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(54) FACILITY AND METHOD OF PLAYING WITH A BOUNCE SURFACE, DOORS, BALL AND PLAYING NET, TAKING ACCOUNT OF PLAYER'S INDIVIDUAL SCORE AND PLAYING TIME

(57) The equipment and method of playing with a bouncing surface, goals, ball and playing net, taking into account the individual score of the players and the playing time, according to the invention will find application in sports halls, training complexes, children's facilities, schools, parks and sports grounds. The facility is designed for performing a game with a ball on a bouncing surface, under certain rules of the game, being a new method of playing the ball, involving passing the ball over the net, hitting the ball into a goal hole, and scoring an individual score of the accurate shots made by each by the players for a certain playing time. The facility is a playing field, separated as a cell, built from a tubular structure of galvanized iron, and the playing field is separated in a closed space as a cell (1) in the shape of a parallelepiped. The pipes that make up the tubular structure of the cell (1) are lined with vinyl coating with embedded foam (2). The cabin in the lower part, with which it is mounted on the ground, is lined and decorated with panels of solid polycarbonate and vinyl (3). The upper part of the tubular structure, designated as a playing field, into which the players enter, has the shape of a parallelepiped. The walls along the length and the ceiling of the formed parallelepiped are made of a safety net (5). The safety net (5) is attached to the tubular structure of the cell (1) with a reinforced polyester rope. In the safety net there are zippered openings (6) for players to enter the playing field. The goals (9) are located on the short walls of the parallelepiped, remaining behind each of the players, and according to the method of use, each of the players aims to hit with the ball the goal located behind the other player and accordingly he/she protects his/her own goal when the other player shoots the ball. The goals (9) include openings of different diameters, pairs of static (10) and movably attached (11) plates, an electric button (12) connected to a controller in an electronic panel (13).

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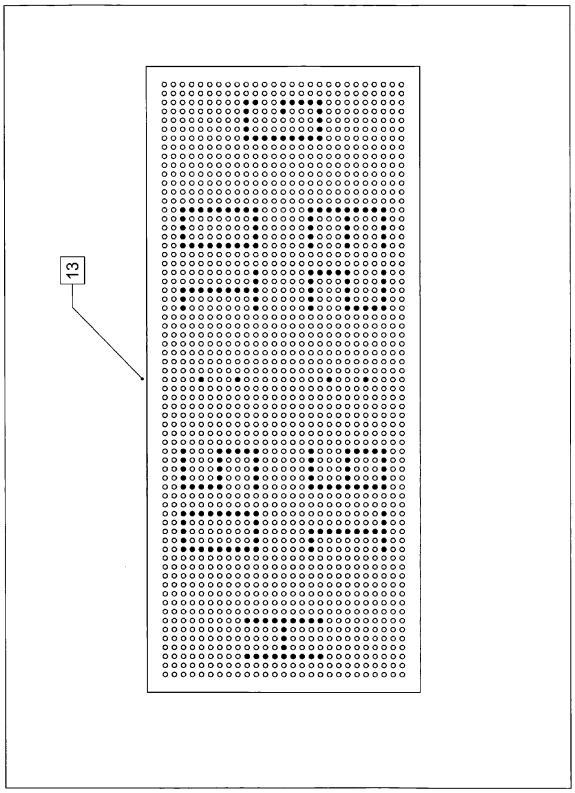

Fig. 3

(52) Cooperative Patent Classification (CPC): (Cont.)
A63B 2225/50; A63B 2225/74

Description

FIELD OF ENGINEERING

[0001] The invention relates to the creation of a method of playing in a specially constructed for the game facility with a bouncing surface, doors, ball and net. The game method provides for taking into account the individual score of the players and the playing time. The method of play and the facility are recreational and competitive in nature and are intended for children and adults. The invention will find application in sports clubs, children's entertainment centers, gymnasiums in schools and other places where sports can be practiced indoors or outdoors. The invention creates conditions and allows the performance of an independent game under certain rules. The facility provides the ability to perform the method of play while accounting for each player's score and playing time. The method and facility suggest the possibility of having two or four players at the same time, divided into teams against each other. The equipment of the game provides for a barrier net through which the ball passes, a board where the ball should land and a bouncing surface on which the players are located. Keeping the ball in the field of play is ensured by fence nets.

