(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 212 819 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
19.07.2023 Bulletin 2023/29

(21) Application number: **22190683.7**

(22) Date of filing: **17.08.2022**

(51) International Patent Classification (IPC):
F41J 3/00 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
F41J 3/0019; F41J 3/0023

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(30) Priority: **18.01.2022 GB 202200569**

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(54) **MODULAR DARTS ENVIRONMENT SYSTEM**

(57) A modular darts system 2 comprises a hub 4 having a dartboard surface or a connector 24 for weight-bearing connection to a dartboard 6, the hub 4 further comprising a plurality of apertures 26, and a plurality of arms 10, the arms 10 being configured to engage the plurality of apertures 26 and to engage at least one ancillary dartboard component 12, 13, 14.

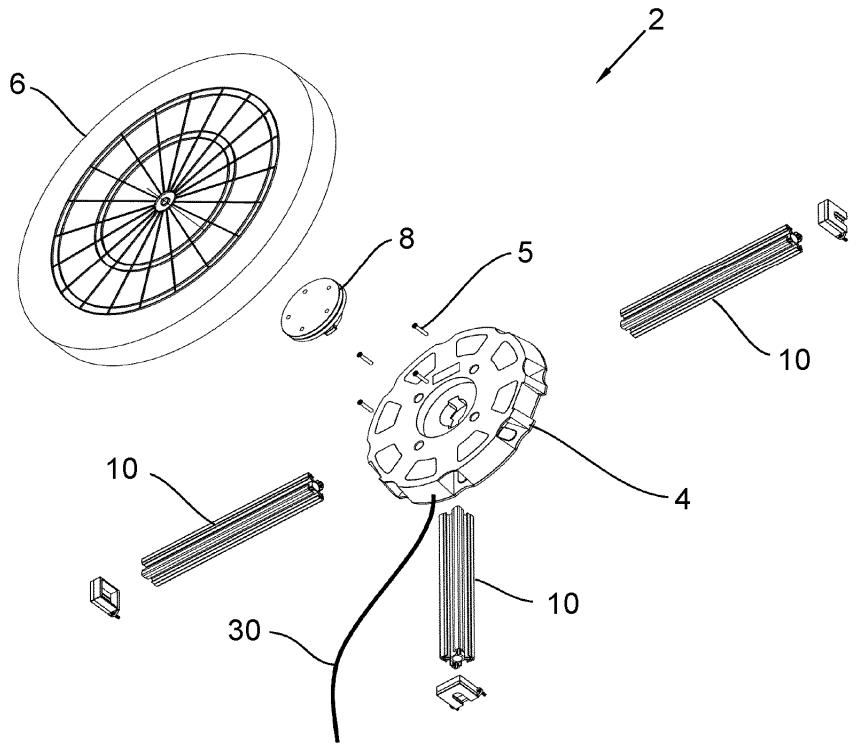

FIG. 2

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Description

[0001] The present invention relates to a modular system for implementing a darts environment.

[0002] Traditionally, a darts environment is created by mounting a dartboard and one or more ancillary components directly to a vertical wall in the desired configuration. Sometimes one or more free-standing components, such as free-standing lights, may also be positioned nearby. However, creating a darts environment in this manner is often time consuming and has little flexibility when changes are necessary.

[0003] A need therefore exists for a simpler and more dynamic system for implementing a darts environment.

[0004] Viewed from a first aspect, the present invention provides a modular system, comprising: a hub comprising a dartboard surface or a connector for weight-bearing connection to a dartboard, the hub further comprising a plurality of apertures; and a plurality of arms, the arms being configured to engage the plurality of apertures, wherein the arms are each configured to engage at least one ancillary dartboard component.

[0005] This arrangement advantageously provides simpler assembly of a darts environment, as well as permitting easy rearrangement or expansion of the environment after the initial installation.

[0006] Each aperture may comprise a retainer for retaining an arm in the respective aperture. The retainer may comprise a magnet or a mechanical fastener.

[0007] At least one of the arms may be configured to support the weight of the hub, and optionally any components attached thereto, such as the dartboard and any ancillary components.

[0008] At least one of the arms may comprise a fastener hole for attachment to a vertical surface, such as a wall. The fastener hole may be for receiving a fastener, such as a screw, a nail, a hook, etc.

[0009] At least one of the arms may comprise a foot or wheel configured to engage a horizontal surface, such as the floor. The modular system may be configured to stand vertically on the foot or wheel and may be configured to support the hub when the dartboard surface or dartboard is in use. The modular system may be configured to be substantially free-standing, i.e. without supporting against a vertical surface, such as a wall, above floor level.

[0010] One or more or each of the arms may comprise a substantially rectangular outer profile. The outer profile may have a width and a height of different values. In other embodiments, the arms may comprise a circular or oval outer profile.

[0011] One or more or each of the arms may comprise at least one track. The or each track may have a cross-sectional profile configured to permit attachment of a component to the track. The or each track may permit movement of the component along a length-wise direction of arm. The at least one track may comprise at least two tracks arranged in different orientations with respect to the respective arm.

[0012] In other embodiments, the arms may be configured to permit attachment of the components in other manners, for example the arms may have fixed attachment points, such as fastener holes at predetermined locations, or the arms may have ends configured to engage the respective components.

[0013] In some embodiments, one or more of the components may be integrate with one or more of the arms.

[0014] The system may comprise at least one ancillary dartboard component. The or each ancillary dartboard components is configured to engage the arms. The ancillary dartboard component may comprise one or more of: a light, a score board, a dart holder, and a dartboard surround element.

[0015] The system may comprise a dartboard, which may be supported by the mount. The dartboard may be connected to the hub by a dartboard bracket. The dartboard bracket may be configured to support the weight of the dartboard. The dartboard bracket may be configured to permit rotation of the dartboard relative to the hub.

[0016] The dartboard bracket may comprise any of the features of the mechanism for securing a dartboard to a mount described in the second aspect.

[0017] The hub may comprise any of the features of the hub described in the third aspect.

[0018] Viewed from a second aspect, the present invention provides a mechanism for securing a dartboard to a mount, the mechanism having a first configuration in which rotation of the dartboard relative to the mount is prevented, and a second configuration in which rotation of the dartboard relative to the mount is permitted, wherein movement of the dartboard relative to the mount causes the mechanism to transition between the first configuration and the second, and wherein the mechanism is biased towards the first configuration.

[0019] This arrangement permits simple rotation of the dartboard, without requiring it to be dismounted from the dartboard environment, in order to spread wear evenly across the dartboard. By locking rotation of the dartboard when in the desired position, the dartboard is prevented from inadvertent rotation during use.

[0020] The mechanism may comprise a mounting plate for attachment to the dartboard by fasteners. The mounting plate may include a plurality of fastener holes for attachment to the dartboard. The fasteners may be releasable fasteners, and may comprise screws.

[0021] The mechanism may comprise a releasable connector for attachment to the mount. The releasable connector may be configured to be releasable from the mount without tools. For example, the releasable connector may comprise a bayonet attachment or a threaded attachment.

[0022] The mechanism may be configured to transition from the first configuration to the second configuration by a movement of the dartboard relative to the mount. The movement may be movement along an axis of the rotation of the dartboard relative to the mount. The move-

ment may be a relative movement away from one another.

[0023] The mechanism may comprise a biasing member configured to bias the mechanism towards the first configuration. The biasing member may comprise a spring. The biasing member may be disposed between a flange formed on the mounting plate and a flange formed on the releasable connector. The flange of the releasable connector may be provided on a dartboard-proximal-side of the biasing member. The flange of the mounting plate may be provided on a dartboard-distal-side of the biasing member.

