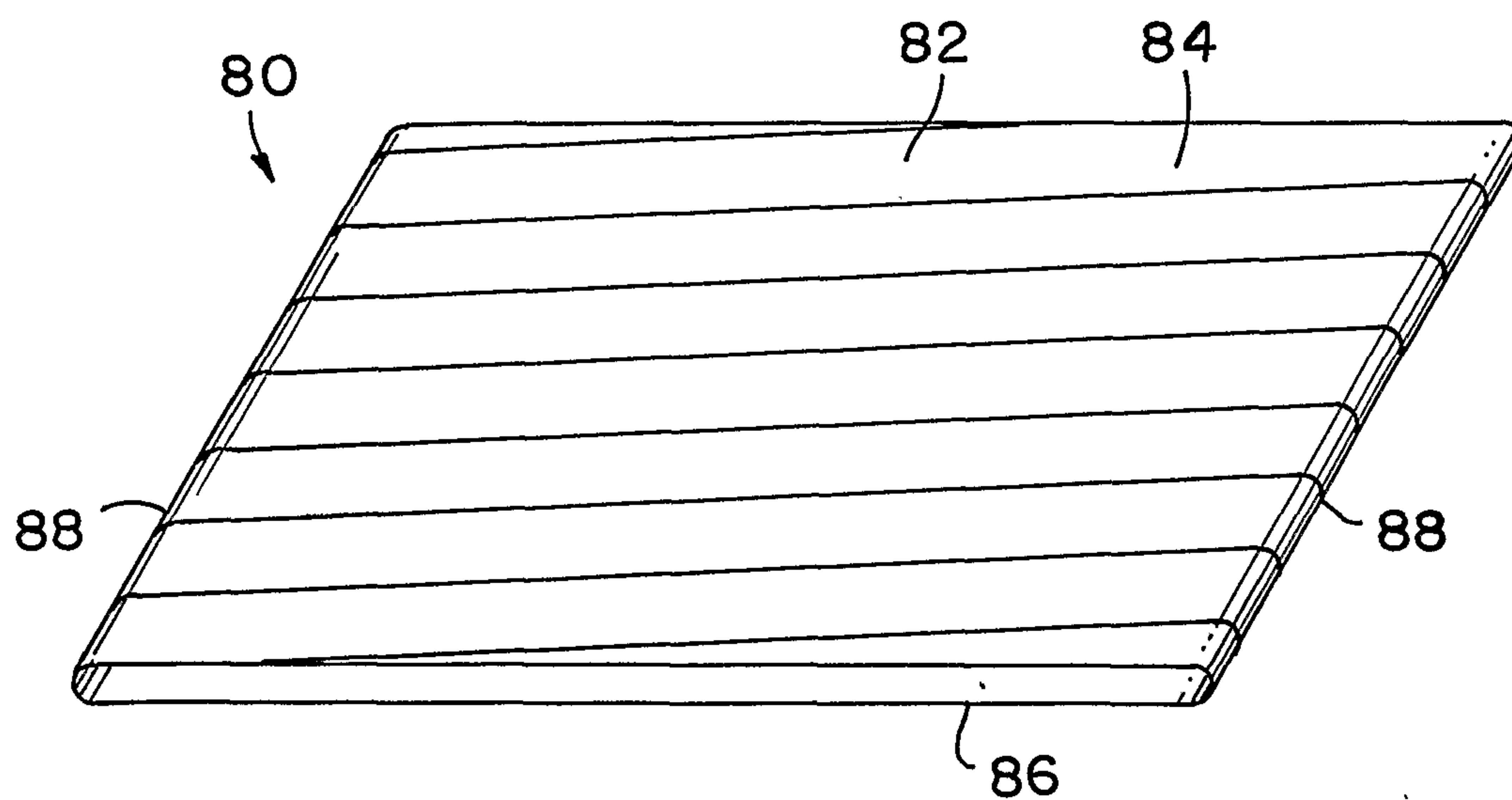
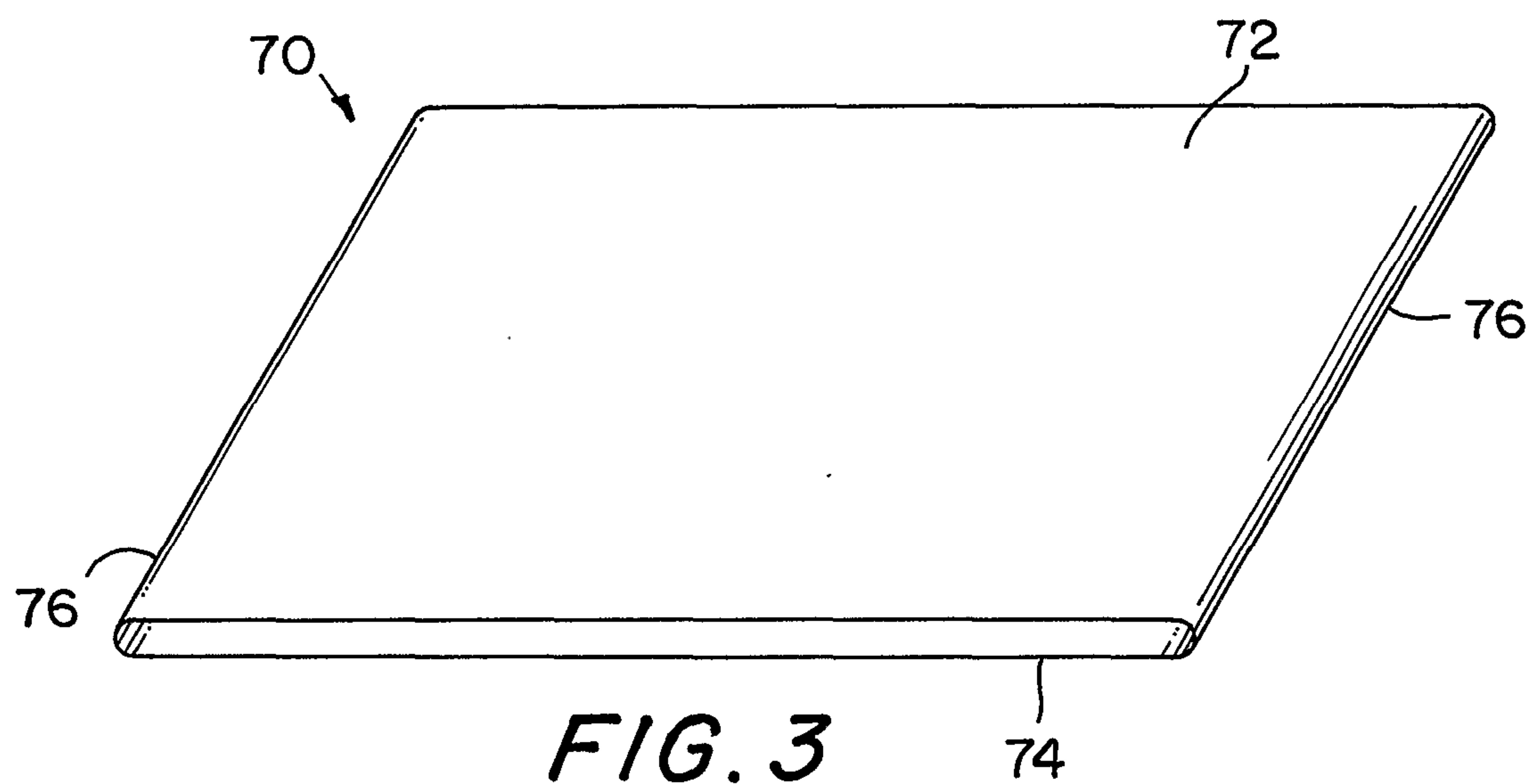


