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(54) **Device for roller painting**

(57) A device (10) for roller painting, especially suitable to be used for painting/decorating works at the corners between adjacent walls or the ceiling of rooms or spaces inside and/or outside civil and/or industrial contexts, comprising a first roller or front roller (12) rotatably arranged with respect to a first axis (14) and a second roller or rear roller (16) rotatably arranged with respect

to a second axis (18) with said first and second axes parallel one to the other, a shell or casing (20) partially covering said first and second rollers, a rod (30) attached to said shell or casing (20) and with said first roller (12) and second roller (16) which have a convex conical profile.

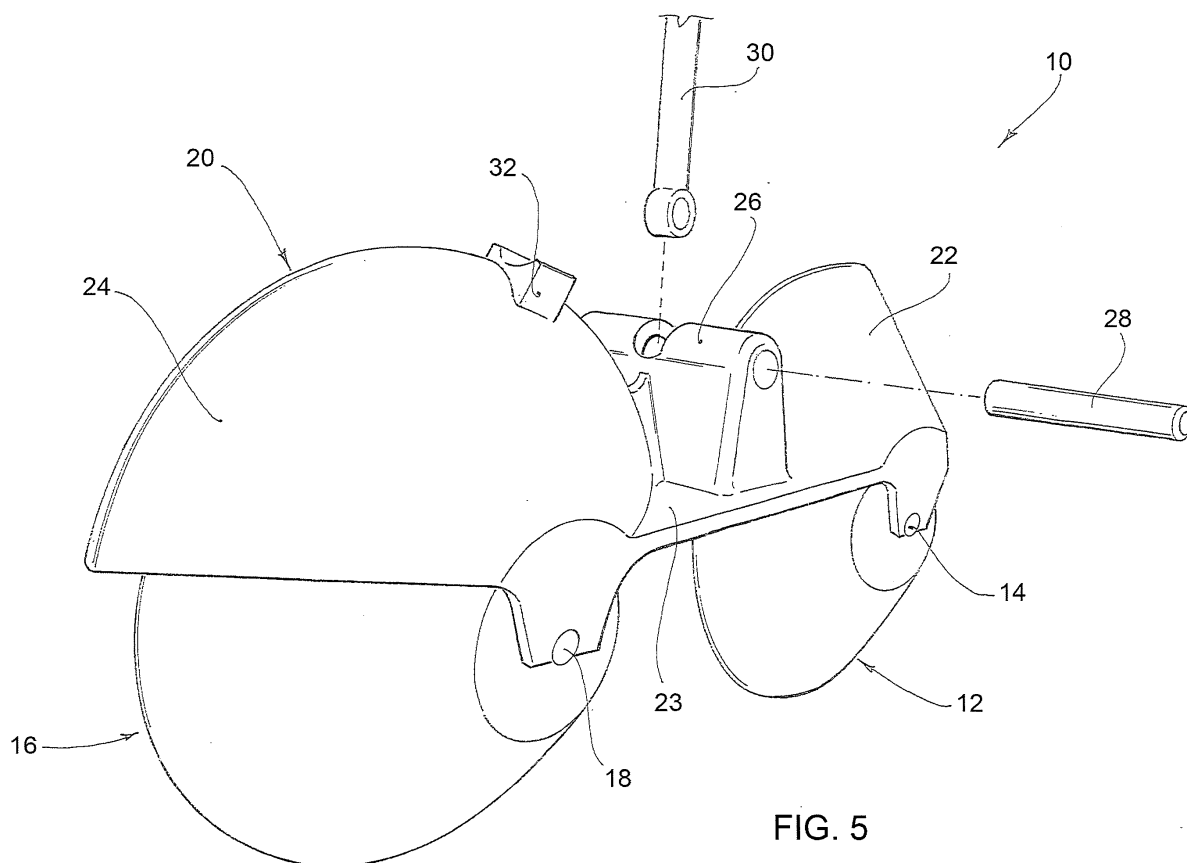


FIG. 5

Description

[0001] The present invention relates to a device for roller painting.

[0002] More particularly the present invention relates to a device for roller painting especially suitable for being used for works of painting/decorating at the corners of a wall or of the ceiling of rooms or spaces inside and/or outside civil and/or industrial contexts.

[0003] As is known, the painting/decorating of inside or outside spaces for civil or industrial use is typically performed by using brushes or rollers soaked with paint in the colour and in the finishes most suitable for the decorative and coverage effect required for the specific room.

[0004] The sizes and types of brushes and/or rollers vary as a function of the sizes and of the position of the wall or of the elements (doors, frames, radiators, etc.) which have to be painted.

