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(54) **DYNAMIC CHAIR**

(57) Disclosed is a dynamic chair comprising: a frame joined at the top to a seat body and at the bottom to a base (3) designed with a central projecting protuberance (4) that acts as an unstable support means of the seat; and an electrical circuit formed by an electrical cable (6) connected at one end to a first metal piece (7) joined to the seat body (1), and at the other end to a second metal piece (8) joined to the central protuberance (4), and which is in contact with the ground, the cable being designed to receive, conduct and divert to earth static electricity that a user seated on the seat may have accumulated.

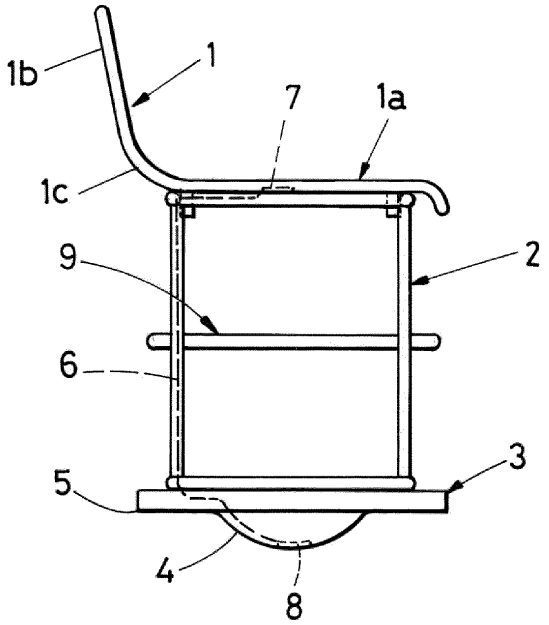

FIG.1

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Description

Object of the invention

[0001] The present invention relates to a dynamic chair which has an unstable support on the floor during use, so that in order to compensate for this instability a user must compensate with the support on the floor of his feet by necessarily exercising certain muscle groups of his body, fundamentally of his feet and legs; all this so that the user can remain stable in the seated position on the chair, a position in which the seating surface of the chair is situated in a substantially horizontal plane.

Technical sector

[0002] The field of technology in which the present invention is concerned is furniture, and more specifically seating furniture.

Technical problem to be solved and background of the invention

[0003] Nowadays, a multitude of models of seating elements are known, such as chairs, stools, sofas, armchairs, etc., all of which include stable supports to rest on the floor.

[0004] Some chairs are also known to have arched glides attached to the ends of pairs of legs, where the arched glides are the elements that support the floor so that a user can balance while seated in the chair. support the floor so that a user can balance while seated in the chair.

Description of the invention

[0005] In order to achieve the objectives and avoid the disadvantages in the previous paragraphs, the invention proposes a dynamic chair comprising a seat body attached to a frame located underneath the seat body; wherein said frame includes a first upper end part attached to the seat body, a lower end part opposite the upper end part.

[0006] The dynamic chair further comprises a base attached to the lower end region of the frame; wherein said base includes a protruding central protuberance as a means of unstable support on the floor of the dynamic chair; and wherein the central protuberance protrudes below a lower perimeter surface of the base.

[0007] The chair includes an electrical circuit comprising an electrical cable; where one end of the electrical cable is connected to a first metal part attached to the seat body, while another end of the electrical cable is connected to a second metal part attached to the central protuberance, while in contact with the floor during use of the chair.

[0008] The power cable is configured to receive, conduct and shunt static electricity to ground that may accumulate on a user seated in the chair.

[0009] In one embodiment of the invention, the frame is formed by tubes which coincide with the edges of a parallelogram, while the base consists of a hollow body with a lamellar structure.

[0010] The electric cable runs through the inner space of some of the frame tubes and also through the inner space of the base.

[0011] The frame is reinforced by an annular body which is attached to the central part which is part of the frame.

[0012] The seat body comprises a platform and a backrest which are connected by means of a curved section, while the platform includes a smooth central concavity and a downwardly extending front flange.