PRIOR ART

[0002] Many games have been created and known over time with a ball that, when it hits a certain field, goal, basket or line, leads to results in scoring points for the player or team that has managed to fulfill the condition of the game. Ball games such as volleyball or tennis are known in which the field of play is divided into two by a net and the ball must pass over the net so as to enter the opposite court and the player or players from the opposite court must prevent the ball from falling in the field in which a point will be scored. In games with passing the ball over the net, different surfaces of the playing field are known, such as sand, wooden surface, fireclay or some artificial covering. Games and installations made of a bouncing surface of different shapes and sizes are known. The game facility with a bouncing surface, ball and net offers as a technical solution a surface with which each of the playing fields is built is a bouncing surface and at the same time a ball game is organized and conducted, in which the score of each player is counted. Thus, each of the players defends their field by using the springiness of the surface and at the same time aims to achieve an accurate hit in the goal located in the field of the other player. The spring-loaded surface offers the ability to bounce in a defense from the ball shot by the other player and to shoot the ball by the player at a significantly bigger height, using a horizontal shot at the goal and a smaller parabola, with which the shot is more accurate and controlled. The field in which the ball must land to score a point is organized as a goal, representing a plane, a board with holes located on the inside wall, behind each of the players, across the field of play on which the participants are standing. The movement of the ball is limited within the facility by means of a safety net. The game ball is made of soft material, but of sufficient density so that it is possible to score a hit and at the same time the impact of the ball on a player's body is not traumatic or painful. Ball games are one of the most popular sports for all ages. Bouncing surfaces, on the other hand, create fun and challenge children and adults alike to explore the possibilities of controlling the human body in flight. There will never be a finite number or enough ball games and equipment for them and a new way of practicing a competitive ball game, using a bouncing surface is a challenge, fun and movement opportunity for children, youth and any adult who realizes the need of movement.

TECHNICAL ESSENCE OF THE INVENTION

[0003] The purpose of the invention is to create a facility that creates conditions for playing with a ball on a bouncing surface according to certain rules of the game, representing a new method, including taking into account the individual score of the players and the playing time. The facility is a tubular structure made of galvanized iron with the thickness of the tubular elements, allowing to ensure stability and load endurance according to the weight of the players and the movements performed during the game. The facility is a field, separated in a closed space as a cell /1/, which is basically in the shape of a truncated pyramid. In the preferred embodiment, the cell /1/ has dimensions, at the base, a length of 800 cm to 840 cm, a width of 230 cm to 460 cm and a height of 360 cm. The pipes that make up the tubular structure of the cell /1/ are lined with vinyl cover with embedded foam 121. The cell /1/ in the lower part, through which it is mounted on the ground, is lined and decorated /3/ with solid polycarbonate and vinyl boards. The upper part of the tubular structure of the cell /1/ is of a parallelepiped shape. The walls along the length and the ceiling of the formed parallelepiped are made of a safety net 151. In a preferred embodiment, the safety net 151 is made of PES / polyester. The safety net 151 is attached to the tubular structure of the cage /1/ with a reinforced polyester rope. The safety net 151 excludes the possibility of the ball leaving the playing field, orients the players to the end of the playing field and protects them from falling off the equipment during the game. Players enter the facility through a specially designed closing opening 161 in the safety net. In a preferred embodiment, two openings 161 are made, which are closed with a zipper with a double-sided grip and fastening. The zipper of the openings 161 is intended to be waterproof if the device is used outdoors. The short walls of the parallelepiped /4/ remain behind each of the players and are used for goals /9/ in the game, and according to the method of use, each of the players aims to hit the ball in the goal located behind the other player and accordingly defends their own goal when shooting the ball performed by the other player.

