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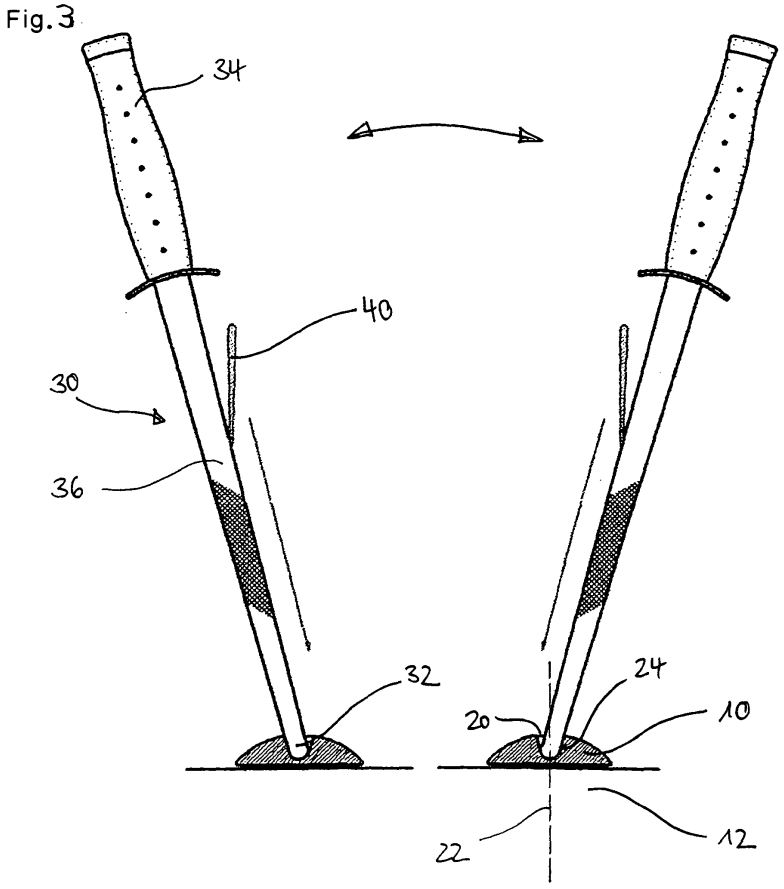
(54) Carrying device for a stick-formed blade sharpener

(57) The invention relates to a carrying device (10) for a stick-formed blade sharpener (30), containing a basic body with a smooth foot (14), which contains at least one non-slipping contact area concerning the foundation (12) and at least one seat positioned at one surface of the basic body and corrsponding with the end section (32) of the blade sharpener (30) so that the end section (32) of the blade sharpener (30) can be put into an angle positon that is already definded.

Fig.3



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Description

[0001] The invention relates to a carrying device for a stick-formed blade sharpener with the characteristic features of claim 1, as well as to a blade sharpening device according to claim 11.

[0002] Stick-formed blade sharpeners, especially sharpening steels, published for example in DE 201 04 557 U1 or US 6 676 490 B1, are well-known and often used for sharpening blade devices, especially knives. But the use of such blade sharpeners can cause several difficulties. For obtaining an optimal result, the blade of the knife has to be slided along the sharpening body on both sides in a regular angle of about 15°. The realization of these sharpening movements requires some practice until it can be done properly. In addition to that, sharpening steel and blade can only be used at a certain risk of injury. Although the risk of the hand which uses the sharpener can be reduced through an appropriate shape of the sharpener, for example through a protection shield in front of the handle. The risk of injury still remains because blade sharpener and knife are used withouth any protection. Compared to other well known blade sharpeners with funnel-shaped sharpening bodies, which are arranged in fixed angles towards each other (see e.g. DE 88 12 376 U1), a normal stick-formed blade sharpener can obtain a far better result, provided it is used properly. The reason for this is that the wedge angle can be adjusted individually, depending on the goods to be cut and/or the diameter of the sharpening steel and/or further factors.