[0024] In the first configuration, the dartboard may be lockable in one of a plurality of equiangularly-spaced orientations relative to the mount. The plurality of orientations may comprise ten positions, and optionally exactly ten positions.

[0025] The mechanism may comprise a plurality of positioning features, each positioning feature corresponding to one of the orientations; and at least one engagement feature configured to engage the plurality of positioning features to lock the dartboard in the respective orientation.

[0026] The positioning features may each comprise a recess or a protrusion. The engagement features may each comprise a protrusion or a recess.

[0027] At least one positioning feature or at least one engagement feature may be configured to bias the dartboard towards the nearest of the orientations when moving from the second configuration to the first configuration. The configuration of the at least one positioning feature or at least one engagement feature may comprise a chamfer.

[0028] In an embodiment, a mechanism for securing a dartboard to a mount, comprises: a mounting plate including a plurality of fastener holes for attachment to the dartboard by screws, the mounting plate comprising a shaft extending, in use, away from the dartboard; a releasable connector for attachment to the mount, the releasable connector being configured to be releasable from the mount without tools, and the releasable connector comprising a bore extending, in use, away from the darboard; and a biasing member configured to bias the mounting plate towards the releasable connector, the biasing member being disposed between a flange formed on of the mounting plate and a flange formed on the releasable connector, wherein the mechanism has a first configuration in which rotation of the dartboard relative to the mount is prevented, and a second configuration in which rotation of the dartboard relative to the mount is permitted, wherein movement of the dartboard relative to the mount causes the mechanism to transition between the first configuration and the second, and wherein the mechanism is biased towards the first configuration; wherein the shaft and the spring are received within the bore, the spring surrounding the shaft; wherein a flange is provided on the shaft of the mounting plate and contacts a dartboard-distal-side of the biasing member; and wherein a flange is provided with the bore of the releasable connector and contacts a dartboard-proximal-side of the biasing member.

[0029] Viewed from a third aspect, the present invention provides a hub comprising: a dartboard surface or a connector for weight-bearing connection to a dartboard; an electrical inlet for receiving electrical power; and an electrical outlet for providing the electrical power to an ancillary dartboard component.

[0030] The hub may comprise an integral levelling tool for verifying an orientation of the hub. The levelling tool may comprise a spirt level.

[0031] The electrical inlet may comprise a plug for connection to a mains electricity outlet. The electrical inlet may comprise a cable connected to the plug. Alternatively, the electrical inlet may comprise a socket for connection to a mains electricity outlet

[0032] The electrical outlet may comprise a socket. The socket may comprise a USB connector or a 12V direct current (DC) socket.

[0033] The hub may comprise a transformer for transforming the received electrical power to electrical power for supply to the ancillary dartboard component.

[0034] The hub may comprise a plurality of fastener holes for attachment to a vertical surface.

[0035] The hub may comprise a housing. The housing may define an interior chamber. The interior chamber may comprise the transformer. The housing may comprise the socket of the electrical outlet and/or the socket of the electrical inlet.

[0036] The hub may comprise damping members on a surface of the hub, the damping members being arranged to reduce transmission of vibrations between the hub and an adjacent object. The damping members may be formed on a front surface or a rear surface of the hub.

[0037] The hub may comprise aperture, which may be configured to each retain an arm for supporting an ancillary dartboard component. One or more or all of the apertures may each comprise a retainer for retaining an arm in the respective aperture. The retainer may comprise a magnet or a mechanical fastener.

[0038] Certain preferred embodiments of the present invention will now be described, by way of example only and with reference to the accompanying drawings, in which:

Figure 1 shows a front view of a modular darts system providing a darts environment;

Figure 2 shows an exploded view of part of the modular darts system;

Figure 3 shows a front view of a hub of the modular darts system;

Figure 4 shows a rear view of the hub;

Figure 5 shows an exploded view of the hub;

Figure 6 shows a rear view of a board bracket of the modular darts system;

Figure 7 shows a cross-sectional view of the board bracket;

Figure 8 shows an exploded view of the board bracket;

Figure 9 shows an arm of the modular darts system;

Figure 10 shows a cross-sectional view of the arm; and

Figure 11 shows a front view of an alternative modular darts system for providing a soft-tip darts environment.

[0039] With reference to Figures 1 and 2, a darts environment is illustrated. The darts environment is formed by a modular darts system 2.

[0040] The darts system 2 comprises a system hub 4, which supports a dartboard 6. The dartboard 6 is releasably and rotatably mounted to the system hub 4 using a board bracket 8.

[0041] A plurality of arms 10 are connected to the system hub 4. The arms 10 support ancillary components of the dartboard environment. As illustrated in Figure 1, the ancillary components may include dartboard surround elements 12, a dartboard lamp 13 and a dart holder 14. Other ancillary components, not shown, may include a scoreboard. The ancillary components are each secured to arms 10 of the system 2, as will be discussed in greater detail below.

[0042] The dartboard surround elements 12 each protect part of a wall or other surface behind the dartboard 6. The dartboard surround elements 12 are each an annular segment, and in the illustrated embodiment are quarter-segments. The dartboard surround elements 12 are formed of a foam material, such as polyurethane foam or the like.

[0043] The dartboard lamp 13 is a light source configured to illuminate part of the dartboard 6.

[0044] The dart holder 14 is configured to hold a plurality of darts, such as the six in the illustrated embodiment.

[0045] Figures 3 and 4 show the system hub 4 in greater detail.

[0046] The system hub 4 comprises a housing 16. The housing 16 is configured to be mountable to a wall or other vertical surface so as to support the weight of the system hub 4, the dartboard 6 and any ancillary components 12, 14. In the illustrated embodiment, this is achieved by means of a plurality of through-holes 18 sized to receive fasteners, such as screws 5, to secure the system hub 4 to the wall.

[0047] The system hub 4 further comprises a spirit level 20, which is formed on a front side of the system hub 4, so as to be visible when the system hub 4 is mounted to the wall. The spirit level 20 allows an installer to easily verify that the system hub 4 has been mounted at the correct orientation.

[0048] A rear surface of the system hub 4 is provided with a plurality of damping members 22, arranged to be positioned between the housing 16 and the wall, when the system hub 4 is mounted to the wall. The damping members 22 serve to reduce noise transmission when the dartboard 6 is used.

[0049] Optionally, a front surface of the system hub 4 may also be provided with a plurality of damping members 23 (not shown in Figure 3), arranged to be positioned between the housing 16 and the dartboard 6. The damping members 23 similarly serve to reduce noise transmission when the dartboard 6 is used.

[0050] The system hub 4 comprises a bracket mount 24 configured to retain the board bracket 8. In the illustrated embodiment, the bracket mount 24 is in the form of a female bayonet socket. However, any suitable interconnection may be used, such as a screw thread connection or the like. Advantageously, a bayonet allows simple connection of the the board bracket 8 to/from the system hub 4, without the use of tools, whilst still retaining the board bracket 8 securely in a desired orientation.

[0051] The system hub 4 also comprises a plurality of arm apertures 26, each configured to receive an arm 10. Each of the apertures 26 is sized to closely fit the respective arm 10. The system hub 4 is configured to releasably retain each arm 10 within the respective aperture 26. In the illustrated embodiment, this is achieved using a magnet 28 retained within each aperture 26, for example at an end of each aperture 26. However, other means of arm retention may be used, as appropriate, such as a friction fit or interlocking mechanical retainers.

[0052] Figure 5 shows the internal construction of the system hub 4.

[0053] The housing 16 of the system hub 4 comprises a front housing shell 16a and a rear housing shell 16b, which are held together by fasteners 16c, such as screws. The housing shells 16a, 16b form an enclosed interior region of the system hub 4.

