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(72) Inventors:
• **GARCÍA CARABAÑA, Antonio**
28033 Madrid (ES)
• **GARCÍA AZNAR, Santiago**
28033 Madrid (ES)
• **RUEDA GONZÁLEZ, Sonsoles**
28033 Madrid (ES)

(71) Applicant: **Genomica S.A.U.**
28033 Madrid (ES)

(74) Representative: **Balder IP Law, S.L.**
Paseo de la Castellana 93
5a planta
28046 Madrid (ES)

(54) **MULTI-WELL TEST PLATE ASSEMBLY AND METHOD OF PREPARING A TEST PLATE FOR ANALYSIS**

(57) A multi-well test plate assembly comprises a base member (2) with at least one opening (3) for receiving and housing at least a portion (1A, 1B) of a well strip (1), and at least one first insert member (21) arranged to fit into the opening, for supporting the portion (1A, 1B) of the well strip in the opening. This assembly makes it possible to process samples in portions of a well strip, such as in a portion with four well strips divided off a well

strip with eight wells, with the portion of the well strip kept in a desired position in relation to the edges of the base member.

Also disclosed are a method for adaptation of a well strip for use in the assembly, a method of preparing a test plate for analysis of at least one sample, and use of the multi-well test plate assembly for sample analysis.

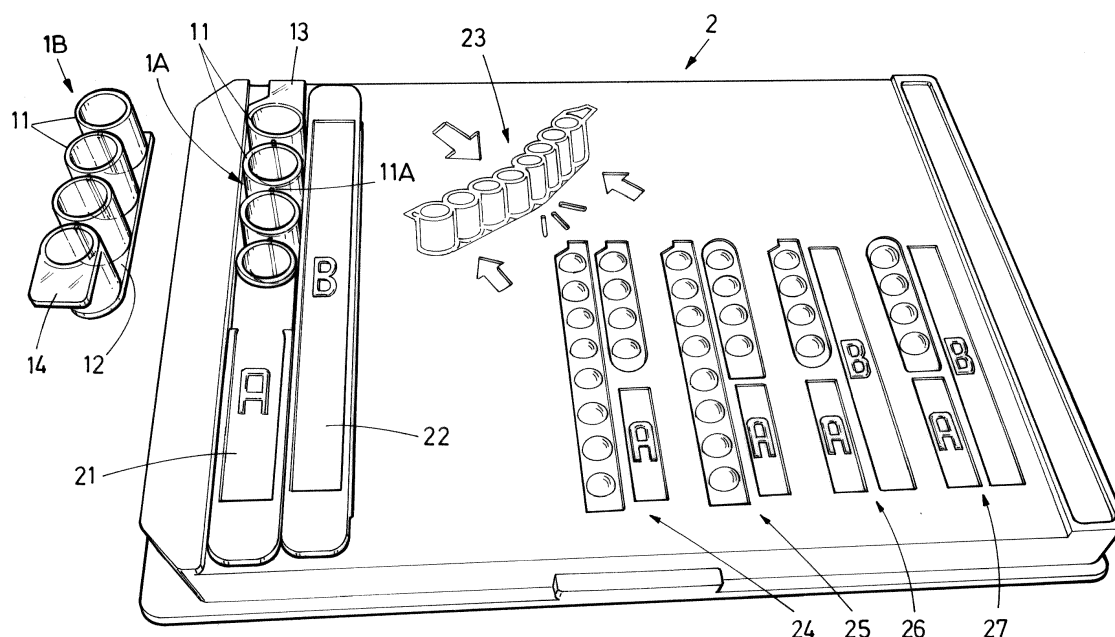


FIG.3

Description

TECHNICAL FIELD

[0001] The invention is related to the field of multi-well test plates for analysis of samples.

STATE OF THE ART

[0002] Multi-well test plates are used for holding test media for the purpose of carrying out different kinds of, for example, biological and bio-chemical procedures, including for example processing and testing of biological material. Existing standards include for example the ANSI SLAS 4-2004 standard (formerly recognized as ANSI/SBS 4-2004), which defines well positions in relation to microplates having 96, 384 and 1536 wells, respectively. Test plates with a substantial number of wells are often used in more or less automated procedures, often involving sophisticated machines that can carry out one or more process steps on the test plates, such as adding matter such as test media and/or reactants to the wells, PCR, hybridization of test media, capturing images of the wells and processing the images, for example, in order to allow conclusions to be reached based on growth, hybridization, etc. One example of a multiwell test plate is disclosed in US-2012/0129250-A1, based on a plate with a multiplicity of holes, and a multiplicity of receptacles made of the same plastic which are fixedly connected to the plate at the holes by directly molding them thereto.

[0003] Sometimes, only a relatively small number of wells are needed, for example, when the analysis is limited to a relatively low number of samples. However, if a test plate with 96 wells is used, and depending on the type of analysis that is carried out, the entire test plate may be rendered unsuitable for further use. For example, when a test plate with 96 wells is used for analysis of four samples, 92 wells may be rendered unsuitable without having been used at all. This represents a substantial amount of waste. Traditionally the cost of the wells has been considered almost irrelevant, but nowadays there are sophisticated techniques that make use of wells with sophisticated features, such as for example wells including sophisticated complementary probes, such as hybridization probes, immobilized to the bottom of the well for interaction with the sample, as well as for interaction with PCR products obtained of a sample taken for diagnosis. This means that nowadays, the cost of the wells may not always be irrelevant.

[0004] It is known in the art to reduce the amount of waste by allowing a test plate to be subdivided into a plurality of parts. For example, US-2011/0286897-A1 discloses a microtiter plate having 96 wells that can be subdivided into portions with 24 wells, due to break lines that divide the plate into various segments. Other examples of test plates that can be subdivided are known from WO-2008/030914-A2 (application no. PCT/US2007/077696),

[0005] It is also known to use so-called well strips, which can be combined together to form a well matrix in accordance with a standard such as the ANSI SLAS 4-2004 standard. A commonly used format is based on well strips with eight wells, which can be arranged into a well matrix with up to 96 wells by arranging the well strips on a frame featuring a central opening. Thereby, the wells can be positioned in a well-defined manner, and the assembly comprising the frame and the well strips can be processed using equipment adapted for handling the frame, whereby the wells will be positioned in defined positions in relation to equipment such as image capturing devices. Depending on the circumstances, one or more well strips can be used. For example, when 12 wells are needed, two well strips can be used. One arrangement of this type is disclosed in US-5084246-A. Here, the wells in each strip can further be separated from each other. US-5084246-A explains that the separation of individual wells is important where only some of the wells need to be subjected to further tests.

[0006] Another example of microplates based on 1x8 strips is the Corning® 96-well Polystyrene Stripwell™ Microplates, alleged to feature flat-bottom strips designed to easily break apart and designed to fit only one way into a strip-holder. The strips are pre-assembled in an "egg-crate" style strip holder that allows each individual well to be positioned back into the microplate once broken.

[0007] However, a draw-back with the system disclosed in US-5084246-A is that when carrying out the basic test or tests with the well strip arranged in the frame, all of the wells in the strip may be subjected to similar conditions. For example, when the assembly comprising the frame and the well strips arranged in the frame is subjected to conditions such as vibration and/or high temperatures, all the wells are affected. Thus, if only some of the wells are actually used, the other wells may suffer deterioration. For example, sophisticated probes adhered to the bottom of the well may deteriorate. Also, even if some wells of a well strip would still be useful for analyzing a sample after use of the other wells, re-use of a partially used strip may often be prohibited or at least not preferred, for example, for safety reasons, such as in order to minimize the risk of contamination.

[0008] As explained in US-5084246-A, locating members are provided on the base and mating members are provided on the strip, so that the strip is positionable in the rectangular array defined by the frame in one direction only.

[0009] Figure 1 illustrates another example of a prior art multi-well test plate, comprising well strips 1 (one of which is illustrated in the figure) and a rectangular frame 200 able to accommodate twelve such strips, each strip comprising eight wells. Here, just like in the system described in US-5084246-A, the frame comprises two longer sides 201, 202 and two shorter sides. The longer sides are configured with arcuate portions 201 A, 202A arranged for receiving the wells 11 arranged at the end of

the array of eight wells of a well strip 1.