[0003] It is the aim of the present invention to provide a device, which makes it easier to use any stick-formed blade sharpener, especially any sharpening steel, so that unskilled persons are also enabled to sharpen their blades professionally. Furthermore, the risk of accident, while sharpening a blade, should be reduced.

[0004] This aim of the invention is fulfilled with the independent claims 1 and 11. Characteristic features of further developments of the invention can be seen in the dependent claims.

[0005] The carrying device for a stick-formed blade sharpener contains a basic body with a smooth foot, which contains at least one non-slipping contact area in relation to a preferably smooth foundation, as well as at least one seat positioned at one top surface of the basic body and corrsponding with the end section of the blade sharpene, so that the end section of the blade sharpener can be put into an angle positon that is already definded.

[0006] The carrying device for a stick-formed blade sharpener preferably contains a comparatively flat and heavy basic body, preferably a metal body. The carrying device can especially be made of a metal casting body. But every other material, which contains the required stiffness for the fixing of the stick-formed blade sharpener, can be used as well, e.g. wood, plastic or the like. When using a lightweight material, like injection moulding or wood, an additonal device, which enables the carrying device to obtain a firm position on the foundation, e.g. the kitchen work surface, proves to be useful.

[0007] Thus, the carrying device can especially contain an integrated weight. The basic body can e.g. be hollow, so that the interior can be filled with water, sand or any other heavy material. The carrying device could also contain one or several hollow spaces, in which one or several weights could be inserted. Another development of the invention could e.g. require that the carrying device contains a ring-shaped seat with the appropriate width and depth, in which a weight ring of iron, steel or any other appropriate material can be inserted and fixed.

[0008] Alternatively, the carrying device can contain a weighing foot, which e.g. consists of metal. It can also consist of several different materials. Alternatively, a carrying device preferably made of lightweight material can contain a fixing device, e.g. a suction foot, a magnet, a joiner's clamp or the like, so that the carrying device can be tightly fixed at a foundation. The foundation, on which the bottom of the carrying device is located, can especially consist of a preferably smooth kitchen work surface, a table or the like.

[0009] The three-dimensional shape of the basic body can in principle be just as you like, e.g. hemispherical, cuboidical, conical, truncated conical or pyramidal. In a preferred realization of the present invention, the basic body of the carrying device consists of a spherical segment, whose plane side forms the foot and whose spherical top surface contains a seat for the end section of the blade sharpener. The seat should correspond with the top of the blade sharpener.

[0010] A model and usefull dimension can require that the diameter of the spherical foot contains about 2 to 3.5 inch. Thus, the height of the carrying device can contain about 0.5 to 1 inch. The other dimensions and measurements of the carrying device can be almost just as you like. In general, shapes and sizes, which offer a good position and do not tend to a tilting of the carrying device, should be preferred. The surface of the carrying device can be smooth; but it can also contain a design and/or a more or less distinct, regular or irregular structure.

[0011] The foot of the carrying device should provide an optimal surface to prevent a tilting of the carrying device. Furthermore, it should guarantee a non-slip contact of the carrying device and the foundation, e.g. a kitchen work surface.

[0012] The foot of the carrying device is preferably planar. In a preferred realization of the invention, the foot is spherically shaped. Its shape can also be square, rectangular, triangular, multi-angular or the like. An appropriate big surface is to be preferred, as it guarantees a safe position of the carrying device.

[0013] A certain part of the foot guarantees a non-slip contact with the foundation. This part can for example consist of a plane rubber foot. Only certain parts of the foot can contain rubber feet and/or napping and/or rings and/or similar rubber elements which can e.g. be glued to the foot. Such non-slip elements can for example also

be set in and/or be put into and/or be glued to and/or be fixed in another way at the depressions of the foot surface. A non-slip element preferably consists of one elastic ring, which is stuck between two ring-shaped guide rings at the edge of the foot. This elastic ring can for example consist of a rubber ring, a hollow O-ring or the like.