[0054] The system hub 4 comprises an electrical inlet for receiving electrical power, such as mains electrical power. The electrical inlet comprises a cable 30 extending from the housing 16 and terminating in a plug for connection to a mains electrical outlet so as to supply electricity to the system hub 4. Alternatively, the electrical inlet may comprise an electrical inlet socket on the housing 16 for connection to such a cable 30.

[0055] Within the interior region of the system hub 4 is provided electrical circuitry (not shown). The electrical circuitry may receive the power from the electrical inlet. The electrical circuitry may comprise an electrical transformer and/or a rectifier. In other embodiments, a transformer and/or rectifier may be additionally or alternatively provided outside of the system hub 4, for example in a power supply adaptor of the cable 30.

[0056] The system hub 4 further comprises one or more electrical outlets (not shown) for supplying electrical power to an ancillary component 12, 13, 14. The electrical outlets receive power from the electrical circuitry inside the system hub 4. The electrical outlets may comprise sockets on the housing for connection to cables of the ancillary components 12, 13, 14, such as a cable 32 of the lamp 13. The electrical outlets may take any form, but in one embodiment take a standardised form, such

as a USB socket.

[0057] Whilst the cables 30, 32 are shown exposed in the figures, in exemplary embodiments the cables 30, 32 may run within channels of the arms 10. This is aesthetically more appealing, and also protects the cables 30, 32 from accidental damage.

[0058] Figures 6 to 8 show the board bracket 8 in greater detail. The board bracket 8 is a mechanism for securing the dartboard 6 to the bracket mount 24 of the system hub 4.

[0059] The board bracket 8 comprises a dartboard mounting plate 34 for connection to the dartboard 6, and a mount connector 36 for connection to the bracket mount 24 of the system hub 4.

[0060] The board bracket 8 is configured so that when the dartboard mounting plate 34 and the mount connector 36 are pulled apart from one another, they are able to rotate relative to one another about an axis A that extends through the centre of the board bracket 8 and dartboard 6. However, when the dartboard mounting plate 34 and the mount connector 36 are held together, they are prevented from relative rotation, and are locked in one of ten (10) equiangular spaced positions. A biasing member in the form of a spring 38 is configured to bias the dartboard mounting plate 34 and the mount connector 36 against one another.

[0061] Thus, the board bracket 8 provides a first configuration in which rotation of the dartboard relative to the mount is prevented (as shown in the Figures), and a second configuration in which rotation of the dartboard relative to the mount is permitted (not shown).

[0062] Dartboards often wear unevenly, in particular around the "20 segment". Therefore, it is common to periodically rotate dartboards to spread the wear more evenly. A standard dartboard has order-ten rotational symmetry (so long as the number ring is removable or rotatable), and therefore rotation in increments of 36° spreads the wear of the dartboard without impeding play.

[0063] In order to orient the dartboard 6 in one of the predetermined positions, the board bracket 8 comprises a plurality of apertures 40 formed in the mount connector 36, and a plurality of protrusions 42 formed on the dartboard mounting plate 34. The apertures 40 form positioning features and are equiangularly spaced to define the locked positions of the dartboard 6. The protrusions 42 form locking features and act to engage the apertures 40 to lock the dartboard 6 in the respective position.

[0064] In the illustrated embodiment, there are ten (10) apertures 40, and five protrusions 42. However, only one protrusion 42 is required for operation of the board mount 8.

[0065] Furthermore, the board mount 8 would still function if the apertures 40 were provided in the dartboard mounting plate 34 and the protrusions 42 were provided on the mount connector 36. However, the present arrangement advantageously aids in installing the dartboard mounting plate 34 on the dartboard 8.

[0066] The apertures 40 and protrusions 42 are each circular or cylindrical in the illustrated embodiment. However, other shapes may be used so long as they engage to retain the dartboard 6 in the respective position. Furthermore, the illustrated protrusions 42 have chamfered tips so as to guide them into the respective apertures 40 if the dartboard 6 is not exactly aligned in the respective position.

[0067] The board mount 8 comprises a plurality of fastener holes 44 for receiving fasteners (not shown), such as screws, to secure the board mount 8 to the dartboard. The fastener holes 44 are configured to align with the apertures 40 of the dartboard mounting plate 34. Thus, the fasteners can be installed in the respective fastener holes 44 through the apertures 40. In the illustrated embodiment, five fastener holes 44 are provided. However, more or fewer fasteners may be used.

[0068] As discussed above, a spring 38 is provided to bias the dartboard mounting plate 34 and the mount connector 36 towards one another. The spring 38 is a coil spring and is trapped between two flanges 46, 48; a first flange 44 being connected to the dartboard mounting plate 34, and a second flange 46 being connected to the mount connector 36. The first flange 44 is on a dartboard-distal-side of the spring 38, and the second flange 46 is on a dartboard-proximal-side of the spring 38, such that the spring 38 biases the dartboard mounting plate 34 and the mount connector 36 towards one another.

[0069] The dartboard mounting plate 34 comprises a shaft 48 about which the spring 38 is received. The shaft 48 is configured to hold a cap plate 50 by means of a fastener 52, such as a screw. The cap plate 50 forms the first flange 44 when connected to the shaft 48.

[0070] The mount connector 36 comprises a spring tube 54 that extends axially away from the dartboard 6 and receives the spring 54 within a bore of the spring tube 54. The second flange 46 is provided within the bore of the spring tube 54. An inner edge of the second flange 46 serves to position the shaft 48 of the dartboard mounting plate 34, and an inner edge of the spring tube 54 serves to position the cap 50 of the dartboard mounting plate 34. This arrangement constrains relative movement between the dartboard mounting plate 34 and the mount connector 36 to axial movement along the axis A, and rotational movement around the axis A.

[0071] A pair of bayonet pins 56 are provided on the outside of the spring tube 56 to provide the bayonet connection to the mount 24. The board bracket 8 also comprises a bayonet biasing member, such as a rubber washer 58 provided around the spring tube 54. The bayonet biasing member provides resistance against detachment of the bayonet pins 56 from the mount 24 of the system hub 4.

[0072] Figures 9 and 10 show details of the arms 10 of the system 2. The arms 10 are configured to be interchangeable, and all have the same cross-sectional shape, as shown in Figure 10.

[0073] The arms 10 are formed from a strong, stiff and light, material, such as aluminium or polycarbonate. The

arms 10 in the illustrated embodiment are formed by extrusion.

[0074] The arms 10 each comprise a magnet 58 formed on at least one end. The magnet 58 is positioned so as to engage a magnet 28 of the system hub 4 when inserted into one of the apertures 26 of the system hub 4.

[0075] The arms 10 are have a substantially rectangular outer cross-sectional shape. A height and a width of the outer shape of the arms are different lengths, so as to restrict the orientations that the arms 10 can be inserted into the apertures 26 of the system hub 4.

[0076] The arms 10 each define four channels 60, one on each side of the arm 10, extending lengthwise with respect to the arm 10. The channels 60 are each the same shape, and are configured to permit attachment of an ancillary component to the channel 60. The channels 60 thus form tracks that permit movement of the respective component along a length-wise direction of arm.

[0077] Advantageously, the components may each comprise at least one connector configured to connect to the channels 60. Thus, the components each comprise a standardised connector, which simplifies interconnections within the systems 2.

[0078] In addition to attachment to the ancillary components of the system 2 that form the dartboard environment, the arms 10 may also permit attachment of other fasteners or mounting components. For example, the ends of the arms 10 may be configured to connect to fasteners that connect to a further arm 10, thus allowing extension of the arm.

