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(54) **URBAN FURNITURE**

(57) This publication relates to an urban furniture (10) for urban rooms, configured with an upper user surface suitable for use by the public, the furniture comprising at least two vertically arranged lamellas (11) intended to rest on a supporting surface, the upper surface of which serving as users surface, the lamellas (11) being interconnected by means intertying device(s) (18,20). The

urban furniture (10) comprises at least one console (12) containing technical installations, such as electrical power supply, devices for WiFi and corresponding points for connection, said at least one console (13) being connected to and being arranged parallel with an adjacent lamella (11).

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Description

The Technical Field of the Invention

[0001] The present invention relates generally to outdoor furniture for urban spaces, provided with an exterior user surface suitable for use by human beings. More specifically the invention relates to urban furniture for urban rooms, configured with an upper user surface suitable for use by the public, the furniture comprising at least two vertically arranged lamellas intended to be supported by a supporting surface, the upper surface of the urban furniture serving as user's surface, the lamellas being interconnected by means intertying device(s).

Background of the invention

[0002] The surroundings and the appearance of an urban space may have great impact and effect on the sensing and feeling of safety and security experienced by the citizens while appearing or staying outdoor in a public area. A factor of importance expressed by many is darkness and dark areas, often in combination with deserted areas and/or hostile and deserted surroundings. Such experience is even stronger if the surroundings in addition are in the form of urban slum. Empty or deserted spaces may in itself create the sense of un-security or unattractiveness.

[0003] There exist practical knowledge of how creation of sightlines and positions of objects in the public space affect the behaviour and use of the public room. But there exists little empirical facts that confirm this knowledge. Moreover, there exists little knowledge of how different systems for positioning of urban furniture and objects affect the sense of urban security.

[0004] Studies of the importance of inter alia the effect of illumination on the experienced sensing of security has been performed. A number of outdoor furniture is known. Example of such furniture are disclosed in the following publication or media:

A modular cardboard chair made up of lamellas, arranged in spaced relation is disclosed in <http://dzinetrip.com/modular-cardboard-chair-by-designer-giorgio-caporaso/>. This furniture appears to be intended for in-house use.

[0005] An outdoor urban furniture, belonging to the applicant, is disclosed in <http://www.norfax.no/produktter/detaljer/benk-ja-benken-betong-m-rygg/2661/222>

[0006] Reference is also made to <https://log-utemiljo.no/benker-nusser-stadtmobel/> disclosing another example of prior art outdoor furniture made up of lamellas..

[0007] CN 204091353 discloses an outdoor solar table comprising a table top body, a table top supporting column and a base and stone benches. The base is fixedly to the ground; the table top supporting the column is fixedly connected with the base; and the table top is fixed

to the top end of the table supporting column.

[0008] In order to enhance the experienced sensing of security in various urban rooms there is a need for urban furniture enhancing the environment, creating and causing activities that attracts people to remain for a period in said urban rooms or spaces.

Summary of the invention

[0009] A main principle forming the basis for the present invention is to create an urban space where emphasize is laid on regenerative relations between people and on experienced security and therefor also configured and designed to develop measures of non-physical character, creating activities and attractive rooms and thereby providing experienced security through social control.

[0010] One possible solution may be to place street furniture that motivates more visitors to come to the place, and further motivate them to extend the stay for a prolonged period. The purpose of this urban furniture is to provide activities attracting visitors and in this way increasing the experienced security on the site due to the present of people and possibly also illumination.

[0011] A means according to the present invention is to introduce security enhancing products directed to physical as well as non-physical measures in urban rooms. This may be in the form of measures related to designing and arranging vegetation and lightening, and also developing security creating products in the form of purpose built or specifically designed park and outdoor furniture. Such measures will contribute to the presence of other people and regenerative relations between the people. Such measures will also contribute to experienced security. In this way measures of a non-physical type are provided for creating activities.

[0012] An object of the invention is to create an urban environment contributing to creation of security by creating bases and possibilities for togetherness with other people in an area or location of an urban area.

[0013] Another object of the invention is to provide an urban furniture that due to its shape and design, characteristics, properties and inherent possibilities, will attract people and the public, making it more attractive to be and stay in that area or location.

[0014] Yet another object is to establish a resource centre that may provide service and back-up to different activities approved by the owner of the furniture, such as for example Foodtruck™, street musicians, and other types of arrangements or events.