[0013] The platform of the seating body includes lower appendages extending from a bottom face of the seating body platform; wherein said lower appendages are configured to engage upper end sections of tubes forming part of the frame; and wherein the connection between the seat body and the frame comprises bolts relating the lower appendages and said upper end sections of tubes of the frame.

[0014] The back of the upper seat body includes at least one hole that is configured to grip and hold the chair during handling and moving. In one embodiment of the invention, the frame of the chair is made of metal, while the base and the seat body are made of a plastic material, so that the frame is attached to the base by means of a bolted connection.

[0015] In one embodiment of the invention, the central protuberance of the base has a spherical cap- shaped configuration.

[0016] In order to facilitate a better understanding of this descriptive report and forming an integral part of the same, a series of illustrative and non-limiting figures of the subject matter of the invention is provided below.

Brief description of the figures

[0017]

Figure 1.- It shows an elevation view of the dynamic chair, object of the invention. It basically comprises an upper seat body, a frame and a lower base.

Figure 2.- It shows a perspective view of the frame connecting the lower base to the seat body of the chair.

Figure 3.- It shows a perspective view of the upper seat body of the chair.

Figure 4.- It shows a profile view of the upper seat body of the chair.

Description of an example of an embodiment of the invention

[0018] Considering the numbering adopted in the figures, the dynamic chair comprises a seat body (1), a frame (2) of tubular structure, and a base (3); wherein the seat body (1) is, configured to allow a user to sit during the use of the chair. In the embodiment shown in the figures, the base (3) has a circular shape.

[0019] On the other hand, the base (3) of the chair is configured to rest on the ground in an unstable manner during the use of the chair, so that for this purpose said base (3) includes in its center a central protuberance (4) in the form of a spherical cap; where during the use of the chair of the invention, in order to compensate for its instability, the user must compensate it with the support on the ground of his feet necessarily exercising certain muscle groups of the body, mainly the back, feet and legs, so that the user can remain stable in the seated position on the chair.

[0020] Thus, the user seated in the chair of the invention continuously exercises these muscle groups in a comfortable and easy way, precisely because of the instability of the chair's floor support during use.

[0021] The chair of the invention can be useful in the prevention of lumbago and other pathologies, by counteracting the negative effect exerted by prolonged sitting and also, help in overcoming various ailments, especially back problems.

[0022] On the other hand, the instability of the chair is limited, thus hindering tipping over, by means of perimeter parts of the base (3) which are around the central protuberance (4), so that in the embodiment shown in the figures, said perimeter parts refer to a perimetral corner edge (5) of the base (3), although in another embodiment of the invention not shown in the figures, these perimeter parts could be, for example, appendages that protrude from under the lower base (3) at a lower height than the central protuberance (4).

[0023] The chair of the invention further includes an electrical circuit comprising a single-phase electrical cable (6) configured to receive and conduct static electricity to ground that may accumulate on a user seated in the chair.

[0024] For this purpose, one end of the electrical cable (6) is connected to a first metal part attached to the upper seat body (1), while the other end of the electric cable (6) is connected to a second metal part (8) attached to the central protuberance (4) and in contact with the floor. Obviously, by means of the electric cable and both metallic pieces (7), (8), the possible static electricity of the user can be conducted and diverted to the floor.

[0025] As shown in the figures, the electric cable (6) runs along the inside of some of the tubes that make up the frame, while another section of the electric cable (6) runs along an interior space of the lower base (3), which has a hollow structure.

[0026] In the embodiment of the invention shown in the figures, the frame (2) is formed by metallic tubes that coincide with the edges of a parallelepipedic body; where four of said tubes are arranged in vertical directions with a circular cross-section, four others are arranged in a first horizontal plane with a rectangular cross-section coinciding with the seat body (1) and four others are arranged in another horizontal plane coinciding with the base (3). The frame (2) can also be reinforced by means of an annular body (9) of cylindrical-tubular section arranged at mid-height.