[0079] Additionally, one or more of the arms 10 may be comprise fastener holes for connection to a vertical surface. Thus, instead of using fastener holes 18 to secure the system hub 4 to a wall, the system hub 4 may be supported by the arms 10, which may be connected to the wall.

[0080] In a further embodiment, one or more of the arms 10 may be configured to stand vertically, and to support the system hub 4. The vertically-standing arm(s) 10 may be configured to connect to a foot, optionally having casters, which may stand on the floor. Thus, in this embodiment, the system 2 may provide a free-standing standing darts environment.

[0081] Figure 8 shows an alternative implementation of a modular soft tip darts system 102. This modular soft tip darts system 102 forms a soft tip darts environment, i.e. a darts environment for use with soft tip darts.

[0082] The modular soft tip darts system 102 shown in Figure 11 shares many similarities with the modular darts system 2 described above, and therefore only the differences will be described. Like elements are labelled with the same reference sign, but incremented by 100.

[0083] In the modular soft tip darts system 102, the system hub 104 comprises an integral soft tip dartboard surface 106. A soft tip dartboard surface 106 typically comprises a plastic board with moulded holes that receive plastic-tipped darts. Due to the nature of soft tip darts, it is not necessary to periodically rotate a soft tip dartboard surface 106. Thus, the soft tip dartboard surface 106 can be integrated with the system hub 104 and a separate dartboard and board bracket are not required.

[0084] The system hub 104 may further comprise a digital scoreboard 115, and the system hub 104 may include integral scoring electronics for automatically calculating a score when a dart hits the soft tip dartboard 106.

[0085] Similar to the system hub 4 of the modular darts system 102 described above, the system hub 104 of the modular soft tip darts system 102 comprises a plurality of apertures (not visible) that receive arms 110 for supporting ancillary components such as a lamp 113.

[0086] Also, similar to the system hub 4 of the modular darts system 102 described above, the system hub 104 of the modular soft tip darts system 102 may be configured to connect directly to the wall via fasteners (not shown) or may be supported by the arms 110 in any of the configurations described above.

[0087] The following clauses set out features of the invention which may not presently be claimed in this application but which may form the basis for future amendment or a divisional application.

1. A modular system, comprising:

   a hub comprising a dartboard surface or a connector for weight-bearing connection to a dartboard, the hub further comprising a plurality of apertures; and
   a plurality of arms, the arms being configured to engage the plurality of apertures;
   wherein the arms are each configured to engage at least one ancillary dartboard component.

2. A modular system according to clause 1, wherein each aperture comprises a retainer for retaining an arm in the respective aperture, wherein the retainer comprises a magnet or a mechanical fastener.

3. A modular system according to clause 1 or 2, wherein at least one of the arms is configured to support the weight of the hub.

4. A modular system according to clause 3, wherein at least one of the arms comprises a fastener hole for attachment to a vertical surface.

5. A modular system according to clause 3, wherein at least one of the arms comprises a foot or wheel configured to engage a horizontal surface.

6. A modular system according to clause 5, wherein the modular system is configured to stand vertically on the foot or wheel and to support the hub when the dartboard surface or dartboard is in use.

7. A modular system according to any of clauses 1 to 6, wherein the arms each comprise at least one track, the or each track having a cross-sectional profile configured to permit attachment of a component to the track, and to permit movement of the component along a length-wise direction of arm.

8. A modular system according to clause 7, wherein the at least one track comprises at least two tracks arranged in different orientations with respect to the respective arm.

9. A modular system according to any of clauses 1 to 8, comprising:

at least one ancillary dartboard component, wherein the or each ancillary dartboard components is configured to engage the arms,
wherein the ancillary dartboard component comprises one or more of: a light, a score board, a dart holder, and a dartboard surround element.

10. A mechanism for securing a dartboard to a mount, the mechanism having a first configuration in which rotation of the dartboard relative to the mount is prevented, and a second configuration in which rotation of the dartboard relative to the mount is permitted, wherein movement of the dartboard relative to the mount causes the mechanism to transition between the first configuration and the second, and wherein the mechanism is biased towards the first configuration.

11. A mechanism according to clause 10, comprising:
a mounting plate including a plurality of fastener holes for attachment to the dartboard by screws.

12. A mechanism according to clause 10 or 11, comprising:
a releasable connector for attachment to the mount, the releasable connector being configured to be releasable from the mount without tools.

13. A mechanism according to clause 12, wherein the releasable connector comprises a bayonet attachment or a threaded attachment.

14. A mechanism according to any of clauses 10 to 13, wherein the mechanism is configured to transition from the first configuration to the second configuration by a relative movement of the dartboard away from the mount along an axis of the rotation of the dartboard relative to the mount.

15. A mechanism according to any of clauses 10 to 14, comprising:

a biasing member configured to bias the mechanism towards the first configuration, the biasing member being disposed between a flange formed on the mounting plate and a flange formed on the releasable connector,
wherein the flange of the releasable connector is provided on a dartboard-proximal-side of the biasing member, and the flange of the mounting plate is provided on a dartboard-distal-side of the biasing member.

16. A mechanism according to any of clauses 10 to 15, wherein, in the first configuration, the dartboard is lockable in one often, equiangularly-spaced orientations relative to the mount.

17. A mechanism according to clause 16, comprising:

a plurality of positioning features, each positioning feature corresponding to one of the orientations and comprising a recess or a protrusion; and
at least one engagement feature configured to engage the plurality of positioning features to lock the dartboard in the respective orientation.

18. A mechanism according to clause 17, wherein at least one positioning feature or at least one engagement feature is configured to bias the dartboard towards the nearest of the orientations when moving from the second configuration to the first configuration.

19. A mechanism according to clause 10, comprising:

a mounting plate including a plurality of fastener holes for attachment to the dartboard by screws, the mounting plate comprising a shaft extending, in use, away from the dartboard;
a releasable connector for attachment to the mount, the releasable connector being configured to be releasable from the mount without tools, and the releasable connector comprising a bore extending, in use, away from the dartboard; and
a biasing member configured to bias the mechanism towards the first configuration, the biasing member being disposed between a flange formed on of the mounting plate and a flange formed on the releasable connector,
wherein the shaft and the spring are received within the bore, the spring surrounding the shaft;
wherein a flange is provided on the shaft of the mounting plate and contacts a dartboard-distal-side of the biasing member; and
wherein a flange is provided with the bore of the releasable connector and contacts a dartboard-proximal-side of the biasing member.

20. A hub comprising:

a dartboard surface or a connector for weight-bearing connection to a dartboard;
an electrical inlet for receiving electrical power; and
an electrical outlet for providing the electrical power to an ancillary dartboard component.

21. A hub according to clause 20, comprising:
an integral levelling tool for verifying an orientation of the hub.

22. A hub according to clause 20 or 21, wherein the electrical inlet comprises a plug for connection to a mains electricity outlet.
23. A hub according to any of clauses 20 to 22, wherein the electrical outlet comprises a USB connector or a 12V direct current (DC) socket.
24. A hub according to any of clauses 20 to 23, comprising:
a transformer for transforming the received electrical power to electrical power for supply to the ancillary dartboard component.
25. A hub according to any of clause 20 to 24, comprising:
a plurality of fastener holes for attachment to a vertical surface.
26. A hub according to any of clauses 20 to 25, comprising:
damping members on a surface of the hub, the damping members being arranged to reduce transmission of vibrations between the hub and an adjacent object.

Claims

1. A modular system, comprising:

a hub comprising a dartboard surface or a connector for weight-bearing connection to a dartboard, the hub further comprising a plurality of apertures; and
a plurality of arms, the arms being configured to engage the plurality of apertures;
wherein the arms are each configured to engage at least one ancillary dartboard component.