[0015] Still a further object of the invention is to contribute to an urban environment that is smart, secure and safe and green and in addition making it safe and secure to move around in the urban environment day and night, also making it interesting and attractive for people to remain staying in this environment.

[0016] Yet another object of the invention is to provide an attractive, multi-purpose and user friendly solution for the public with a variety of functions implied or incorpo-

rated in the concept.

[0017] According to the present invention, the objects are achieved by a solution as further defined by the features of the independent claim, while embodiments, variants, and alternatives are defined by the dependent claims.

[0018] According to the present invention it is provided an urban furniture for urban rooms, configured with an upper user surface suitable for use by the public. The furniture comprises at least two vertically arranged lamellas arranged in spaced relation, intended to be supported by a supporting surface, the upper surface of the urban furniture serving as user's surface, the lamellas being interconnected by means intertying device(s). Moreover, the urban furniture comprises at least one console containing technical installations, such as electrical power supply, devices for WiFi and corresponding points for connection, said at least one console being connected to and being arranged parallel with an adjacent lamella.

[0019] According to one embodiment, the at least one console is positioned between two adjacent lamellas.

[0020] According to one variant, the console may be arranged in a middle position of the urban furniture.

[0021] Moreover, the urban furniture may comprise three or more lamellas and that the lamellas are arranged in spaced relation by means of one or more intertying devices and intermediate spacers.

[0022] Moreover, said at least one console may be provided with an inner room containing the technical devices that the urban furniture may be provided with, and that said inner room preferably may be sealed from at least the upper surface of the furniture in order to prevent intrusion of rain water or moisture. Access to the inner room may for example be through a side wall and/or a lid arranged at the top surface of said at least one console.

[0023] The urban furniture may possibly be provided with one or more units for illumination.

[0024] According to one embodiment, the lamellas may have different length and/or width for formation of an urban furniture with different shape or foot print. Moreover, the top surface of the lamellas may preferably as an option have a slightly convex curvature from the middle part to the sides.

[0025] The lamellas may be interconnected and possibly connected to at least one console by means of a plurality of stays or bolts, the lamellas and the console preferably being arranged in sideways spaced relation at least at the upper part of the lamellas.

[0026] The lamellas and possibly said at least one console may preferably also be interconnected at their lower part by means of at least one elongate rail or similar types of interconnecting devices.

[0027] According to one embodiment the console may form a middle part of the urban furniture, the middle console preferably supporting the illumination, and being positioned symmetrically.

[0028] The illumination may according to the invention be made of a massive polycarbonate material with a light

source at the bottom or possibly by a tube of plastic material with a light source at the top and bottom or internally covered with LED, as a coarse pixelated LED-screen.

[0029] Since the solutions according to the invention is based on use of a limited number of basis modules, the invention is flexible and may easily be adapted and provide a number of different configurations and foot prints, dependent on the surroundings in which the solutions are intended to forming a part of.

[0030] According to the invention an attractive outdoor furniture is provided, suitable to form a part of a secure and attractive urban environment, and also being attractive to people living in urban environments. The solution opens for provisions of free charging of electrical equipment and public access to internet through WiFi. This enables the sitting element to function as an e-bench and may serve as a resource centre for activities attracting other people to the spot and thereby contributing to the creation of and the intended sense of security.

[0031] With such resources combined with a web page informing of the positions of the various e-benches in the neighbourhood in addition to possible actual activities at the various e-bench addresses, a unique security providing concept may be formed, since security is created by togetherness with other people. In a city or town one will get a sense or feeling of being safer and more secure where there are more people in the area.

[0032] The bench, with its shape and design, properties and possibilities will attract people due to amongst other the WiFi, lights, integrated electrical power supply via technical sockets with up to 32 amps., ordinary sockets 16 amps., and USB sockets for charging of computers, tablets and telephones.

[0033] Seventy percent of the product is the interactive parts. In such case the physical shape may be completely and totally facilitated in order to make the bench function optimally. It is after all this part that in principle shall contribute so that the street furniture shall contribute to the enhanced feeling of security.

[0034] According to the invention it is provided an urban furniture concept that contributes both to the physical environment and the interactive part and to illumination. This illumination may from an environmental point of view be controlled by light sensors and/or motion sensors.

