US 20230311016A1

(19) **United States**

(12) **Patent Application Publication**

Wang

(10) **Pub. No.: US 2023/0311016 A1**

(43) **Pub. Date: Oct. 5, 2023**

(54) **TOY CONSTRUCTION KIT AND TILE**

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(21) Appl. No.: **17/709,412**

(22) Filed: **Mar. 31, 2022**

Publication Classification

(51) **Int. Cl.**

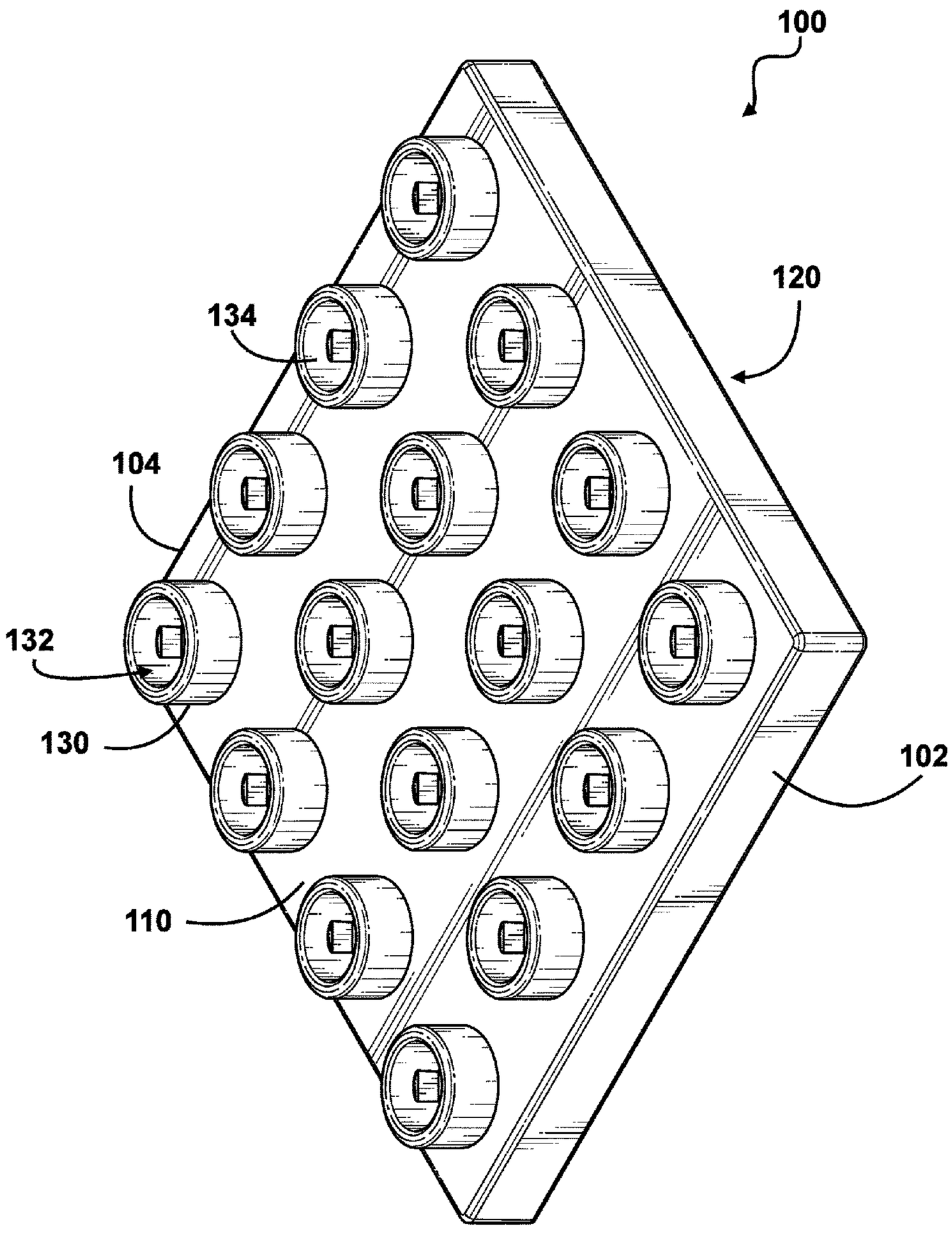
A63H 33/08 (2006.01)

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

CPC ***A63H 33/086*** (2013.01)

(57) **ABSTRACT**

A construction toy kit and tile are provided for a low-profile interlocking toy. The construction toy kit contains a plurality of tiles, each comprising two parallel plates connected to one another by a sidewall. A support structure is disposed in a cavity defined by the parallel plates and sidewall to simultaneously prevent each plate from flexing relative to one another and reduce the overall weight of the tile. A plurality of coupling studs extend outward from an outer surface of the tile and configured to enable each tile to couple, mate, or mesh with at least one other tile in the kit, according to various embodiments defining the type, size, and arrangement of coupling studs.



