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(54) Multi-purpose rotating communication device

(57) The invention relates to a multi-purpose rotating communication device which contains a firmly fixed supporting frame, an information-carrying unit connected to the supporting frame in such a way that it is able to rotate, a propulsion unit inserted between the supporting frame and the information-carrying unit, and furthermore, a central unit for the control of the operation of the propulsion unit, the propulsion unit has a driving part-unit, and a drive transfer structure connected to the driving part-unit, the supporting frame has a cable channel, the driving part-unit is connected to the central unit with the help of the connection cables situated in the cable channel.

The characteristic feature of the invention is that the information-carrying unit (20) is constructed of two or more sets of display members (21, 22, 23) that can move independently, at least some of the display members (21, 22, 23) have independent propulsion units (30) attached, which are separately connected to the central unit (40).

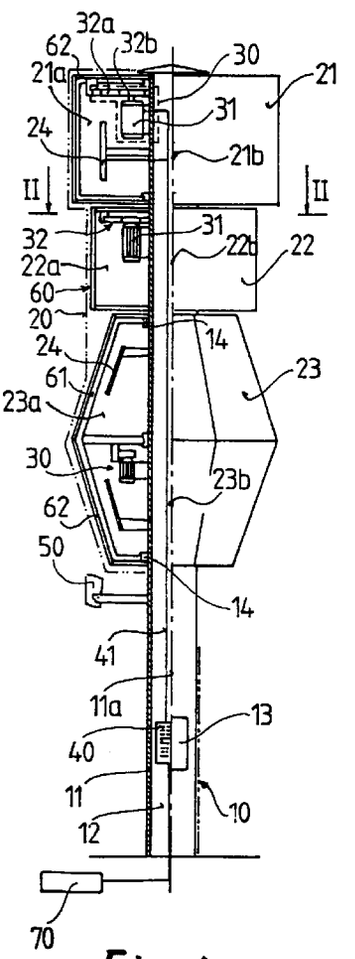

Fig. 1

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Description

[0001] The subject of the invention is a multi-purpose rotating communication device which contains a firmly fixed supporting frame, an information-carrying unit connected to the supporting frame in such a way that it is able to rotate, a propulsion unit inserted between the supporting frame and the information-carrying unit, and furthermore, a central unit for the control of the operation of the propulsion unit, the propulsion unit has a driving part-unit, and a drive transfer structure connected to the driving part-unit, the supporting frame has a cable channel, the driving part-unit is connected to the central unit with the help of the connection cables situated in the cable channel.

[0002] With the development of industrial and commercial services, different advertising and communications devices have spread to a ever widening sphere, the aim of which is to attract the attention of potential customers, pedestrians in public areas, and so increase the desire to purchase and the saleability of the products and services.

[0003] Such solutions also include advertising boards that have a rotating appearance surface, the point of which is that the carrying surface containing the information to be expressed is connected to the supporting frame so that it rotates as the result of a force supplied by a propulsion unit connected to some sort of auxiliary power supply. Such a description can be found in invention registration number HU 816 and patent description US 2.556.472.

[0004] The undoubted advantage of these constructions is that as a result of the rotation of the information-carrying unit driven with the help of the motor and the drive transfer device it more effectively attracts contemplative observation and so carries out its task with greater efficiency, in other words it provides attention attracting information to potential customers.

[0005] Their disadvantage, however, is that in the case of the known constructions beside the investment costs of the extensive carrying structures, because of the relatively small appearance surface only a moderate capacity information-carrying surface can be attained, which reduces the costs efficiency of the advertising, and involves the slow return of the investment costs.

[0006] Another disadvantage is that monotone movement of the small (as compared to the carrying frame) information-carrying unit reduces the startling aspect of the sight, which with time can lead to the further reduction in the efficiency of the advertising.

[0007] Another unfavourable aspect is that the changing of the information-carrying unit or text that is to appear is difficult, and there is no way what so ever to subsequently increase or modify the appearance surfaces, or the costs make its realisation unfeasible.

[0008] With the creation of the rotating communication device according to the invention our aim was to eliminate the deficiencies of the known versions and to create a version that as a result of its large area and various advertising surfaces, and their continually changing movement and form creates a structure functioning as a really startling, spatial figure, and in this way an effective device for distributing information.

[0009] The solution according to the invention lead to the recognition that if the supporting frame is selected properly, and to that - differently to what is known - several independent display members, and the propulsion units operating them are attached, furthermore, the propulsion units are individually fitted between the supporting frame and the parts of the information-carrying unit, then the task can be solved.