The goals /9/ in the preferred embodiment are made of a light metal cross structure with nine pairs of plates /7/, made of aluminum composite panels, solid polycarbonate, mounted on it. In front of the pairs of tiles is mounted a board /4/, freely hanging, thus forming the goal /9/, clamped with tape to the tubular structure of the cell /1/ on its four sides as suspenders and in a preferred variant it is made of polypropylene tape. Said tape attaches the door to the pipe structure and the short walls of the facility. The goal 191 in which a field goal is to be scored in the preferred embodiment has nine holes /8/, with a different diameter for each hole, but large enough to pass the ball for play on a field goal. It is preferable that the openings are made on the hanging vertical goal 191 with an arrangement of three rows and three columns with equal distances between the openings themselves. The pairs of tiles /7/ are not visible to the players and are placed behind the door holes /8/. In the preferred embodiment, one tile of the pairs is static /10/ and the other tile is movable /11/ and is attached to the static one by means of spring bolts so that the movable one /11/ can be displaced by the impact of the ball and touch the static one /10/ and then return to its original state. In the preferred embodiment, the spring tension is calculated for a ball of specified dimensions and weight. An electric button /12/ is mounted on the static tile, which detects touches on the movably attached tile /11/. In front of the tiles /7/ is the goal /9/ measuring 200 cm by 200 cm, in which nine holes of different diameters have been made. The goal /9/ is made of foam-filled vinyl. The static tiles /10/ are connected to an electronic board /13/ mounted along the length in the middle of the long wall of the parallelepiped. The electronic board /13/ lights up by means of diode panels and has an additional built-in controller for executing preset commands. The electronic panel /13/ is connected to an audio player for producing sound when a hit is made and the beginning and beginning/end of musical-accompanying sounding. In the preferred embodiment, the floor of the facility is made of two independent rectangular-shaped bounce sheets /14/. The model is made with springboards /trampolines/ measuring 210 cm by 300 cm. Each of the boards has metal springs /15/ made of galvanized steel that fix the board. The springs are vinyl covered. The number, thickness of steel and tension of the springs vary, according to the purpose of the facility and the intended permissible weight and load. The two bouncing surfaces are located next to each other, being connected to each other along the short side of the rectangles. In the model presented in the diagram, the bouncing surfaces are located at a height of 74 cm relative to the level of the ground on which the facility is installed. The height is necessary to prevent hitting the ground surface when bouncing on the canvas. The height can vary and be adjusted according to the weight of the participants, the number of springs in the bouncing surface and the place where the equipment will be installed. In order to compensate for the height of deployment of the bounce sheets /14/, a ladder /16/ is installed at the opening 161 of the fence safety net 151. During the connection, a separator is placed between the two bouncing surfaces with a game net /17/ attached to it. The game net /17/ is made of polyester with dimensions: height from 140 cm to 220 cm and length of 200 cm. The way of placing the game net /17/ allows its height to be adjusted in relation to the bouncing surface and vary from 120 cm to 220 cm, relative to the height of the participants in the game, the degree of difficulty to be achieved and the experience of the players. To play the game, a ball /18/ is used, made of foam and with a diameter of the ball /18/ from 9 to 15 cm and a weight of 20-100 g. The ball should be able to be counted when hitting the movable tile /11/ and to cause the spring to contract so that the static plate /10/ is touched and the electric button /12/ is actuated. At the same time, the ball /18/ should allow a possible and comfortable grip with a hand by each of the players.

[0004] The method of play in the facility, in a preferred embodiment, involves two players and one game ball. The players enter the facility by the ladder /16/ through the opening 161 and stand on both sides of the playing net /17/. A player is appointed to start the game. At a given start of the game, the player in possession of the ball moves around the playing field by bouncing on the bounce sheet /14/ and tries to pass the ball /18/ over the playing net 1171 so that the ball enters one of the holes 181 on the goal /9/ located behind the other player. The second player, bouncing off the bounce sheet, tries to prevent the ball from passing over the playing net /17/ and into one of the openings 181 of the goal 191 located behind him, while trying not only to block the movement of the ball /18/, but to hold and control the ball so that he/she can then shoot at the goal /9/ located behind the first player. When the ball /18/ hits one of the goal openings /8/, the button /12/ sends a signal to the electronic board 1131, which writes a point for the player, on the opposite side of the door /9/, and gives a sound signal. The electronic scoreboard /13/ displays and reports the score of each of the players and the predetermined playing time, stopping the reading when the game is interrupted. When the allotted time expires, a sound signal from the electronic scoreboard signals the end of the game.

[0005] The game allows cameras to be installed in various places on the playing field so as to record the game. With a secured connection to a computer, by means of the controller, the regulation of the electronic panel 1131 can be carried out remotely.

[0006] The conducted tests show that the optimal playing time is 10 minutes, taking into account the physical load of the muscles and the heart. That is why this is the set standard playing time in the facility when the game is announced. If the players achieve a tie in the stipulated 10 minute standard playing time, the time is extended by 1 to 3 minutes.

[0007] When registering more people wishing to participate in the game, it is possible to demarcate beginner

and advanced categories or organize a competition between the participants on the basis of a tournament, with distribution into groups and the organization of elimination matches, according to the number of participants. When practicing and spreading the game as a sport, based on the tournaments and participations held, an age ranking can be organized.

[0008] The tests conducted show that the rules of the game are clearly understandable, the game is dynamic, easy to learn even by young children, it is executable by the players, it achieves the goals of providing fun and movement to the competitors. At the same time, the experiments show that, in the recommended implementation, the method of play and the implementation of the facility guarantee the safety of the participants by limiting the risks of traumatic injuries during the performance of the game and jumping on the bouncing surface. The load-bearing elements of the structure are sealed and cushioned with foam, the game ball is light from a soft, foam material. Tests show that the game increases the level of concentration of the participants for a relatively long time by being a challenge and develops the motor culture of the players, the ability to control their body and movements when bouncing and in flight, while simultaneously performing shooting movements with a ball aimed at a specific target. The method of playing involves the loading of different muscles of the body, and the constant bouncing of the players on the bouncing canvases causes the expenditure of energy. The game method involves achieving a goal and determining a winner, which implies keeping the interest of the participants with the introduced competitive element and game time in which the result is counted.