[0005] A typical case is represented by the painting or varnishing of the corner areas between two adjacent walls or between ceiling and walls, to perform which it is possible to use a flat brush with straight or oblique head or a paint brush with round head or, alternatively, a sponge or fabric roller (according to the type of finish to be obtained and/or the surface features of the wall).

[0006] However these types of tools have some major disadvantages.

[0007] The use of the paint brush, for example, requires a great deal of time and effort in that it is necessary to dip it repeatedly to keep it loaded, with continual movements of ascending and descending the ladder or, in any case, in the direction of the bucket or container with the paint.

[0008] A further disadvantage linked to the use of the paint brush is represented by its dripping if overly loaded with paint and, consequently, by the unevenness of the finish.

[0009] Similarly the use of a roller in sponge or fabric has some disadvantages linked to the fact that, being of reduced size, it cannot be loaded with considerable quantities of paint and, consequently, has to be repeatedly dipped in the receptacle or container of the paint.

[0010] Moreover the roller always has a projecting pin or projecting rod (to support the rotation of the roller) which creates lines on the wall, requiring subsequent further strokes, optionally with a paint brush, in order to be able to eliminate them.

[0011] A further disadvantage is represented by the fact that the painted band which is obtained with the roller or with the paint brush is very narrow in that, if a roller or a paint brush of greater dimensions were to be used it would not be possible to perform easily and completely/evenly the painting of the intersections of the corners of the walls with the ceiling or between adjacent walls and it would then be necessary to finish the painted part with a further appropriate paint brush with a correlated increase in terms of time, dripping and the like. Moreover

the use of a roller of larger size compared to those typically present on the market for the specific function would worsen the disadvantage represented by the pin mentioned above.

[0012] In order to overcome these disadvantages DE 19517737 describes a painting device comprising a container element with respect where to two painting rollers are rotatably arranged with V-sectioned profile and whose sides engage with a feed roller, likewise rotatably arranged inside said container element, partially immersed in a receptacle of paint integrated with the container element and with a V-sectioned profile complementary to the V-shaped profile of the painting rollers. In this painting device, moreover, a rod hinged with respect to the container element allows the painting device to be moved and orientated.

[0013] However this painting device also entails some major disadvantages linked to the overall dimensions of the device and to its impractical use, in terms of raising and moving of the painting rollers, bearing in mind the fact that the device integrates the receptacle for the paint.

[0014] The main object of the present invention is that of avoiding the disadvantages mentioned above.

[0015] More particularly the object of the present invention is that of providing a device for roller painting which allows painting to be performed with bands of adequate width of the corner regions between adjacent walls and between walls and ceiling rapidly and easily.

[0016] A further object of the present invention is that of providing a device for roller painting which does not create splashes or drips of paint during painting.

[0017] A further object of the present invention is that of providing a roller device which allows application of the paint evenly and without residues of drips, lumps or similar imperfections.

[0018] A further object of the present invention is that of providing a device for painting of the roller type with limited overall dimensions and such as not to have elements which can create interference with the surfaces during painting.

[0019] A further object of the present invention is that of making available to users a device for roller painting suitable for guaranteeing a high value of resistance and reliability in time and such, moreover, as to be able to be easily and economically manufactured.

[0020] These and other objects, which will be made clearer here below, are achieved in accordance with the invention with the features listed in the annexed independent claim 1.

[0021] According to the invention a device for roller painting is provided comprising a first roller or front roller rotatably arranged with respect to a first axis and a second roller or rear roller rotatably arranged with respect to a second axis with said first and second axes parallel one to the other, a shell or casing partially covering said first and second rollers, a rod attached to said shell or casing and with the first roller and the second roller shaped with a convex conical profile.

[0022] Advantageous embodiments of the invention are disclosed by the dependent claims.

[0023] The constructional and functional features of the device for roller painting of the present invention will be made clearer by the following detailed description, in which reference is made to the accompanying drawings which represent a preferred and non-limiting embodiment thereof, in which:

Figure 1 shows schematically a side view of the device for roller painting of the present invention;
Figure 2 shows schematically a view from below of the device for painting of the invention;
Figures 3 and 4 show a front view and a rear view, respectively, of the device of the invention;
Figure 5 shows schematically a partially blown-up axonometric view of the device for roller painting of the invention.

[0024] Referring to the aforementioned drawings, the device for roller painting of the invention, denoted overall by 10, comprises a first roller or front roller 12 rotatably positioned with respect to a first axis 14 and a second roller or rear roller 16 rotatably positioned with respect to a second axis 18, with said first axis 14 and second axis 18 arranged parallel one to the other and with said first and second rollers secured internally to a shell or casing 20 defined by a single part or by separate components assembled one with the other by gluing, slotting, welding or the like and known means of constraint and made in lightweight, resistant and easily washable plastic material.