[0010] In accordance with the set aims the multi-purpose rotating communication device according to the invention - which contains a correctly fixed supporting frame, an information-carrying unit connected to the supporting frame in such a way that it is able to rotate, a propulsion unit inserted between the supporting frame and the information-carrying unit, and furthermore, a central unit for the control of the operation of the propulsion unit, the propulsion unit has a driving part-unit, and a drive transfer structure connected to the driving part-unit, the supporting frame has a cable channel, the driving part-unit is connected to the central unit with the help of the connection cables situated in the cable channel - is formed in such a way that the information-carrying unit is constructed of two or more sets of display members that can move independently, at least some of the display members have independent propulsion units attached, which are separately connected to the central unit.

[0011] A further criterion of the multi-purpose rotating communication device according to the invention may be that the display members are regular bodies, e.g. rectangular prisms, cylinders that have internal hollows, and the supporting frame leads through the internal hollows of at least some of the display members.

[0012] A constructed form of the invention is that the supporting frame is a single column. The longitudinal axes of the display members and the longitudinal axis of the column are coaxial.

[0013] In a further form of the invention the propulsion units of the individual display members are situated in the internal hollow of the given display member. The driving part-unit of the propulsion unit is fixed to the supporting frame, the movement transfer structure contains a movement transfer body connected to the display member and the other movement transfer body fitted between the one movement transfer body and the driving part-unit. The one movement transfer body and the other movement transfer body are a friction wheel pair.

[0014] A yet another version of the rotating communication device is when one or more light sources are situated near to the display members and/or one or more illuminating bodies are situated inside the internal hollow of the display

members.

[0015] From the point of view of the rotating communication device a favourable aspect can be that the display members contain a rotating frame constructed from frame elements and surface forming elements fined to the rotating frame.

[0016] The multi-purpose rotating communication device according to the invention has numerous favourable characteristics. The most important of these is that due to the number and positioning of the display members and the propulsion units it is possible for the elements of the information-carrying unit to rotate independently o each other in both directions, which provides a continually changing, permanently moving overall effect and so greatly increases the startling aspect of the sight, which better attracts the eyes of the viewer, and so creates an advertising possibility operating with significantly greater efficiency.

[0017] Another advantage is that due to the structural form the number of the display members forming the information-carrying unit can be changed as required, their order may be changed, and individual display members may be replaced with display members with other forms. This feature creates the possibility that it is always possible to position surface creating elements of the required size onto a supporting frame installed at a given place, and so the number of display members and together with this the complete surface of the information-carrying unit is always optimal.

[0018] Another favourable aspect is that in the new construction as a result of the positioning of the propulsion unit in the new construction there is no need for the energy and the signals controlling the operation to be conducted through slip rings; which makes the driving of the display members simpler and more secure, and also reduces the possibility of breakdown.

[0019] Another advantage is that in the case of a supporting frame in the form of a column beside the small space requirement it is possible to create and utilise extensive, appropriately split-up advertising surfaces, which results in more favourable operating costs than is usual.

[0020] Another advantage that needs to be mentioned is that the various materials of the surface forming elements of the display members positioned on the supporting frame, the possibility for the variation of the colour, form and illumination transform it into a mobile statue, which in the case of appropriately programmed control, apart from its actual task, it can be deemed as a unique public area composition.

[0021] The rotating communication device according to the invention henceforward in connection with the construction example is illustrated in detail on the basis of a drawing. On the drawing

Diagram 1 is a version of the solution according to the invention in side view, partly in section,
Diagram 2 is a section drawing taken on plane II of diagram 1.

[0022] On diagram 1 a version of the multi-purpose rotating communication device according to the invention can be seen where the supporting frame 10 is formed by a column 11 of uniform strength consisting of one piece. Inside the column 11 there is a cable channel 12 formed stretching along its longitudinal axis 11a. At the end of the cable channel 12 of the column 11 near the ground there is a door 13, with the help of which the cable channel 12 can be accessed. Display members 21, 22, 23 of different forms and sizes are positioned underneath one another on the column 11, which together form the information-carrying unit 20.