FIGURES EXPLANATING THE COMPONENTS AND THE FUNCTIONS THEREOF

[0009] A model of a playing facility with a bouncing surface, ball and net, taking into account the individual score of the players and the playing time is shown in the attached figures.

Figure 1 shows the overall appearance of the facility, indicating the location and general view of each of the components necessary for the proper execution and equipment of the facility.

Figure 2 shows a view of the goal /9/ with the designed openings and the location of the metal cross structure with installed pairs of tiles /7/ on which, when the ball hits, the electronic board reports a change in the result.

Figure 3 shows a view of the light electronic board /13/ for reporting the start and end of the game, the playing time and the result.

EXAMPLE OF IMPLEMENTATION

[0010] The exemplary implementation of the facility is shown in Diagram 1. The tubular structure of the cell /1/ made of galvanized iron is made in the form of a truncated pyramid with a rectangular base and with dimensions of 640 cm in length, 230 cm in width at the base, 360 cm in height and 1000 cm by 230 cm at the top of the pyramid. 160 m of cp42, 3 mm pipe is required for the implementation of the sample model. The pipes of the tubular structure of the cell /1/ are lined with vinyl coating with an embedded 50 mm foam 121. For the implementation of the sample model, 50 square meters of vinyl and 24 square meters of foam are used. For the lining /3/ of the base, the lower part of the cell /1/ and the decorative tiles, solid polycarbonate boards with a thickness of 3 mm are used with dimensions of the four rectangular boards - 320/50 cm, and trapezoidal boards with dimensions of 85/320/50/320 cm. After lining the base of the tubular structure of the cage, the remaining visible part of the tubular structure of the cell /1/ is shaped like a parallelepiped. The walls along the length and the ceiling of the parallelepiped are made of a safety net/5/ with characteristics - 4 mm/ PES /polyester 4.5x4.5 cm. The safety net 151 is attached to the tubular structure of the cell /1/ with a reinforced polyester rope. The purpose of the safety net is to ensure that the ball remains in the facility and at the same time to prevent players from bouncing so that they fall off the facility. In the preferred version, two openings are made in the safety net for players to enter the facility. The openings 161 are closed with a waterproof zipper with double-sided grip and fastening. The zipper allows for a stronger closing of the openings, has a protective coating and excludes the possibility of injury and scratches, as well as easy opening under pressure. For this reason, a textile fastener of the self-adhesive tape type velcro, was not used in the implementation of the sample model. The short walls of the parallelepiped are made of a light transparent metal cross structure /19/. Pipes measuring 220 cm by 200 cm were used for it. Nine pairs of plates /7/ with a square shape and sizes varying from 40 cm to 60 cm in length on the side, made of aluminum composite panels, solid polycarbonate, were installed on the metal structure. In front of the pairs of tiles is mounted a board /4/, freely hanging and this forms the goal /9/, clamped with tape to the tubular structure of the cell /1/ on its four sides like suspenders, made in a preferred variant of polypropylene tape. Said tape attaches the goal to the pipework and short walls of the facility. The pairs of tiles /7/ are placed behind the openings 181 of the goal /9/, one tile of the pairs being static /10/ and the other tile being movably attached /11/ to the static one /10/ by spring bolts so that it can move from the hitting of the ball to touch the static one, then return to its original state. An electric button /12/ is mounted on the static tile, which detects touches on the movably attached tile /11/. In front of the tiles /7/ is the cell /9/ measuring 200 cm by 200 cm, in which nine holes of different