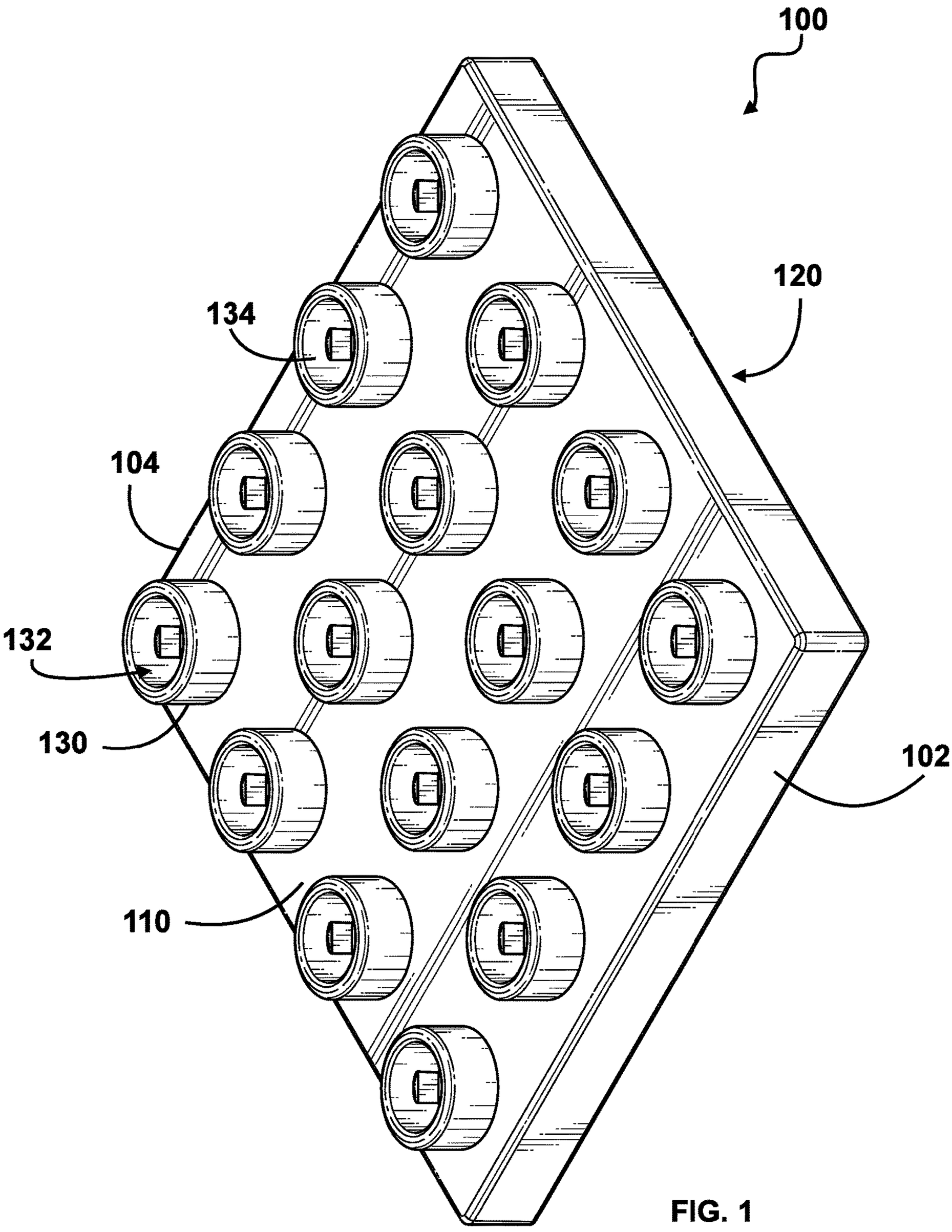


FIG. 1

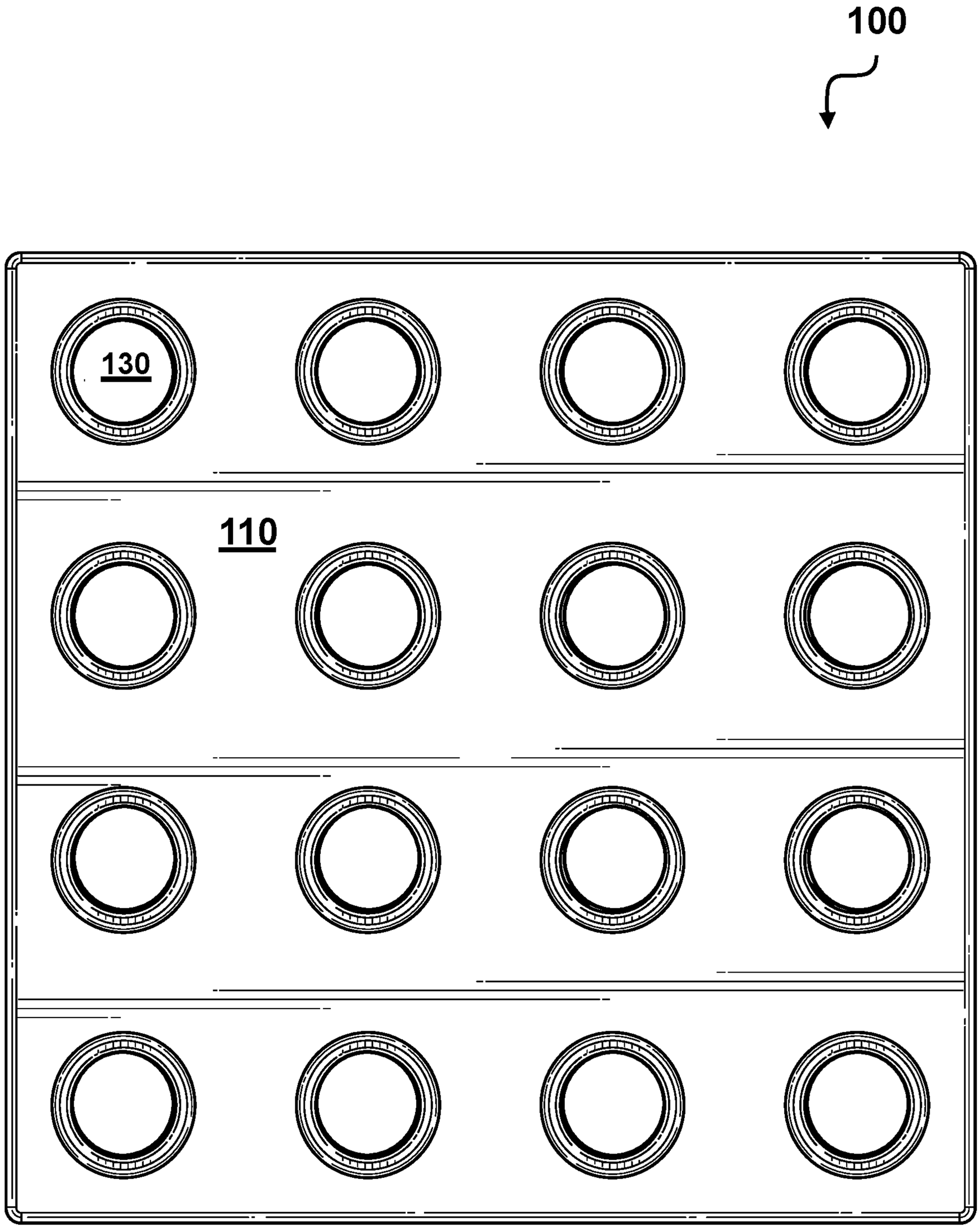


FIG. 2

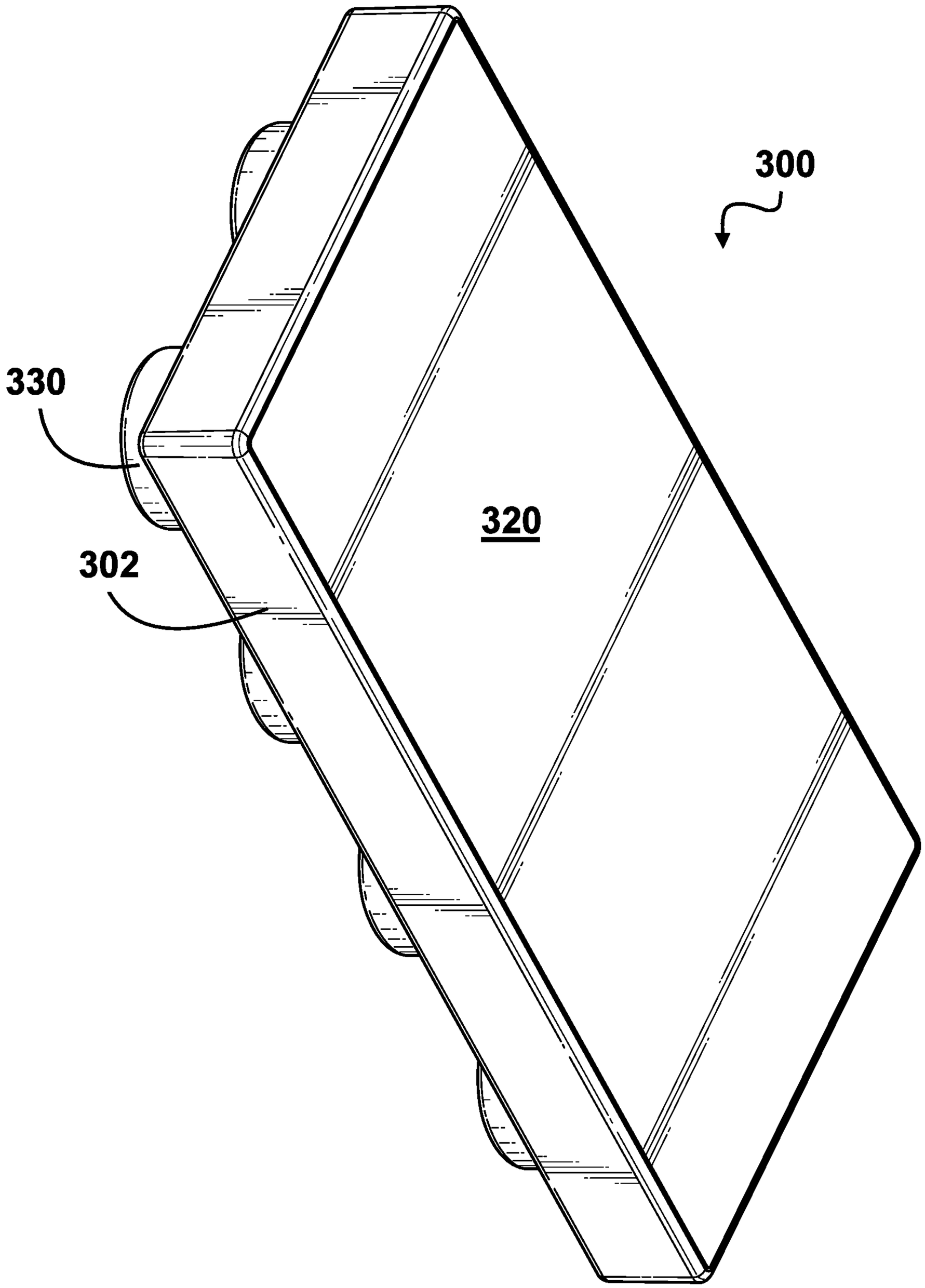


FIG. 3

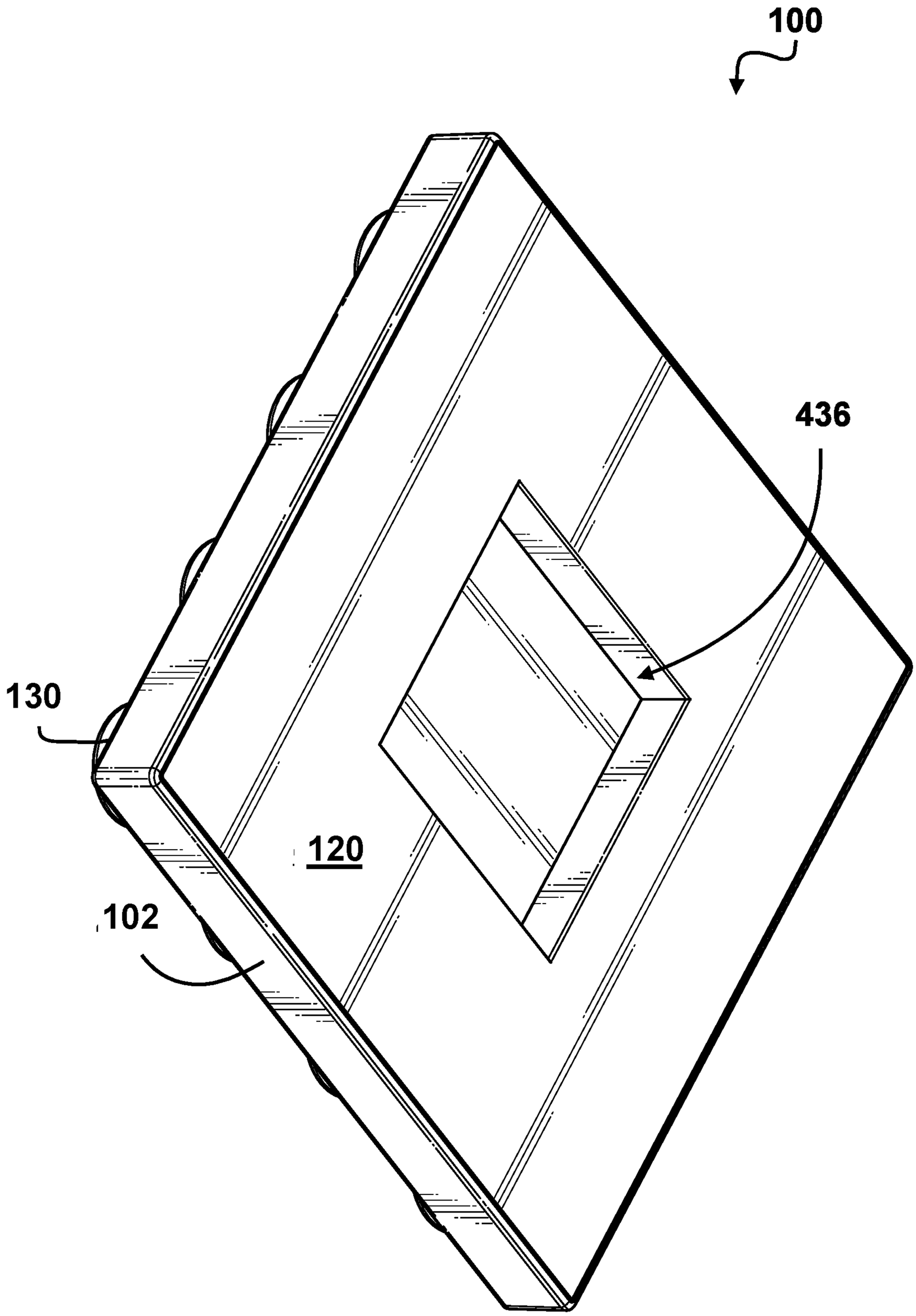


FIG. 4

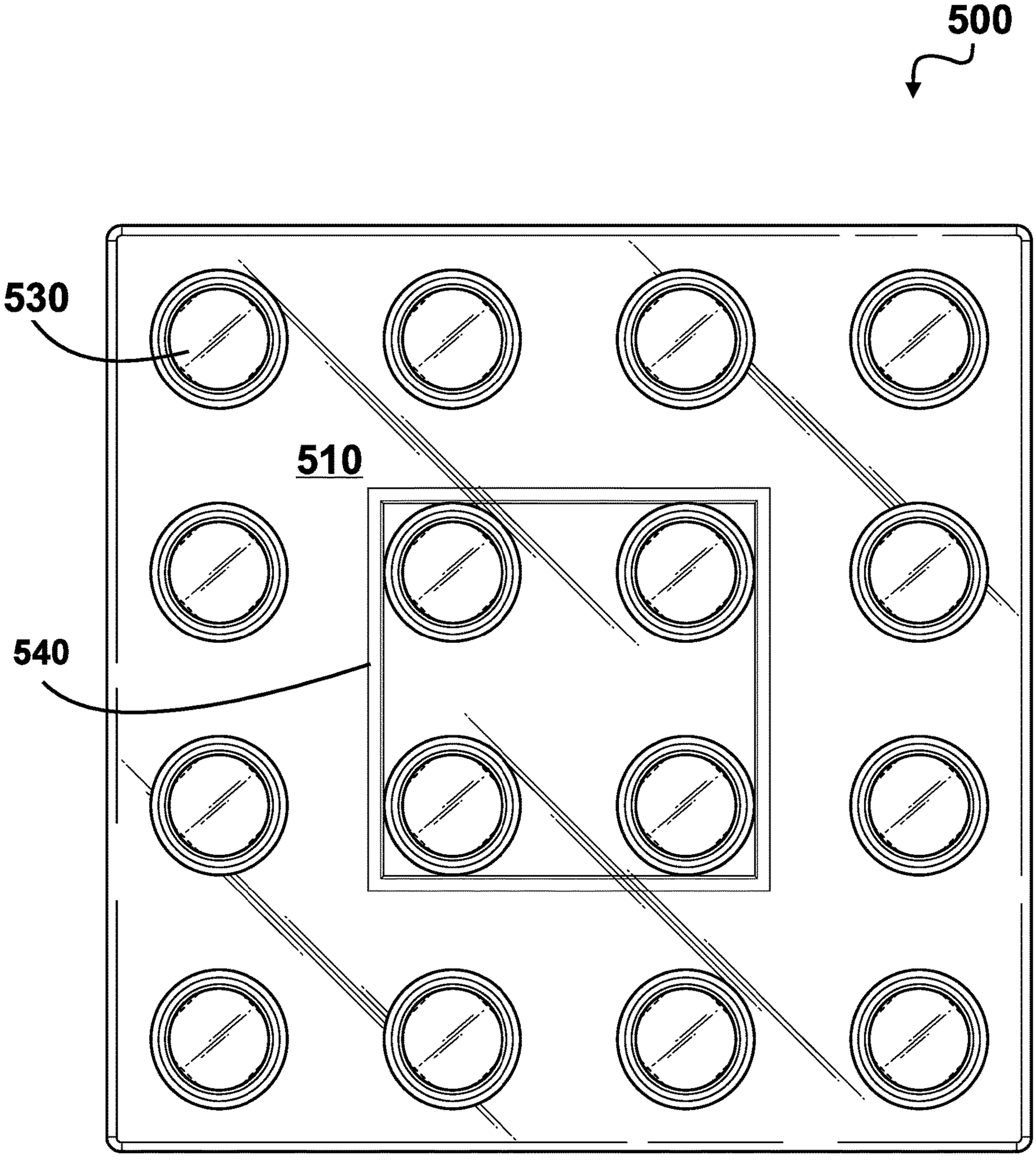


FIG. 5

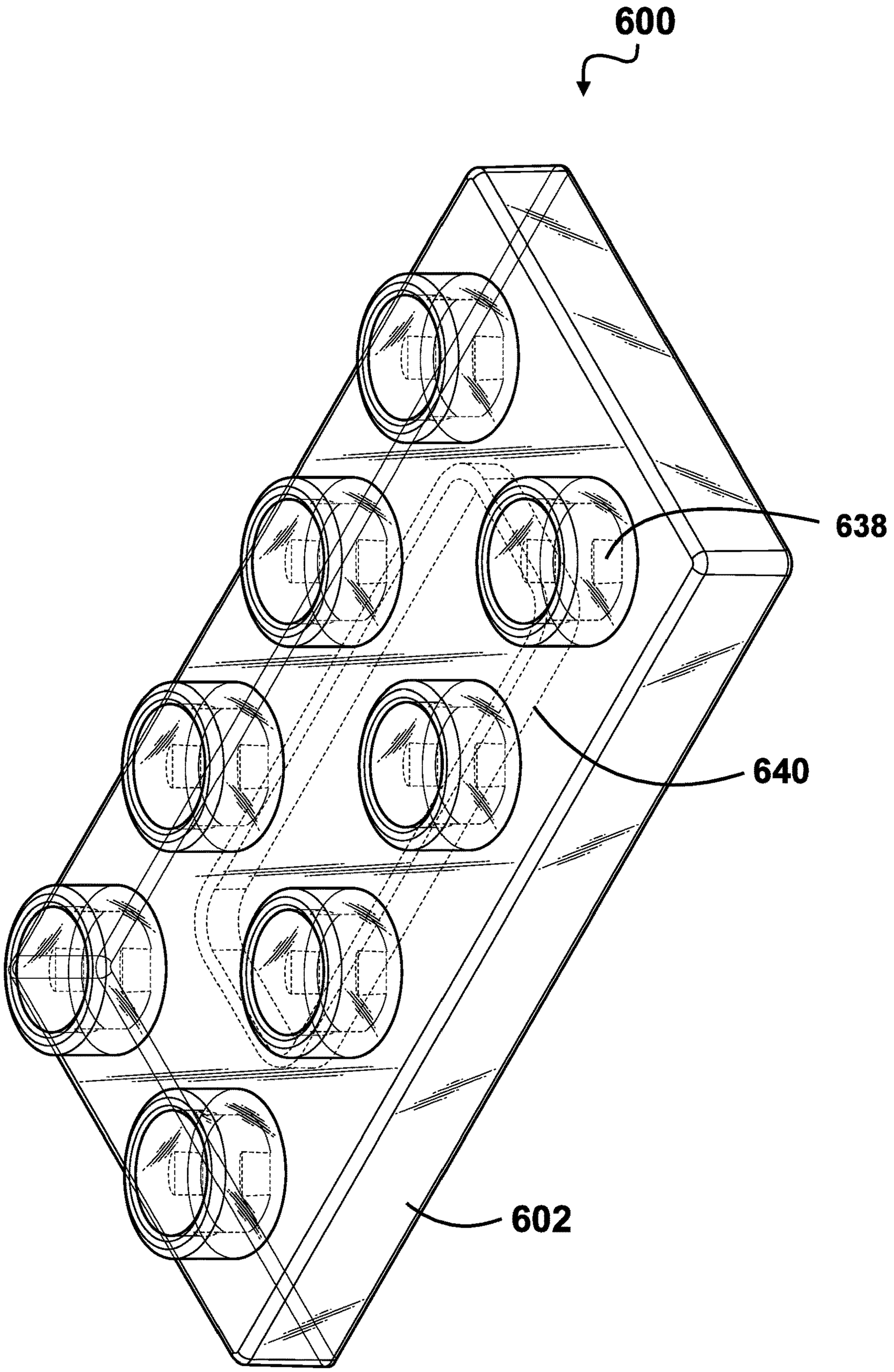


FIG. 6

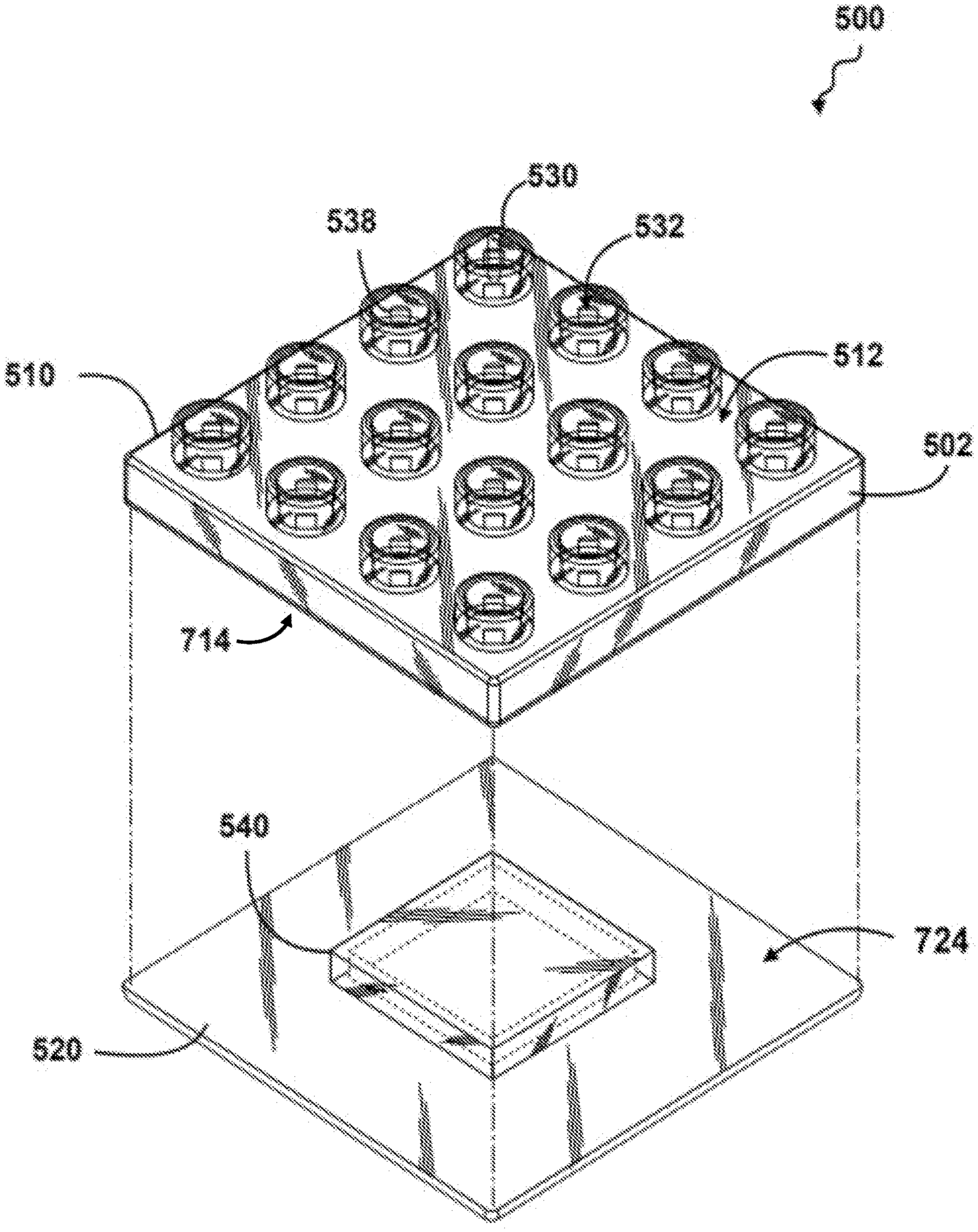


FIG. 7

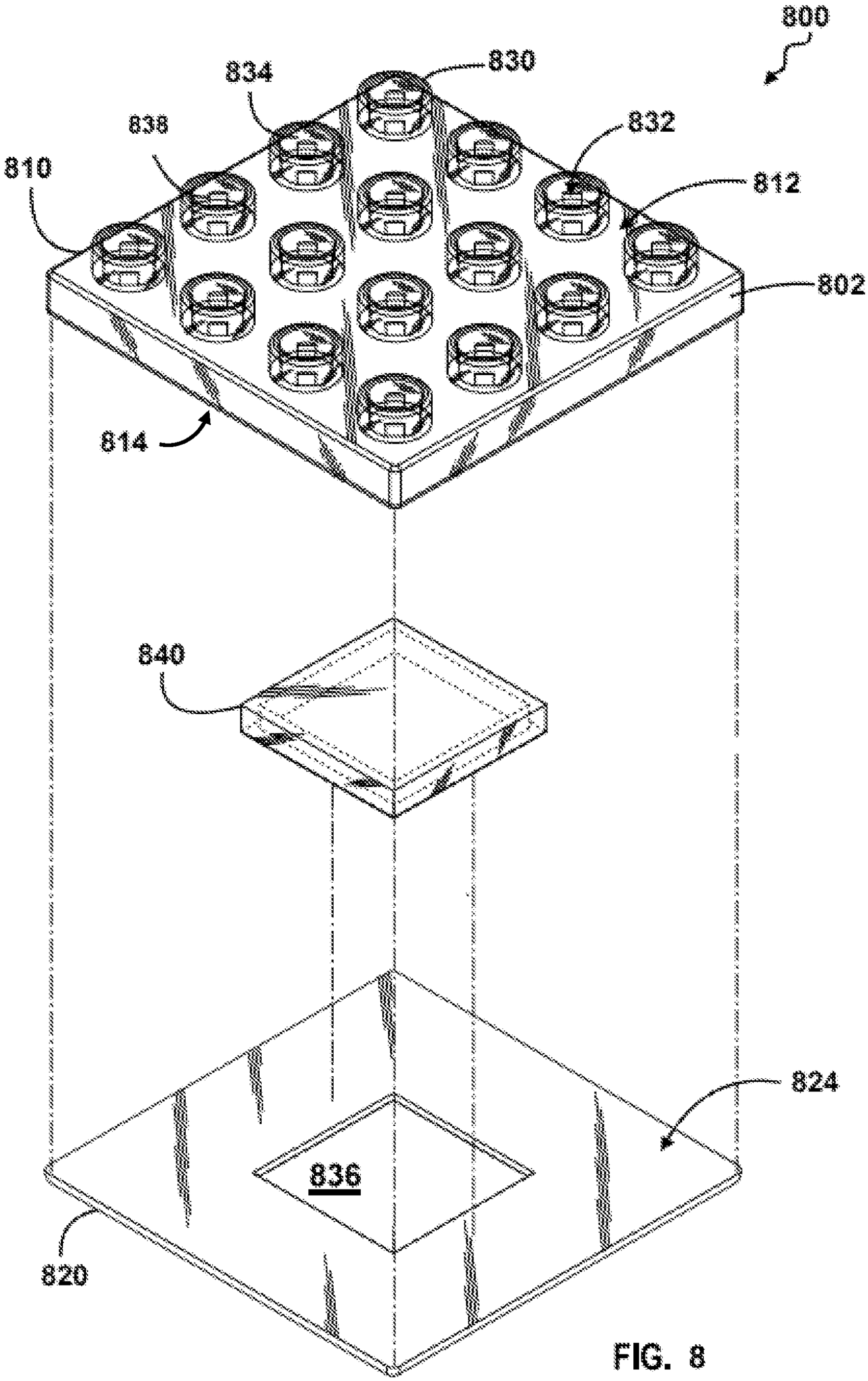


FIG. 8

TOY CONSTRUCTION KIT AND TILE

GOVERNMENT CONTRACT

[0001] Not applicable.

CROSS-REFERENCE TO RELATED APPLICATIONS

[0002] Not applicable.

STATEMENT RE. FEDERALLY SPONSORED RESEARCH/DEVELOPMENT

[0003] Not applicable.

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TECHNICAL FIELD

[0005] The disclosed subject matter relates generally to interlocking toys kits and tiles for creative and educational play and, more particularly, to a construction toy kit of tiles comprising a tile configured to couple with another tile.

BACKGROUND

[0006] Though primarily for entertainment, some toys allow users to learn in a fun and creative environment. For instance, construction toys allow the user to explore geometry and engineering principles through the creation of basic structures while also having fun and exercising creativity. Traditional wooden blocks, Lincoln Logs addressed in U.S. Pat. No. 1,351,086 to Lloyd, and LEGO bricks subject to U.S. Pat. No. 3,005,282 to Kirk, are some examples of well-beloved construction toys. While Lincoln Logs and LEGO bricks reduce the risk of toppling structures built with traditional smooth blocks through their respective, well-known locking structures, they do require significant dexterity to combine, which limits use to children of certain age and ability. Lincoln Logs further limit a user's play