2. A modular system according to claim 1, wherein each aperture comprises a retainer for retaining an arm in the respective aperture, wherein the retainer comprises a magnet or a mechanical fastener.

3. A modular system according to claim 1 or 2, wherein at least one of the arms is configured to support the weight of the hub, and

optionally wherein at least one of the arms comprises a fastener hole for attachment to a vertical surface; or
optionally wherein at least one of the arms comprises a foot or wheel configured to engage a horizontal surface, and wherein the modular system is configured to stand vertically on the foot or wheel and to support the hub when the dartboard surface or dartboard is in use.

4. A modular system according to any of claims 1 to 3, wherein the arms each comprise at least one track, the or each track having a cross-sectional profile configured to permit attachment of a component to the track, and to permit movement of the component along a length-wise direction of arm, and
optionally wherein the at least one track comprises at least two tracks arranged in different orientations with respect to the respective arm.

5. A modular system according to any of claims 1 to 4, comprising:

at least one ancillary dartboard component, wherein the or each ancillary dartboard components is configured to engage the arms,
wherein the at least one ancillary dartboard component comprises one or more of: a light, a score board, a dart holder, and a dartboard surround element.

6. A mechanism for securing a dartboard to a mount, the mechanism having a first configuration in which rotation of the dartboard relative to the mount is prevented, and a second configuration in which rotation of the dartboard relative to the mount is permitted, wherein movement of the dartboard relative to the mount causes the mechanism to transition between the first configuration and the second, and wherein the mechanism is biased towards the first configuration.

7. A mechanism according to claim 6, comprising:

a mounting plate including a plurality of fastener holes for attachment to the dartboard by screws; and
a releasable connector for attachment to the mount, the releasable connector being configured to be releasable from the mount without tools,
optionally wherein the releasable connector comprises a bayonet attachment or a threaded attachment.

8. A mechanism according to claim 6 or 7, wherein the mechanism is configured to transition from the first configuration to the second configuration by a relative movement of the dartboard away from the mount along an axis of the rotation of the dartboard relative to the mount.

9. A mechanism according to any of claims 6 to 8, comprising:

a biasing member configured to bias the mechanism towards the first configuration, the biasing member being disposed between a flange formed on the mounting plate and a flange formed on the releasable connector,
wherein the flange of the releasable connector

is provided on a dartboard-proximal-side of the biasing member, and the flange of the mounting plate is provided on a dartboard-distal-side of the biasing member.

10. A mechanism according to any of claims 6 to 9, wherein, in the first configuration, the dartboard is lockable in one often, equiangularly-spaced orientations relative to the mount, the mechanism comprising:

a plurality of positioning features, each positioning feature corresponding to one of the orientations and comprising a recess or a protrusion; and
at least one engagement feature configured to engage the plurality of positioning features to lock the dartboard in the respective orientation, optionally wherein at least one positioning feature or at least one engagement feature is configured to bias the dartboard towards the nearest of the orientations when moving from the second configuration to the first configuration.

11. A mechanism according to claim 6, comprising:

a mounting plate including a plurality of fastener holes for attachment to the dartboard by screws, the mounting plate comprising a shaft extending, in use, away from the dartboard;
a releasable connector for attachment to the mount, the releasable connector being configured to be releasable from the mount without tools, and the releasable connector comprising a bore extending, in use, away from the dartboard; and
a biasing member configured to bias the mechanism towards the first configuration, the biasing member being disposed between a flange formed on of the mounting plate and a flange formed on the releasable connector,
wherein the shaft and the spring are received within the bore, the spring surrounding the shaft;
wherein a flange is provided on the shaft of the mounting plate and contacts a dartboard-distal-side of the biasing member; and
wherein a flange is provided with the bore of the releasable connector and contacts a dartboard-proximal-side of the biasing member.

12. A hub comprising:

a dartboard surface or a connector for weight-bearing connection to a dartboard;
an electrical inlet for receiving electrical power; and
an electrical outlet for providing the electrical power to an ancillary dartboard component.

13. A hub according to claim 12, wherein the electrical outlet comprises a USB connector or a 12V direct current (DC) socket, and

14. A hub according to claim 12 or 13, comprising:
a transformer for transforming the received electrical power to electrical power for supply to the ancillary dartboard component.

15. A hub according to any of claims 12 to 14, comprising:

an integral levelling tool for verifying an orientation of the hub; and/or
damping members on a surface of the hub, the damping members being arranged to reduce transmission of vibrations between the hub and an adjacent object.