[0010] The well strip is made up of an integrally molded transparent piece of polystyrene and comprises eight wells 11 arranged in an array, and interconnected by joints 11 A extending vertically between the adjacent wells, and also by a common bottom plane 12 of the well strip. Additionally, at a first end the well strip comprises a first tongue-like extension 13 that is substantially coplanar with the upper ends of the wells and that tapers or narrows towards its end, so that the end of the first extension is less wide than the outer diameter of the wells, whereby the first extension is arranged to be supported on top of a first one of the longer sides 201, in a space defined by two pins 201 B (or, at one of the ends of the longer side, between one of said pins 201 B and the upper portion of the shorter side 204). At the second end of the well strip, opposite to the first end of the well strip, a second tongue-like extension 14 is provided that is substantially coplanar with the upper ends of the wells, and that has a substantially constant width similar to the outer diameter of the wells. This second extension is too wide to fit in between a pair of pins 201 B or between the rightmost pin 201 B and the shorter side 204. Therefore, the user will always place the second extension 14 on top of the second one 202 of the longer sides, and the first extension 13 on top of the first one of the longer sides. Thereby, it is guaranteed that the well strip will always be oriented in a predetermined manner when placed in the frame. The assembly provides for 96 wells, arranged in pre-determined positions which can be identified using numbers A1-H12, based on the letters A-H on the upper surface of the left shorter side and numbers 1-12 on the upper surface of the second longer side of the frame. The frame typically has standardized dimensions.

[0011] Thus, one or more well strips 1 with samples can be placed in the frame 200, and the assembly comprising frame and well strips can then be handled by machinery configured to handle assemblies complying with the relevant standard. The frame can be positioned in the machine, and thereby each well will have a predetermined spatial position in the machine, which facilitates automatic handling and processing.

[0012] However, as explained above, a draw-back is that when only a few samples are to be processed, for example, when only 1-4 samples are to be processed, there is a substantial waste of wells if an entire well strip is used.

DESCRIPTION OF THE INVENTION

[0013] A first aspect of the invention relates to a multi-well test plate assembly comprising a base member (2) and at least one first insert member.

[0014] The base member typically has a substantially rectangular shape and is shaped and dimensioned in accordance with a standard, such as with outer dimensions corresponding to the substantially rectangular frame of

prior art systems, for compatibility with systems adapted to handle multi-well test plates. The substantially rectangular shape that is typical for these test plates is due to the customary arrangement of the wells in rows and columns, such as in 8 rows and 12 columns for a test plate with 96 wells, a format corresponding to some embodiments of the invention. In some embodiments of the invention, the base member typically has a size in the order of 85x128 mm, which corresponds to the ANSI SLAS 4-2004 standard. The base member is typically made up of a molded piece of a suitable polymer material such as polyamide 6, polystyrene, acrylonitrile butadiene styrene, and polyvinylchloride.

[0015] The base member comprises at least one opening for receiving and housing at least a portion of a well strip, for example, a portion of a well strip featuring N wells, such as 8 wells, 16 wells, etc. The portion of the well strip can comprise M wells, M and N being integers, $M < N$. For example, in the case of a well strip with eight wells, the portion of the well strip may comprise one, two, three or four wells, for example, the first or the last four wells in the array of wells. The portion is typically obtained by breaking the well strip into one or more parts, such as into two parts, for example, by breaking it in correspondence with a weakened portion, such as in correspondence with a weakened line.

[0016] The at least one first insert member is arranged to fit into the opening, for supporting the portion of the well strip in the opening. This provides for a flexible arrangement in which a well-strip can be divided into two or more portions, whereafter one of the portions can be fitted into the opening, which is larger than what is necessary to accommodate the portion of the well strip. The first insert member interacts with the well strip to keep it in the desired position. That is, for example, the opening can be suitable for housing one well strip comprising for example eight wells, or a portion thereof, for example, a portion comprising one, two, three, four, etc., wells. The first insert member is used to position the portion of the well strip in the opening. Thus, the portion of the well strip can be precisely positioned in the opening, in spite of the fact that the length of the opening corresponds to an entire well strip. Thus, the base member can be used to handle portions of standard well strips with standard equipment, that is, for example, with currently existing equipment, ensuring that the wells of the portion of the well strip will be precisely positioned in relation to base member and, thereby, in relation to the different items of the apparatus, such as injectors, image capturing devices, etc., that have to interact with the wells during or after processing. This is an advantage compared to the system known from US-5084246-A1: there, if the well strip is broken to form two separate portions, and if one of the portions is arranged in the rectangular opening defined by the frame, its position in relation to the frame will not be fixed, as it may slide within the frame. This makes it difficult, if not impossible, to carry out analysis with standard equipment using the frame and a portion with for ex-

ample four wells, as this portion will not necessarily remain in a fixed position in relation to the frame. By means of the additional first insert member provided by the present invention, the portion of the well strip can be precisely positioned within the opening in the base member, and remain so during automatic and/or manual manipulation of the assembly during processing, such as when the base member is transferred to a machine and manipulated therein, for example, moved between different positions, vibrated to promote hybridization, etc. The first insert member can, for example, be a molded element of the same material as the base member.

[0017] Many prior art references focus on the provision of fragments of a full microplate of wells, and some of them disclose methods and means for providing well strips starting from the full microplate. Actually, US-5084246-A even teaches providing individual wells. However, these prior art references provide no teaching concerning how to subject strips of less than 8 wells to further processing, such as PCR amplification, hybridization, washing, etc., and especially not concerning how to do so using standardized equipment adapted for operation with standardized microplate formats. The present invention solves this problem and makes it possible to process also portions of well strips, allowing them to be placed and reliably maintained in a correct position in relation to a frame or similar, during further processing steps that involve, for example, shaking, tilting, vibrations, etc.

[0018] In some embodiments of the invention, the opening has a length in a direction parallel to a short side of the base member, and the opening is dimensioned for accommodating at least one well strip, the first insert member having a length complementary to the length of a portion of the well strip. Thereby the first insert member and the portion of the well strip, placed one after the other, will extend over the length of the opening. That is, for example, the portion of a well strip with N wells can have a length corresponding to M wells, and the first insert member can then have a length corresponding to N-M wells. In some embodiments, both the well strip and the first insert member can have a length corresponding to 4 wells.

[0019] In some embodiments of the invention, the opening has a length in a direction parallel to a short side of the base member, and the opening is dimensioned for accommodating at least one well strip, and the first insert member has a length of approximately 7/8 or less of the length of the opening. The first insert member is adapted for being placed in the opening aligned with a portion of a well strip (such as aligned with a portion having one, two, three or four wells, or more) so that the portion of the well strip and the first insert member, together, extend over the length of the opening.

[0020] In some embodiments of the invention, the first insert member has a length corresponding to approximately half the length of the opening, so that the first insert member can be used to position and support half

a well strip in the opening. For example, the first insert member can be adapted to support a well strip portion with four wells in an opening adapted to accommodate a well strip having eight wells.

[0021] In some embodiments of the invention, the assembly further comprises at least a second insert member arranged to fit into the opening. For example, the second insert member can be arranged to be placed next to the first insert member, for example, completely or partly occupying a space suitable for housing a second well strip.

[0022] In some embodiments of the invention, the second insert member is longer than the first insert member. For example, the second insert member can be arranged to have a length corresponding to the one of a full well strip, for example, of the type comprising eight wells. Thus, the opening, in combination with the first insert member and the second insert member, can accommodate a portion of a well strip, an entire well strip, a portion of one well strip and an entire additional well strip, or two well strips, the remainder of the opening being filled by both insert members, by the second insert member only, by the first insert member only, and by none of the first and second insert members, respectively. Thus, for example, in some embodiments of the invention, the assembly can be used to accommodate four, eight, twelve or sixteen wells, correctly and precisely positioned in relation to the edges of the base member. Of course, in some embodiments other numbers of wells and combinations of well strips and portions of well strips can be accommodated.

