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(54) **Quick connection for loudspeakers**

Schnellverbindungs Vorrichtung für Lautsprecher

Dispositif d'assemblage rapide pour haut-parleurs

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Description

[0001] This invention relates to a quick connection for loudspeakers, constituted substantially by an annular cylindrical body, either integral with or mounted on to the heavier back part constituting the magnet unit of loudspeakers, bayonet-engageable into a moulded seat which is obtained either directly on the plate of the doors or other suitable parts of the body, or on plastic details of support parts, such as for instance car parts or the like for car radio systems. It is provided with peripheral slanted or spiral flanges having the function of hooking its bayonet connection on said moulded seats.

[0002] The annular body, which engages with the magnet unit of loudspeakers, is applicable to said moulded seat thanks to an axial insertion movement followed by a rotation, which may be performed by hand or with mechanical tools and/or arms. No fasteners such as screws or the like are required.

[0003] Besides joining loudspeakers to their supporting seats with a more rational and functional system, this invention comprises also connections that, once the whole is assembled, ensure a perfect and stable permanence in their correct position, and a perfect realization of electric connections.

[0004] The annular cylindrical body may be also provided with a front part constituted by a peripheral band, with a free lower edge, on which band the front band of the diffusion cone of the loudspeaker engages. The lower edge of said peripheral band is free and participates in the connection getting in pressure relation with the peripheral zone adjoining the hole where said annular body is engaged.

[0005] As is known, the configuration of present loudspeakers includes front structures peripherally arranged relatively to the outlet mouths of the diffusion cones, on which mouths coupling holes are provided for screws, rivets, bolts and the like. Thanks to these devices, the loudspeakers are connected to the spaces where they belong.

[0006] However, such connections, while appearing to be adequate for their task, have some substantial drawbacks. In particular, one can notice that the connection of loudspeakers with their seats is obtained with rigid means, overlooking the possibility of elastic suspensions suitable to prevent the transmission of possible vibrations and/or recoils due to impacts or the like to the diffusion cones, with the obvious risk of damages.

[0007] Another drawback lies in that on site fastening of loudspeakers is rather long and complicated, with screws, rivets and the like for which the operators must utilize adequate equipments, besides wasting time, with obvious economic repercussions on the finished products.

[0008] EP-A-0198 359 discloses a quick connection for loudspeakers provided with a heavier back part or a magnet unit comprising: an annular body assembled to or integral with the heavier back part or the magnet unit

of the loudspeaker; a fixed seat or structure, constituting the housing of the loudspeaker, provided with a through hole in which said loudspeaker is aligned and connected; a system of restrained hooking and locking said annular body to said fixed seat without utilization of complementary fastening means, and electric contacts of the loudspeaker and of a radio system, said contacts being in adherence when the loudspeaker is fastened to the seat, such as defined in the preamble of claim 1.

[0009] Object of this invention is to eliminate the above reported drawbacks.

[0010] According to the present invention, this and other objects which will result from the following description are achieved by a quick connection for loudspeakers wherein the system of restrained hooking and locking the annular body to the fixed seat without utilization of complementary fastening means, comprises:

- slanted or spiral flanges, provided along the peripheral edge of the annular body and openings and engaging parts, provided along the edge of the fixed seat, said slanted or spiral flanges of the annular body being in bayonet connection with the engaging parts of the fixed seat by axial coupling of said flanges to the corresponding openings and partial rotating of the annular body causing said flanges to bayonet-fit into said engaging parts; and
- elastic tangs, provided on the annular body, and corresponding seats, provided on fixed seat; said tangs engaging into said seats when the slanted or spiral flanges of the annular body are in the bayonet connection with the engaging parts of the fixed seat.

[0011] The results achieved by the quick connection for loudspeakers of the present invention are: the connection of the loudspeakers to the supporting structures is applied on the heavier back part, opposite to the diffusion cones and corresponding to the magnet unit; the front part of loudspeakers, i.e. the diffusion cones, is free from rigid connections; the coupling of fasteners with the related and corresponding seats is by axial insertion and following rotation with bayonet-closing, followed by a final connection and by the closing of electric contacts.

[0012] Further advantages are obtained by the utilization of a second part constituted by a continuous front peripheral band, on which the peripheral band of the diffusion cone engages and which comprises a lower edge whose function is to get in touch and pressure-engage with the zone adjoining the hole where said first annular body engages; both parts may integrate a special electric connection: the quick connection is preferably made from plastic material or any other material having antivibration damping characteristics; the whole houses the coupled loudspeaker completely; the quick connection is bayonet-assembleable, either by hand or automatically, with no need for other tools.

[0013] The advantages achieved by this invention lie essentially in that the connection of loudspeakers with

their seats is obtained in a simple, quick, economical and safe way, the diffusion cones are not required to perform as supports; the freedom of the diffusion cones ensures the optimum operation both from the strictly mechanical point of view and from the more important acoustic point of view.

[0014] Further advantages are provided by the fact that the quick connection may be of the universal type, utilisable for corresponding types of loudspeakers and standardized holes to be obtained on the prepared walls of vehicles in general; the connection can be easily fastened in the corresponding spaces by simple alignment and bayonet-hooking rotation, while the possible lower edge gets in touch and pressure relation, with antivibration function, on the peripheral surface adjoining the coupling holes realizable on said prepared walls; the whole operation is quick, simple and economical.

[0015] The invention is described with more details hereafter according to some embodiments proposed by way of non limitative example, with reference to the attached drawings, wherein:

Fig. 1 shows a through-section of a loudspeaker provided with the quick connection constituted by the annular body only,

Fig. 2 shows a front view of the same quick connection of Fig. 1,

Fig. 3 shows a side view of the same quick connection of Fig. 1,

Fig. 4 shows a front view of a loudspeaker seat, prepared for the coupling with the quick connection of Fig. 1,

Fig. 5 shows the detail of the electric contacts provided on the seats of Fig. 4,

Fig. 6 shows the detail of the electric contacts provided on the quick connection of Fig. 1, which contacts can be coupled with those provided in the corresponding seat,

Fig. 7 shows a through-section of the quick connection with the peripheral band on which the supporting means for the assembly can be seen,

Fig. 8 shows a through-section of the same quick connection of

Fig. 7, with the loudspeaker after the assembly,

Fig. 9 shows the view/through-section of the quick connection only, with the front peripheral band already assembled,

Fig. 10 shows the side view of the detail of the annular body, with the slanted or spiral peripheral flanges,

Fig. 11 shows the side view of a second version of the detail of the annular body, with the slanted peripheral flanges,

Fig. 12 shows a front view of a second version of a hole prepared for housing the quick connection complete of the loudspeaker, and

Fig. 13 shows the back view of a quick connection with the front peripheral band wherein a loudspeaker is already inserted.