[0025] The first roller 12 and the second roller 16 have tendentially different dimensions in terms of thickness in the direction of the rotation axis, diameter and a convex conical profile.

[0026] The first roller or front roller 12 has a thickness tendentially comprised between 2 and 3 cm, while the second roller or rear roller 16 has a thickness tendentially comprised between 3 and 6 cm.

[0027] The conical profile of the first roller 12 defines an angle α smaller than 90° while that of the second roller 16 defines an angle β greater than or equal to 90° .

[0028] The angle α is for example comprised between 45° and 80° and preferably equal to 60° , while the angle β is for example comprised between 90° and 110° and preferably equal to 95° .

[0029] Referring to the preferred embodiment as per the drawings, the first roller 12 and the second roller 16 have the same diameter. However in different embodiments the diameters of the two rollers can be different and, more particularly, the second roller or rear roller 16 can have a larger diameter with respect to that of the first roller or front roller 12.

[0030] Both the first roller or front roller 12 and the second roller or rear roller 16 are made in sponge, velvet, in natural or synthetic material or in other different and suitable materials and finishes chosen according to the type

of wall to be painted or paint used or, again, the final effect required.

[0031] The first roller or front roller 12 is a painting roller and has the function of painting the corner of the wall and the edge comprised between the intersections of the walls and of the ceiling. This is allowed by the fact that said first roller has an angle of the conical profile smaller than 90° and a width smaller than that of the second roller 16.

[0032] The second roller or rear roller 16, instead, has a smoothing and levelling function in that it allows more even application of the layer of paint deposited by means of the first roller and, having greater thickness compared to that of the first roller 12, allows the dimension of the painted angular band to be increased so as to allow then the use of a roller or paint brush suitable for painting large surfaces.

[0033] The shell or casing 20 comprises a front portion 22 partially covering the first roller or front roller 12 and a rear portion 24 partially covering the second roller or rear roller 16.

[0034] The front portion 22, referring to the embodiment as per the drawings, covers the first roller 12 for an angle tendentially equal to or smaller than 90° , while the rear portion 24 covers the second roller 16 for an angle tendentially equal to 180° .

[0035] The shell or casing 20, in the region comprised between the front portion 22 and the rear portion 24, develops externally a fork 26 with respect where to a rod 30 is hinged, by means of a pin 28, and provided with a grip and which is optionally extendable in a telescopic way or by the coupling of appropriate extensions.

[0036] The internal configuration and, optionally, also the external one of the front portion 22 and of the rear portion 24 of the shell or casing 20 is made with a shaping with conical profile corresponding to that of the two rollers, in such a way that the splashes or nebulised particles of paint, generated by the rolling of the rollers on the surface to be painted, are collected in the gap formed between the front and rear portions of the shell or casing and the respective front and rear rollers.

[0037] The front portion 22 and the rear portion 24 are joined below by means of opposed plate-like projections 23 which define a lower face or base of the shell or casing 20 arranged along a plane parallel and positioned above with respect to the plane whereon the rotation axes of the first roller 12 and of the second roller 16 lie.

[0038] On the outer surface of the rear portion 24 of the shell or casing 20 a stop element or block 32 is placed for the rod 30 apt to provide a mechanical slotted constraint of the snap-fit type or with deformation or a magnetic constraint. This stop element 32 has the function of blocking the movement of the rod 30 during the phase of loading of the rollers with paint according to the methods described here below.

[0039] Moreover the hinge connection of the rod 30 with respect to the fork 26 of the shell or casing 20 can be of the damped type so as to allow the locking of the

movement of the same rod in any angular position.

[0040] The device for roller painting, described in detail above with reference to its constructional features, is typically coupled to a tray assembly for painting roller (not shown in the drawing) suitable for allowing the loading of the roller device with paint.

[0041] This tray assembly for roller is substantially similar to the one described in a previous European patent application (EP2452828) in the name of the same Applicant and, therefore, will not be described in detail with reference to the constructional elements and to the modes of operation.

[0042] In the specific case of the device for painting with rollers with conical profile of the present invention the tray assembly for roller has a paint collection tray apt to collect a quantity of paint coming from a receptacle integrated in the same tray assembly in a sufficient quantity for impregnating the rollers without the need to remove the surplus paint and provided with a groove or recess longitudinally extended and with a "U" or "V" cross-sectional profile substantially corresponding to the profile of the first roller 12 and of the second roller 16. In this way the paint coming from the receptacle for the paint, with the methods described in the aforementioned European patent, flows into the tray and into the groove or recess inside whereof slide rotatably, forwards and backwards, the first roller 12 and the second roller 16 of the device of the invention, impregnating with paint. During this phase of sliding of the rollers in the groove or recess the rod 30 is in the position of coupling with the stop element 32 which prevents its rotary movement with respect to the hinge 26. In this way, if necessary, the second roller can be kept raised with respect to the first roller or front roller so as to load with paint only said first roller. The same result can be obtained also thanks to the damping of the hinge connection between the rod 30 and the fork 26 of the casing 20, without the need to keep the rod 30 coupled to the stop element 32.