In some embodiments of the invention, the assembly comprises a plurality of first insert members of different lengths. That is, different first insert members can be provided to accommodate well strip portions with different numbers of wells. For example, in some embodiments, a relatively long first insert member can be provided to accommodate a well strip portion with two wells, and a shorter first insert member can be provided to accommodate a well strip portion having for example four wells.

[0023] In some embodiments of the invention, the assembly comprises means for biasing the first insert member towards a preferred position in the opening. In some embodiments, snap fit means or other geometrical configurations can be used, by means of which the first insert member can be snapped or otherwise fixed into a preferred position. In other embodiments, other mechanical interlocking means can be used.

[0024] In some embodiments of the invention, the means for biasing the first insert member towards a preferred position in the opening comprises magnetic means, such as magnets associated with the first insert member and with the rest of the assembly, such as with the base member and/or the second insert member, for example, magnetic means comprising at least one magnet which is part of the first insert member, and at least one second magnet. It has been found that magnetic means can be used to bias the first insert member, as

well as any additional insert members, towards a preferred position in the opening, and also to retain the insert members in this position during typical handling and processing operations, such as transfer of the test plate, vibration or shaking of the test plate, etc. Also, it has been found that by using magnets, problems with manufacture tolerances that often occur with mechanical bias and retention means such as snap fit connections etc., can be reduced or avoided. The magnets can for example be integrated in the base member and in the insert member or members during molding, or attached in a separate step.

[0025] A further aspect of the invention relates to a system comprising a multi-well test plate assembly according to the first aspect of the invention, and at least one well strip comprising at least eight wells. In some embodiments, the well strip is of a plastic material such as polystyrene, polycarbonate, polypropylene, a cycloolefin, glass or quartz. In some embodiments, the material is transparent. In some embodiments, the well strip comprises a plurality of wells arranged one after the other and interconnected by a common bottom plane and/or by interconnecting portions extending vertically along the walls of the adjacent wells, all the way between the bottom and the top of the wells, or only along part of the walls.

[0026] In some embodiments of the invention, the well strip comprises at least one weakened zone, such as a weakened line or track, for facilitating division of the well strip into two defined portions, each comprising at least one well. The weakened zone can be established when for example molding the well strip, but in other embodiments it can be obtained in a separate step, for example, when adapting a well strip with no such weakened zone to allow it to be broken into well-defined portions.

[0027] A further aspect of the invention relates to a method for adapting a well strip for use in a multi-well test plate assembly, comprising the step of heating at least one portion of the well strip to produce at least one weakened zone for facilitating division of the well strip into at least two defined portions, each of these portions comprising at least one well. Nowadays, well strips are often provided featuring a minimum of eight wells. Even when the well strips are obtained by dividing a plate into several strips, the strips as such are generally not arranged for further division, due to the way in which the strips are normally used in test plates, when fitted into the basic rectangular frame. However, the multi-well test plate assembly as described herein makes it possible to use a limited number of wells. Thus, it can be desired to adapt conventional well strips to allow division of them into well-defined portions, preferably adapted to interact correctly with the first insert member or members. It has been found that this can preferably be achieved by heating the well strip so as to produce the weakened zone.

[0028] In some embodiments of the invention, the step of heating at least one portion of the well strip comprises bringing at least one electrically heated element, such as an electrically heated thread or rod, in contact with

the well strip, such as with a bottom portion of the well strip. For example, in the case of well strips having a continuous bottom surface, this can be a preferred position for introducing a notch or other kind of weakened portion, where the well strip will preferably break in a well-defined manner, when subjected to a bending force.

[0029] A further aspect of the invention relates to a method of preparing a test plate for analysis of at least one sample, comprising the steps of dividing a well strip into at least two portions, and positioning at least one of the portions in an opening in a base member of a multi-well test plate assembly, such as in the base member of the multi-well test plate assembly according to the first aspect of the invention, so that the portion is retained in the base member with the wells positioned and retained in pre-determined positions in relation to sides of the base member. The sample can thus be arranged in one or more of the wells of the portion of the well strip, which is inserted into the multi-well test plate assembly, and fixed in a position, for example, using a base member having an opening dimensioned and configured to receive the portion with a snug fit so that the portion will not move substantially in relation to the base member once it has been inserted, or having a larger opening that is, for example, partially closed by one or more insert members, for example, as described above. In some embodiments, the well strip has eight wells, and the portion positioned in the base member has four or less wells.

[0030] A further aspect of the invention relates to the use of the multi-well test plate assembly of the first aspect of the invention, or of the system described above, for sample analysis. Sample analysis may comprise processes involving PCR amplification, hybridization with probes, washing steps, etc., that may be carried out either manually or, preferably, with the aid of more or less automated equipment.

[0031] These processes involve actions such as shaking, tilting and vibration of the test plate. The present invention allows such steps to be carried out while preventing the wells from becoming misplaced as a consequence to these actions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0032] To complete the description and in order to provide for a better understanding of the invention, a set of drawings is provided. Said drawings form an integral part of the description and illustrate an embodiment of the invention, which should not be interpreted as restricting the scope of the invention, but just as an example of how the invention can be carried out. The drawings comprise the following figures:

Figure 1 is a schematic perspective view of a prior art multi-well test plate.

Figure 2 is a schematic perspective view of a multi-well test plate assembly in accordance with an embodiment of the invention.

Figure 3 is a schematic perspective view of the multi-well test plate assembly in accordance with this embodiment of the invention, with a first portion of an eight-well well strip incorporated and prepared for use.

Figure 4 schematically illustrates insertion of a well strip portion and a first insert member into an opening of a base member.

Figure 5 schematically illustrates the multi-well test plate assembly of figures 3-4 with a full well strip inserted and ready for use.

Figure 6 illustrates the same assembly with one and a half well strip inserted and ready for use.

Figure 7 is a perspective view of the assembly in accordance with this embodiment of the invention, from below.

Figures 8A-8C schematically illustrate a well strip adapted for division into two well strip portions, in accordance with an embodiment of the invention.

DESCRIPTION OF A WAY OF CARRYING OUT THE INVENTION

[0033] Figure 2 illustrates how, in an embodiment of the invention, a multi-well test plate assembly comprises a generally rectangular base member 2 featuring an opening 3. This opening is dimensioned and configured for allowing insertion of one or more (in this case, two) well strips of the type shown in relation to figure 1. That is, the base member 1 is, in this embodiment of the invention, configured for use with conventional prior art standard-complying well strips having, for example, eight wells each.

[0034] However, sometimes, only a few wells are to be used, for example, only one, two, three or four wells. Figure 3 shows how in such cases, the assembly of figure 2 can be used to accommodate only a portion 1A of a well strip, for example, a portion comprising four wells, obtained by breaking a full well strip into two halves 1 A and 1 B. The first portion 1 A comprising four wells can be aligned with a first insert member 21 along one part of the opening 3, and the rest of the opening can then preferably be closed using a second, longer, insert member 22. That is, figure 3 shows how a portion 1 A of an eight-well well strip 1 as the one shown in figure 1, the portion 1A comprising four wells, is arranged within the base member 2, and with a first insert member 21 aligned with it. Thus, the portion 1 A is fixed in its position in correspondence with the upper left corner of the base member, that is, the four wells 11 adopt the same position as the corresponding four wells of the full eight-well well strip 1 would have occupied, had that eight-well well strip 1 been inserted in the corresponding column of the base member or in the corresponding column of a frame as the one shown in figure 1. The first insert member contributes to the retention of the portion 1 A of the well strip in the correct position. Thus, the assembly as shown in figure 3 can be used in the same kind of equipment and

subjected to the same process steps as the assembly shown in figure 1, but only four wells are used instead of eight. Additional stability is provided by adding the second insert member 22 to fill the rest of the opening 3. In the illustrated embodiment, magnets 41-43, schematically illustrated in figure 2 (cf. also the discussion in relation to figure 7) are used to keep the first insert member and the second insert member in well-defined positions in relation to each other and to the base member 2. In other (non-illustrated) embodiments, mechanical means are used for positioning and interlocking the members.