[0023] On diagram 1 it can be observed that display member 21 is in this case a square based prism, display member 22 is an equilateral triangle based prism, while display member 23 is two truncated hexagonal based pyramids turned together at their bases. In the interest of favourable stability and solidity the column 11 actually pierces through the display members 21, 22, and 23 and partly passes through their internal hollows 21a, 22a and 23a, the longitudinal main axis 21b of the display member 21, the longitudinal main axis 22b of the display member 22 and the longitudinal main axis 23b of the display member 23 are coaxial with the longitudinal axis 11a of the column 11.

[0024] All of the display members 21, 22 and 23 consist of a rotating frame 60 constructed from frame elements 61, and furthermore, surface forming elements 62 fixed to the frame elements 61. The frame elements 61 and the surface forming elements 62 surround the internal hollow 21a of the display member 21, the internal hollow 22a of the display member 22, and the internal hollow 23a of the display member 23. For easier comprehensibility henceforward only one display member 21 will be mentioned, noting that the further display members 22 and 23 only differ from each other in their extension, but their structural form is essentially the same.

[0025] The propulsion unit 30 is situated in the internal hollow 21a of the display member 21 of the information-carrying unit 20, which consists of the driving part-unit 31 and the movement transfer structure 32. The propulsion unit 31 is preferably an electric motor fixed to the column 11, while one of the movement transfer bodies 32a of the movement transfer structure 32 is fixed to the frame elements 61 of the rotating frame 60, the other movement transfer body 32b is fined in a fixed fashion to the driving part-unit 31.

[0026] Diagram 2 illustrates a possible structure of the movement transfer structure 32. It is preferable if one of the movement transfer bodies 32a of the movement transfer structure 32 and the other movement transfer body 32b forms a friction wheel pair in which one of the movement transfer bodies 32a is ring-like and connects to the other movement

transfer body 32b with its internal surface, which creates the possibility for the driving and driven elements to be slipped with respect to each other and this does not only protect the driving part-unit 31, but also reduces the dynamic loading on the column 11 and the rotating frame 60.

[0027] Returning now to diagram 1, it can be seen on that also that the illuminating body 24 is situated in the internal hollow 21a of the display member 21, which is also preferably connected to the supporting frame 10.

[0028] Here it must be noted that the number of illuminating bodies 24 can be as many as is required, and their positioning only depends on the form of the display member 21 and its size. Naturally the display member 21 does not only have to be illuminated from the inside with an illuminating body 24 positioned in the internal hollow 21a of the display member 21, but can also be illuminated from the outside by light sources 50 fixed to the supporting frame 10.

[0029] The appropriate movement of the display members 21, 22, 23 round the column 11 is made possible by the bearing 14 fitted between the column 11 and the rotating frame 60, which in itself consists of known elements, and is made in the usual way, so it will not be described in detail here.

[0030] Diagram 1 also shows that the power supply and the control signals from the central unit 40 are taken from the energy source 70 by the connecting cables 41 positioned in the cable channel 12 to the driving part-units 31 of the propulsion units 30 carrying out the rotation of the different display members 21, 22 and 23. The energy source 70 is a source situated a long distance away from the supporting frame 10, but it could even be a battery fixed in the cable channel 12 of the column 11, although due to the larger consumption a mains supply is naturally more favourable. Contrary to the energy source 70 it is favourable to position the central unit 40 in the cable channel of the column 11 near to the door 13, so that it can be programmed as required and so that the results of the programming can be immediately checked.

[0031] On using the multi-purpose rotating communication device according to the invention following installation of the supporting frame 10 the driving part-unit 31 of the propulsion unit 30 and the other movement transfer body 32b of the movement transfer structure 32 and the bearing 14 suitable for accepting the rotating frame can be fixed to the column 11.

[0032] Following this the driving pan-unit 31 is to be connected to the central unit 40 and the energy source 70 through the connecting cable 41 and as required one or more illuminating bodies 24 are fixed to the column 11.

[0033] After connecting the standing structural elements to the column 11 the rotating frame 60 of the required display member 21 and the surface forming elements 62 fixed to the frame elements 61 of the rotating frame 60 can be fitted to the column 11 with the insertion of the bearing 14, in such a way that the internal hollow 21a of the display member 21 contains both the elements of the propulsion unit 30 and the illuminating body 24.

[0034] Following the "putting together" of the required number and form of display members 21, 22 and 23 the central unit 40 can be programmed on-site in such a way that the direction of movement, speed, period of movement of the display members 21, 22 and 23 and the flashing time of the illumination bodies 24, and also the illumination period of the light sources 50 can be regulated, and can be preferably different from each other.