[0043] The device for painting with conical rollers of the invention is, at this point, ready to be used at the corners between adjacent walls and between walls and ceiling.

[0044] As can be seen from the above the advantages that the device of the invention achieves are clear.

[0045] The device for painting with rollers of the present invention, being provided with conical rollers, allows advantageously the painting in a short time of the corner portions between adjacent portions and/or between walls and ceiling of a room for civil or industrial use, without soiling and without unfortunate dripping.

[0046] Further advantageous is the fact that with the device of the invention the rollers with conical profile allow easy access to the corner portions of the walls without the need to use a paint brush for finishing operations.

[0047] Further advantageous is the fact that the second roller or rear roller, having a thickness substantially greater with respect to that of the first roller, allows the painted band at the corners to be increased and, conse-

quently, makes the use of the roller for painting the wall faster and easier.

[0048] A further advantage is represented by the fact that the front portion 22 of the shell or cover 20 covers only partially the first roller or front roller 12 and, more specifically, develops with a covering angle smaller than 90°. In this way the front roller easily reaches the edges between the walls and the ceiling.

[0049] A further advantage is represented by the fact that the device of the invention does not have pins or laterally projecting parts such as to be able to come into contact with the walls with consequent unfortunate forming of lines which have to be subsequently eliminated using a paint brush. The position and the shaping of the covering casing or shell contribute to avoiding this unfortunate disadvantage.

[0050] Although the invention has been described above with particular reference to one of its embodiments given only by way of a non-limiting example, numerous changes and variations will appear clear to a person skilled in the art in light of the description given above. The present invention therefore intends to embrace all the changes and variations which come within the scope of the following claims.

Claims

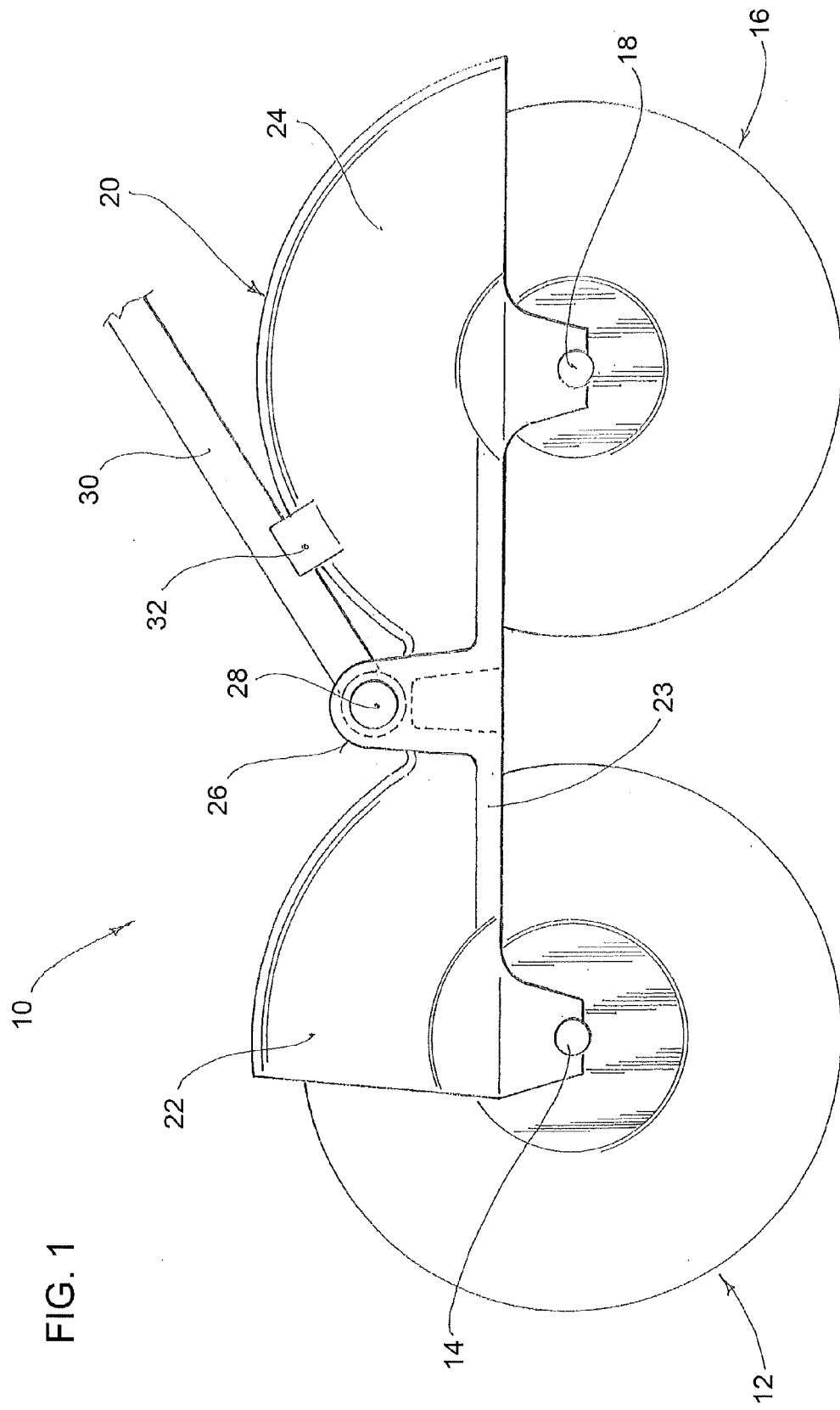
1. A device (10) for roller painting, especially suitable to be used for painting/decorating works at the corners between adjacent walls or the ceiling of rooms or spaces inside and/or outside civil and/or industrial contexts, comprising a first roller or front roller (12) with the function of painting, provided with convex conical profile and rotatably arranged with respect to a first axis (14) and a second roller or rear roller (16) having a smoothing and levelling function, provided with a convex conical profile and rotatably arranged with respect to a second axis (18) parallel to said first axis (14), a shell or casing (20), a rod (30) attached to said shell or casing (20), the device **characterised in that** said second roller (16) or rear roller has the convex conical profile with an angular opening larger than that of the first roller or front roller (12) and a thickness in the direction of the rotation axis (18) larger than the thickness of said first roller in order to increase the dimension of the angular band painted with said first roller.
2. The device for painting according to claim 1, **characterised in that** the conical profile of the first roller or front roller (12) defines an angle α smaller than 90° and the conical profile of the second roller or rear roller (16) defines an angle β greater than or equal to 90°.
3. The device for painting according to claim 1, **characterised in that** the first roller (12) has a thickness