[0027] The seat body (1) comprises a platform (1a) and a low backrest (1b) which are connected by a curved section (1c), while the platform (1a) includes a smooth central concavity (10) and a downwardly extending front flange (11).

[0028] The platform (1a) of the seat body (1) includes lower appendages (12) that start from an underside of said platform (1a), so that said lower appendages (12) are configured to be embedded in upper end sections of the four vertical tubes that form part of the frame (2), ensuring the connection between the seat body (1) and the frame (2) by means of screws not shown in the figures.

[0029] The backrest (1b) of the seat body (1) has two holes (13) through which the fingers of a user's hand can be inserted to grip and hold the chair assembly more easily during handling and transport.

[0030] In the embodiment of the invention shown in the figures, the frame (2) is made of metal, while the base (3) is made of a plastic material such as polypropylene. Likewise, the seat body (1) is also made of polypropylene, so that the frame (2) is joined to the base (3) by means of a bolted connection.

[0031] The height of the chair of the invention can be between 40 cm. and 50 cm., without ruling out other sizes, of course, by varying the height of the frame (2).

Claims

1. Dynamic chair, comprising a seat body (1) attached to a frame (2) located underneath the seat body (1); wherein said frame (2) comprises a first upper end part attached to the seat body (1), a lower end part opposite to the upper end part, and a central part; **characterized in that** it comprises:

   - a base (3) attached to the lower end part of the frame (2); wherein the base (3) includes a protruding central protuberance (4) as a means of unstable support on the floor of the dynamic chair; and wherein the central protuberance (4) protrudes below a lower perimeter surface of the base (3);
   - an electrical circuit comprising an electrical cable (6); wherein one end of the electrical cable (6) is connected to a first metal part (7) attached to the seat body (1), while another end of the electrical cable (6) is connected to a second met-

al part (8) attached to the central protuberance (4) and that is in contact with the ground; where the electric cable (6) is configured to receive, conduct and derive electricity ground static that a user sitting in the chair might have accumulated.

2. Dynamic chair according to claim 1, **characterized in that** the frame (2) consists of tubes that coincide with the edges of a parallelogram.

3. Dynamic chair, according to any one of the preceding claims, **characterized in that** the base (3) consists of a hollow body of lamellar structure.

4. Dynamic chair, according to the previous claims, **characterized by** the fact that the electric cable runs through the interior space of some of the tubes of the frame (2) and also through the interior space of the base (3).

5. Dynamic chair, according to any one of the preceding claims, the frame (2) is reinforced by means of an annular body (9) which is attached to the central part forming part of the said frame (2).

6. Dynamic chair, according to any one of the preceding claims, **characterized in that** the seat body (1) comprises a platform (1a) and a backrest (1b) which are connected by means of a curved section (1c), while the platform (1a) includes a central concavity (10) and a front flange (11) extending downwards.

7. Dynamic chair according to claim 6, **characterized in that** the platform (1a) of the seat body (1) includes lower appendages (12) starting from a lower face of said platform (1a); wherein said lower appendages (12) are configured to engage with upper end sections of tubes forming part of the frame (2); and wherein the connection between the seat body (1) and the frame (2) comprises bolts connecting the lower appendages (12) and said upper end sections of tubes of **the frame.**

8. Dynamic chair according to any one of the preceding claims 6 or 7, **characterized in that** the backrest (1b) of the upper seat body (1) includes at least one hole (13) which is configured for gripping and holding the chair during handling and moving.

9. Dynamic chair according to any one of the preceding claims, **characterized in that** the frame (2) is made of metal, while the lower base (3) and the upper seat body (1) are made of a plastic material; wherein the frame (2) is connected to the lower base (3) by means of a bolted connection.

10. Dynamic chair, according to any one of the preceding claims, **characterized in that** the central protuberance (4) of the base (3) has a spherical cap configuration.