[0014] A non-slip element preferably sticks out of the surface of the foot, so that it directly rests on the foundation, on which the carrying device is used. Apart from rubber, all other anti-slip materials are suitable for such a non-slip contact zone. The surface of the foot itself can also contain a structure or rather a corrugation, which prevents the slipping of the carrying device on the foundation.

[0015] Alternatively or additionally, the foot can contain a fixing device, so that the carrying device can be fixed and re-fixed at the foundation. This fixing device can e.g. consist of a suction foot, a magnet, a joiner's clamp or the like. A joiner's clamp can fix the carrying device at the surface of a table by e.g. gripping the side of the carrying device and the edge of a table.

[0016] Alternatively, the foot can contain a fixing device, so that the present carrying device can be tightly fixed at the foundation. This can e.g. be a bolt that is either fixed by welding, soldering or in a different way and that can be bolted into the foundation.

[0017] According to the invention, the carrying device for the stick-formed blade sharpener contains a seat at the surface, which corresponds with an end section of the stick-formed blade sharpener and which enables that the stick-formed blade sharpener can be put into an already defined angle position. According to the invention, the seat contains at least one installation surface for a lateral face of the blade sharpener. At least one installation surface is required and it preferably contains an inclination of 10° - 20°. An inclination of 15° in relation to a vertical is especially preferred.

[0018] According to the invention, the end-section of a stick-formed blade sharpener is inserted into the seat at the top surface of the carrying device and one lateral surface of the free end-section is attached to the installation surface of the seat. In this way, the main axis of the stick-formed blade sharpener is put into an angle of 10° - 20°, especially into an angle of 15° in relation to the vertical and is fixed in this position or can easily be fixed in this position by the user. It is typical for such a stick-formed blade sharpener to contain an upper handle opposed to the end section of the sharpening steel, which is fixed at the seat in a downward position.

[0019] For sharpening a blade, a knife is slided along the longitude of the sharpening body of the blade sharpener in a vertical position with its blade positioned downwards. In addition to that, the position of the blade sharpener at the carrying device has to be changed, so that a lateral surface of the end section is attached to one installation surface of the seat, which is opposed to the first installation surface. Thus, the main axis of the stick-formed blade sharpener forms an angle of 10° - 20°, especially an angle of 15° in relation to the vertical, but in opposed direction. Now, the other side of the blade is vertically slided down along the sharpening body. This process is repeated until the blade obtains the required sharpness.

[0020] The seat can especially be a depression at the surface of the sharpening body of the carrying device. The diameter of the depression corresponds with the diameter of the end section of the blade sharpener or is slightly bigger. The depression is preferably funnel-shaped and the lateral surfaces or inner walls of the funnel, which take a diagonal course into the inside of the carrying device, are used as installation surfaces for the lateral surfaces or outside lateral areas of the blade sharpener. The diameter of the funnel-shaped depression can amount to e.g. 0.3 to 0.7 inch at the upper part of the top surface of the basic body. Shape and size of the funnel preferably correspond with the cross section of the end section of the blade sharpener.

[0021] The funnel-shaped depression can be shaped symmetrically towards a vertical axis. In this case, all possible installation surfaces show the same inclination of preferably 15°.

[0022] Alternatively, the funnel-shaped depression can be symmetrical towards a vertical surface. In this case, the lateral surfaces, which take a diagonal course into the inside of the carrying device, can show different inclinations.

[0023] Alternatively, other shapes of the depression are also possible. Its shape can e.g. be pyramidal, so that defined triangular or trapezoidal installation surfaces are available to the end section of the blade sharpener. An apt stick-formed blade sharpener can show a suitable triangular, quadrangular or multi-angular cross section and thus three, four or several sharpening surfaces. In such an example, different installation surfaces of the seat can show different inclinations for different sharpening angles, whereas installation surfaces opposed to each other preferably have the same inclination.