[0016] The figures illustrate a quick connection for loudspeakers. In a first embodiment, said quick connection is substantially constituted by an annular body (1) so realized as to be assembleable to or substantially integral with the back part (2) and (2') of loudspeaker (7); more specifically, with the back magnet unit and possibly with the lower edge of the restraint basket of the acoustic diffusion cone.

[0017] The annular body (1), in its non integral version, is realized according to the concept of a preferably but not limitedly plastic anchoring joint. With a suitable sizing, it allows to transform or to adapt even the traditional loudspeakers provided with a metal basket, not designed in view of an automatic assembly, into the type of quick connection which is the subject matter of this invention.

[0018] The annular body (1) is provided along its peripheral edge with slanted or spiral flanges (3) which, during the assembly, get first in alignment relation with as many openings (4) obtained along edge (33) of the through hole (5) of seat (6) constituting the housing of a loudspeaker (7), and get afterwards in an engagement relation with parts (8) of the same seat, through a partial rotation of the same annular body (1).

[0019] In practice, a loudspeaker (7) provided with its own annular body (1), either integral or rigidly mounted; gets in engagement and connection relation with a seat (6) by means of an axial coupling of flanges (3) with the corresponding openings (4) and a following partial rotation which causes said flanges to bayonet-fit into the walls of edge (8) of said seat.

[0020] Seat (6), prepared to house loudspeaker (7), may be, for instance, either integral with or mounted on the car plates, such as those constituting the structure of the doors or other parts, or the parts from plastic material or the like constituting the accessory pockets or the back parts.

[0021] Such seat (6) is preferably so shaped as to create a tile (9) acting as a water-barrier, preventing in this way the need of adding an external element to the structures.

[0022] The above connection system has been so designed as to allow an automatic assembly, with no need for screws or other additional fasteners, which may be carried out either by hand by an operator, or mechanically through a robot (10). In the latter case, and by way of example, the mechanized connection system may be provided with dedicated assembly fitting means obtained on the front protection cover (11), which is removed by the same manipulator at the end of the assembly operation. This does not prevent the system from having one or several suitable assembly fitting means at any other point of the above component.

[0023] The connection, according to this invention, assures a perfect flushness of the front part (42) of loudspeaker (7), thanks to the uniformity of the bearing on the fixed peripheral annular body (12), possibly realized from elastic material, the traction force being uniformly distributed across the bearing outer area, because of the

absence of screws or the like, which, on the contrary, concentrate big stresses on individual points.

[0024] This solution ensures less operation criticality and the anchoring of the loudspeakers in the heaviest point, corresponding to zone (2) of the magnet unit, ensuring the absence of projecting weights.

[0025] This last condition is very important for the absorption and/or capacity of supporting shocks, even violent, as happens when one closes the doors, or the like.

[0026] At the end of the rotation of the bayonet-connection, elastic tangs (13) engage into corresponding seats (21) obtained on seat (6). Such hookings constitute the locking and non-return system of the loudspeakers, so that their positioning is final and assured.

[0027] Besides, such elastic tangs (13,) when they are not engaged in the corresponding seats (21), constitute the system which prevents the unhooking of lid (11); in fact, during the assembly stage preceding the engagement position between the elastic tang (13) and seat (21), the elastic tang (13) is to be considered as resting on the plate. Such situation causes a protrusion of its end part, and an associated interference situation, with a possible rotatory movement of lid (11), preventing in practice its removal. To sum up, if the elastic tang (13), is not inside seat (21), lid (11) cannot be removed; this is a clear indication for the operator that the assembly has been poorly done and has therefore to be completed.

[0028] In its turn, lid (11), if not removed, prevents the assembly of the finishing cover of the loudspeaker, as special interference zones have been created between the two parts on said lid.

[0029] The elastic tangs (13) can be frontally unhooked from their seats (21) to allow the possible disassembly operations. The annular body (1), besides the already expounded characteristics, comprises a peripheral end piece (14) on which a stirrup (15) engages which comprises the electric contacts (16) of loudspeaker (7).

[0030] In the axial insertion, stirrup (15) is caused to enter the central hole (5) of seat (6); after which, in the sequential closing rotation (15), also stirrup (15) rotates until it gets in adherence relation with a second stirrup (18) located on an end piece (19) which originates from the surface of seat (6). Electric contacts (20) are provided also on the second stirrup (18), which connect with the wires of the radio system. The adherence between stirrups (15) and (18) causes also the adherence of the electric contacts (16) and (20), which close the whole circuit.

[0031] The floating contact connection is suitable to accept the two movements which take place during the assembly operation. On said stirrups an additional contact is provided for the end-of-assembly electric functional control, by which it is possible to test directly the correctness of the assembly-electric connection operation.

[0032] In a second embodiment, the quick connection for loudspeakers comprises, besides the above cylindrical annular body (1), a continuous peripheral front band (23).

[0033] The annular body (1) and the peripheral band

(23) are integral to one another and connect coaxially through an intermediate truncated-cone-shaped structure (24), which can substantially replace the restraint basket of the acoustic diffusion cone utilized by the current art.

[0034] While the annular body (1) connects, as said, to the back part (2) of a loudspeaker (7), the front peripheral part (23') of said band (23) engages with the front strip (28) of the diffusion cone (29) of said loudspeaker (7).

[0035] On the external peripheral part of the annular body (1), the peripheral slanted or spiral flanges (3) are always present, and said body configured as described above constitutes always the real loadbearing structure of all the parts constituting the loudspeaker (7) and the means by which said loudspeaker is connectable to a support (110).

[0036] Therefore, for the connection of the annular body (1) it still suffices that a hole (5) with an edge (33) moulded together with openings (4) be present on the fixed structure.

[0037] During the assembly, the spiral flanges (3) get in alignment relation with as many openings (4), which afterwards get in engagement and connection relation with walls (8) of edge (33) of hole (5) by a partial rotation of the basket. The spiral of flanges (3) produces a pressure-closing of the bayonet-fitting type.

[0038] Alternatively, in a further embodiment the connecting flanges or teeth (3) may be obtained directly on the peripheral part of the magnet unit (2). However, in this case, the configuration of the central body (1) will be obviously without the annular part supporting special flanges (3), being limited to the part connected to the magnet unit (2). In the same way, the corresponding coupling hole (5) obtained on support (110) will be adequate to the configuration of said magnet unit provided with spiral flanges (3).