diameters /from 30 cm to 60 cm/ have been made. The goal 191 is made of foam-filled vinyl. The static tiles /10/ are connected to an electronic board /13/ mounted along the height in the middle of the long wall of the parallelepiped. The electronic board 1131 lights up by means of diode panels, with an additional built-in controller for executing preset commands. The electronic panel /13/ is connected to an audio player for producing sound when a hit is made and the start and start/end of music-accompanying sounding. In the preferred embodiment, the floor of the facility is made of two independent bouncing canvases /14/ with a rectangular shape. The model is made with canvases /trampolines/ measuring 210 cm by 300 cm. Each of the canvases has metal springs /15/ made of galvanized steel that fix the canvas. The springs are vinyl covered. The number, thickness of steel and tension of the springs vary, according to the purpose of the facility and the intended permissible weight and load. In a preferred embodiment, the canvases have 68 springs on each of the two bouncing surfaces. The two bouncing surfaces are located next to each other and are connected to each other along the short side of the rectangles. In the model presented in the diagram, the bouncing surfaces are located at a height of 74 cm relative to the level of the ground on which the facility is installed. The height is necessary to prevent hitting the ground surface when bouncing on the canvas. The height can vary and be adjusted according to the weight of the participants, the number of springs in the bouncing surface and the place where the equipment will be installed. In order to compensate for the deployment height of the bounce sheet 114/, a ladder /16/ is installed at the opening 161 of the fence safety net 151. On the presented model, the ladder is 100 cm high and has three built-in steps. The ladder is made of metal. At the connection, a separator is placed between the two bouncing surfaces with a game net /17/ attached to it. The playing net /17/ is made of polyester, with dimensions of height from 140 cm to 220 cm and length of 200 cm. The way of placing the game net /17/ allows its height to be adjusted in relation to the bouncing surface and vary from 140 cm to 220 cm, according to the height of the participants in the game, the degree of advancement and the set difficulty. To play the game, a ball /18/ made of foam and with a diameter of the ball /18/ from 9 to 15 cm and a weight of 20-100 g is used. The ball should be able to pass through the openings 181 of the goal and be counted upon hitting the movably attached tile /11/ and cause the spring to contract so that the static tile /10/ is touched, while the ball /18/ should allow a one-handed grip by a player.

[0011] With two players, after choosing a field for each player to stand in and an appointed player to start the game, the players enter the cell /1/ through the ladder /16/ installed in front of the opening 161 of each field and take their places. When the electronic scoreboard /13/ gives a signal to start the game, the player who has been given the right to start the game takes the ball /18/ and starts moving with bounces on the bounce sheet /14/, trying to achieve the highest bounce immediately before reaching the playing net /17/. At the highest point of the bounce, the player throws the ball /18/ over the playing net /17/ aiming to hit one of the holes 181 in the goal /9/ located behind the other player. The player who is not in possession of the ball chooses a method of defense by bouncing on the bounce sheet to try to block the ball from passing over the playing net /17/ or to divert it from falling into an opening located in the goal 191, which is behind him/her. When the ball /18/ hits one of the door openings 191, the electronic board 1131 indicates a change in the player's score by sound and writing. After a goal is scored, the game continues with the player in whose goal the ball entered and he/she gets the right to hold the ball and shoot. At the end of the predetermined and reported playing time on the electronic scoreboard 1131, the game ends and the player who scored more accurate hits in the opponent's goal is declared the winner. When the time expires and the result is equal, overtime periods of 1 to 3 minutes are played, according to the players' prior agreement and according to their age and physical exertion abilities. With more than two players, player swaps can be arranged, both during play, and head-to-head matches can be arranged and a winner appointed. When using the facility in a sports center or complex, school or training center, players can be divided into levels, for example: beginners, advanced and experts, and by changing the level of the playing net 1171 or the diameter of the door openings, the realization of a hit in the goal to be complicated. When matches are played and won, players can receive points for their inclusion in the ranking.

Claims

1. Bouncing surface, ball and playing net equipment, comprising a cell /1/ of tubular construction in the shape of a truncated pyramid, above ground level, a safety net 151 surrounding the tubular construction of the cell /1/, a ladder /16/, connected to the tubular structure of the cell /1/, goals 191 with openings /8/, pairs of static /10/ and movable /11/ plate located behind the openings /8/, controller, electronic board 1131, ball / 181, a playing net /17/ located vertically in the middle of the long side of the parallelepiped, the floor of the facility being two independent bouncing surfaces /14/ of rectangular shape, between which the playing net 1171 is located, connected to each other and attached to the pipework.

2. A game device according to claim 1, **characterized in that** between the two bouncing canvases there is a playing net /17/ located along an axis vertical to the ground surface, and the playing net /17/ is implemented with the ability to adjust the height by moving the playing net 1171 along the vertical axis of attachment.

3. A game device according to claim 1, **characterized in that** there are goals /9/ implemented as a plane on the two side short walls of the tubular structure of the cell /1/, the goals /9/ having openings of different sizes /8/, each of said holes having a diameter large enough for the game ball /18/ to pass through.

4. A game device according to claim 1, **characterized in that** behind the openings of said goals /9/ for hitting the ball, a movable /11/ and a static /10/ tiles are located, the latter being connected to a button 1121, as the button 1121, connected to a controller in the electronic panel 1131 reports thr touch of the movable /11/ tile to the static one /10/.

5. Game device according to claim 1, **characterized in that** the electronic board 1131 is connected to a player that produces sound and image and is connected to an external device by means of a Wi-Fi connection.