comprised between 2 and 3 cm and the second roller (16) has a thickness comprised between 3 and 6 cm.

4. The device for painting according to claim 1, **characterised in that** the first roller or front roller (12) has a diameter smaller than the second roller or rear roller (16). 5
5. The device for painting according to claim 1, **characterised in that** the first roller or front roller (12) and the second roller or rear roller (16) have equal diameter. 10
6. The device for painting according to one or more of the preceding claims, **characterised in that** the shell or casing (20) comprises a front portion (22) partially covering the first roller or front roller (12) for an angle tendentially equal to or less than 90° and a rear portion (24) partially covering the second roller or rear roller (16) for an angle tendentially equal to 180°, said front and rear portions having shaping or conical profile corresponding to that of the corresponding first roller (12) and second roller (16) and joined below by means of opposed plate-like projections (23) defining a lower face or base of the shell or casing (20) arranged along a plane parallel and positioned above with respect to the plane defined by the rotation axes of the first roller (12) and of the second roller (16). 15 20 25 30
7. The device for painting according to one or more of the preceding claims, **characterised in that** the shell or casing (20) comprises a fork (26) externally developed in the region comprised between the front portion (22) and the rear portion (24) and apt to define a hinge constraint for the rod (30) which is provided with a grip and which is optionally extendable in a telescopic way or by the coupling of appropriate extensions. 35 40
8. The device for painting according to claim 7, **characterised in that** it comprises a stop element or block (32) for the rod (30) apt to provide a mechanical slotted constraint of the snap-fit type or with deformation or a magnetic constraint. 45
9. The device for painting according to claim 7, **characterised in that** the hinge constraint between the rod (30) and the fork (26) is of the damped type. 50
10. Kit for roller painting comprising a device for roller painting according to one or more of the preceding claims and a tray assembly with tray having a "V" or "U"-shaped recess apt to allow the loading of said roller device with paint contained in said tray assembly. 55
11. Method of use of the device for roller painting ac-

ording to one or more of the preceding claims, **characterised in that** it comprises the steps of:

- sliding of said painting device (10) with respect to the tray assembly for roller provided with a paint collection tray apt to collect the paint coming from a receptacle integrated in the same tray assembly, the tray having a groove or recess longitudinally extended with a "U" or "V" cross-sectional profile corresponding to the profile of the rollers (12, 14) of the painting device;
- loading of one or both rollers (12, 14) with the paint contained in the groove or recess of the tray through a forward and backward movement of the painting device, with the rod (30) in contact relation with the stop element or block (32);
- positioning of the painting device with respect to the corners to be painted and moving of the same with the first roller or front roller (12) that paints the corner of the wall and/or the edge comprised between the intersections of the walls and of the ceiling and the second roller or rear roller (16) having smoothing and levelling function and which increases the size of the angular band painted with the first roller.