[0039] In any case, in the bayonet closing rotation there take places, as is evident, a partial axial shifting of the quick connection relatively to the support (110): in such shifting, the lower free edge (26) of the peripheral band (23) gets in a pressure-engagement relation against wall (27) of support (110). The lower edge (26) may be flat or blade-beveled or also it may comprise an elastic gasket (38). In any case, the lower edge (26), with or without gasket (38), engages along all of its development against said wall (27) of support (110), and constitutes an elastic lock of the quick connection.

[0040] Said lock prevents the onset of possible vibrations and/or the so-called acoustic short-circuits; namely, it prevents the air stressed by the back part of the membrane from interfering with the air stressed by the front part of the same, avoiding phenomena of cancellation of the acoustic signals generated or the formation of interferences that might alterate said signals.

[0041] The same lower edge (26) which gets in touch with wall (27) and has thinning or also deformable elastic tangs, has the function of damping the vibrations due to

possible deformations of the system.

[0042] The continuous peripheral front band (23) with the associated lower edge (26) has also the function of protecting the membrane of loudspeaker (7), the diffusion cone (29) and the electric contacts (16) (20), which are preferably, but not limitatively, obtained on stirrups (30) and (31) located, respectively, on the intermediate structure (24) of the quick connection and on wall (27) of the fixed support (110).

[0043] At the end of the bayonet locking rotation, contacts (16) (20) get in touch and engage with one another, connecting electrically and allowing the system to operate.

[0044] The protection of loudspeaker (7) as a whole is completed by a front cover (32), which engages, through peripheral teeth (33), along the circumferential front seat (34) of the peripheral band (23). Also the connection of cover (32) with band (23) is substantially of the bayonet type, with axial alignment and subsequent rotation.

[0045] Once the assembly and workings have ended, cover (32) is removable by counter-rotation and axial slipping off.

[0046] Alternatively, a finishing trim or grid (32') may be applied to the cover 32 in the same seat 34 and with the same rotation system, which trim or grid has a diameter greater than the system, forming a ledge relatively to the door panel of vehicles or the like.

[0047] Such grid 32' is integral with the system or applied subsequently.

[0048] The quick connection has a further advantage in that loudspeaker (7) inside it is more uniformly supported, both in the front and the back part, contrary to the present configurations.

[0049] The quick connection, configured as described above, may be of the universal type with respect to holes (5) to be made in the structure. In fact, said holes may be standardized, simplifying the moulding operations of supports (110), such as the doors of vehicles or the like. To this aim, the back part of the connection is realized with standard external dimensions, while the middle and front part are realized with dimensions suitable for the restraint of the various models and/or types of loudspeakers.

[0050] The so designed quick connection, comprising the elastic tangs (13) and the electric connections (16), ensures a perfect and quick assembly of the whole, excluding possible human errors during the assembly stages.

[0051] Alternatives and variations are possible within the scope of the appended claims.

Claims

1. A quick connection for loudspeakers provided with a heavier back part or a magnet unit (2) comprising:

- an annular body (1) assembled to or integral

with the heavier back part or the magnet unit (2) of the loudspeaker (7),

- a fixed seat (6) or structure (110), constituting the housing of the loudspeaker (7), provided with a through hole (5) in which said loudspeaker (7) is aligned and connected,

- a system of restrained hooking and locking said annular body (1) to said fixed seat (7) without utilization of complementary fastening means, and

- electric contacts (16) of the loudspeaker (7) and (20) of a radio system, said contacts (16, 20) being in adherence when the loudspeaker (7) is fastened to the seat (6),

characterised in that the system of restrained hooking and locking the annular body (1) to the fixed seat (7) comprises:

- slated or spiral flanges (3), provided along the peripheral edge of the annular body (1), and openings (4) and engaging parts (8), provided along the edge (33) of the fixed seat (6); said slated or spiral flanges (3) of the annular body (1) being in bayonet connection with the engaging parts (8) of the fixed seat (6) by axial coupling of said flanges (3) to the corresponding openings (4) and partial rotating of the annular body (1) causing said flanges (3) to bayonet-fit into said engaging parts (8); and

- elastic tangs (13), provided on the annular body (1), and corresponding seats (21), provided on fixed seat (6); said tangs (13) engaging into said seats (21) when the slated or spiral flanges (3) of the annular body (1) are in the bayonet connection with the engaging parts (8) of the fixed seat (6).

2. The quick connection for loudspeakers according to claim 1, **characterised in that** the fixed seat (6) is provided with a tile (9) acting as a water-barrier.

3. The quick connection for loudspeakers according to claim 1 or 2, **characterised in that** the loudspeaker (7) is provided with a lid (11) and its removal is prevented when the elastic tangs (13) are outside the corresponding seats (21).

4. The quick connection for loudspeakers according to anyone of the preceding claims, **characterised in that** the annular body (1) is provided with a first stirrup (15), including the electric contacts (16) of the loudspeaker (7), supported by a peripheral end piece (14); and, correspondingly, the fixed seat (6) is provided with a second stirrup (18), including the electric contacts (20) of the radio system, supported by an end piece (19); the first stirrup (15) being in adherence relation with the second stirrup (18), causing

the adherence between the electric contacts (1B, 20) closing the electric circuit, when the slated or spiral flanges (3) of the annular body (1) are in bayonet connection with the engaging parts (8) of the fixed seat (6).