6. A method of playing on a bouncing surface, ball and net facility according to claim 1 and comprising the performance of the following operations:

- Entry into the facility of a number of players corresponding to the bouncing surfaces;
- Adjusting the height of the net, in accordance with the height of the players;
- Selecting a starting player;
- Arranging the players on both sides of the net /17/;
- Indication of start of game on the electronic scoreboard;
- Putting the ball into play by the player chosen to start the game by throwing the ball over the net /17/ in the direction of the goal opening /9/ located behind the other player.
- Players move across the field and shoot at the goal by jumping from the bouncing surface of the floor.
- In the case of a hit in the door opening, the number 1 is written on the electronic panel, and the panel emits a sound signal.
- When the ball passes into the second player's field and is caught by him/her, the latter gets the right to shoot at the goal of the first player.
- When the game is interrupted, the electronic scoreboard stops counting the playing time.
- When the predetermined time expires, the electronic scoreboard gives an audible signal to end the game.
- The player who scored more hits won the game.

7. A game method according to claim 6, **characterized in that** the participating players can request a replacement of one or two players during a game.

8. A game method according to claim 6, **characterized in that** the game net /17/ is placed at a height according to the skills of the players in mastering the game.

9. A game method according to claim 6, **characterized by** conducting a competition between more than two players by dividing these players into separate groups and organizing eliminations between the winners of each of said groups.