by requiring users to combine the components in set configurations, which severely limiting creativity. Additionally, wooden blocks and LEGO bricks have some heft to them, and, owing to their particular dimensions including height, can be prone to toppling. This, in addition to relatively sharp corners, can cause injury to a user. Indeed, the potential for injury from seemingly innocuous LEGO bricks is so well known that it has become an amusing, well-circulated meme on the Internet. Even further, all of these proposals require significant space—for play and storage—because their components are bulky.

[0007] One proposal to address the deficiencies in classic construction toys is U.S. Pat. No. 10,881,974 to Donohoe, which teaches a connector for log-style construction toys. While this proposal attempts to increase the combinability of classic construction toys, it is quite limited since it simply allows the user to change the combination direction at set points. Thus, while this proposal allows for more freedom in connection, creativity is limited to only a few set combinations.

[0008] Further proposals to improve construction toys are U.S. Pat. No. 6,746,297 to Robjent and U.S. Pat. No. 8,961,258 to Balint, which teach toy building sets with interlocking panels. However, these proposals are deficient because the interlocking mechanisms specified require significant dexterity. This limits the utility of the construction toys as many potential users, including young users, those with undeveloped fine motor skills, and even those with physical or developmental disabilities, may lack the motor skills necessary to play with the building sets. Balint, for example, provides that locking is achieved by inserting a tile protrusion into an