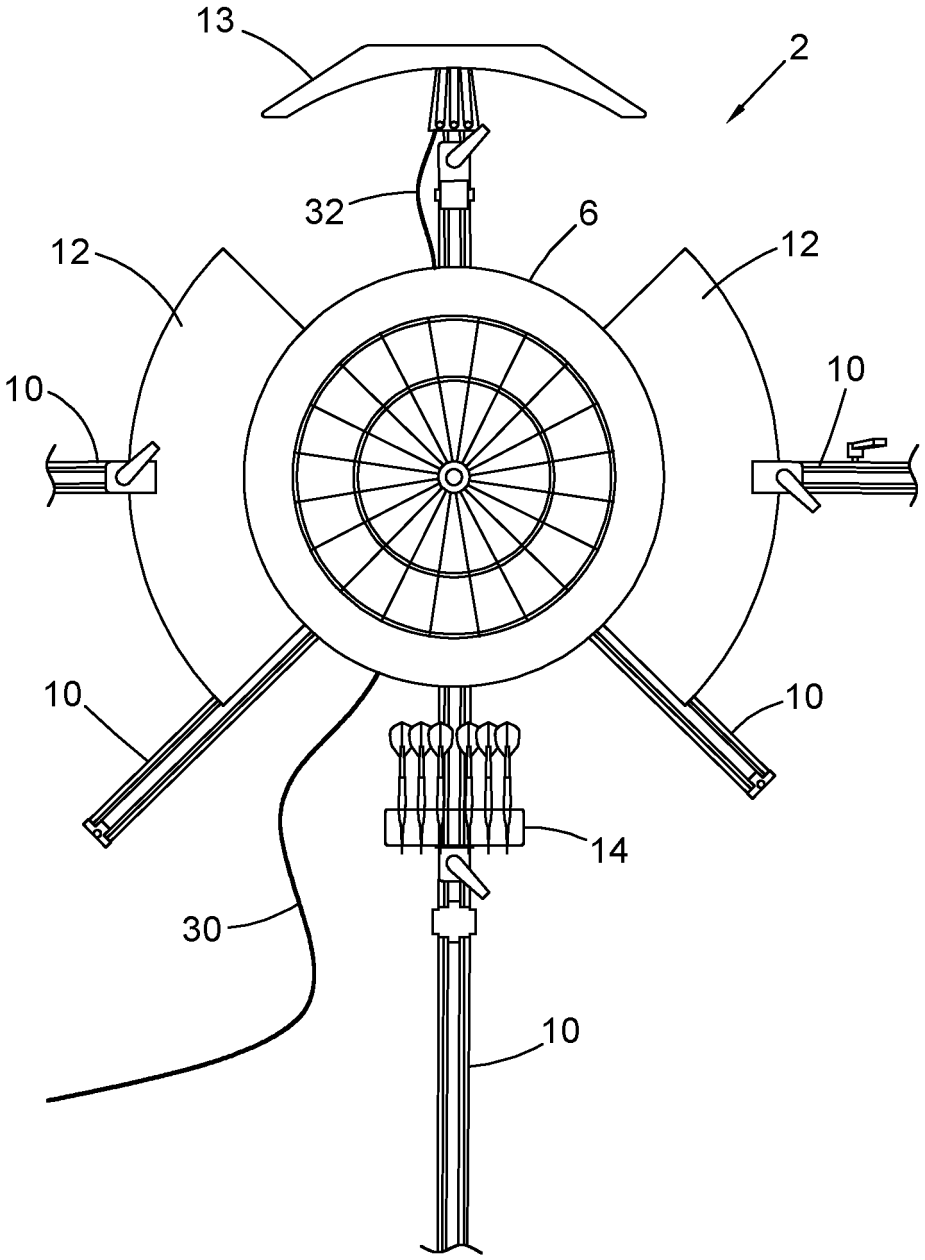

FIG. 1

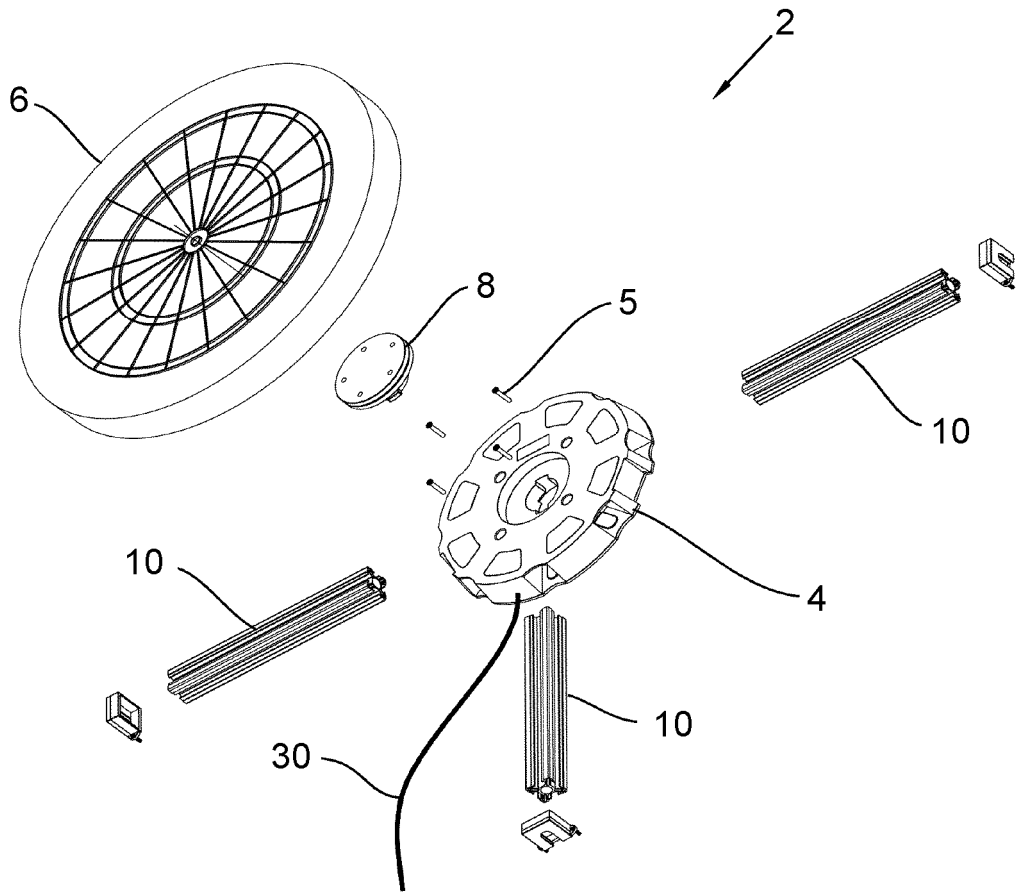

FIG. 2

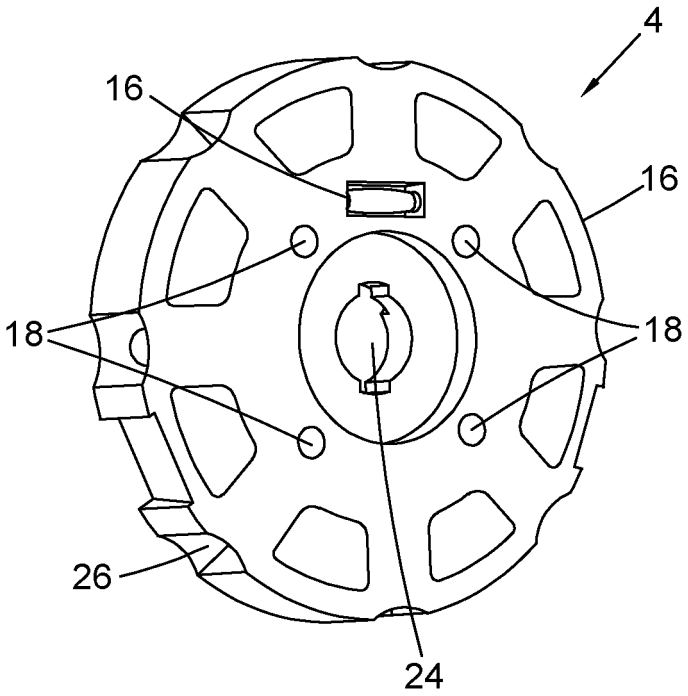

FIG. 3

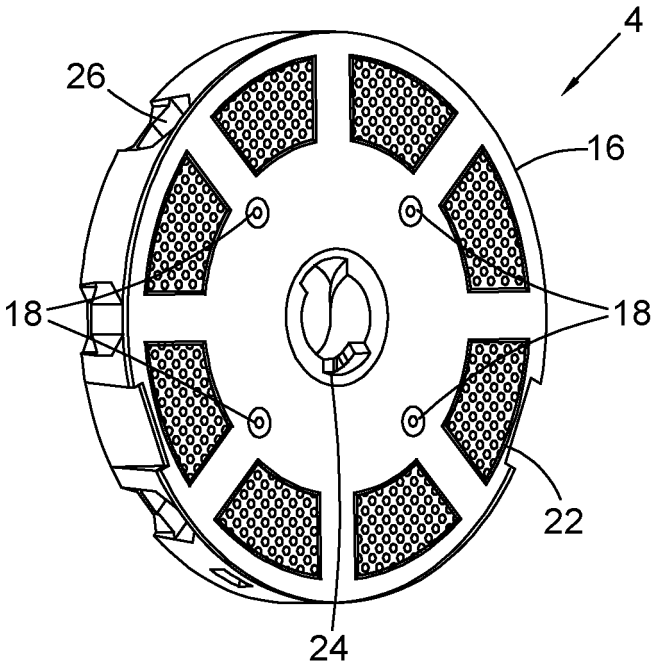

FIG. 4

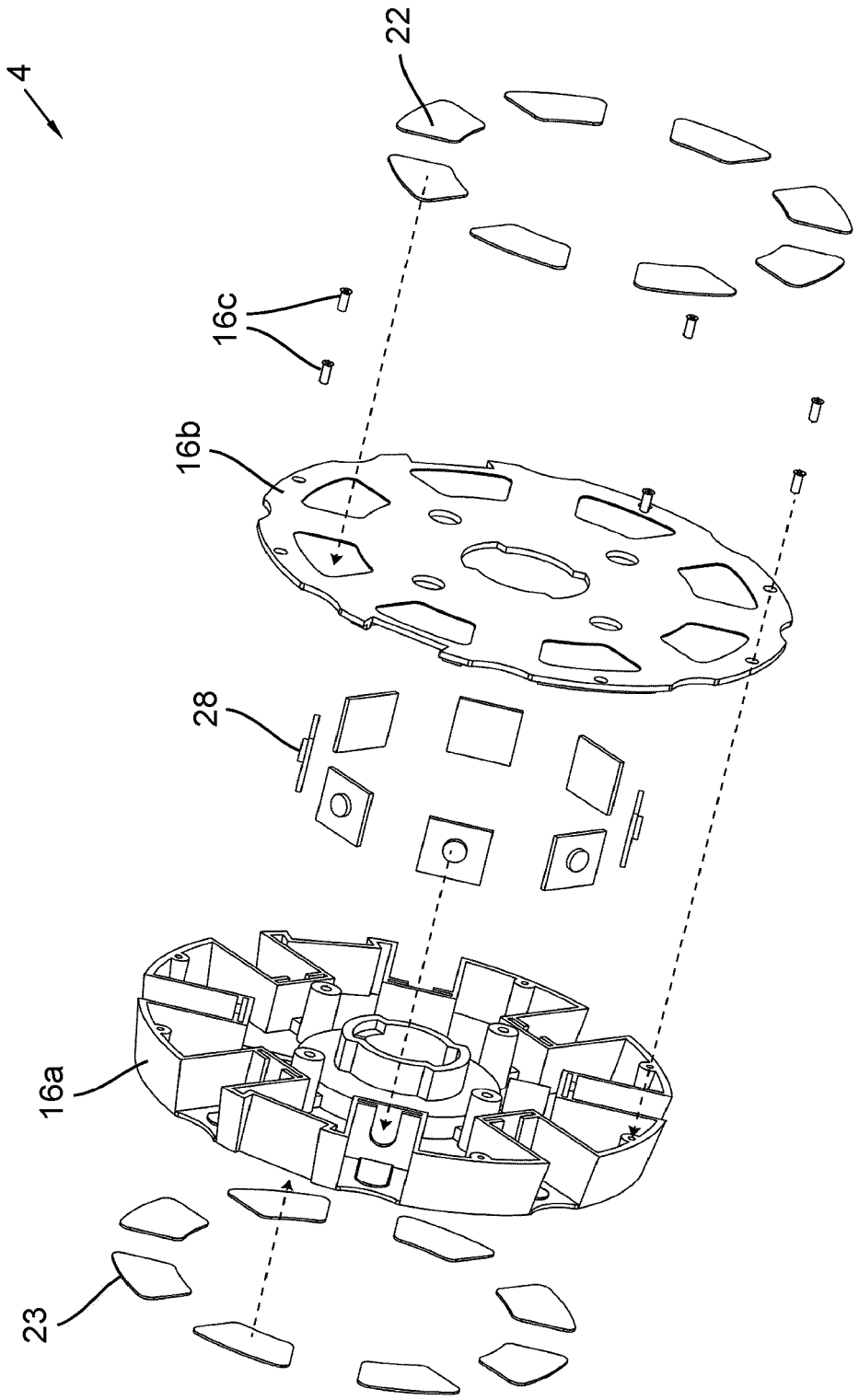