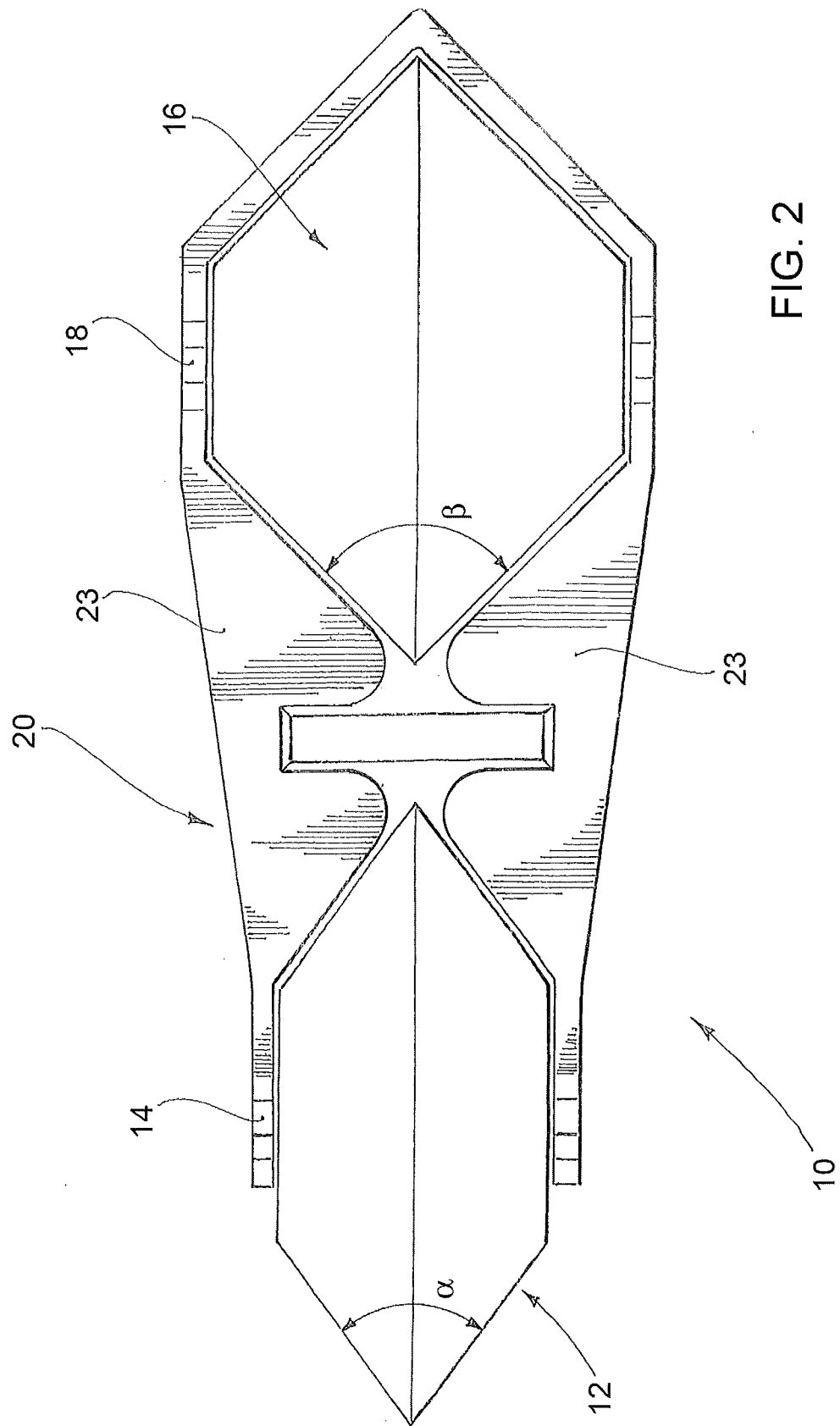
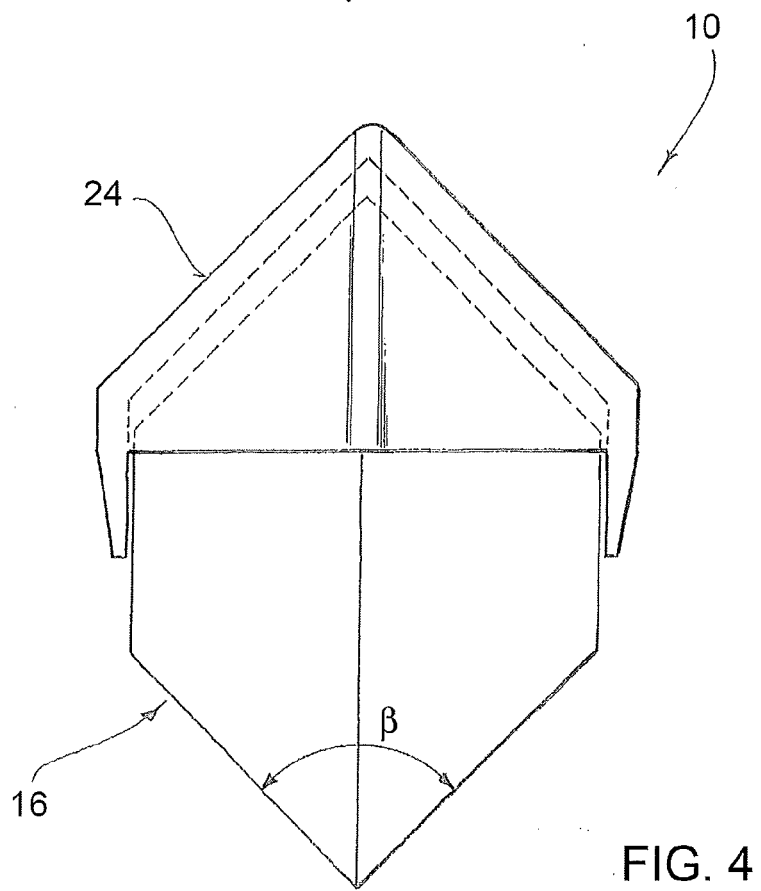