5. The quick connection for loudspeakers according to claim 4, **characterised in that** the first (15) and second (18) stirrups are provided with additional electrical contacts for the end-of-assembly electric connection control. 10
6. The quick connection for loudspeakers according to anyone of the preceding claims, **characterised in that** the annular body (1) comprises a continuous peripheral front band (23) connected coaxially to said body (1) through an intermediate truncated-cone-shaped structure (24); said peripheral front band (23) having a front peripheral part (23'), engaging a front strip (28) of the diffusion cone (29) of the loudspeaker (7), and a lower edge (26) engaging under pressure, optionally with an interposed gasket (38), the wall (27) of the support (110). 15
7. The quick connection for loudspeakers according to claim 6, **characterised in that** the lower edge (26) is thinned or provided with deformable elastic tangs or with an elastic gasket (38). 20
8. The quick connection for loudspeakers according to anyone of the preceding claims from 6 to 7, **characterised in that** the electric contacts (16) of the loudspeaker (7) are supported by a first stirrup (30) located on the intermediate truncated-cone-shaped structure (24), and the electric contacts (20) of the radio system are supported by a second stirrup (31) located on the wall (27) of the support (110). 25
9. The quick connection for loudspeakers according to anyone of the preceding claims from 6 to 8, **characterised in that** the loudspeaker (7) is provided with a front cover (32) having peripheral teeth (37) connected along the circumferential front seat (34) of the peripheral front band (23) by a bayonet-type connection. 30
10. The quick connection for loudspeakers according to anyone of the preceding claims from 6 to 8, **characterised in that** the loudspeaker (7) is provided with a finishing trim or grid cover (32') applied to the cover (32) and having a diameter greater than the loudspeaker system and connected to the peripheral front band (23) by a bayonet-type connection. 35

Patentansprüche

1. Schnellverbindung für Lautsprecher, welche mit ei-

nem schwereren Rückteil oder einer Magneteinheit (2) versehen sind, umfassend:

- einen ringförmigen Körper (1), der mit dem schwereren Rückteil oder der Magneteinheit (2) des Lautsprechers (7) zusammengebaut oder in diesem integriert ist,
- einen festen Sitz (6) oder Struktur (110), welche(r) das Gehäuse des Lautsprechers (7) bildet, der mit einer Durchgangsöffnung (5) versehen ist, in welcher der Lautsprecher (7) ausgerichtet und angefügt ist,
- ein System des zurückhaltenden Einhängens und Verriegelns des ringförmigen Körpers (1) an dem festen Sitz (7) ohne Verwendung von komplementären Befestigungsmitteln, und
- elektrische Kontakte (16) des Lautsprechers (7) und (20) eines Radiosystems, wobei die Kontakte (16, 20) aneinander anhängen, wenn der Lautsprecher (7) in dem Sitz (6) befestigt ist,

dadurch gekennzeichnet, dass das System des zurückhaltenden Einhängens und Verriegelns des ringförmigen Körpers (1) an dem festen Sitz (7) umfasst:

- abgeschrägte oder spiralförmige Flansche (3), die entlang der Umfangskante des ringförmigen Körpers (1) vorgesehen sind, und Öffnungen (4) und Eingriffsteile (8), die entlang der Kante (33) des festen Sitzes (6) vorgesehen sind; wobei die abgeschrägten oder spiralförmigen Flansche (3) des ringförmigen Körpers (1) in Bajonettverbindung mit den Eingriffsteilen (8) des festen Sitzes (6) durch axiales Koppeln der Flansche (3) an die entsprechenden Öffnungen (4) und teilweises Rotieren des ringförmigen Körpers (1) in Bajonettverbindung stehen, was die Flansche (3) veranlasst, in den Eingriffsteilen (8) Bajonett-gepasst zu sein; und
- elastische Angeln (13), die auf dem ringförmigen Körper (1) vorgesehen sind, und entsprechende Sitze (21), die auf dem festen Sitz (6) vorgesehen sind; wobei die Angeln (13) in die Sitze (21) eingreifen, wenn die abgeschrägten oder spiralförmigen Flansche (3) des ringförmigen Körpers (1) in der Bajonettverbindung mit den Eingriffsteilen (8) des festen Sitzes (6) stehen.

2. Schnellverbindung für Lautsprecher gemäß Anspruch 1, **dadurch gekennzeichnet, dass** der feste Sitz (6) mit einer Platte (9) versehen ist, die als eine Wasserbarriere wirkt.
3. Schnellverbindung für Lautsprecher gemäß Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** der Lautsprecher (7) mit einem Deckel (11) versehen

ist und seine Entfernung verhindert wird, wenn die elastischen Angeln (13) außerhalb der entsprechenden Sitze (21) sind.

4. Schnellverbindung für Lautsprecher gemäß irgendeinem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der ringförmige Körper (1) mit einem ersten Bügel (15) versehen ist, welcher die elektrischen Kontakte (16) des Lautsprechers (7) enthält, durch ein Umfangs-Endstück (14) getragen wird; und entsprechend der feste Sitz (6) mit einem zweiten Bügel (18) versehen ist, welcher die elektrischen Kontakte (20) des Radiosystems enthält, durch ein Endstück (19) getragen wird; wobei der erste Bügel (15) in anhängender Relation zu dem zweiten Bügel (18) steht, was das Anhängen zwischen den elektrischen Kontakten (16, 20), welche den elektrischen Schaltkreis schließen, bewirkt, wenn die abgeschrägten oder spiralförmigen Flansche (3) des ringförmigen Körpers (1) in Bajonettverbindung mit den Eingriffsteilen (8) des festen Sitzes (6) stehen.
5. Schnellverbindung für Lautsprecher gemäß Anspruch 4, **dadurch gekennzeichnet, dass** die ersten (15) und die zweiten (18) Bügel mit zusätzlichen Kontakten für die Ende-des-Zusammenbaus-Elektrikverbindungskontrolle versehen sind.
6. Schnellverbindung für Lautsprecher gemäß irgendeinem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der ringförmige Körper (1) ein kontinuierliches Umfangsfrontband (23) umfasst, welches koaxial zu dem Körper (1) durch eine zwischenliegende Struktur (24) in der Form eines Kegelstumpfes verbunden ist, wobei das Umfangsfrontband (23) einen Umfangsfrontteil (23') aufweist, der in einem Frontstreifen (28) des Diffusionskonus (29) des Lautsprechers (7) eingreift, und eine untere Kante (26), die unter Druck optional mit einer zwischenliegenden Dichtung (38) in die Wand des Trägers (110) eingreift.
7. Schnellverbindung für Lautsprecher gemäß Anspruch 6, **dadurch gekennzeichnet, dass** die untere Kante (26) verdünnt oder mit deformierbaren elastischen Angeln oder mit einer elastischen Dichtung (38) versehen ist.
8. Schnellverbindung für Lautsprecher gemäß irgendeinem der vorhergehenden Ansprüche 6 bis 7, **dadurch gekennzeichnet, dass** die elektrischen Kontakte (16) des Lautsprechers (7) durch einen ersten Bügel (30) getragen werden, der sich auf der zwischenliegenden kegelstumpfförmigen Struktur (24) befindet, und die elektrischen Kontakte (20) des Radiosystems durch einen zweiten Bügel (31) getragen werden, der sich auf der Wand (27) des Trägers

(110) befindet.