extrusion on a second tile and then twisting one tile relative to the other. This not only limits arrangements of tiles as flat surfaces, but the locking and twisting mechanism require significant dexterity to operate, preventing access to many. Further, these proposals are deficient because they teach solid panels, which increases the weight, thus increasing the possible risk of injury and requiring significant dexterity to manipulate the panels for play.

[0009] Thus, although various proposals have been made for different types of construction toys, none of those in existence combine the characteristics of the present invention. Therefore, there remains a need for a construction toy that is easily combinable, compact, and lightweight.

SUMMARY

[0010] The present disclosure is directed to a construction toy kit which may comprise a plurality of interlocking toy tiles comprising a first and second plate, at least one coupling stud on the first plate, at least one side wall extending between the first and second plates, and a support structure interposed between the first and second plate.

[0011] For purposes of summarizing, certain aspects, advantages, and novel features have been described. It is to be understood that not all such advantages may be achieved in accordance with any one particular embodiment. Thus, the disclosed subject matter may be embodied or carried out in a manner that achieves or optimizes one advantage or group of advantages without achieving all advantages as may be taught or suggested.

[0012] In accordance with one embodiment, the tile may be a round, square, rectangle, parallelogram, triangle, or any other shape. The tile may further be shaped as any letter of the English alphabet or any other language. It is contemplated that to obtain the shape, the first and second face of the tile may be the same shape. It is further contemplated that the first and second face of the tile may be the same size, though this will not be necessary to practice the invention.

[0013] In one embodiment, the tile may contain a side wall extending from at least one edge defining the first plate towards at least one edge defining the second plate. In some embodiments, the side wall may extend continuously around the first and second plate such that a cavity may be defined by the first and second plate and the side wall.

[0014] The toy tile may comprise a support structure interposed between the first and second plate. In some embodiments, the support structure may be disposed within the cavity defined by the first and second plate and the side wall and further configured to provide internal support to the

tile. For instance, the support structure may be configured to prevent the flexing of the first and/or second plate of the tile.

[0015] The support structure may be defined as structure operative to provide support to the tile between the first and second plates, and therefore, in some embodiments, support structure may comprise a framework, and, in some embodiments, the framework may comprise an infill pattern such as, for example only and without limitation, a beam, truss, honeycomb design, block, contour, point, web, or line. A person of ordinary skill in the art will appreciate that innumerable infill patterns for providing structural support between the plates comprising the tile are available to practice the invention, and therefore, the invention shall not be limited by the particular framework or infill pattern defining the support structure.