[0035] Figure 4 schematically illustrates how a user can grip a sub-assembly comprising a portion of a well strip (hidden by the hand of the user) and the first insert member 21 aligned therewith, for insertion of this sub-assembly into the opening 3 of the base member 2.

[0036] Figure 5 illustrates the assembly accommodating a full well strip 11.

[0037] Figure 6 illustrates the assembly accommodating one full well strip 11 and a second portion 1 B of another well strip, with the tongue-like extension 14 supported on top of the first insert member 1 A.

[0038] In some embodiments, the surface of the base member can be provided with indications (for example, indications integrally molded with the base member, or printed labels adhered to the surface of the base member) suggesting how to correctly combine insert members, well strips and well strip portions in the opening. For example, figure 3 illustrates integrally moulded indications showing how a well strip can be divided into portions (cf. indication 23) as well as how an entire well strip as well as parts of well strips can be arranged in combination with the insert members (24-27).

[0039] That is, with just a few insert members, a variety of combinations of well strips and well strip portions can be accommodated, thereby providing for flexibility and reduced waste of wells. In other embodiments, more insert members and/or insert members featuring different lengths (for example, in the case of eight-well well strips, insert members complementary to well strip portions having one, two, three, four, five, six and/or seven wells) can be provided. Generally, the skilled person will try to strike a balance between the desire to reduce waste and the desire to keep the assembly as simple as possible. Sometimes, the use of well strip portions comprising four wells can be preferred, for example, when processing takes place using equipment adapted for simultaneous operation on four wells, for example, for simultaneous addition of matter and/or removal of matter, such as chemical or biological reagents, to and/or from the four wells. Such devices are frequently used for operating on this kind of well strip.

[0040] Figure 7 is a rear view of the assembly illustrating how, in an embodiment of the invention, the first insert member 21, the second insert member 22, as well as the base member 2, are provided with respective magnets 41, 42, 43 arranged to attract each other, in order to bias the two insert members towards a preferred position and

to retain them in that position. The use of magnetic means for biasing the insert members to a certain position and for retaining them in that position has been found to work surprisingly well, and avoids the kind of tolerance problems that often occur when mechanical means, such as snap-fits, dove-tail configurations, etc., are used to keep different members of plastic material in specified relationships to each other. For example, the arrangement shown in figure 7, with the magnets arranged aligned with each other along an axis parallel with the longer sides of the base member, and for example approximately in correspondence with one of the ends of the first insert member, has proven to provide excellent results.

[0041] Figures 8A-8C illustrate one embodiment of a well strip adapted to be dividable into two parts, each part featuring four wells. The well strip is generally of the kind shown in figure 1, but has been provided by a weakened zone or line 15. In an embodiment of the invention, this is achieved by contacting the bottom of the well strip with an electrically heated rod or thread 50, as schematically illustrated in figure 8C. Thereby, also conventional well strips can be adapted for use in accordance with the invention.

[0042] In this text, the term "comprises" and its derivations (such as "comprising", etc.) should not be understood in an excluding sense, that is, these terms should not be interpreted as excluding the possibility that what is described and defined may include further elements, steps, etc. An exception to this is when reference is made to the number of wells of a well strip or well strip portion. For example, when reference is made to a well strip or well strip portion having N wells, this generally means that the well strip or well strip portion has exactly that number of wells.

[0043] The expressions "well strip" stands for a "strip of wells", i.e. "a set of wells provided one after the other in a row".

[0044] The invention is obviously not limited to the specific embodiment(s) described herein, but also encompasses any variations that may be considered by any person skilled in the art (for example, as regards the choice of materials, dimensions, components, configuration, etc.), within the general scope of the invention as defined in the claims.

Claims

1. A multi-well test plate assembly comprising

a base member (2) comprising at least one opening (3) for receiving and housing at least a portion (1 A, 1 B) of a well strip (1), and at least one first insert member (21) arranged to fit into the opening, for supporting the portion (1 A, 1 B) of the well strip in the opening.

2. The multi-well test plate assembly according to claim

1, wherein the opening has a length in a direction parallel to a short side of the base member, and wherein the opening (3) is dimensioned for accommodating at least one well strip, and wherein the first insert member (21) has a length complementary to the length of a portion of the well strip so that the first insert member and the portion of the well strip, placed one after the other, extend over the length of the opening.

3. The multi-well test plate assembly according to claim 1, wherein the opening has a length in a direction parallel to a short side of the base member, and wherein the opening (3) is dimensioned for accommodating at least one well strip, and wherein the first insert member (21) has a length of approximately 7/8 or less of the length of the opening, the first insert member being adapted for being placed in the opening aligned with a portion (1 A, 1 B) of a well strip so that the portion of the well strip and the first insert member (21), together, extend over the length of the opening.

4. The multi-well test plate assembly according to claim 2 or 3, wherein the first insert member (21) has a length corresponding to approximately half the length of the opening (3), so that the first insert member (21) can be used to position and support half a well strip (1) in the opening (3).

5. The multi-well test plate assembly according to any of the preceding claims, further comprising at least a second insert member (22) arranged to fit into the opening.

6. The multi-well test plate assembly according to claim 5, wherein the second insert member (22) is longer than the first insert member (21).

7. The multi-well test plate assembly according to any of the preceding claims, comprising a plurality of first insert members of different lengths.

8. The multi-well test plate assembly according to any of the preceding claims, comprising means for biasing the first insert member (21) towards a preferred position in the opening.

9. The multi-well test plate assembly according to claim 8, wherein the means for biasing the first insert member (21) towards a preferred position in the opening comprises magnetic means, for example, magnetic means comprising at least one magnet (43) which is part of the first insert member, and at least one second magnet (41, 42).

10. A system comprising a multi-well test plate assembly according to any of the preceding claims, and at least

one well strip (1) comprising at least 8 wells (11).

11. The system according to claim 10, wherein the well strip comprises at least one weakened zone (15) for facilitating division of the well strip into two defined portions (1A, 1 B), each comprising at least one well (11). 5
12. A method for adapting a well strip (1) for use in a multi-well test plate assembly, comprising the step of heating at least one portion of the well strip to produce at least one weakened zone (15) for facilitating division of the well strip into at least two defined portions (1 A, 1 B), each of said portions comprising at least one well (11). 10 15
13. The method according to claim 12, wherein the step of heating at least one portion of the well strip (1) comprises bringing at least one electrically heated element (50) in contact with the well strip (1). 20
14. A method of preparing a test plate for analysis of at least one sample, comprising the steps of dividing a well strip (1) into at least two portions (1 A, 1 B), and positioning at least one of the portions (1A, 1B) in an opening (3) in a base member (2) of a multi-well test plate assembly, such as in the base member of the multi-well test plate assembly according to any of claims 1-9, so that the portion is retained in the base member with the wells (11) positioned and retained in pre-determined positions in relation to sides of the base member (2). 25 30
15. Use of the multi-well test plate assembly of any of claims 1 to 9, or of the system of any of claims 10 and 11, for sample analysis. 35