9. Schnellverbindung für Lautsprecher gemäß irgendeinem der vorhergehenden Ansprüche 6 bis 8, **dadurch gekennzeichnet, dass** der Lautsprecher (7) mit einer Frontabdeckung (32) versehen ist, welche umfängliche Zähne (37) aufweist, die entlang des Umfangs-Frontsitzes (34) des Umfangsfrontbandes (23) durch eine bajonettartige Verbindung verbunden ist.
10. Schnellverbindung für Lautsprecher gemäß irgendeinem der vorhergehenden Ansprüche 6 bis 8, **dadurch gekennzeichnet, dass** der Lautsprecher (7) mit einer Abschluss-Verkleidung oder Gitterabdeckung (32') versehen ist, die an die Abdeckung (32) angefügt ist, und einen Durchmesser aufweist, der größer als das Lautsprechersystem ist und an dem Umfangsfrontband (23) durch eine bajonettartige Verbindung angeschlossen ist.

Revendications

1. Raccord rapide pour haut-parleur à partie arrière alourdie ou élément magnétique (2), ledit raccord rapide comprenant :

- un corps annulaire (1) assemblé ou formé d'un seul bloc avec la partie arrière alourdie ou l'élément magnétique (2) du haut-parleur (7),
- un siège, ou support, fixe, (6, 110) d'accueil du haut-parleur (7), comportant un trou traversant (5) dans lequel ledit haut-parleur (7) s'aligne et se connecte,
- un dispositif de maintien à crochet et verrou pour connecter ledit corps annulaire (1) avec ledit siège fixe (6) sans utiliser de moyens de fixation complémentaires,
- et un ensemble de contacts électriques (16, 20), prévus respectivement sur le haut-parleur (7) et sur un système radiophonique, lesdits contacts (16, 20) étant en contact entre eux lorsque le haut-parleur (7) est fixé au siège (6),

caractérisé en ce que le dispositif de maintien du corps annulaire (1) avec le siège fixe (6) comprend :

- des saillies inclinées ou en forme de spirale (3) placées sur le bord périphérique du corps annulaire (1), des ouvertures (4), et éléments d'engagement (8) placés le long du bord (33) du siège fixe (6), lesdites saillies (3) inclinées ou en forme de spirale du corps annulaire (1) coopérant avec les éléments d'engagement (8) du siège fixe (6) par couplage axial desdites saillies (3) avec les ouvertures correspondantes (4) et rotation partielle du corps annulaire (1) de ma-

- nière à obtenir un assemblage de type baïonnette dans lesdits éléments d'engagement (8), - ainsi que des ergots élastiques (13) placés sur le corps annulaire (1) et des sièges correspondants (21) placés sur le siège fixe (6), lesdits ergots (13) étant en prise avec lesdits sièges (21) lorsque les saillies (3) inclinées ou en forme de spirale du corps annulaire (1) sont en relation de type baïonnette avec les éléments d'engagement (8) du siège fixe (6).
2. Raccord rapide selon la revendication 1, **caractérisé en ce que** le siège fixe (6) est pourvu d'un élément (9) de protection contre l'humidité.
 3. Raccord rapide selon l'une ou l'autre des revendications 1 et 2, **caractérisé en ce que** le haut-parleur (7) est muni d'un couvercle (11) dont le retrait est rendu impossible lorsque les ergots élastiques (13) ne sont pas engagés dans les sièges correspondants (21).
 4. Raccord rapide selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le corps annulaire (1) est équipé d'un premier étrier (15) incluant les contacts électriques (16) du haut-parleur (7) et supporté par une pièce terminale périphérique (14), et **en ce que**, de manière correspondante, le siège fixe (6) est pourvu d'un second étrier (18) incluant les contacts électriques (20) du dispositif radiophonique et porté par une pièce terminale (19), le premier étrier (15) adhérant au second étrier (18) de manière à mettre en contact les contacts électriques (16, 20) qui ferment alors le circuit électrique lorsque les saillies (3) inclinées ou en forme de spirale du corps annulaire (1) sont en relation de type baïonnette avec les éléments d'engagement (8) du siège fixe (6).
 5. Raccord rapide selon la revendication 4, **caractérisé en ce que** les premier et second étriers (15, 18) comportent des contacts électriques additionnels pour le contrôle de la connexion électrique après assemblage.
 6. Raccord rapide pour haut-parleur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le corps annulaire (1) comprend une bande périphérique avant continue (23) connectée coaxialement sur ledit corps (1) au moyen d'une structure (24) intermédiaire de forme tronconique, ladite bande périphérique avant (23) comportant une partie périphérique avant (23') coopérant avec une bande avant (28) du cône de diffusion (29) du haut-parleur (7), et un bord inférieur (26) coopérant à pression, facultativement avec interposition d'un joint (38), avec la paroi (27) du support (110).
 7. Raccord rapide selon la revendication 6, **caractérisé en ce que** le bord inférieur (26) est aminci, ou pourvu d'ergots élastiques déformables ou d'un joint élastique (38).
 8. Raccord rapide selon l'une ou l'autre des revendications 6 ou 7, **caractérisé en ce que** les contacts électriques (16) du haut-parleur (7) sont portés par un premier étrier (30) placé sur la structure intermédiaire (24) de forme tronconique, et **en ce que** les contacts électriques (20) du système radiophonique sont portés par un second étrier (31) placé sur la paroi (27) du support (110).
 9. Raccord rapide selon l'une quelconque des revendications 6 à 8, **caractérisé en ce que** la haut-parleur (7) comporte un couvercle avant (32) muni de dents périphériques (37) connectées au siège avant (34) périphérique de la bande périphérique avant (23) par un dispositif de type baïonnette.
 10. Raccord rapide selon l'une quelconque des revendications 6 à 8, **caractérisé en ce que** le haut-parleur (7) comporte un volet de finition ou un couvercle (32') grillagé, appliqué sur le couvercle (32) et ayant un diamètre supérieur à celui du haut-parleur, et connecté à la bande périphérique avant (23) par un dispositif de type baïonnette.