FIG. 5

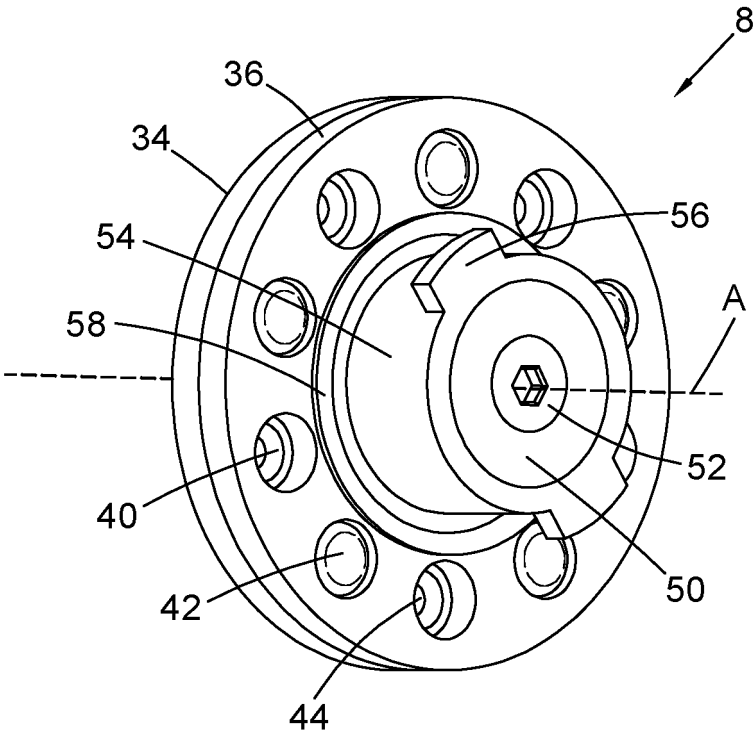
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FIG. 6

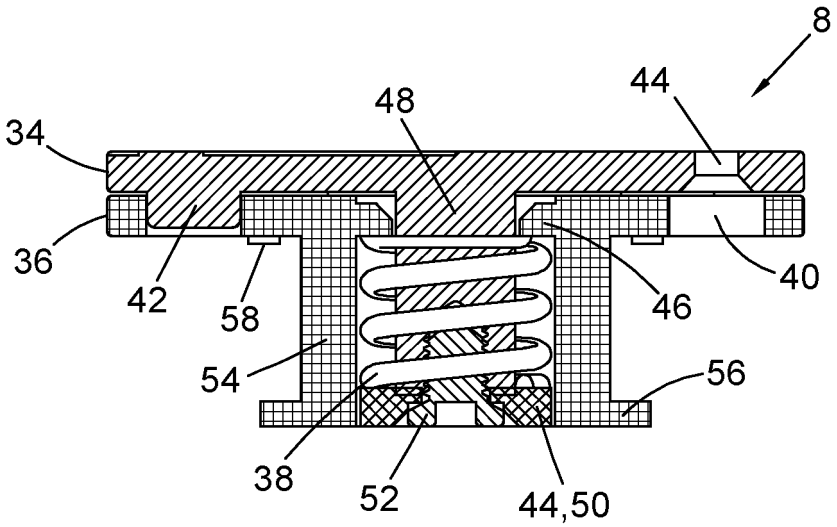
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FIG. 7