[0035] It may be possible to link a web site to the specific furniture, where the address or web addresses to the place or the furniture is printed or appear on the furniture, so that the public can open the address. This page will be a communication site between for example "professional" users of the furniture, such as for example Foodtruck™, street musicians and other users. On this web-site the public may for example be able to find out when Foodtruck™, or others will arrive at the site. On the web site it is also possible to access for example free WiFi. Also Augmented Reality may be a part of the concept, a technology that combines data from the physical world with virtual data. The lamellas may be interconnected by means of two bolts.

Short Description of the Drawings

[0036] In the following embodiments of the invention shall be described in further details, referring to the drawings, where:

Figure 1 shows schematically and in perspective an embodiment of a security creating urban furniture shown in the form of a large sitting element; Figure 2 shows schematically and in perspective a second embodiment of a security creating urban furniture in the form of a small sitting element; Figure 3 shows schematically a view seen from above of the sitting element disclosed in Figure 1; Figure 4 shows schematically a vertical view of an alternative embodiment of a sitting element; Figure 5 shows schematically a vertical view seen from a side of the sitting element disclosed in Figure 1; Figure 6 shows schematically in perspective a view of the large sitting element shown in Figure 1, partly shown in an exploded view; Figures 7a to 7c show schematically a horizontal view and two side views of an embodiment of the little sitting element; Figure 8 shows schematically a view seen from above of an alternative configuration of the middle console, where access to the technical room is from the top side via a removable lid; and Figure 9 shows an alternative design of an urban furniture without illumination.

Detailed Description of Embodiments shown in the Figures

[0037] The following description of exemplified embodiments of the present invention refers to the attached drawings. The same reference numbers are used in association with the different embodiments for the same or similar elements. The following detailed description is not meant to limit the invention or the scope of protection, the scope of protection being defined by the skilled person's interpretation of the scope of the attached claims.

[0038] Reference in the drawings to "one embodiment" or "an embodiment" means that a specific feature, construction or characterizing part described in relation to an embodiment comprises at least one embodiment of the subject-matter. Accordingly, use of the phrase "in one embodiment" or "in an embodiment" in different places in the description will not necessarily relate to one and the same embodiment.

[0039] Figure 1 shows schematically and in perspective an embodiment of a security creating street or urban furniture in the form of a large sitting element 10. The disclosed sitting element 10 may for example have a diameter of 1.8 meter and a height of for example 0.45 meter, even though said dimensions are not to be considered as limiting for the invention. The disclosed em-

bodiment of the sitting element 10 is assembled from a number of lamellas 11, arranged on each side of a centrally arranged middle console 12. The lamellas 11 are given a decreasing length, so that the lamellas 11, when in assembled state with the middle console 12, form a sitting element with a circular foot print. It should be noted that the lamellas 11 may be given length that totally provides the sitting element 10 with an oval shape; a polygonal shape or a rectangular foot print. Moreover, the sitting element 10 may be given any other suitable shape, for example triangular shape or leaf clover shape or any organic shape without thereby deviating from the inventive idea.

[0040] The lamellas 11 may be made of glulam wood, any suitable plastic material or metal or concrete, while the middle console 12 preferably may be made of steel and configured to house technical devices for electrical power supply, WiFi, etc. As further indicated in Figure 1, the lamellas 11 may be arranged in sideways spaced relation, thereby forming vertically arranged slots 13 between adjacently arranged lamellas, extending in the full height of the lamellas, and between the middle console 12 and the adjacently arranged lamella 11 on each side of the middle console 12. In respect to the middle console 12, one or more vertical and upwards extending rods or tubes 14 may be arranged, for example provided with illumination. According to the disclosed embodiment the height of the rod(s) may be 1 meter, without necessarily being considered limiting for the invention. The vertical end surfaces of the lamellas 11 may be inwardly and downwardly slanted and in addition rounded, thus avoiding abrupt or sharp transitions between adjacent surfaces on each lamella 11. The top surface of each lamella 11, i.e. the surface facing upwards when in assembled state, may be slightly rounded or given an arch shaped surface in order to secure that water will not remain on the top surface, but drain off and away through the slots 13 between adjacent lamellas 11.

[0041] The sitting element 10 may also be provided with equipment for provision of WiFi, connection points for electrical power supply 15 and electricity for charging, etc. The console 12 may also be equipped with power supply for the illumination integrated in the vertical rods or tubes 14. Plates 16 of metal, for example galvanized steel or stainless steel showing information graphics, may be arranged on one or several side surfaces of the sitting element 10.