11. Dynamic chair according to any one of the preceding claims, **characterized in that** the base (3) has a circular shape.

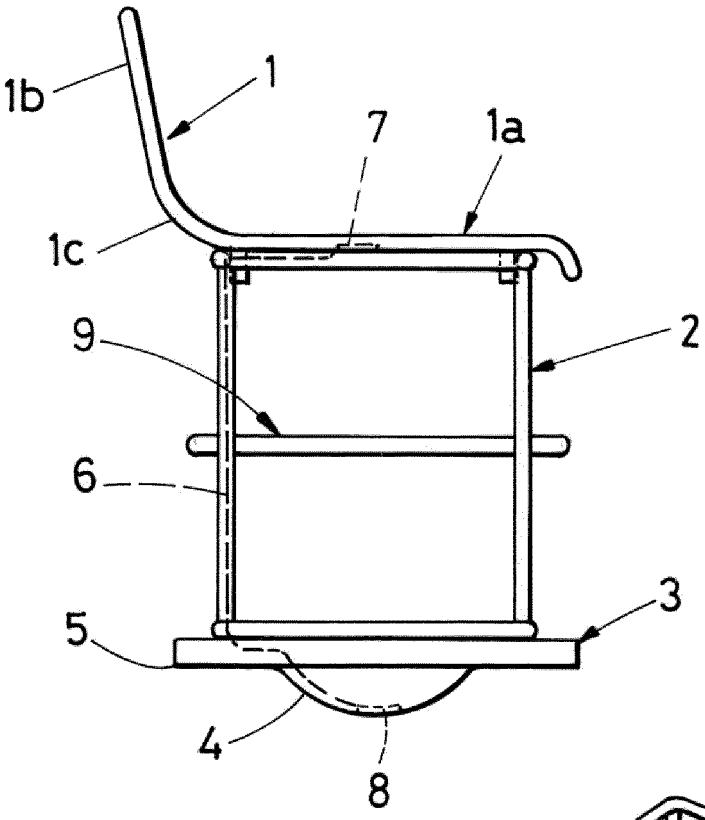

FIG.1

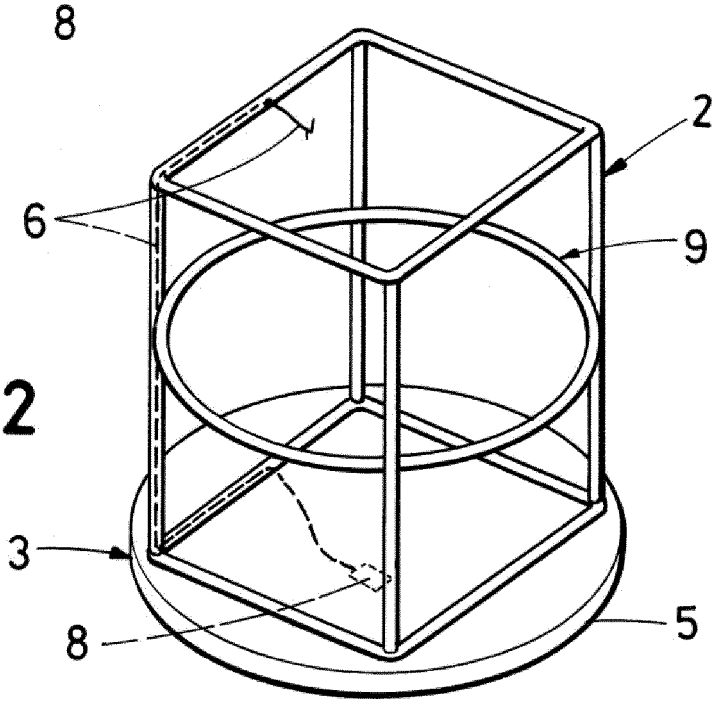

FIG.2

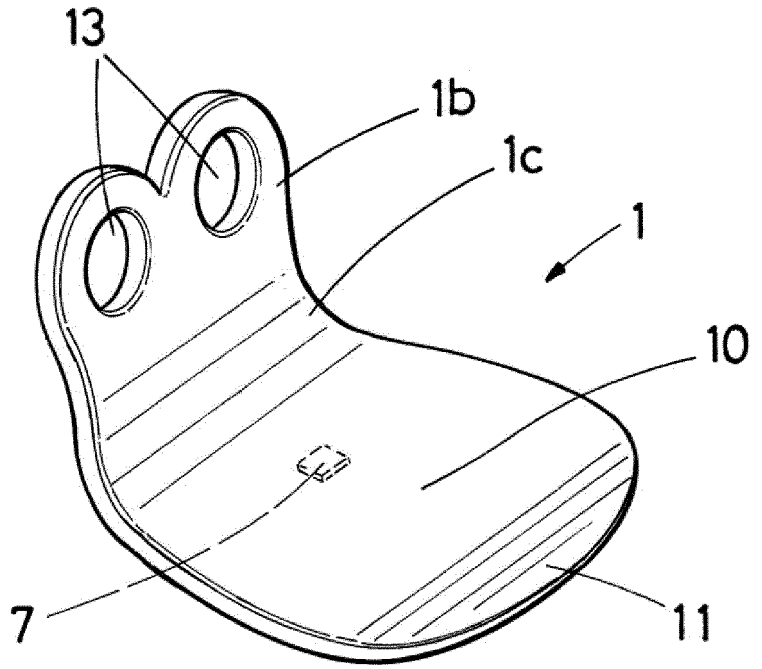

FIG.3

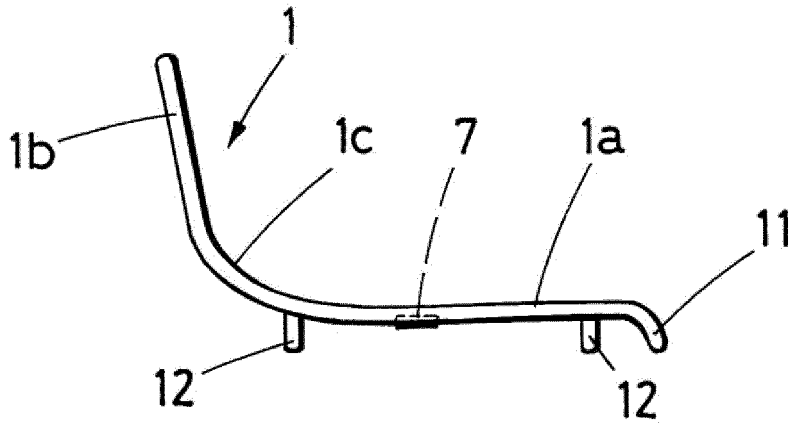

FIG.4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2021/000038

A. CLASSIFICATION OF SUBJECT MATTER

A47C3/029 (2006.01)
H05F3/02 (2006.01)
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A47C, H05F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	ES 148927U U (POUTOUT PIERRE) 01/02/1970, claims and figure 1 and 2.	1, 3, 6, 9-11
X	US 5810751 A (MEIER ROBERT H ET AL.) 22/09/1998, Abstract and figures 1 a 4.	1, 3, 6, 9-11
X	US 2020016456 A1 (DUKE JOHN HINCKS) 16/01/2020, Abstract and figures.	1, 2, 3, 6, 9-10
X	CN 207100973U U (ZHENG HUACAN) 16/03/2018, Abstract and figures 1 and 6.	1, 2, 6, 9
A	CN 204378547U U (FENG ZICHEN) 10/06/2015, Abstract and figure 1 and 2.	1

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
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Date of the actual completion of the international search	Date of mailing of the international search report
24/01/2022	**(25/01/2022)**
Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04	Authorized officer M. Martín Moronta Telephone No. 91 3495447

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2021/000038

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4747011 A (LISSNER DAVID) 24/05/1988, Abstract and figure 2.	1, 4

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
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