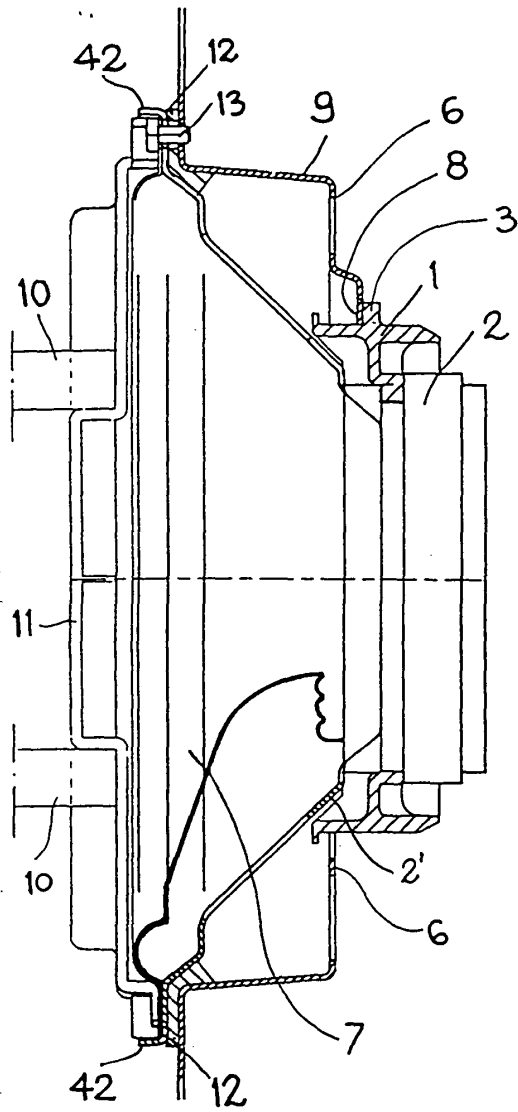


FIG. 1

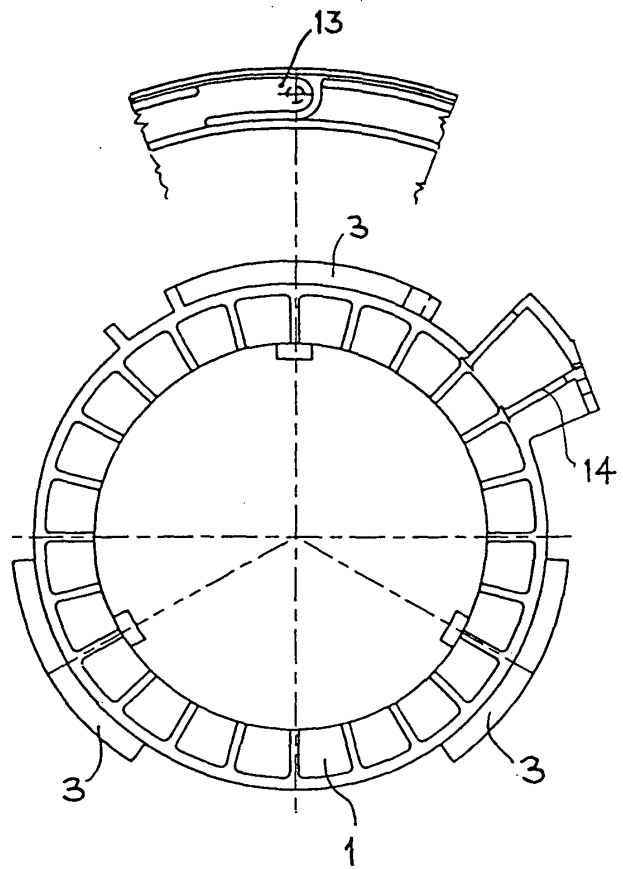


FIG. 2

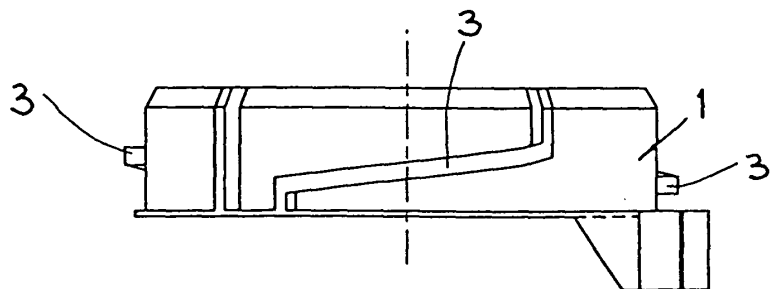
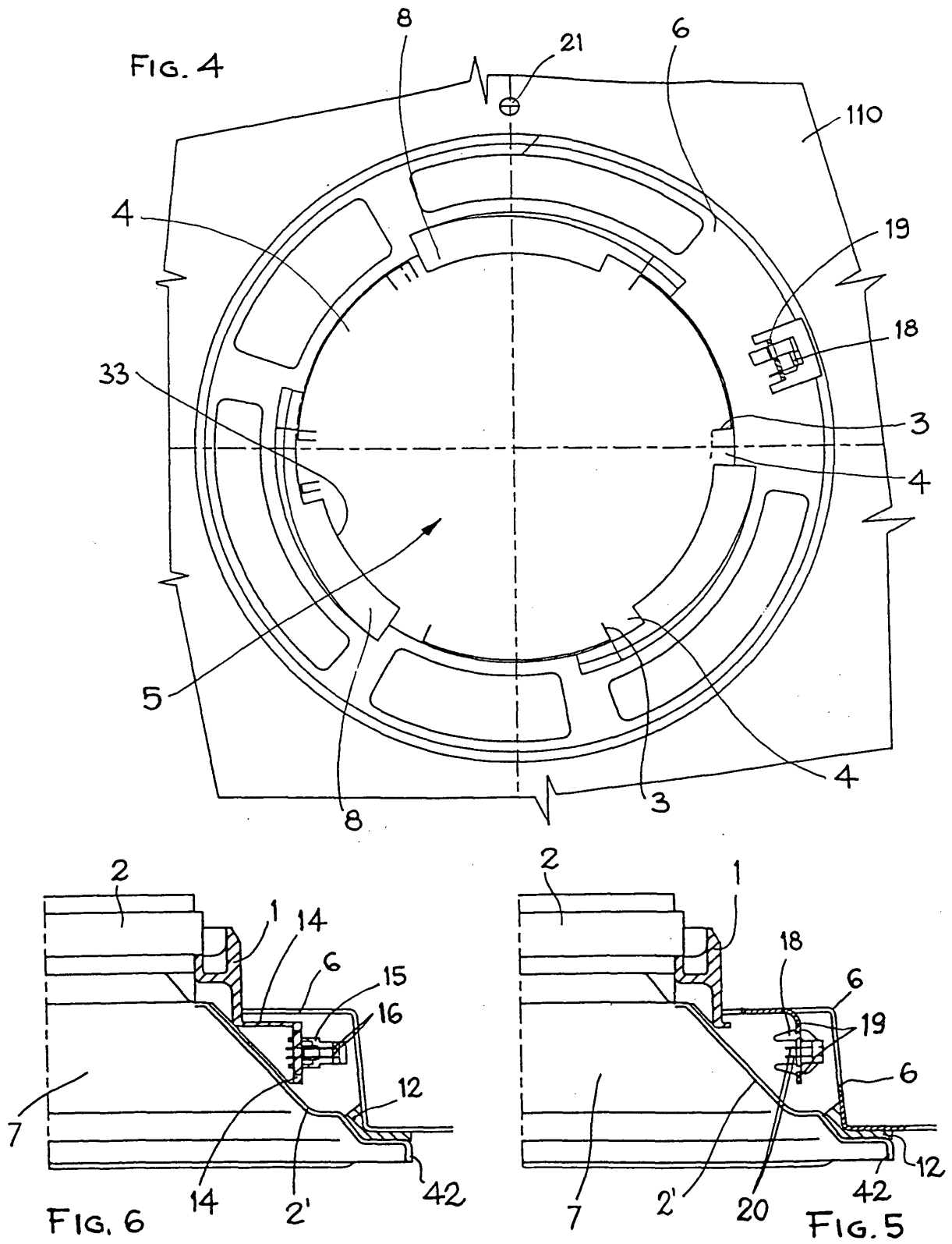