[0042] The rods or tubes 14 with illumination may for example be made of massive polycarbonate with a light source at the bottom, or possibly a tube of plastic materials with a light source at the top or bottom, or provided internally with LED, as a coarse pixelated LED screen.

[0043] Figure 2 shows schematically and in perspective a second embodiment of a security creating urban or outdoor furniture in the form a small sitting element 10. The embodiment disclosed has a general shape as disclosed in Figure 1, but without the vertical rods or tubes 14. This embodiment is also provided with a middle con-

sole 12 with technical devices (not shown). Moreover, the diameter of this embodiment may for example be 1 meter. This embodiment may otherwise be constructed in the same way as the embodiment disclosed in Figure 1. As for the embodiment disclosed in Figure 1, the sitting element 10 may rest on the supporting surface by means of one or more legs 17, so that it is formed a minimum vertical distance between the lower surface of the lamellas 11 and the supporting surface.

[0044] Figure 3 shows schematically a view seen from above of the sitting element 10 shown in Figure 1. As indicated the sitting element comprises a number of horizontally arranged, parallel lamellas 11 with a vertical height and a certain width, arranged in sidewise spaced relation and in sideways spaced relation to a centrally arranged middle console 12. The lamellas 11 and the middle console 12 are rigidly interconnected in order to maintain the desired shape and configuration by means of one or more laterally extending bolts or stays 20 provided with intermediately arranged spacers 18. The bolts or stays 20 may be in the form of threaded rods with spacers 18 threaded or screwed on the threaded bolt in order to maintain the desired and required distance between adjacent lamellas 11 and between the middle console 12 and the first adjacent lamella 11.

[0045] On the bottom side of the sitting element a flat iron rail 19 is arranged, fixed to the lamellas 11. One or more legs 17 for support of the sitting element 10 may be fixed to the flat iron rails 19. The legs 17 may be provided with devices for enabling adjustment of the height of the legs 17 in order for adjustment for an uneven supporting surface 21.

[0046] Figure 4 shows schematically a vertical view seen from one side of an alternative embodiment of the sitting element 10, where the sitting element is provided with plane, vertical end surfaces and possibly only one centrally arranged rod or tube 17, while Figure 5 shows schematically a vertical view seen from a side of a sitting element 10 shown in Figure 1. Here the end surfaces are skewed downwards and inwards.

[0047] Figure 6 shows schematically a view in perspective of the large sitting element shown in Figure 1, partly shown in exploded state. As indicated, the lamellas 11 are interconnected by means of two stays or rods 20, extending through the lamellas, and with spacers 18 arranged in between for establishing the required vertical slot 13 between two adjacent lamellas 11 or between the middle console 12 and the adjacent lamella 11 on each side. In addition the lamellas may preferably be interconnected by means of a steel profile or flat iron rail 19 arranged under the sitting element 10. This steel profile may also form the attachment or fixing means for the 17. The steel profile 17 may preferably extend diametrically from one side to the opposite side, arranged orthogonally on the longitudinal orientation of the lamellas. The lamellas 11 may be terminated with a steel plate 16 fixed to the stay or bolt 20 and the steel profile 19. The lamellas 11 may be tied together by a number of stays or bolts 20

in the upper part of the lamellas and a bottom rail 19. The distance between the lamellas 11 is maintained by means of spacers 18 threaded on the stays or bolts 20. Screws through the bottom rail and into the bottom part of the lamellas 11 secure desired distance between the bottom parts of the lamellas 11. Alternatively, stays or bolts may instead or in addition be arranged with spacers also arranged at the lower part of the lamellas.

[0048] In order to provide access to the technical devices in the middle console 12, the middle console may be provided with a lid 22, for example arranged on one side or both sides of the console 12. The end plates or the lids 22 may be associated with a railing arrangement, so that the technical devices inside the middle console 13 may be drawn as a tray for eased access for an operator or for maintenance. This may provide enhanced access to the electronics for maintenance or upgrading. The lid 22 may be locked from the underside in order to prevent the public from unauthorized or unintentional access.

[0049] Figures 7a to 7c shows schematically a horizontal view and two side views seen from the side respectively, of an embodiment of the small sitting element shown in Figure 2, generally comprising a number of lamellas and a console 12.