[0035] Following the programming of the central unit 40 the driving part-unit 31 of the propulsion 30 belonging to the display member 21 of the multi-purpose rotating communication device receives power, and so as a result of its rotation it rotates the other movement transfer body 32b attached to it, which, in this case, is a small friction disc. When the other movement transfer body 32b revolves it moves the large sized ring-like friction wheel which fills the role of the movement transfer body 32a attached to the rotating frame 60. After the movement transfer body 32a starts to move it starts to revolve around the longitudinal axis 11a of the column 11, which at the same time is also the longitudinal main axis 21b of the display member, and as it revolves with the help of the rotating frame 60 it spins the display member 21. While the display member is revolving - in accordance with the program of the central unit 40 - the illuminating body 24 or the light source 50 may be activated, and so not only the revolving of the display member 21 happens, but its internal or external illumination may also take place.

[0036] Depending on the program of the central unit 40 while the display member 21 is moving, or after it has stopped display member 22, or display member 23, or both of them start rotating in the previously described manner. In the case of several display members 21, 22, 23 it may happen that groups formed out of the neighbouring display members 21 and 22 or those display members 21 and 23 that are not neighbouring carry out harmonised movement, while those in the other group stay in a stationary position.

[0037] It should be mentioned here that there could be such an ordering when one or more display members 21 are fixed to the column 11 so that they do move in any way. Naturally in this case the internal hollow 21a of the display member 21 does not contain the propulsion unit 30. It can also be imagined that the supporting frame 10 is not a straight column, but a different, spatially gridded structure, in which the display members 21, 22 and 23 are fined to the different grid elements.

[0038] The display members 21, 22 and 23 starting and stopping at different time points, the flashing lights and the different forms provide a startling and interesting spectacle for the observer, which keeps the attention of the pedestrians for a longer period and with this is more effective at completing its task.

[0039] The multi-purpose rotating communication device can be used well for advertising purposes, for giving different

information, but apart from this it can also be used for the decoration of public areas e.g. shopping centre car parks.

List of references	
10 supporting frame	11 column
	11a longitudinal axis
	12 cable channel
	13 door
	14 bearing
20 information-carrying unit	21 display member
	21a internal hollow
	21b longitudinal main axis
	22 display member
	22a internal hollow
	22b longitudinal main axis
	23 display member
	23a internal hollow
	23b longitudinal main axis
	24 illuminating body
30 propulsion unit	31 driving part-unit
	32 movement transfer structure
	32a a movement transfer body
	32b another movement transfer body
40 central unit	41 connection cable
50 light source	
60 rotating frame	61 frame element
	62 surface forming elements
70 energy source	

Claims

1. A multi-purpose rotating communication device which contains a firmly fixed supporting frame, an information-carrying unit connected to the supporting frame in such a way that it is able to rotate, a propulsion unit inserted between the supporting frame and the information-carrying unit, and furthermore, a central unit for the control of the operation of the propulsion unit, the propulsion unit has a driving part-unit, and a drive transfer structure connected to the driving part-unit, the supporting frame has a cable channel, the driving part-unit is connected to the central unit with the help of the connection-cables situated in the cable channel, **characterised by** that the information-carrying unit (20) is constructed of two or more sets of display members (21, 22, 23) that can move independently, at least some of the display members (21, 22, 23) have independent propulsion units (30) attached, which are separately connected to the central unit (40).

2. The multi-purpose rotating communication device according to claim 1 **characterised by** that the display members (21, 22, 23) are regular bodies; e.g. rectangular prisms, cylinders that have internal hollows (21a, 22a, 23a), and the supporting frame (10) leads through the internal hollows (22a, 23a) of at least some of the display members (21, 22, 23).

3. The multi-purpose rotating communication device according to claim 1 or 2 **characterised by** that the supporting frame (10) is a single column (11).

4. The multi-purpose rotating communication device according to claim 3 **characterised by** that the longitudinal axes (21b, 22b, 23b) of the display members (21, 22, 23) and the longitudinal axis (11a) of the column (11) of the supporting frame (10) are coaxial.

5. The multi-purpose rotating communication device according to any of claims 1 - 4 **characterised by** that the propulsion units (30) of the individual display members (21, 22, 23) are situated in the internal hollow (21a, 22a, 23a) of the given display member (21, 22, 23).

6. The multi-purpose rotating communication device according to claim 5 **characterised by** that the driving part-unit (31) of the propulsion unit (30) is fixed to the supporting frame (10), the movement transfer structure (32) contains a movement transfer body (32a) connected to the display member (21, 22, 23) and the other movement transfer body (32b) fitted between the one movement transfer body (32a) and the driving part-unit (31).