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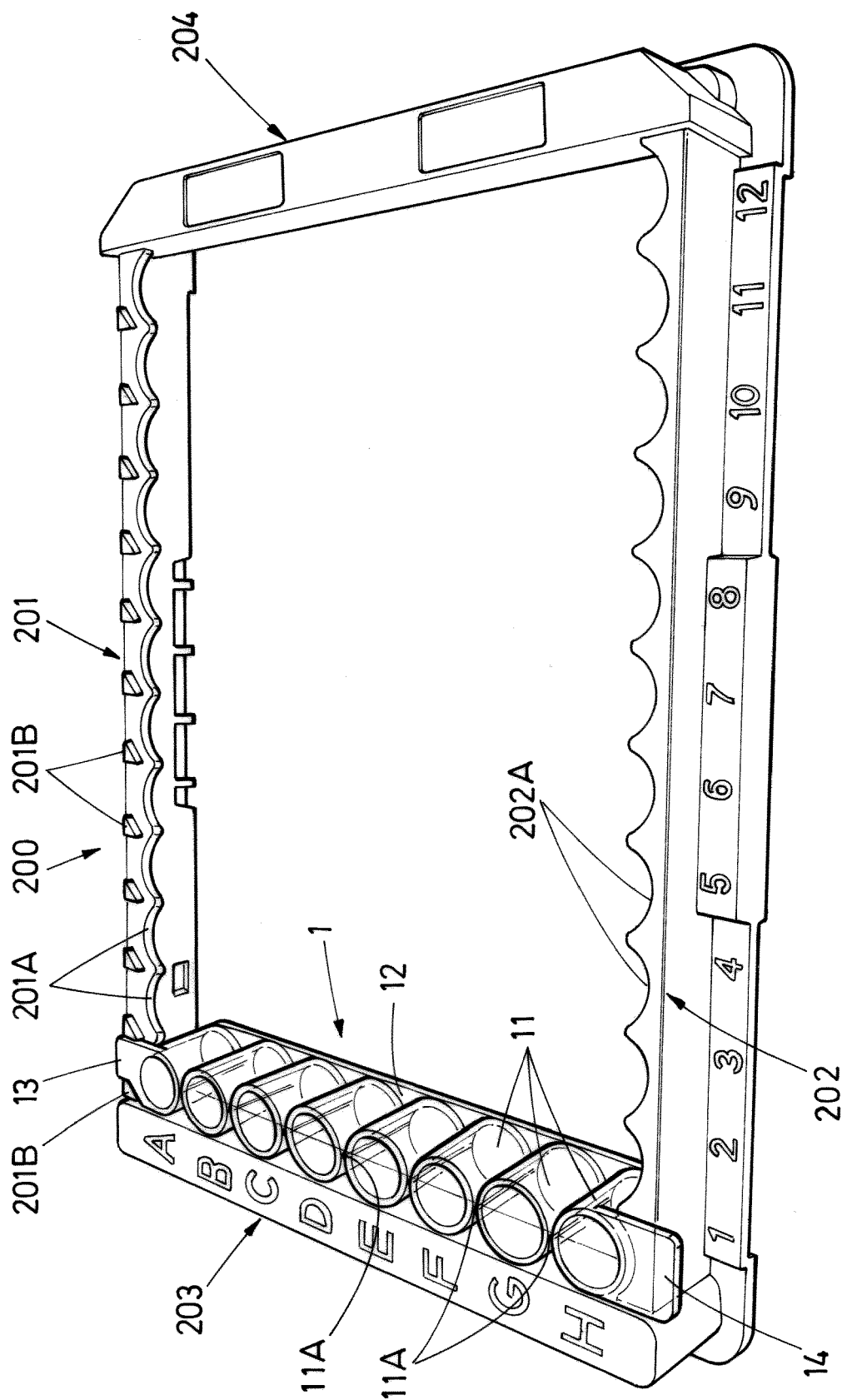