FIG. 2

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*FIG. 4*

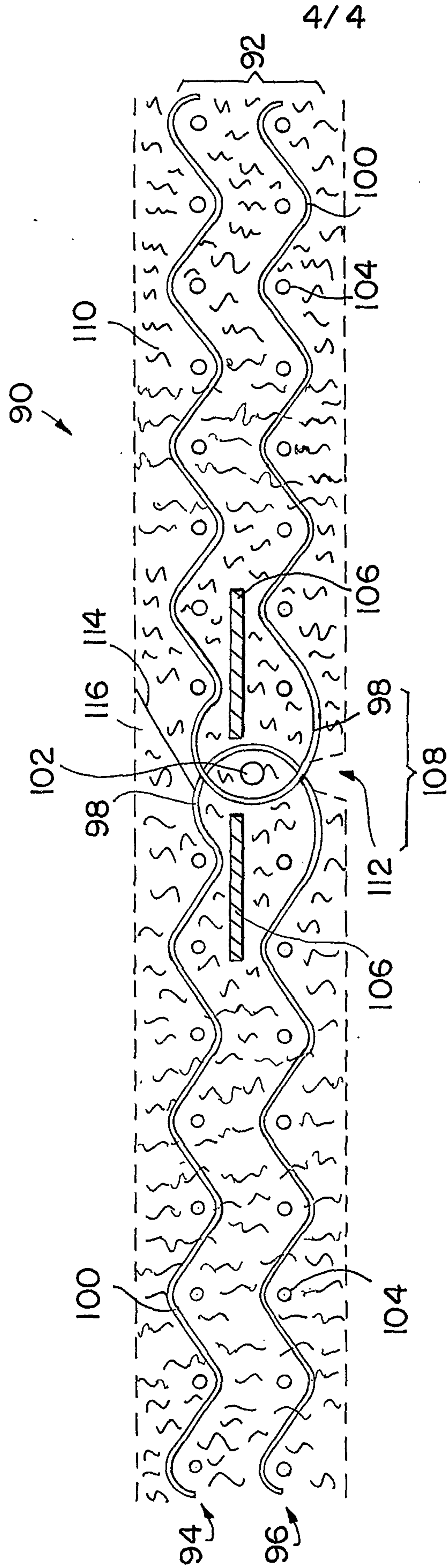


FIG. 5