[0016] In some embodiments, the support structure may be separate and distinct from the first and second plates, however, it is contemplated that the support structure may alternatively or additionally be formed on an inner surface of the first or second plate. For instance, the second plate may be formed, such as by molding, to define a recess projecting inward toward the inner surface of the first plate.

[0017] It is contemplated that the support structure may define any shape operative to provide support between the first and second plates. For example only and without limitation, the support structure may define one or more beams, stadiums, parallelograms, triangles, or circles. In some embodiments, the support structure may be the same shape as the tile. In another embodiment, the support structure may be a shape different from the tile. Thus, in one, non-limiting, clarifying example, the tile may be square while the support structure may be a stadium.

[0018] In addition to the at least one coupling stud comprising the first plate, and in accordance with just one non-limiting embodiment, an outer surface of the second plate may comprise a means for coupling the tile to another tile. For example and without limitation, the means for coupling on the second plate may be a recess, coupling studs, magnets, or even tubular projections, among many others, including combinations of the same.

[0019] In some embodiments, the recess formed as a support structure on the second plate may even be configured to securely yet removably couple with at least one coupling stud on another tile in the kit. In such embodiments, the recess may be sized such that one or more of the at least one coupling stud are configured to frictionally contact with at least one boundary or edge defining the recess. In another embodiment, the recess may be defined by the structural support

[0020] It is contemplated that the construction toy kit may comprise a variety of the toy tiles as described. For example and without limitation, the construction toy kit may comprise at least one tile comprising a recess on the second plate and at least one tile comprising an essentially flat second plate. As a further example, the construction toy kit may comprise at least one tile of a circular shape, at least one tile of a rectangular shape, and at least one tile of a triangle shape, as well as other polygons and combinations of the same.

[0021] In another embodiment, the construction toy kit may comprise tile wherein the second plate comprises one or more coupling studs. In some embodiments, the second plate may be molded to define one or more coupling studs integrated on the outer surface of the second plate.

[0022] In one embodiment, the one or more coupling studs may be configured to securely yet removably couple with another one or more coupling studs on another tile formed in accordance with embodiments of the tiles disclosed herein. In some such embodiments, at least one of the one or more coupling studs may define an aperture extending outward from the outer surface of the first or second plate.

[0023] According to some embodiments, the aperture may be sized to mate with one or more other coupling studs on any of the first and second plates of other tiles comprising the invention. For example, the inner diameter of the aperture may frictionally engage with an outer surface of such one or more other coupling studs. A person of ordinary skill will appreciate tolerances necessary to create frictional engagement.

[0024] In another embodiment, the kit may comprise tiles operative to securely yet removably mesh with one another. For instance, it is contemplated that the one or more coupling studs may be configured, arranged, and distributed on an outer surface of the first tile such that the first tile one or more coupling studs may mesh in any space between one or more coupling studs distributed on an outer surface of the second tile. In other words, and for example and without limitation, each, or at least some, of the one or more coupling studs of one tile comprising the invention may be arranged and sized such that the distance defining any space between such one or more coupling studs is sized to receive, and indeed frictionally contact, the one or more coupling studs of another tile comprising the invention. In some embodiments, the tiles may be offset when meshed. In another embodiment, at least one edge of the first tile may be aligned with the at least one edge of the second tile when meshed or otherwise coupled to one another. As such, in some embodiments, the one or more coupling studs on at least a first and second tile may be uniformly distributed with respect to one another. In some embodiments, the tiles may comprise different numbers, sizes, types and arrangements of coupling studs with respect to one another.

[0025] It is contemplated that a kit may comprise a plurality of the aforementioned tile embodiments. At least one of the plurality of tiles may be operative to securely yet removably interlock with at least one of another of the plurality of tiles in the kit.

[0026] Several advantages of this construction toy kit and tile are that they:

[0027] a.) increase creativity of the users by allowing a variety of different connection configurations;

[0028] b.) provides an opportunity for users to learn about different interlocking mechanisms;

[0029] c.) creates a construction toy with a low profile; and

[0030] d.) reduces the risk of injury to the user.

[0031] It is an object of this invention to provide a low-profile construction toy.

[0032] It is another object of this invention to reduce the weight of toy tiles without compromising structural integrity.

[0033] It is a further object of this invention to allow creative play.

[0034] It is yet another object of this invention to allow a plurality of combinations of tiles via different coupling methods.

[0035] One or more of the above-disclosed embodiments, in addition to certain alternatives, are provided in further

detail below with reference to the attached figures. The disclosed subject matter is not, however, limited to any particular embodiment disclosed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0036] FIG. **1** shows a perspective view of an embodiment of the tile having a 4×4 coupling stud configuration.

[0037] FIG. **2** shows a top view of one embodiment of the tile having a 4×4 solid coupling stud configuration.

[0038] FIG. **3** shows a bottom view of one embodiment of a rectangular tile.

[0039] FIG. **4** shows a bottom view of one embodiment of a square tile comprising a recess.

[0040] FIG. **5** shows a top view of one embodiment of the tile comprising a support structure and a 4×4 configuration of coupling studs.

[0041] FIG. **6** shows a perspective view of one embodiment of the tile comprising a support structure and a 2×4 configuration of coupling studs.

[0042] FIG. **7** shows an exploded view of the tile shown in FIG. **5**.

[0043] FIG. **8** shows an exploded view of one embodiment of the tile comprising a support structure and a recess.

[0044] The disclosed embodiments may be better understood by referring to the figures in the attached drawings, as provided below. The attached figures are provided as non-limiting examples for providing an enabling description of the method and system claimed. Attention is called to the fact, however, that the appended drawings illustrate only typical embodiments of this invention and are therefore not to be considered as limiting of its scope. One skilled in the art will understand that the invention may be practiced without some of the details included in order to provide a thorough enabling description of such embodiments. Well-known structures and functions have not been shown or described in detail to avoid unnecessarily obscuring the description of the embodiments.

[0045] For simplicity and clarity of illustration, the drawing figures illustrate the general manner of construction, and descriptions and details of well-known features and techniques may be omitted to avoid unnecessarily obscuring the invention. Additionally, elements in the drawing figures are not necessarily drawn to scale. For example, the dimensions of some of the elements in the figures may be exaggerated relative to other elements to help improve understanding of embodiments of the present invention. The same reference numerals in different figures denote the same elements.

[0046] The terms "first," "second," "third," "fourth," and the like in the description and in the claims, if any, are used for distinguishing between similar elements and not necessarily for describing a particular sequential or chronological order. It is to be understood that the terms so used are interchangeable under appropriate circumstances such that the embodiments described herein are, for example, capable of operation in sequences other than those illustrated or otherwise described herein. Furthermore, the terms "include," and "have," and any variations thereof, are intended to cover a non-exclusive inclusion, such that a process, method, system, article, device, or apparatus that comprises a list of elements is not necessarily limited to those elements, but may include other elements not expressly listed or inherent to such process, method, system, article, device, or apparatus

[0047] The terms "couple," "coupled," "couples," "coupling," and the like should be broadly understood and refer to connecting two or more elements or signals, electrically, mechanically or otherwise. Two or more electrical elements may be electrically coupled, but not mechanically or otherwise coupled; two or more mechanical elements may be mechanically coupled, but not electrically or otherwise coupled; two or more electrical elements may be mechanically coupled, but not electrically or otherwise coupled. Coupling (whether mechanical, electrical, or otherwise) may be for any length of time, e.g., permanent or semi-permanent or only for an instant.

[0048] The term "equal" and the like should be broadly understood as being within defined tolerances that are known to those of ordinary skill in the art.

DETAILED DESCRIPTION

[0049] Having summarized various aspects of the present disclosure, reference will now be made in detail to that which is illustrated in the drawings. While the disclosure will be described in connection with these drawings, there is no intent to limit it to the embodiment or embodiments disclosed herein. Rather, the intent is to cover all alternatives, modifications and equivalents included within the spirit and scope of the disclosure as defined by the appended claims.