FIG.1
PRIOR ART

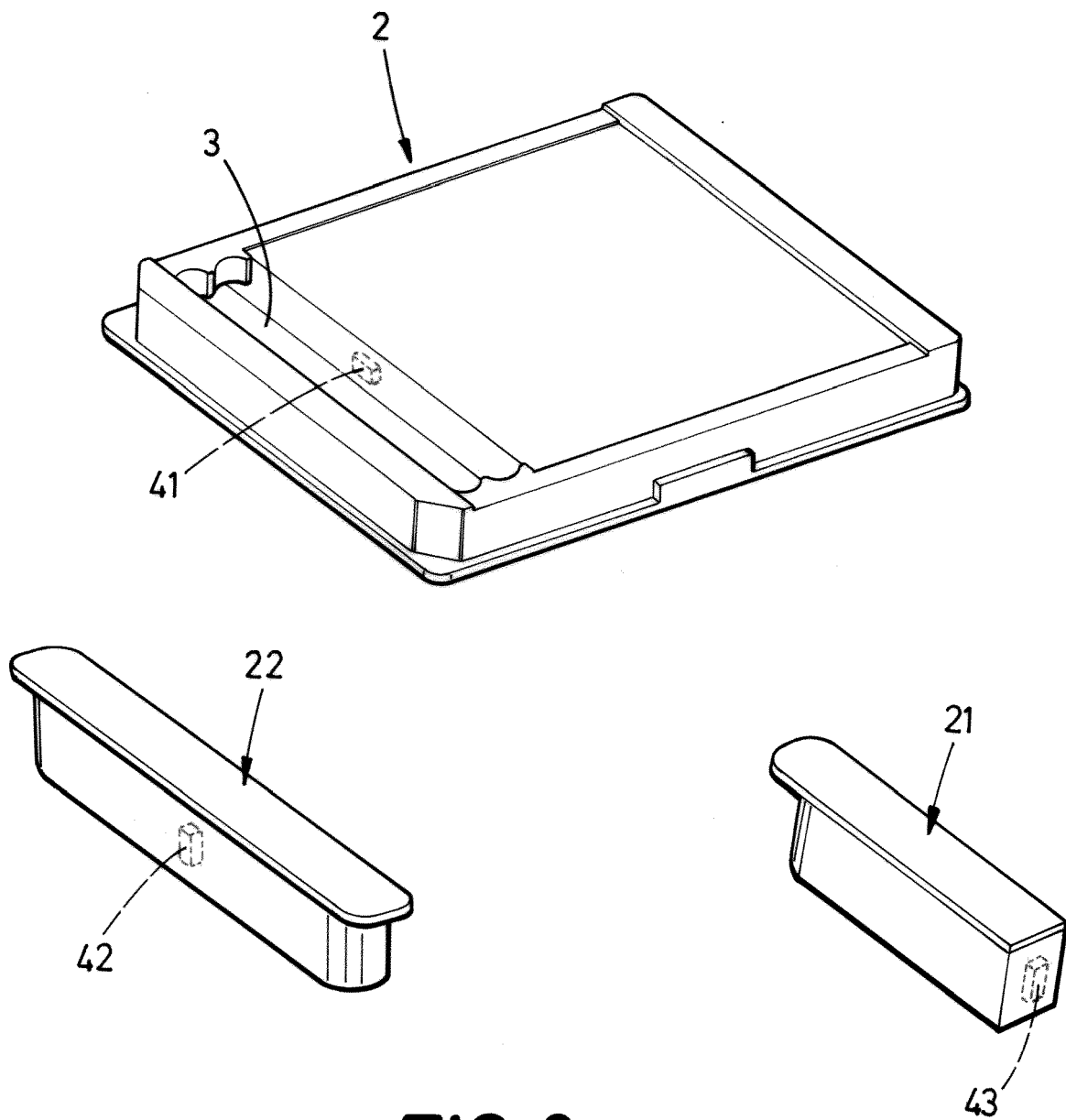


FIG.2

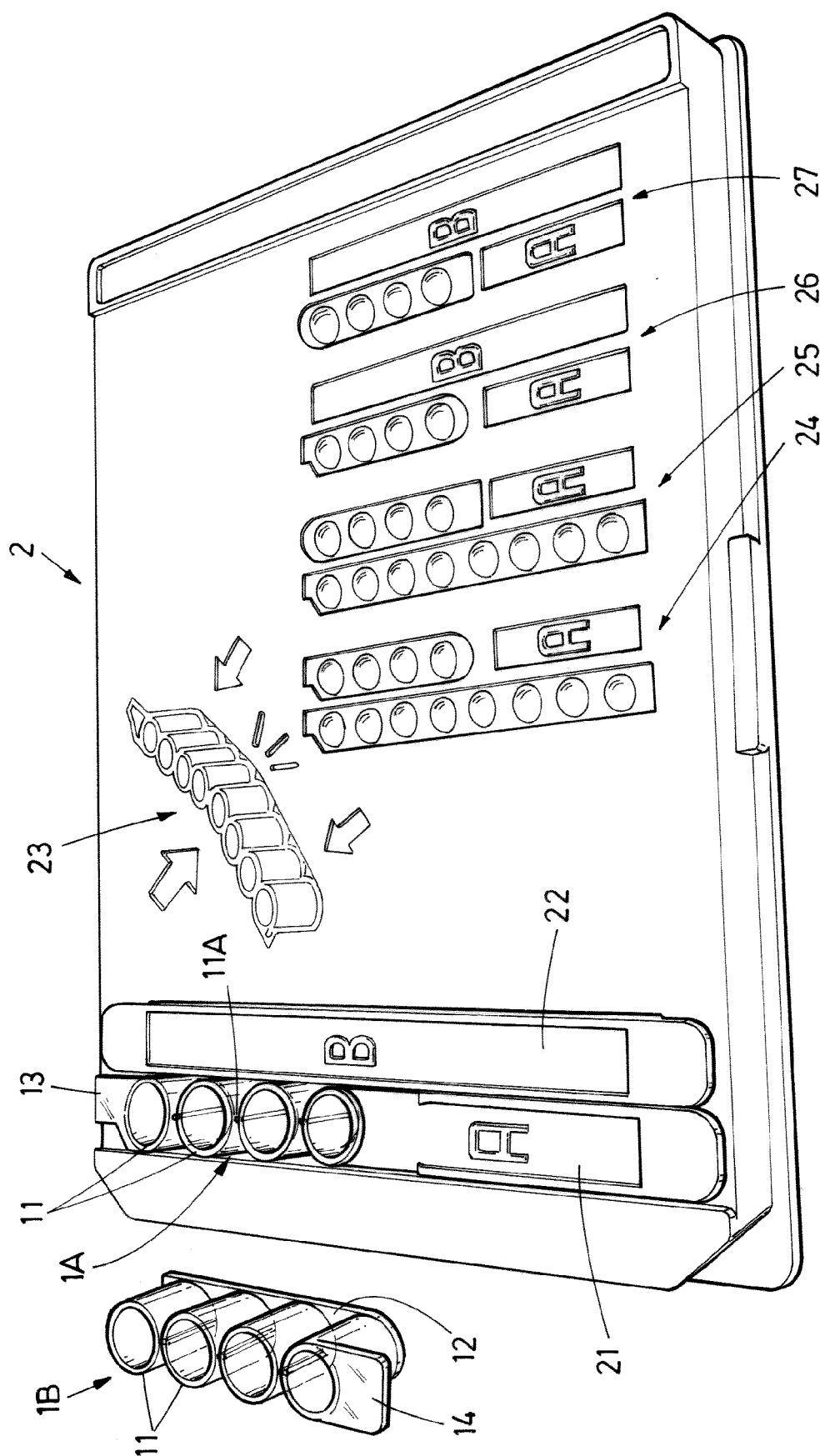
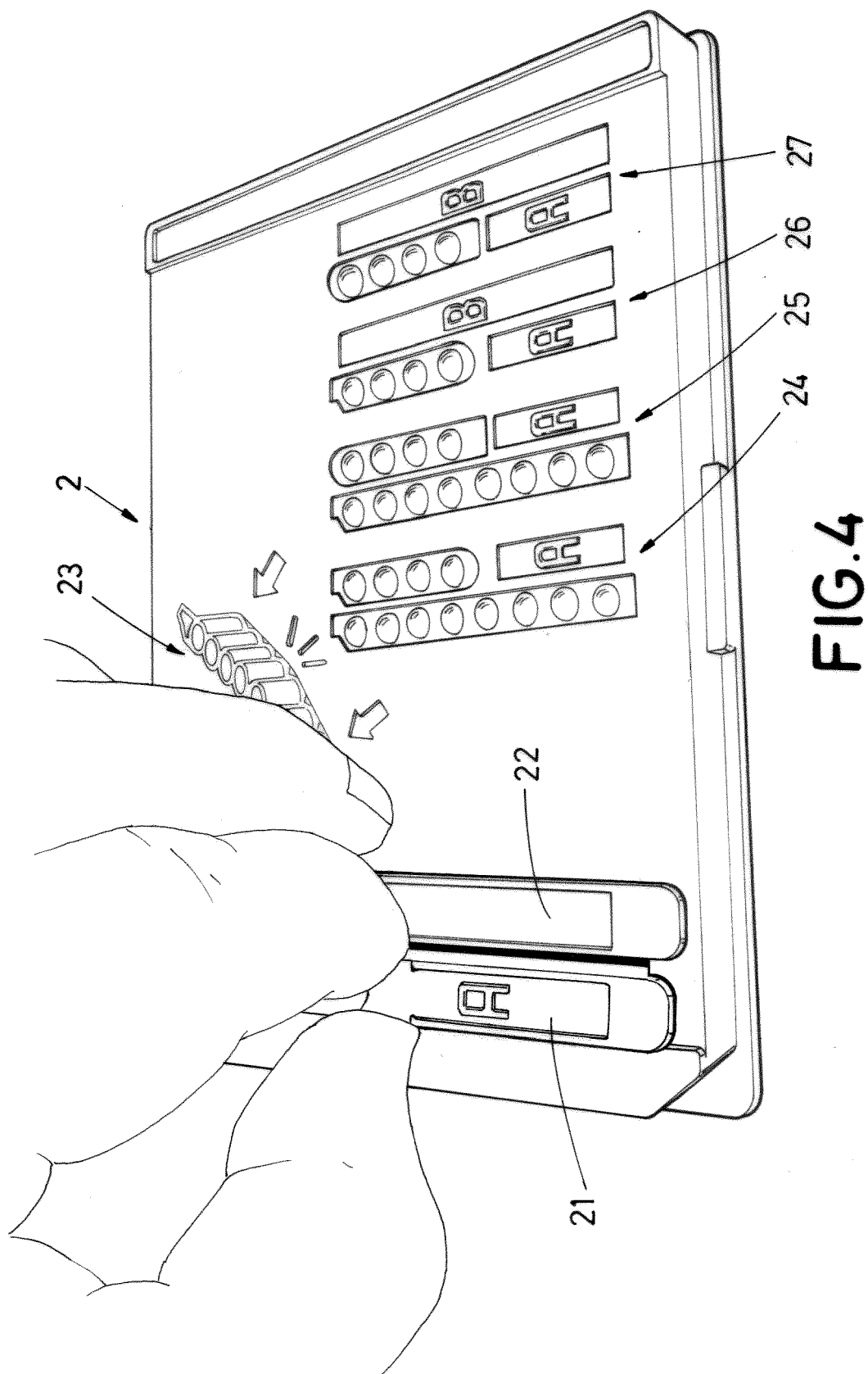