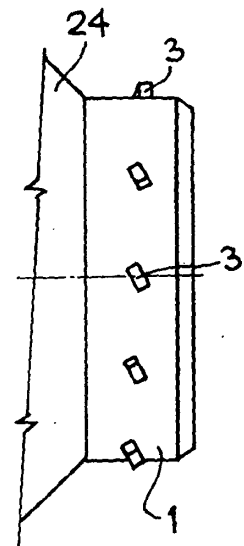
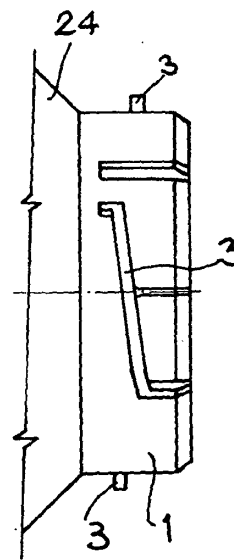
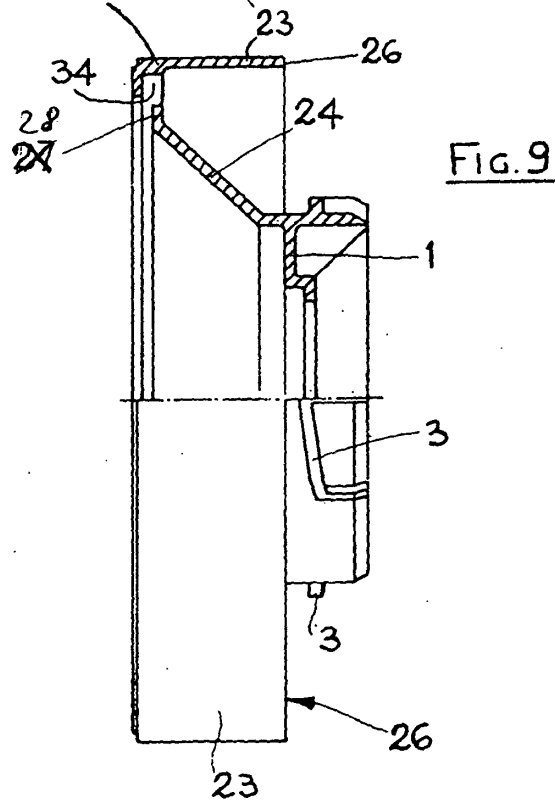
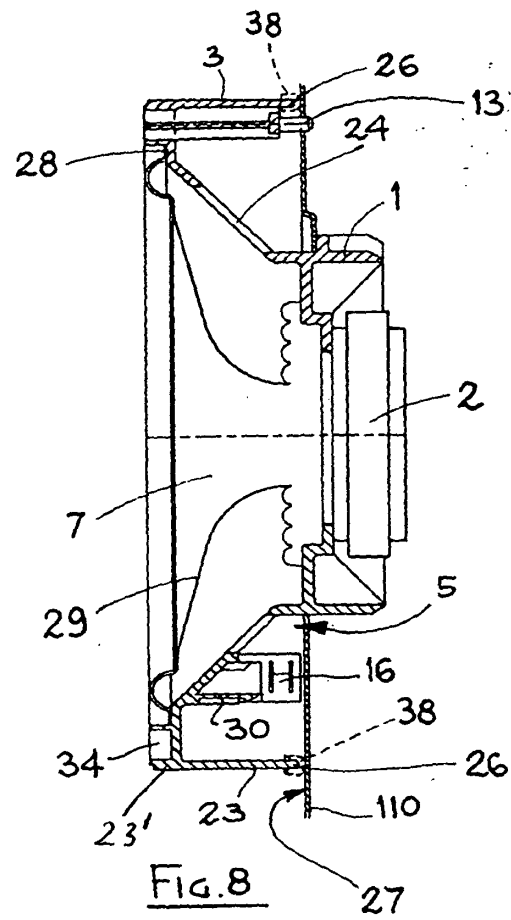
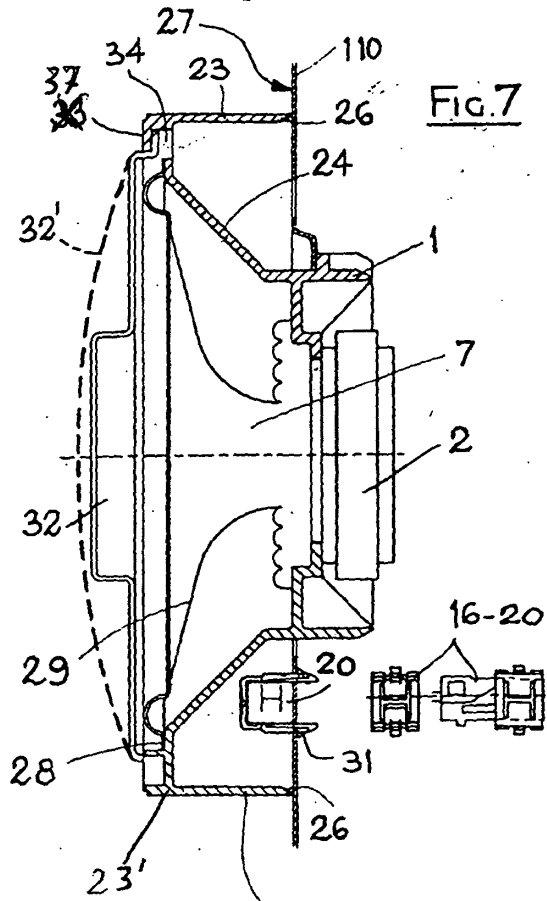