[0050] With reference to FIGS. **1** and **2**, one exemplary embodiment of a tile **100** may comprise a first plate **110**, a second plate **120**, and a sidewall **102** connecting the first plate **110** and the second plate **120**. The first plate **110** may comprise at least one coupling stud **130**. In this exemplary embodiment, the tile **100** is shaped as a square and comprises 16 tiles arranged in a four stud by four stud ("4×4") configuration.

[0051] The first plate **110** may be parallel to the second plate **120**. As shown in FIG. **1**, the sidewall **102** may extend from at least one edge **104** of the first plate **110** to the second plate. It is contemplated that the sidewall **102** may be continuous along the entire first plate **110**, however, it may be provided in segments as necessary or desired.

[0052] The first plate **110** may comprise at least one coupling stud **130**. In some embodiments, the at least one coupling stud **130** may take any variety of shapes and forms. For the sake of brevity, however, certain clarifying examples will be discussed with reference to the figures. In addition, the number of coupling studs shall not be limited. For instance, in some embodiments, the at least one coupling stud **130** may be an even number of coupling studs **130**, though this is not necessary to practice the invention. In one example, as shown in FIG. **1**, the first plate **110** may comprise sixteen coupling studs **130** as a squared number of equally spaced coupling studs dispersed across an outer surface **112** of the first plate **110**. As further examples and without limitation, the first plate **110** may comprise two, four, six, eight, ten, twenty, forty, ninety-six, or one-hundred-forty-four or even more coupling studs **130**. A person of ordinary skill in the art will appreciate that these numbers are provided for example and without limitation, and that other numbers of studs are available in the present invention.

[0053] In the exemplary embodiment reflected in FIG. **1**, the at least one coupling stud **130** may comprise a wall **134** defining a hollow **132** extending from the distal end of the at least one coupling stud **130** to the outer surface **112** of the

first plate **110**. In some exemplary embodiments, the wall **134** may comprise a means for locking coupling studs **138**.

[0054] The wall **134** defining the hollow **132** of at least one coupling stud **132** may be a non-uniform diameter. For example, and without limitation, the wall **134** may have a greater diameter at the distal end than at the proximate end. In some exemplary embodiment, the proximate end of the hollow **132** may comprise a means for locking coupling studs **138** operative to improve mating between the tiles. The means for locking coupling studs **138** may, for example and without limitation, be a latch, groove, hook, and/or pincher.

[0055] It is contemplated that the second plate **120** may comprise at least one coupling stud **130**. In instances where the second plate **120** comprises at least one coupling stud **130** it may be symmetrical to the at least one coupling stud **130** on the first plate **110**. It is further contemplated that in instances where the second plate **120** comprises an equal number of the at least one coupling stud **130** as the at least one coupling stud **130** on the first plate **110**, the at least one coupling stud **130** on the second plate **120** may be offset from the at least one coupling stud **130** on the first plate. In another embodiment, the second plate **120** may comprise a different number of the at least one coupling stud **130** as shown on the first plate **110**.

[0056] In some embodiments, the at least one coupling stud **130** may be solid rather than hollow. It is contemplated that a solid coupling stud **130** may be operative to mate with the hollow **132** in the at least one coupling stud of FIGS. **1** and **2**. As a clarifying example, an exemplary solid coupling stud may be sized such that the diameter of such at least one coupling stud **130** is operative to engage with the wall **134** defining the hollow **132** in FIG. **1**. In some embodiments, a solid coupling stud **130** of FIG. **1** may securely yet removably frictionally engage with the wall **134** of FIG. **1**.

[0057] With reference to FIG. **1**, the at least one coupling studs **130** on one tile **100** may be configured to mesh with the at least one coupling studs **130** on another tile **100**. For example, the space between the at least one couplings stud **130** on one tile **100** may be operative to engage an outer portion of any wall defining any of the at least one coupling studs on another tile. It is further understood that to mesh, the at least one coupling stud **130** may be solid as shown in FIG. **2**, comprise a hollow **132** as shown in FIG. **1**, or a combination thereof.

[0058] It is contemplated that in the construction toy kit, at least one of the plurality of tiles may be operative to couple with at least one of the plurality of tiles. For example, and without limitation, the at least one of the plurality of tiles may be operative to mate with at least one of the plurality of tiles. The at least one of the plurality of tiles may further be operative to mesh with at least one of the plurality of tiles. It is understood that, one tile in the kit may be operative to mate with another tile in the kit, but may not mate with all tiles in the kit. Additionally, one tile in the kit may be operative to mesh with another tile in the kit, but may not mesh with all tiles in the kit. It is contemplated that by having a plurality of coupling options present in one kit, a user may be exposed to a plurality of different connection forms rendering the tiles and kit beneficial for learning and creativity.

[0059] Alternative bottom perspective views of certain embodiments of tiles comprising the kit are shown in FIGS. **3** and **4**. It should be noted that an exemplary rectangular tile is shown in FIG. **3**. As shown in FIG. **3**, an exemplary second plate **320** may be flat. FIG. **4**, however, shows as an alternative, that the second plate, such as that of the exemplary square tile **100** first shown in FIG. **1**, may define a recess **436** as, concurrently or alternatively, a support structure (which will be discussed below) and means for coupling one of the plurality of tiles in the construction toy kit to another one of the plurality of tiles. In FIG. **4** the recess **436** is shown as a square, however, such recess may be any shape such as, without limitation rectangle, circle, stadium, triangle, or any other desirable shape. The recess **436** may be of a depth equal to the height of the at least one coupling stud **130**. It is further contemplated, that in some embodiments, the recess **436** may be of a depth less than the height of the at least one coupling stud **130**. In another embodiment, the recess **436** may be of a depth greater than the height of the at least one coupling stud **130**. In some embodiments, the depth of the recess **436** may be equal to the height of the sidewall **102** such that the recess terminates on the first plate **410** of the tile.

[0060] The recess **436** may have an outer dimension less than the outer dimension of the tile **400**. In certain exemplar embodiments, the outer dimension of the recess **436** may be sized such that it is operative to engage with the at least one coupling stud on at least one of the plurality of tiles in the construction toy kit. As a clarifying example, the recess **436** may be sized such that at least one coupling stud of another tile may frictionally contact a wall or boundary defining the recess **436**.

[0061] The recess **436** may further comprise an embossed design. The embossed design may, for example and without limitation, comprise an image, letter, pattern, or other design.

[0062] FIG. **5** illustrates an exemplary embodiment of a tile **500** comprising sixteen coupling studs **530** arranged in a 4×4 configuration, a first plate **510**, and a support structure **540** interposed between the first plate **510** and a second plate (obscured from view). More particularly, the first and second plates are composed of transparent material that provides a view of the support structure interposed therein. FIG. **6** illustrates another exemplary embodiment of a tile **600** comprising a support structure **640** interposed between a first plate **510** and a second plate (obscured from view), the tile **600** comprising eight coupling studs **630** arranged in a two stud by four stud ("2×4") configuration.

[0063] FIGS. **5** and **6** illustrate alternative exemplary embodiments of a tile comprising a support structure interposed between the first plate and the second plate configured to provide structural support to the plates. The structural support may, for example, increase the tensile, compressive, sheer strength, or combinations thereof of the tile while reducing the overall weight and necessary material. That is, providing a support structure reduces any need of providing a solid tile to reduce flexion and possible breakage of each of the plates.

[0064] The support structure may be in any shape suitable to provide support to the plates. For example and without limitation, the support structure may be a circle, square, rectangle, triangle, stadium, beam, or any other suitable shape. In one exemplary embodiment, as shown in FIG. **6**, the shape of the support structure **640** may mimic the shape as the tile **500**. However, it is contemplated that the shape of the support structure may be different than the shape of the tile.

[0065] It is contemplated the density of the support structure may vary. For example, and without limitation, the density of the support structure may be 100% such that it is a solid structure. As a further example, the density of the support structure may be 20% in order to reduce necessary material and weight. In such embodiments when the density is less than 100% it is contemplated that the infill may be a variety of patterns. The patterns may, for example and without limitation, be honeycomb, grid, line, truss, contour, point, or web. A person of ordinary skill in the art will understand that other infill patterns, as known in the art, are available in the present invention and the foregoing are provided as examples only.