[0050] Figure 8 shows schematically a view seen from above of an alternative embodiment of an urban furniture 10 provided with a middle console 12 and illumination 14, where access to the technical room 23 is provided from the upper surface through a removable lid 24. According to this solution all points for connection arranged inside the room 23 are arranged on the vertical side walls, preventing water from coming in contact with the contact points.

[0051] Figure 9 shows an alternative embodiment of the urban furniture 10 without illumination 14, but with a console 12, where the furniture is given an elongate, more or less elliptical shape.

[0052] Even if embodiments are shown with a circular footprint, it should be appreciated that the sitting element may be given any suited shape, either with straight edges or a more organic curved shape.

[0053] The solution is based on building block system that may be assembled in many different configurations. It may be made up as an elongate, thin bench configuration or may be in the form of more wide benches with straight sides without thereby deviating from the inventive concept.

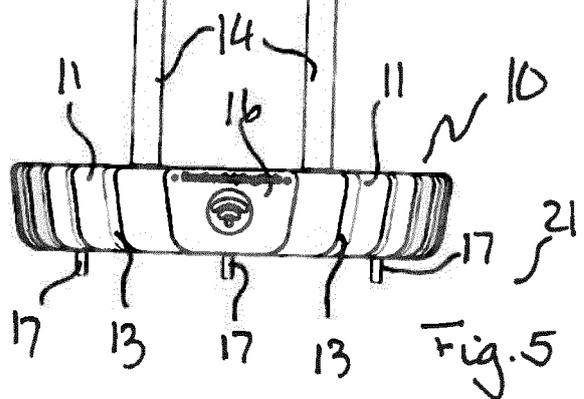
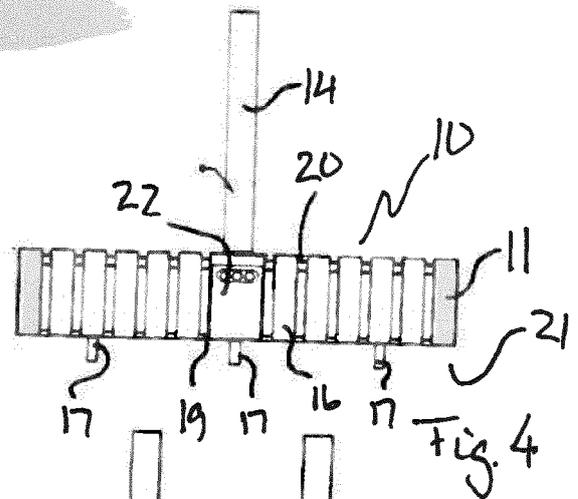
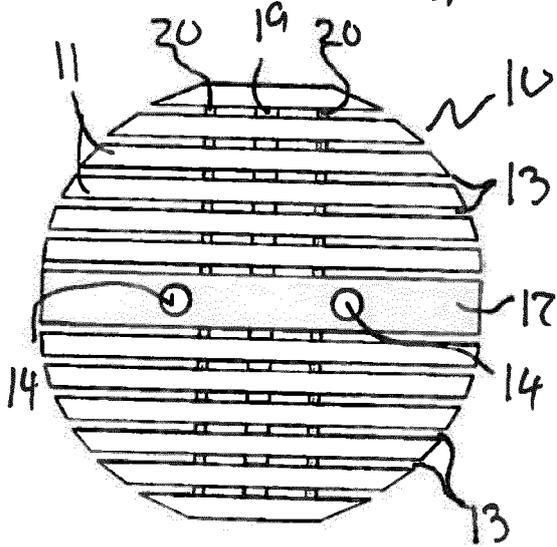
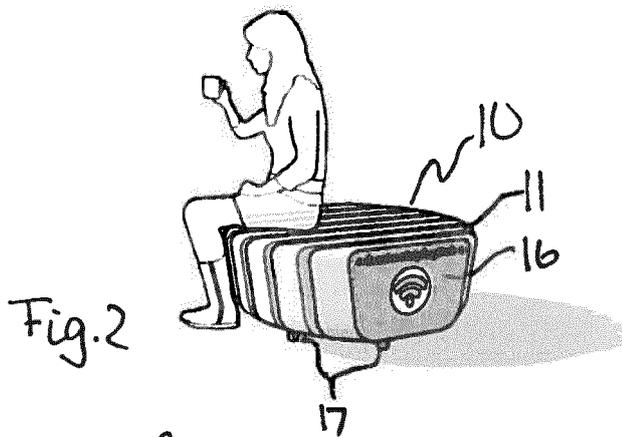
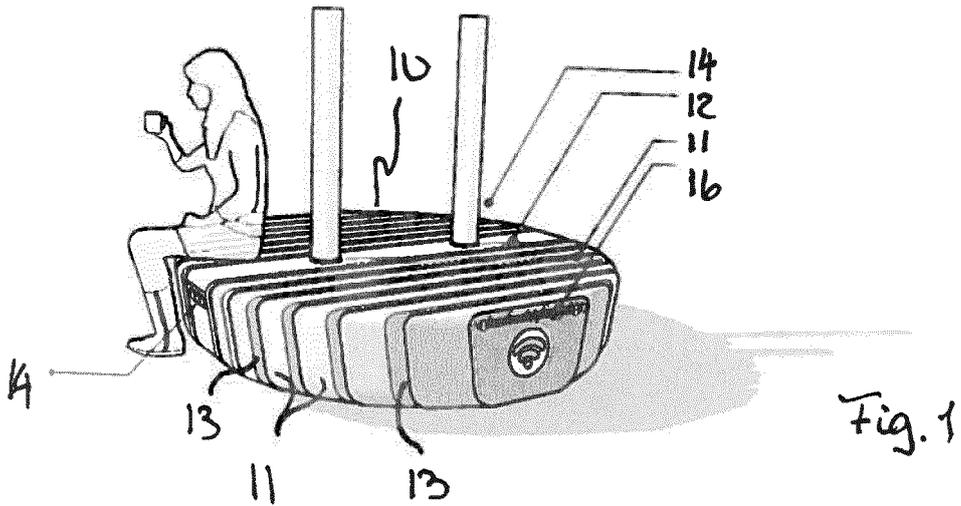
[0054] The urban furniture is shown without ant backrest. It should be noted, however, that the urban furniture may be provided wit backrests without thereby deviating from the inventive concept.