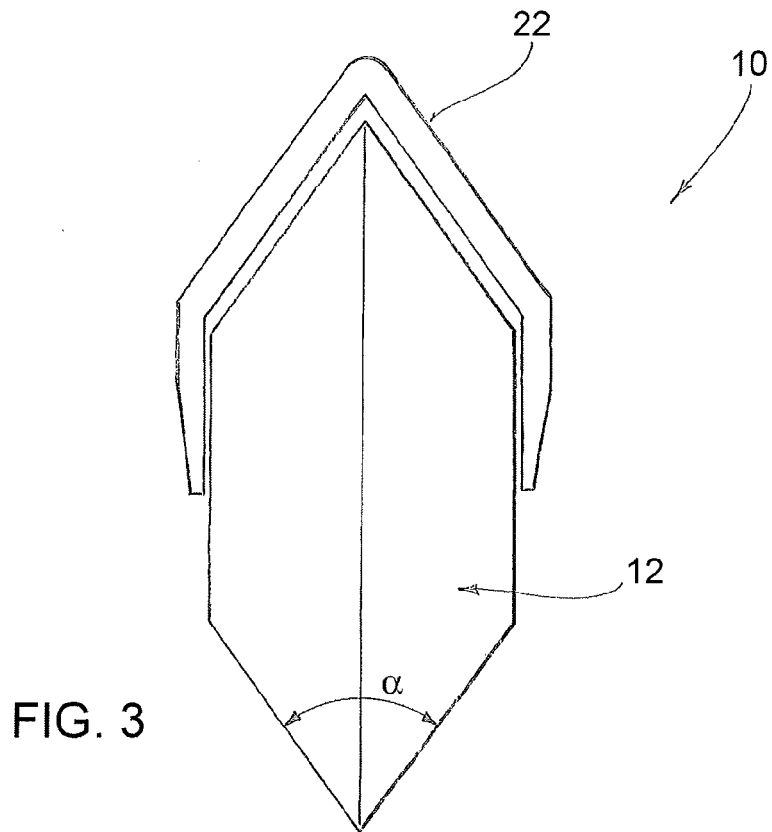