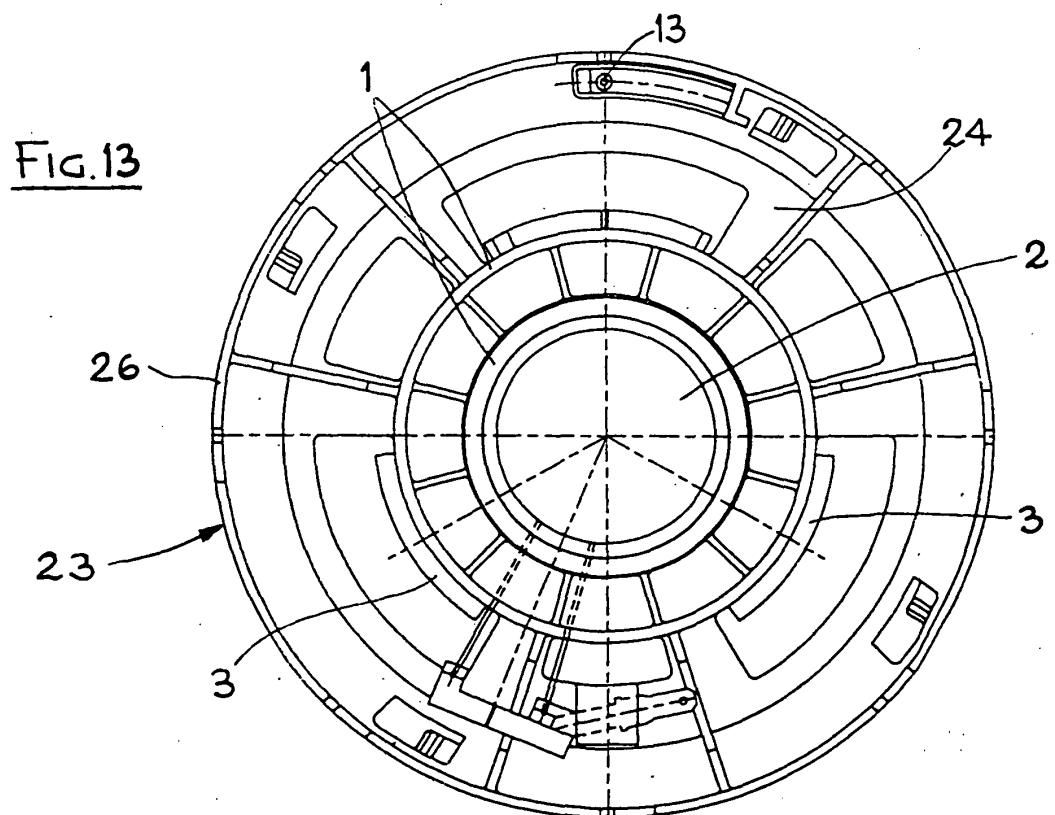
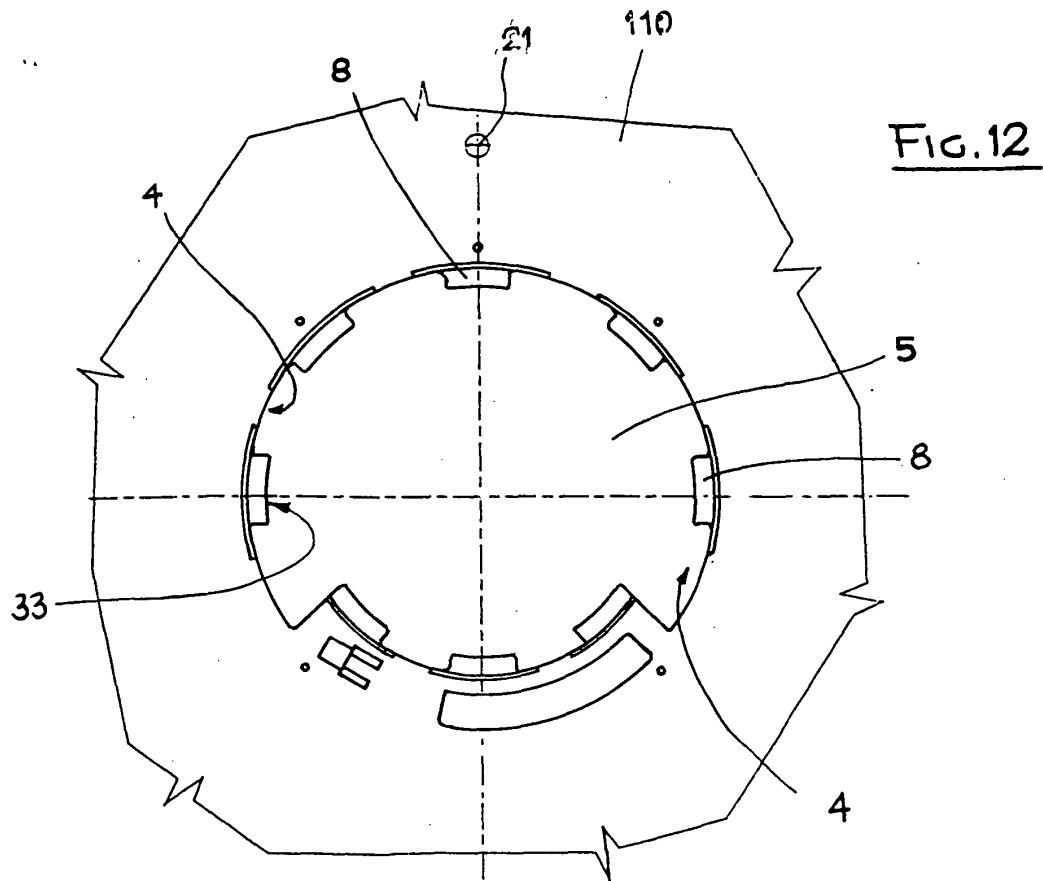


FIG. 3







REFERENCES CITED IN THE DESCRIPTION

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