[0055] In the embodiments disclosed in the drawings the console is in the form of a middle console 12, i.e. a console 12 arranged with an even number of lamellas on each side of the console 12. It should be appreciated, however, that the console 12 may have any suitable position, i.e. it may be arranged at one end of the furniture

10, or at any position between the middle position and the end position. Moreover, it should be appreciated the urban furniture may have any footprint, i.e. circular, oval elongate, square or polygonal, without thereby deviating from the inventive idea. Moreover, the furniture 10 may be provided with more than one console 11.

Claims

1. Urban furniture (10) for urban rooms, configured with an upper user surface suitable for use by the public, the furniture comprising at least two vertically arranged lamellas (11) intended to rest on a supporting surface, the upper surface of the furniture (10) serving as user's surface, the lamellas (11) being interconnected by means of one or more intertying device(s) (18,20),
characterized in that the urban furniture (10) comprises at least one console (12) houses technical installations, such as electrical power supply, devices for WiFi and corresponding points for connection, said at least one console (13) being connected to and being arranged parallel with an adjacent lamella (11).
2. Urban furniture (10) according to claim 1, wherein the at least one console (12) is positioned between two adjacent lamellas (11).
3. Urban furniture (10) according to claim 2, wherein the console (12) is arranged in a middle position of the urban furniture (10).
4. Urban furniture (10) according to one of the claims 1 to 3, wherein the urban furniture comprises three or more lamellas and that the lamellas are arranged in spaced relation by means of said one or more intertying devices (19,20) and intermediate spacers (18).
5. Urban furniture (10) according to one of the claims 1 to 4, wherein said at least one console is provided with an inner room containing the technical devices that the urban furniture (10) is to be provided with, and that said inner room preferably is sealed from the upper surface in order to prevent intrusion of rain water.
6. Urban furniture (10) according to claim 5, wherein access to the inner room is through a side wall (22) and/or a lid arranged at the top surface of said at least one console (12).
7. Urban furniture (10) according to one of the claims 1 to 6, wherein the urban furniture (10) is provided with one or more units for illumination.
8. Urban furniture (10) according to one of the claims 1 to 7, wherein the lamellas (11) may have different length and/or width for formation of an urban furniture with different shape and where the top surface of the lamellas (11) preferably has a slightly convexly curvature from the middle part to the sides..
9. Urban furniture (10) according to one of the claims 1 to 8, wherein the lamellas (11) are interconnected and possibly connected to at least one console (12) by means of a plurality of stays or bolts (20), arranged in sideways spaced relation at the upper part of the lamellas.
10. Urban furniture (10) according to one of the claims 1 to 9, wherein the lamellas (11) and possibly said at least one console (12) are interconnected at their lower part by means of at least one elongate rail (19).
11. Urban furniture (10) according to one of the claims 1 to 10, wherein the urban furniture (10) is provided with a middle console (12) supporting the illumination (14).
12. Urban furniture (10) according to one of the claims 7, wherein the illumination may be made of a massive polycarbonate material with a light source at the bottom or possibly by a tube of plastic material with a light source at the top and bottom or internally covered with LED, as a coarse pixelated LED-screen.