FIG. 2



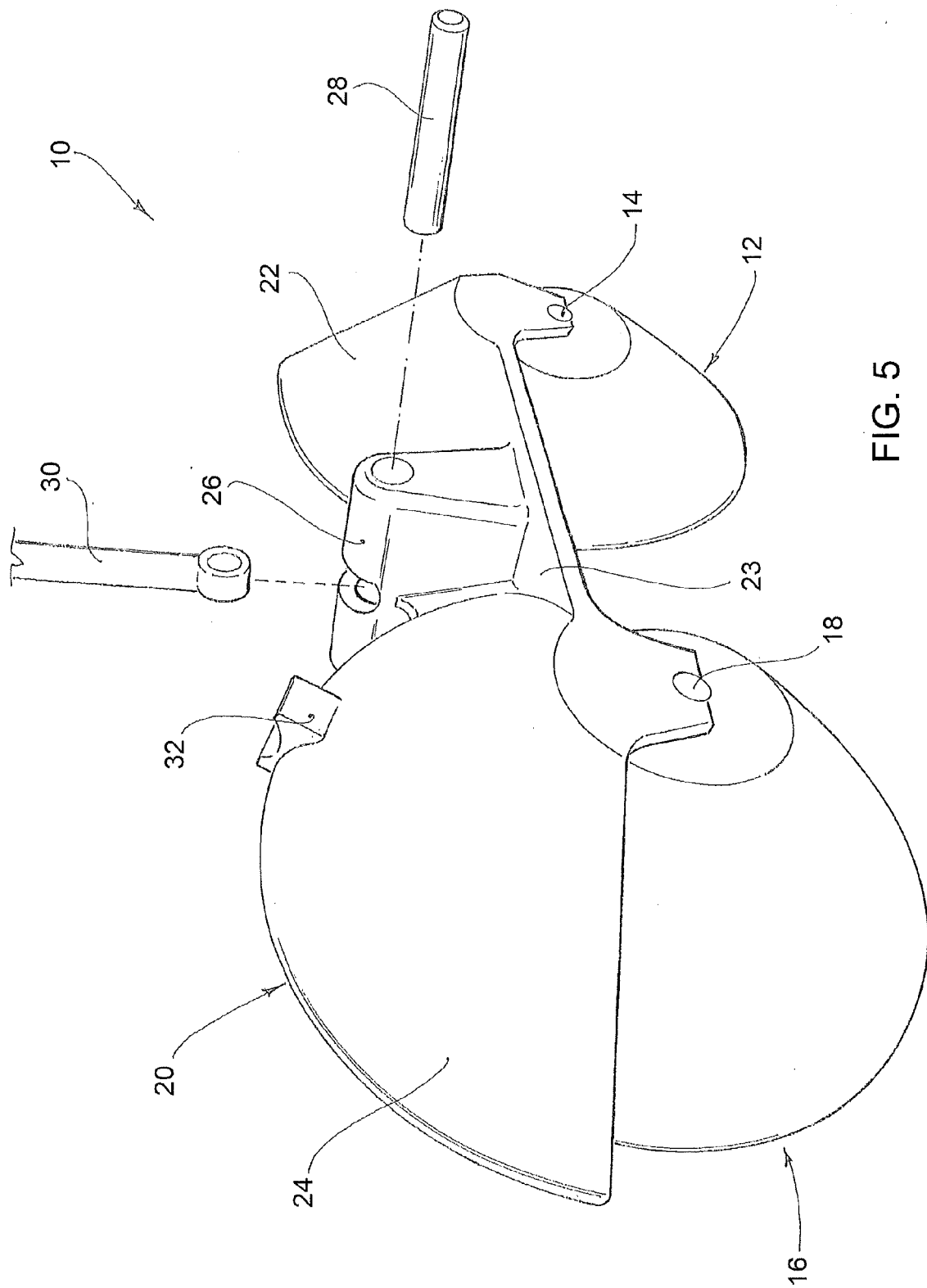


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
EP 14 18 8902

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EPO FORM 1503 03 82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
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A	US 2 577 339 A (LEE JOSEPH O) 4 December 1951 (1951-12-04) * column 1, line 39 - column 3, line 15; figures 1-6 *	1-11	INV. B05C17/02
A,D	DE 195 17 737 A1 (MEINHARD WOLFGANG [DE]) 21 November 1996 (1996-11-21) * abstract; figures 1-3 * * column 2, line 21 - line 30 *	1-11	
A	EP 2 737 959 A1 (MASSIMI GIACOMO [IT]) 4 June 2014 (2014-06-04) * the whole document *	1-11	
L	IT MI20 130 621 A1 (MASSIMI GIACOMO) 17 October 2014 (2014-10-17) * Prior national application; the whole document *	1-11	
A	US 2 929 089 A (NALL WARREN L) 22 March 1960 (1960-03-22) * the whole document *	1-11	TECHNICAL FIELDS SEARCHED (IPC)
A	WO 2009/005523 A1 (DOUGLAS RUSSELL [US]) 8 January 2009 (2009-01-08) * abstract; figures 1-9 *	1-11	B05C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 29 April 2015	Examiner Frego, Maria Chiara
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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

EP 14 18 8902

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29-04-2015

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EPO FORM P0459

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

REFERENCES CITED IN THE DESCRIPTION

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