7. The multi-purpose rotating communication device according to any of claims 1 - 6 **characterised by** that the one movement transfer body (32a) and the other movement transfer body (32b) are a friction wheel pair.

8. The multi-purpose rotating communication device according to any of claims 1 - 7 **characterised by** that one or more light sources (50) are situated near to the display members (21, 22, 23) and/or one or more illuminating bodies (24) are situated inside the internal hollow (21a, 22a, 23a) of the display members (21, 22, 23).

9. The multi-purpose rotating communication device according to any of claims 1 - 8 **characterised by** that the display members (21, 22, 23) contain a rotating frame (60) constructed from frame elements (61) and surface forming elements (62) fitted to the rotating frame (60).

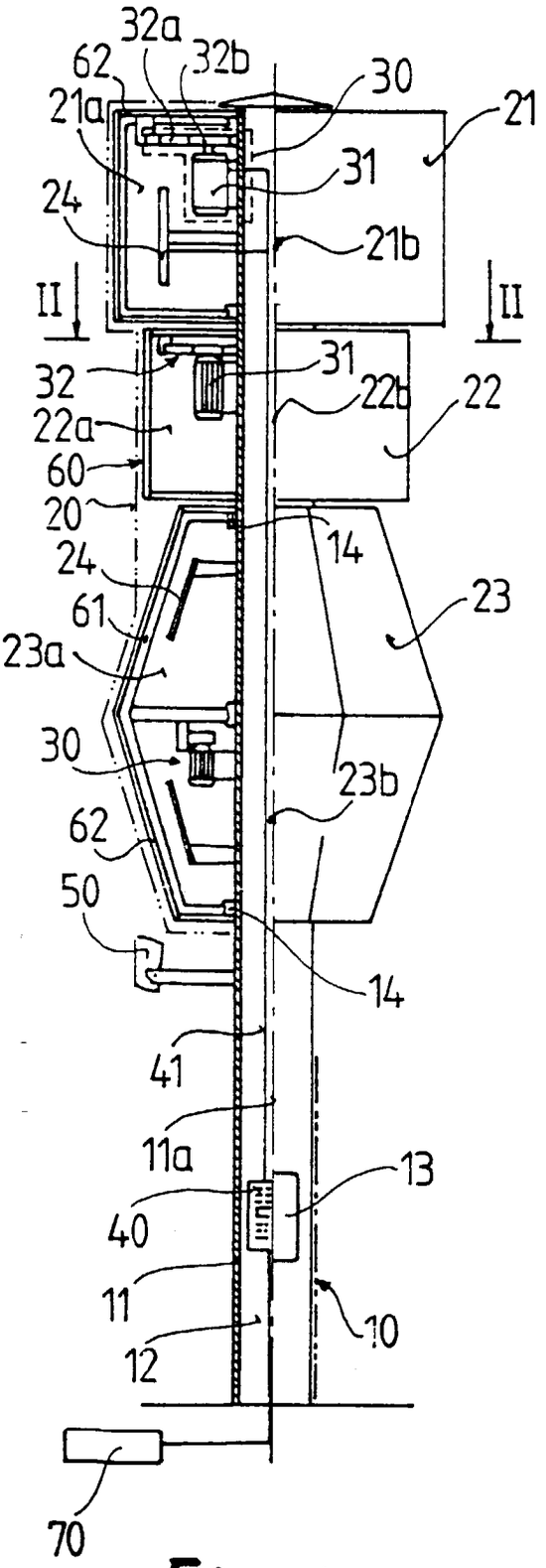
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Fig. 1

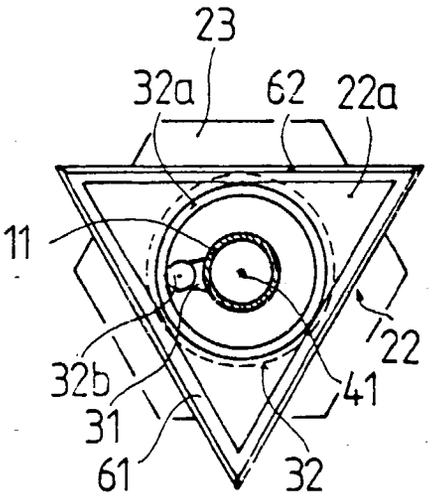
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Fig. 2