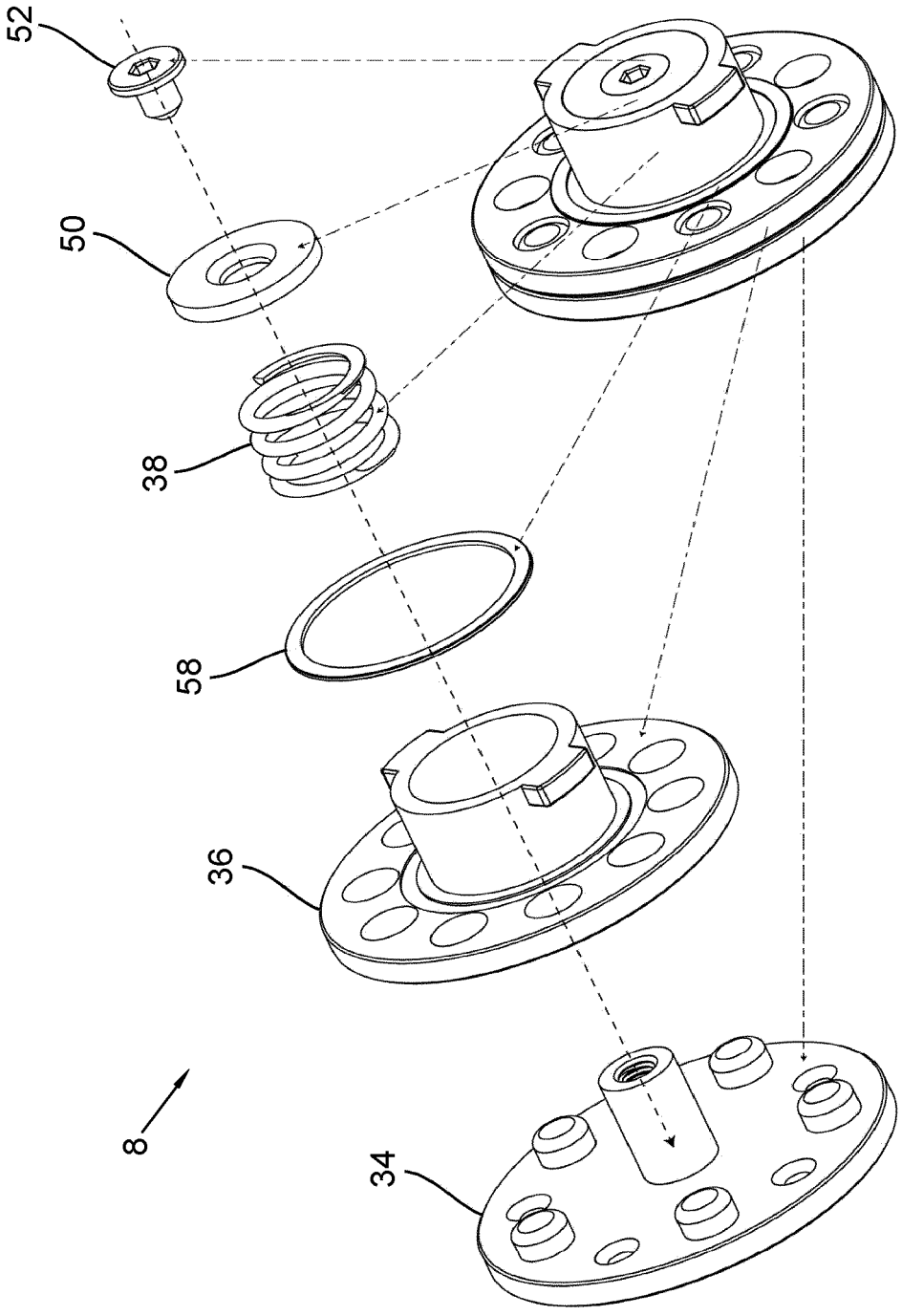

FIG. 8

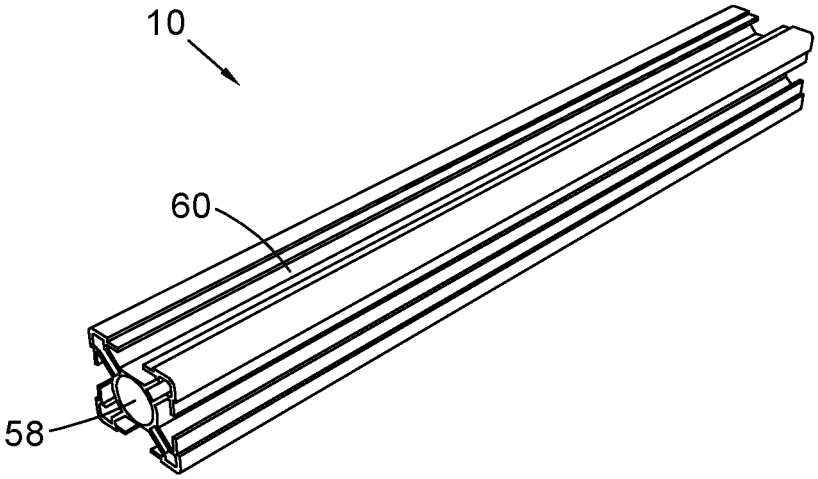

FIG. 9

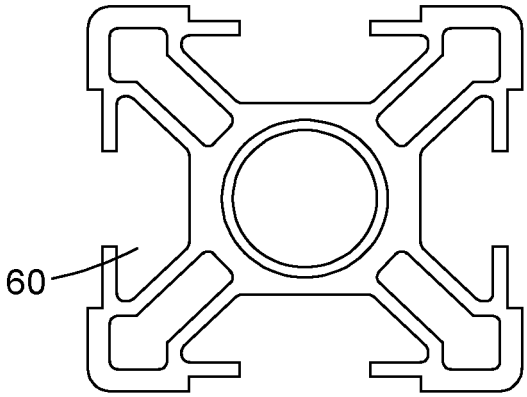

FIG. 10

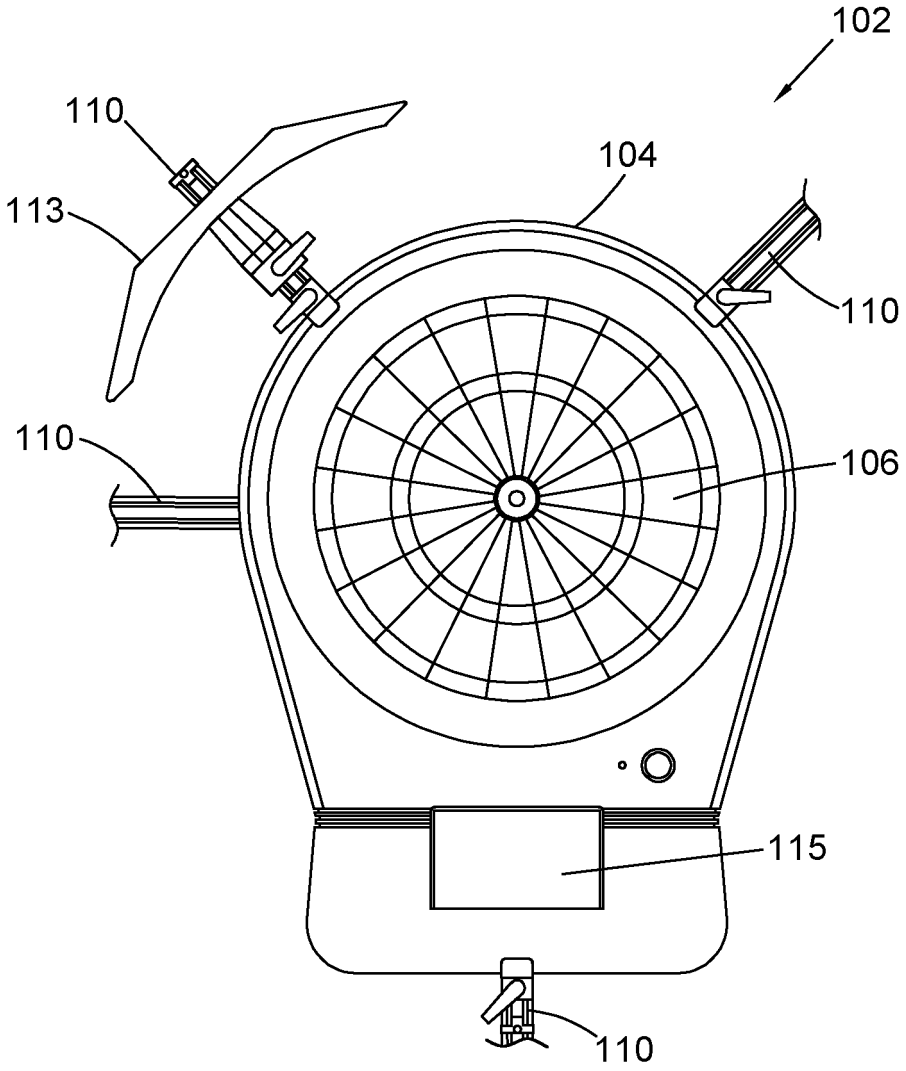

FIG. 11