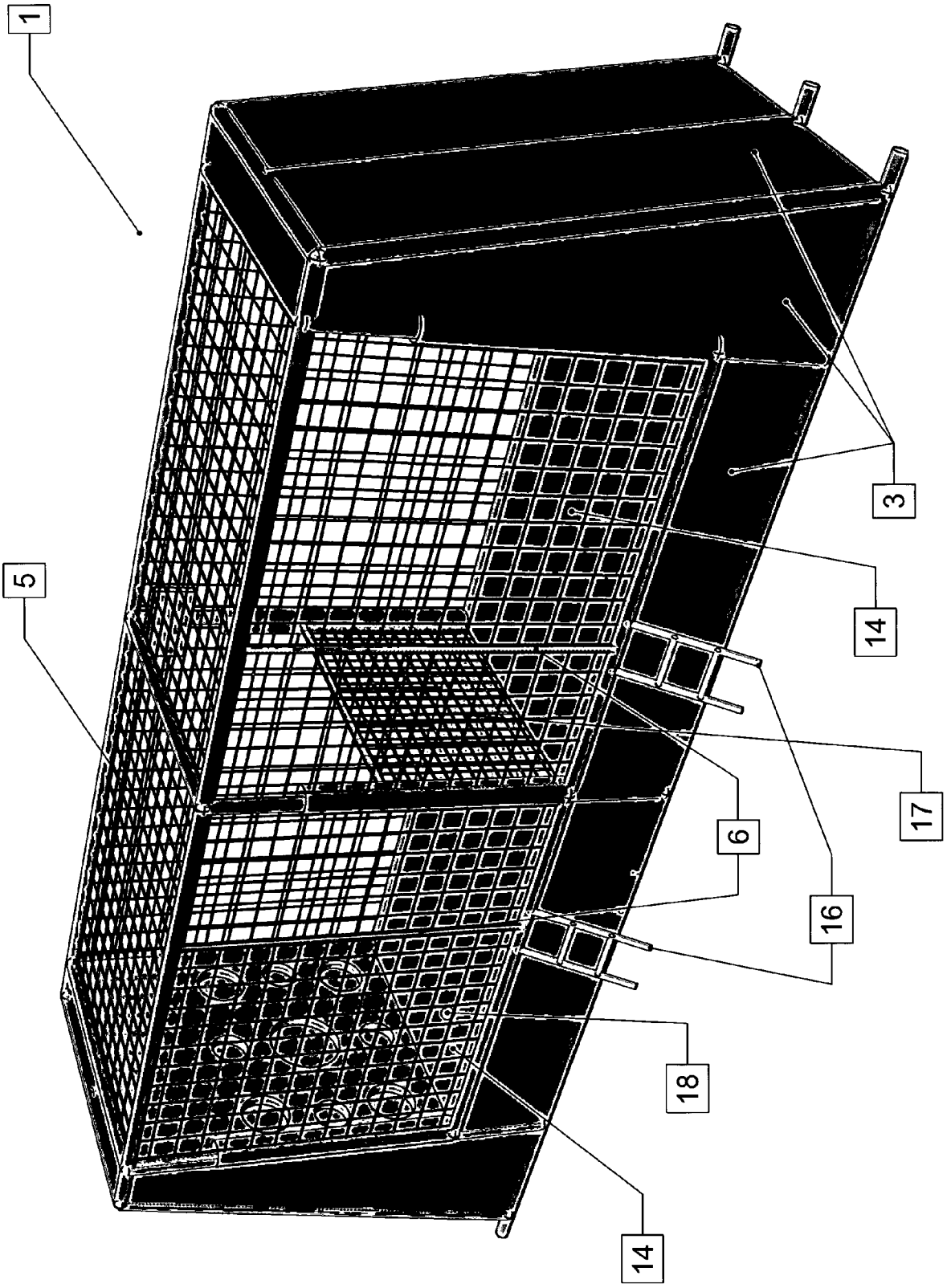

Fig. 1

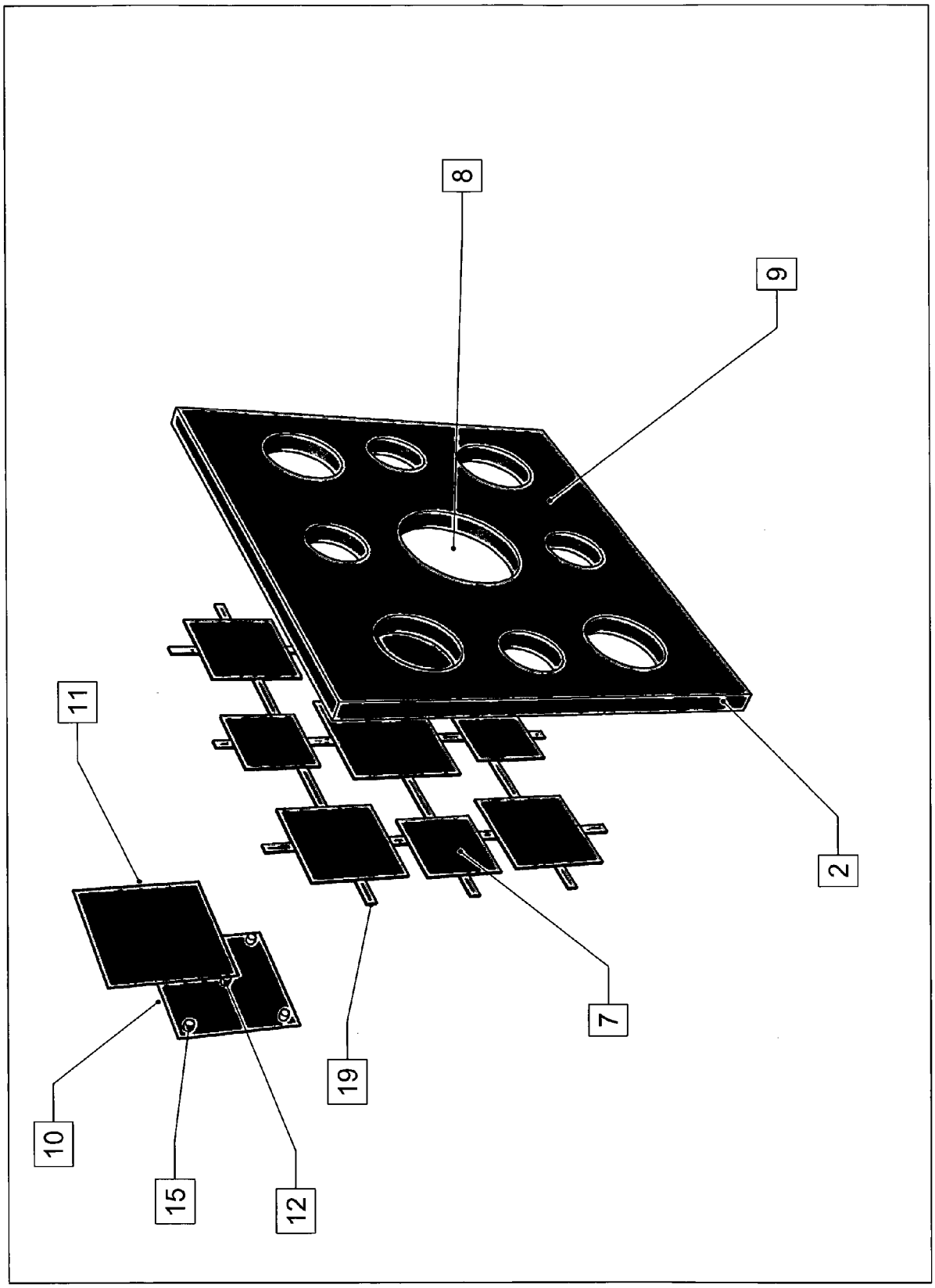

Fig. 2

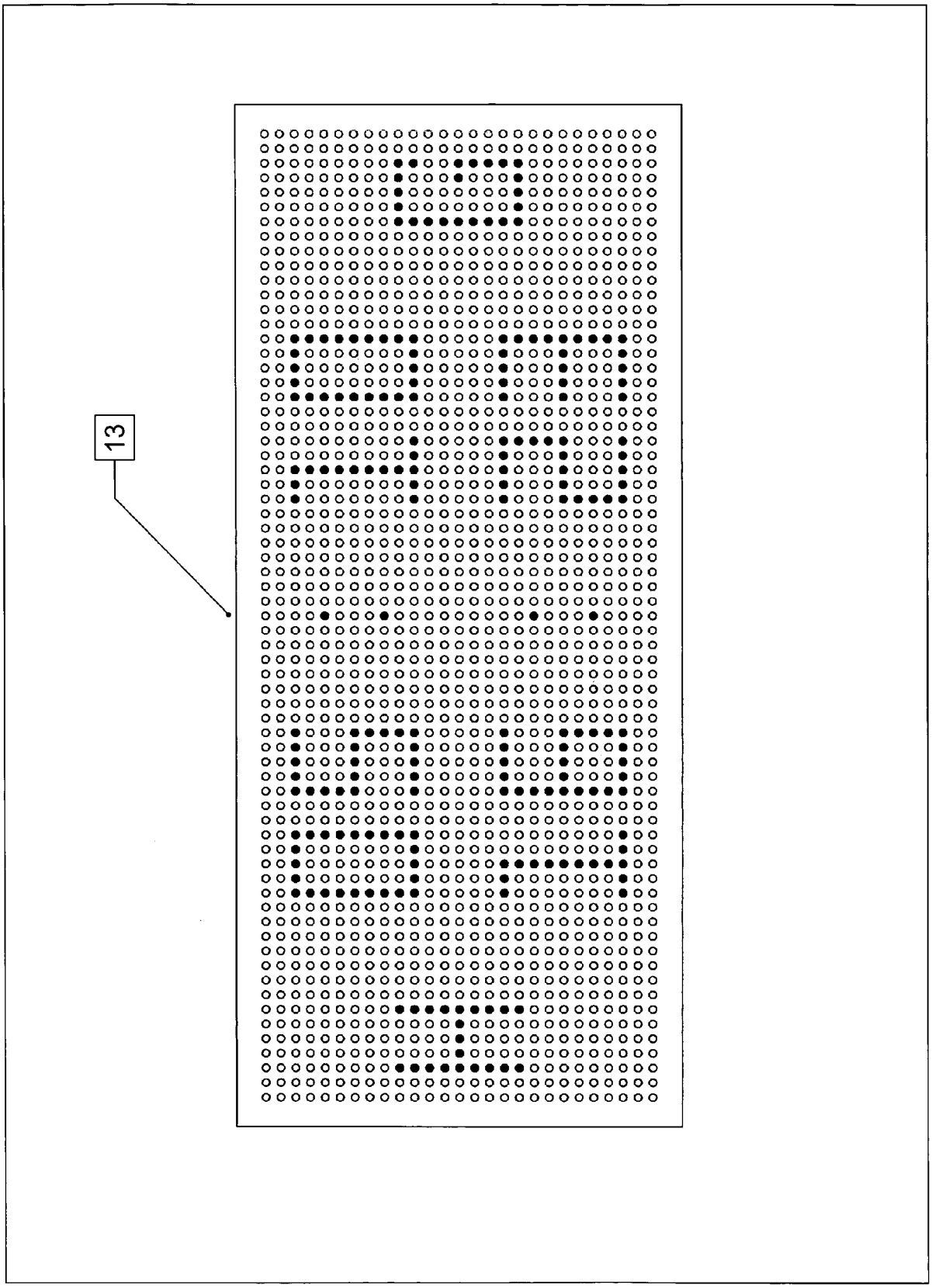

Fig. 3

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 24 47 2004

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	FR 2 456 531 A1 (PLM GMBH [DE]) 12 December 1980 (1980-12-12) * pages 5-18; claims; figures *	1-9	INV. A63B5/11 A63B61/00 A63B61/04 A63B71/02 A63B63/00 A63B71/06 A63B24/00 A63B67/00
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Y	US 3 312 471 A (NISSEN GEORGE P) 4 April 1967 (1967-04-04) * columns 2-4; claims; figures *	1-9	
Y	US 9 084 908 B1 (CHEN SAMUEL [CN]) 21 July 2015 (2015-07-21) * column 4, lines 30-34; claims; figures *	5	
Y	US 5 833 557 A (COLE EDWARD W [US]) 10 November 1998 (1998-11-10) * column 4, lines 54-67; claims; figures *	6-9	
A	US 7 611 427 B1 (CLINE MICHAEL [US]) 3 November 2009 (2009-11-03) * claims; figures *	1-9	TECHNICAL FIELDS SEARCHED (IPC) A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	30 July 2024	Herry, Manuel

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 24 47 2004

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