[0066] The support structure may be centered, such that the tile and the support structure are concentric. It is contemplated that the support structure may have smaller dimension than the outer dimensions of the tile. Some support structures may be sized such that their dimensions are in a range inclusive of 99% and 1% of the outer dimensions of the tile. In certain exemplary embodiments, the support structure may have dimensions such that they are in a range inclusive of 75% and 25% of the outer dimensions of the tile or 60% and 50% of the tile.

[0067] Additionally, in some embodiments, the support structure may define the recess **436** shown in FIG. **4**.

[0068] Exploded views of tile **100** are shown in FIGS. **7** and **8** illustrating exemplary internal structures and surfaces. More particularly, FIG. **7** illustrates an exploded view of the tile shown in FIG. **5**. It is contemplated that the second plate **520** and the first plate **510** as shown in FIG. **7** may be separate pieces which have been adhered to one another by, for example and without limitation, melt processing, glue, or press fit.

[0069] As shown in FIG. **7**, support structure **540** may be integrated, in one non-limiting embodiment, into a central portion of the second plate **520** and configured to extend inwards toward the inner surface **714** of the first plate **510**. In another embodiment, the first plate **510** may further comprise the support structure **540** that extends inwards towards the inner surface **724** of the second plate **520**. In such an embodiment, the support structure **740** may comprise multiple components of the first plate **110** and second plate **120** wherein when combined the support structure **540** is created.

[0070] FIG. **8** illustrates an exploded view of a tile **800** comprising sixteen coupling studs **830** arranged in a 4×4 configuration, a support structure **840**, and a recess **836** defined by the support structure **840**. The support structure **840** may fully define the recess **836** such that the recess **836** terminates at the inner surface **814** of the first plate **810**. The recess **836** may terminate at any point along the support structure **840**. It is contemplated that in some embodiments, not shown, the support structure may define a recess on the first and second plate of a tile such that the tile comprises an opening.

[0071] It is contemplated that the tile as shown in any embodiment may be made out of any suitable material. In one exemplary embodiment the tile may be made out of plastic, such as without limitation, acrylic, acrylonitrile butadiene styrene, polyethylene terephthalate glycol, polystyrene, or polypropylene. A person of ordinary skill in the art will appreciate all types of plastic that may be used in the present invention.

[0072] The tile may be made of transparent, translucent, or opaque material. In instances where the tile comprises a support structure, the transparent or translucent material may allow the support structure to be viewed through the material. The tile may further comprise a combination of the aforementioned materials.

[0073] A toy construction kit may comprise any combination of the tiles discussed above.

CONCLUSIONS, RAMIFICATIONS, AND SCOPE

[0074] While certain embodiments of the invention have been illustrated and described, various modifications are contemplated and can be made without departing from the spirit and scope of the invention. For example, the construction toy kit and tile may comprise other forms of couplings not disclosed here. Accordingly, it is intended that the invention not be limited, except as by the appended claim(s).

[0075] The teachings disclosed herein may be applied to other systems, and may not necessarily be limited to any described herein. The elements and acts of the various embodiments described above can be combined to provide further embodiments. All of the above patents and applications and other references, including any that may be listed in accompanying filing papers, are incorporated herein by reference. Aspects of the invention can be modified, if necessary, to employ the systems, functions and concepts of the various references described above to provide yet further embodiments of the invention.

[0076] Particular terminology used when describing certain features or aspects of the invention should not be taken to imply that the terminology is being refined herein to be restricted to any specific characteristics, features, or aspects of the toy construction kit and tile with which that terminology is associated. In general, the terms used in the following claims should not be constructed to limit the toy construction kit and tile to the specific embodiments disclosed in the specification unless the above description section explicitly define such terms. Accordingly, the actual scope encompasses not only the disclosed embodiments, but also all equivalent ways of practicing or implementing the disclosed system, method and apparatus. The above description of embodiments of the toy construction kit and tile is not intended to be exhaustive or limited to the precise form disclosed above or to a particular field of usage.

[0077] While specific embodiments of, and examples for, the method, system, and apparatus are described above for illustrative purposes, various equivalent modifications are possible for which those skilled in the relevant art will recognize.

[0078] While certain aspects of the method and system disclosed are presented below in particular claim forms, various aspects of the method, system, and apparatus are contemplated in any number of claim forms. Thus, the inventor reserves the right to add additional claims after filing the application to pursue such additional claim forms for other aspects of the toy construction kit and tile.

CONCLUSIONS, RAMIFICATIONS, AND SCOPE

[0079] While certain embodiments of the invention have been illustrated and described, various modifications are contemplated and can be made without departing from the

spirit and scope of the invention. For example, the construction toy kit and tile may comprise other forms of couplings not disclosed here. Accordingly, it is intended that the invention not be limited, except as by the appended claim(s).

[0080] The teachings disclosed herein may be applied to other systems, and may not necessarily be limited to any described herein. The elements and acts of the various embodiments described above can be combined to provide further embodiments. All of the above patents and applications and other references, including any that may be listed in accompanying filing papers, are incorporated herein by reference. Aspects of the invention can be modified, if necessary, to employ the systems, functions and concepts of the various references described above to provide yet further embodiments of the invention.

[0081] Particular terminology used when describing certain features or aspects of the invention should not be taken to imply that the terminology is being refined herein to be restricted to any specific characteristics, features, or aspects of the toy construction kit and tile with which that terminology is associated. In general, the terms used in the following claims should not be constructed to limit the toy construction kit and tile to the specific embodiments disclosed in the specification unless the above description section explicitly define such terms. Accordingly, the actual scope encompasses not only the disclosed embodiments, but also all equivalent ways of practicing or implementing the disclosed system, method and apparatus. The above description of embodiments of the toy construction kit and tile is not intended to be exhaustive or limited to the precise form disclosed above or to a particular field of usage.

[0082] While specific embodiments of, and examples for, the method, system, and apparatus are described above for illustrative purposes, various equivalent modifications are possible for which those skilled in the relevant art will recognize.

[0083] While certain aspects of the method and system disclosed are presented below in particular claim forms, various aspects of the method, system, and apparatus are contemplated in any number of claim forms. Thus, the inventor reserves the right to add additional claims after filing the application to pursue such additional claim forms for other aspects of the toy construction kit and tile.

1.-**10**. (canceled)

11. A toy tile comprising:

a first plate having at least one edge, an outer surface, and an inner surface,

a. at least one coupling stud extending outward from the outer surface of the first plate;

b. a second plate having at least one edge, an outer surface, and an inner surface;

c. at least one side wall extending between the first and second plates; and

d. a support structure interposed between the inner surfaces of each of the first and second plates.

12. The toy tile of claim **11**, wherein the second plate comprises a means for coupling with the at least one coupling stud, wherein the means for coupling is selected from a group consisting of a recess, at least one coupling stud, or combinations thereof.

13. The toy tile of claim **11**, wherein the at least one side wall is integrated with the at least one edge of the first plate.

14. The toy tile of claim **11**, wherein the support structure is integrated into a central portion of the second plate and configured to extend inwards toward the inner surface of the first plate.

15. (canceled)

16. The toy tile of claim **11**, wherein the support structure is defined by a shape selected from a group consisting of a line, stadium, parallelogram, triangle, circle, or combinations thereof.

17. The kit of claim **11**, wherein the at least one coupling stud comprises a wall defining a hollow.

18. The toy tile of claim **17**, wherein the hollow extends from a distal surface of the at least one coupling stud towards the outer surface of the first plate, wherein the hollow comprises a means for locking the at least one coupling studs configured for mating.

19. An interlocking toy tile comprising:

a first plate having at least one edge, an outer surface, and an inner surface;

a. at least one coupling stud extending outward from the outer surface of the first plate;

b. a second plate having at least one edge, an outer surface, and an inner surface, the outer surface of the second plate comprising a means for coupling selected from a group consisting of a recess, at least one coupling stud, or combinations thereof;

c. at least one side wall extending between the first and second plates; and

d. a support structure integrated into a central portion of the second plate and configured to extend inwards to the inner surface of the first plate.

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