FIG. 3



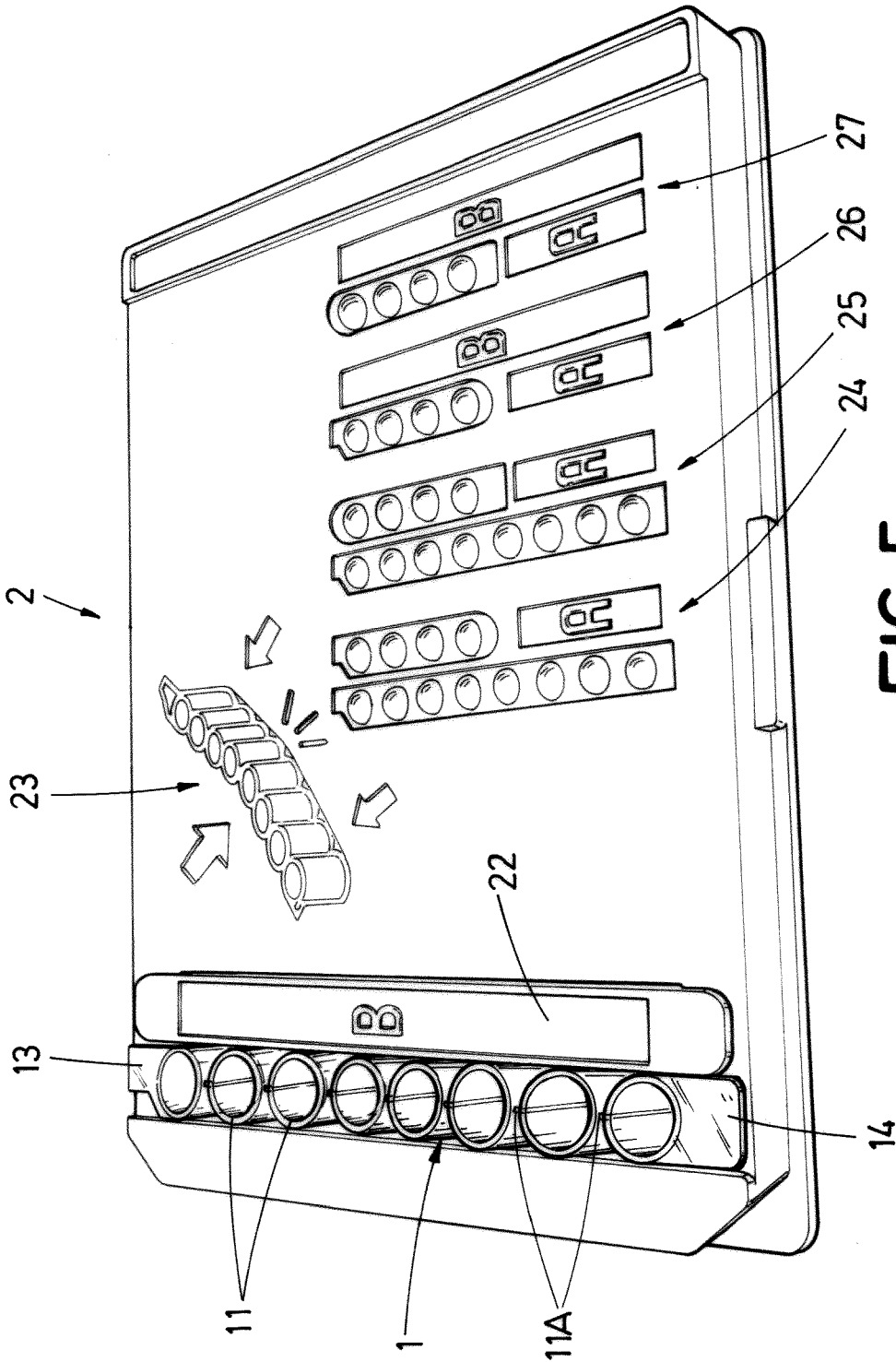


FIG. 5

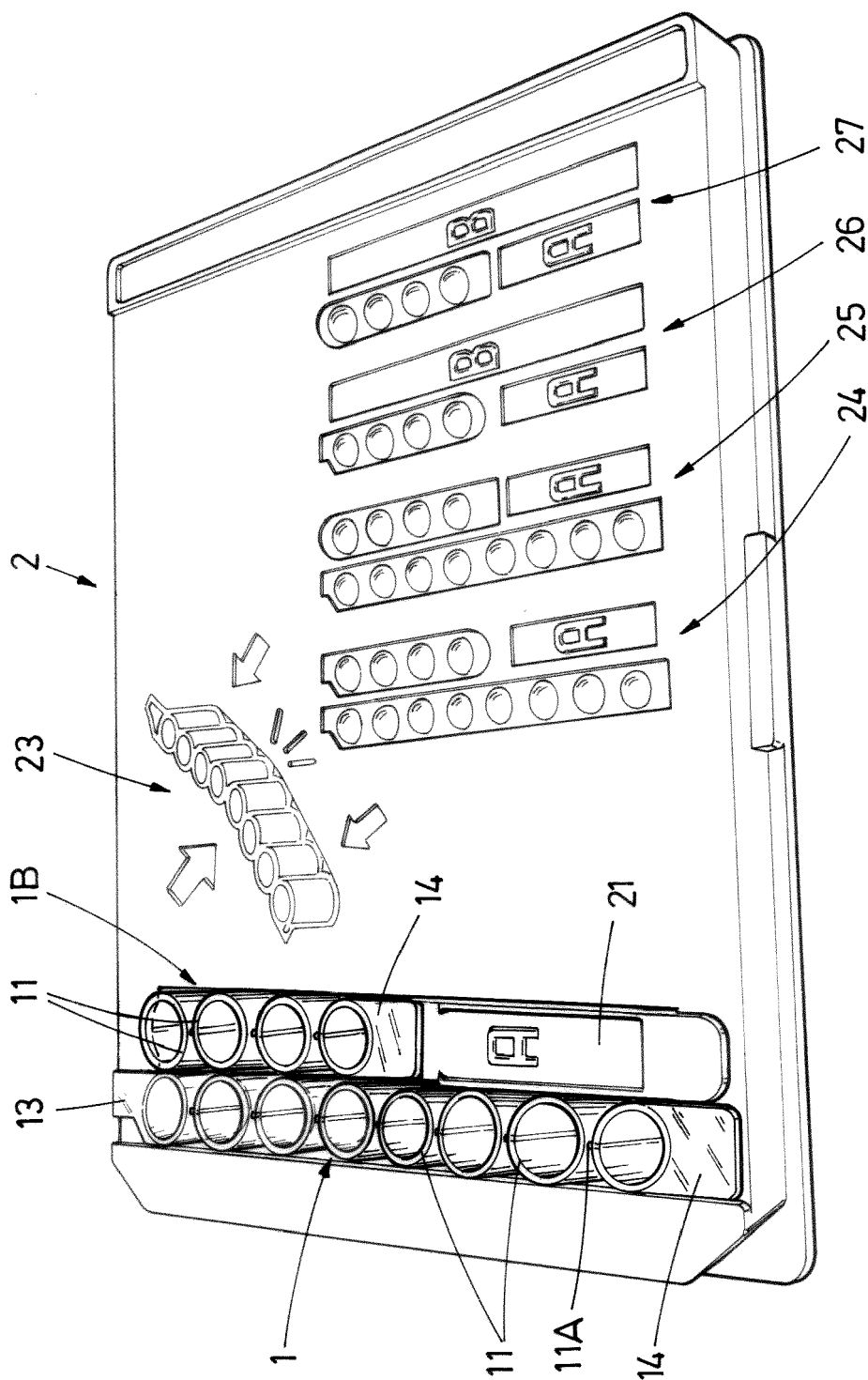


FIG. 6

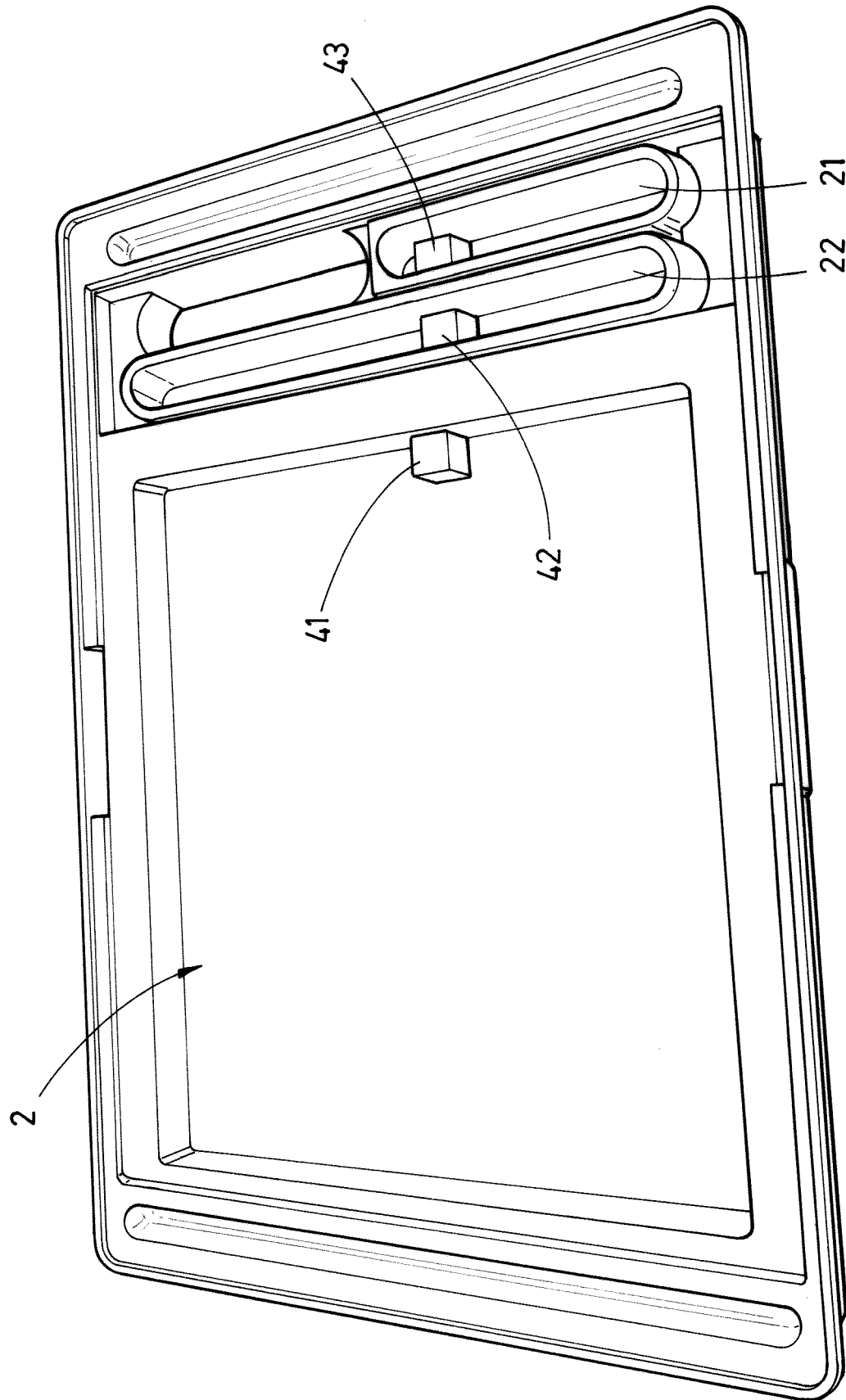


FIG.7

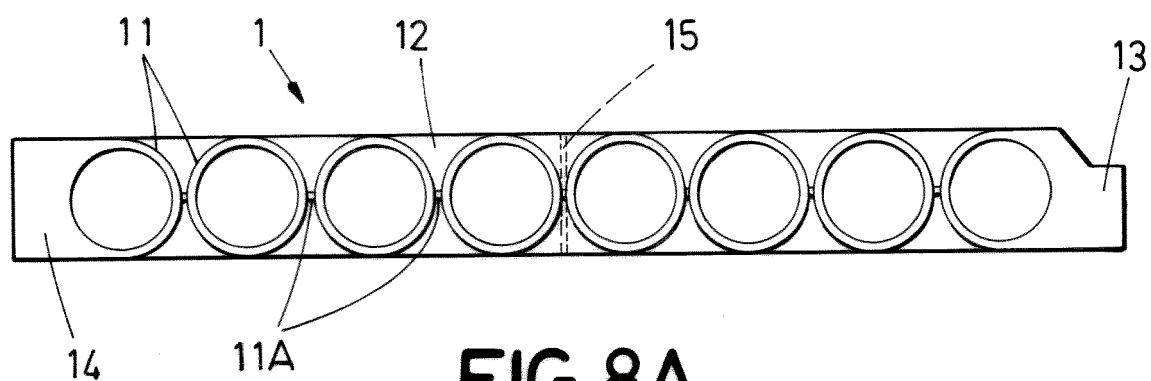


FIG. 8A

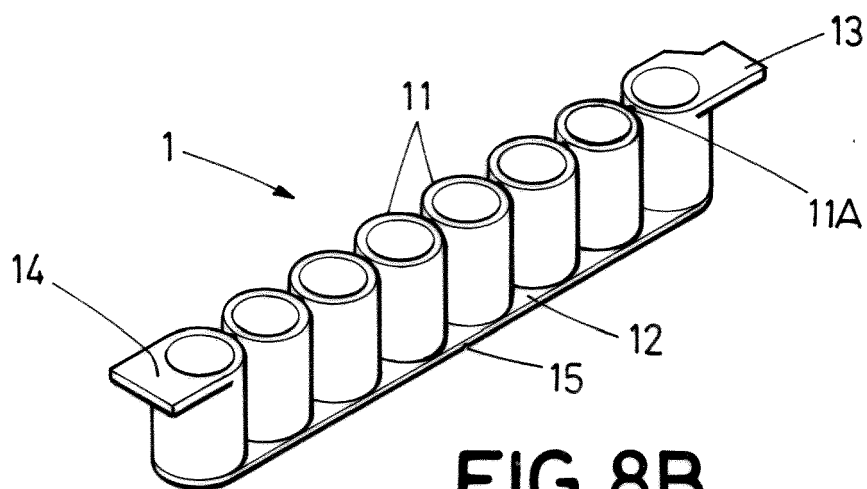


FIG. 8B

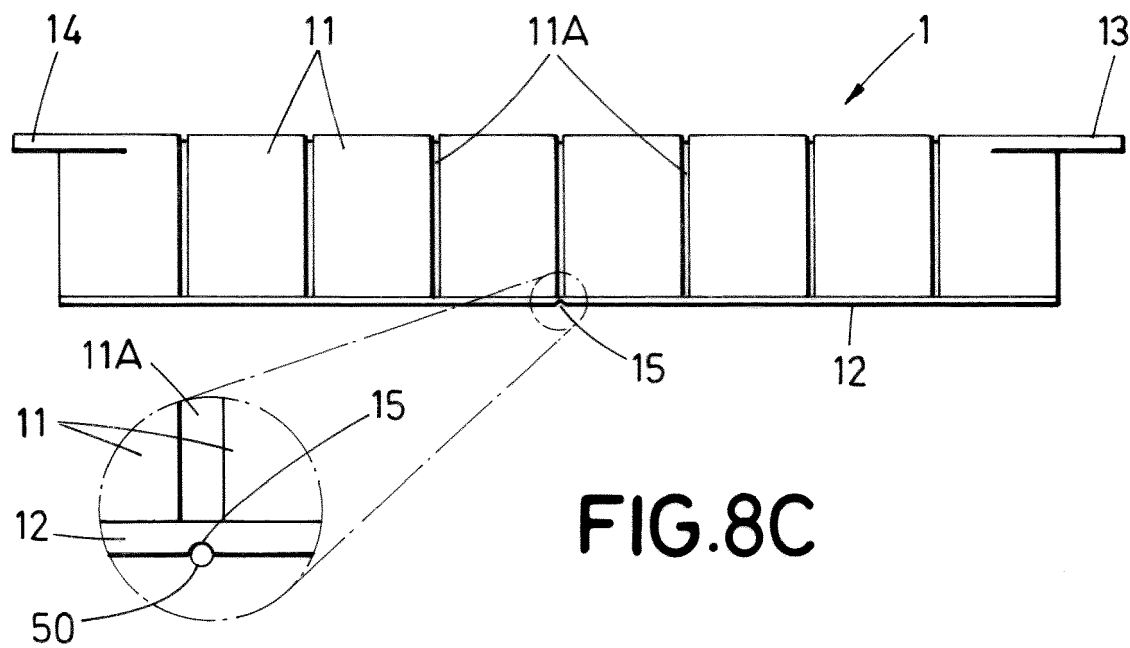


FIG. 8C



EUROPEAN SEARCH REPORT

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X,D	US 2011/286897 A1 (USCHKUREIT THOMAS [DE] ET AL) 24 November 2011 (2011-11-24) * paragraph [0064] * * figure 1a *	12,13	
X	WO 2015/075653 A2 (IDEA MACHINE DEV DESIGN & PRODUCTION LTD [IL]) 28 May 2015 (2015-05-28) * page 17, line 24 - line 29 * * page 18, line 10 - line 18 * * figure 3C *	1-11,14,15	
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 28 July 2016	Examiner Bischoff, Laura
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EP 16 38 2030

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