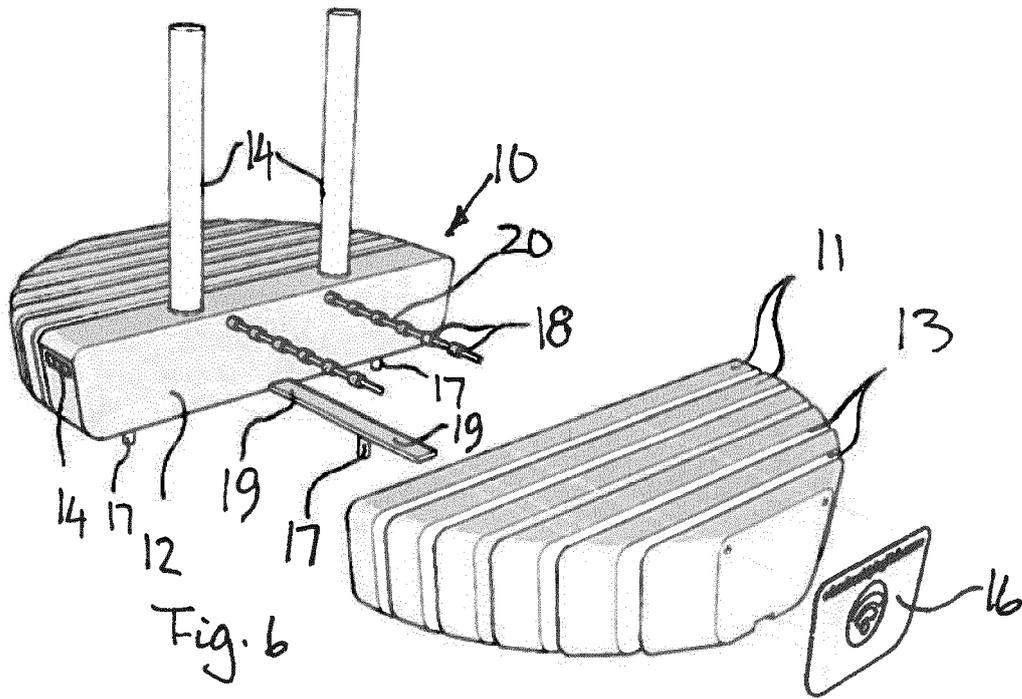


Fig. 6

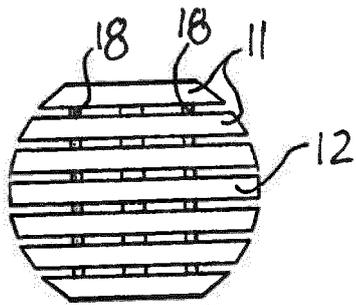


Fig. 7a

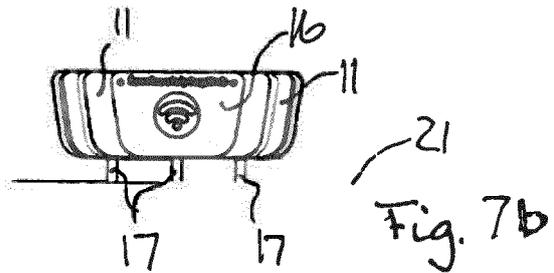


Fig. 7b

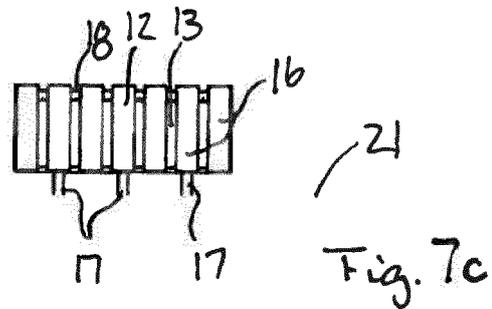


Fig. 7c

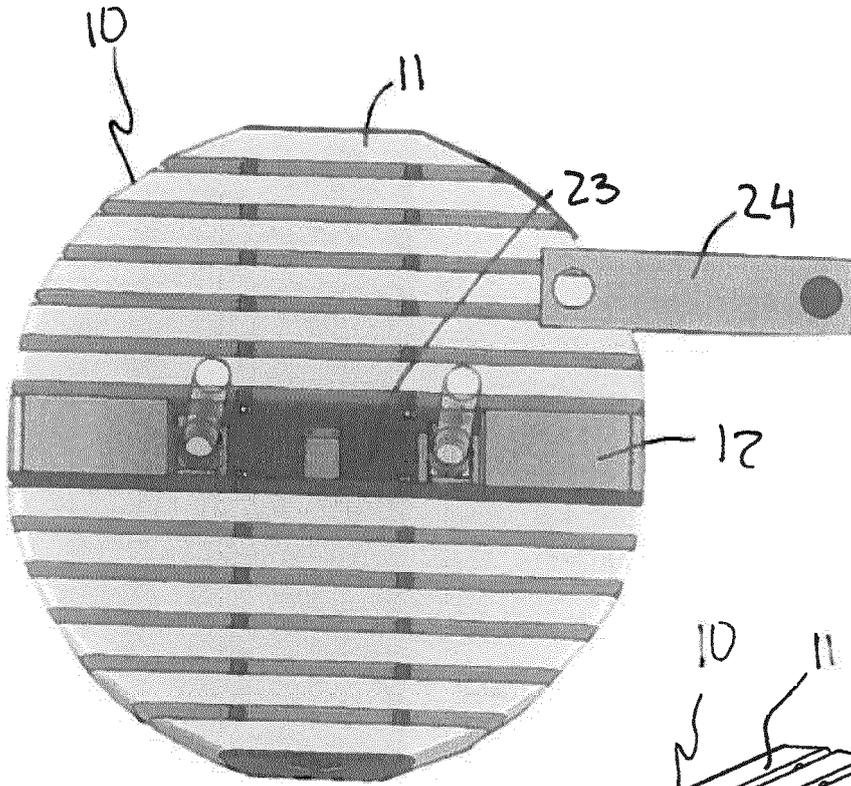


Fig. 8

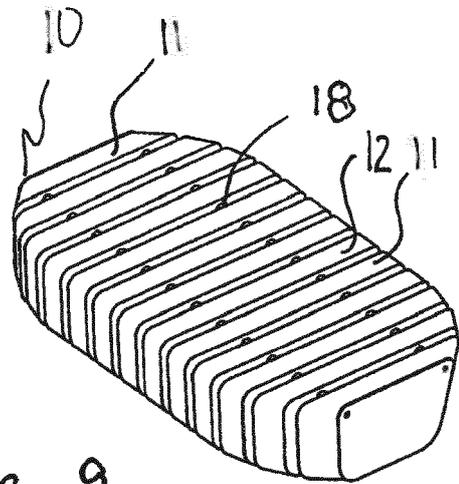


Fig. 9



EUROPEAN SEARCH REPORT

Application Number
EP 17 18 6287

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	KR 2015 0085379 A (KNU INDUSTRY COOPERATION FOUND [KR]) 23 July 2015 (2015-07-23) * paragraphs [0032] - [0036]; figures 1-3 *	1-7, 11, 12	INV. A47C7/72 A47C11/00
X	----- Behance: "Ameba on Behance", , 4 June 2013 (2013-06-04), XP055423596, Retrieved from the Internet: URL:https://www.behance.net/gallery/9121777/Ameba [retrieved on 2017-11-10] * page 3 *	1,8-10	
A	----- CN 104 398 035 A (REN LI NA) 11 March 2015 (2015-03-11) * figure 1 * -----	1-12	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47C
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		10 November 2017	Melo Sousa, Filipe
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 17 18 6287

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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10-11-2017

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 20150085379 A	23-07-2015	NONE	

CN 104398035 A	11-03-2015	NONE	

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 204091353 [0007]