[0024] The carrying device can alternatively show at least one diagonal drilling at its top surface, into which the stick-formed blade sharpener can be inserted diagonally. In such an example, the blade sharpener cannot be changed within the drilling but has to be put into another drilled whole, when its position has to be changed.

[0025] Alternatively, all variants of the seat as a depression are also possible as heightening and/or lattice construction and/or other realizations. At the top surface of the basic body a funnel-shaped ledge, into which the end section of the blade sharpener can be inserted, can be e.g. placed, soldered or welded. Such ledges can be made of any stable materials like e.g. metal, wood, plastic or the like. Another possible variant is a raised ring, which is supported by several braces and whose dimensions define the required angle of the working position of the sharpening steel.

[0026] All variants of carrying devices for stick-formed blade sharpener described so far can be used universally

for different, commercial blade sharpeners, especially sharpening steels, provided that the end sections fit into the seat of the present carrying device.

[0027] Another possibility of placing a stick-formed blade sharpener into the right angle consists of the swiveling installation of a diagonal fixing bolt at a tight foundation. A stick-formed blade sharpener with a funnel-shaped end section can be put onto this fixing bolt. A conical or truncated conical fixing bolt can rise vertically from the top surface of the foot. The sharpening steel, which contains a cylindrical or differently shaped depression or drilling at its free end, can be put onto this fixing bolt. The required angle positions of the blade sharpener can be achieved by an apt shapening of the conical or truncated conical fixing bolt as well as by the corresponding depression or drilling at the end side of the sharpening steel.

[0028] A carrying device according to the invention provides that the stick-formed blade sharpener is always fixed in a prescribed and optimal angle towards the vertical and thus to a vertically slided blade. Thus, the ideal wedge angle for the blade is given. Unskilled persons are also able to hold a knife in a vertical position and to slide it down, whereas the optimal sharpening angle is given automatically. Carrying devices with differently inclined installation surfaces for the end section of the blade sharpener enable a certain variability of sharpening a knife.

[0029] The slipping of the blade sharpener is prevented by the installation of the top of the blade sharpener into the seat of the carrying device according to the invention, as well as by its non-slip position at a foundation. While sharpening a knife, the blade is only slided vertically. Thus, even when the knife is not held tightly, it cannot slide aside but can only fall down vertically onto the work surface. The risk of injury is therefore clearly reduced. A solid handle at the end of the blade sharpener, which is fixed at the carrying device, provides for additional safety.

[0030] Now referring to the drawings, the invention will be described. Identical parts of the invention have identical reference numbers and will not be described several times.

Fig. 1 is a schematic side view of a preferred realization of a carrying device according to the invention.

Fig. 2 depicts a cross-sectional view of a carrying device according to Fig. 1.

Fig. 3 shows the typical sharpening of a blade by means of a carrying device according to the invention as depicted in Fig. 1.

[0031] Fig. 1 shows a schematic side view of a preferred realization of a carrying device 10 according to the invention. The basic body of the carrying device 10 is made of metal and is equivalent to a spherical segment about 0.5 to 0.7 inch high. Its plane side forms a spherical foot 14 with a diameter of about 2 - 3 inch. At its fringe, the foot 14 contains two ring shaped guide rings 16. Between them, an O-ring 18, made of rubber, is stuck. This rubber ring 18 sticks out of the plane surface of the foot 14 and is thus an anti-slip element, which is directly placed onto the foundation 12 or a kitchen work surface. Thus, the sliding of the carrying device10 during the action of sharpening is prevented. In the shape of a depression, seat 20, which corresponds with the end section of the blade sharpener, is placed at the spherical top surface of the carrying device 10. Shape and function of seat 20 can be seen in Fig. 2 and 3.

[0032] Fig. 2 depicts a cross-sectional view of a preferred realization of a carrying device 10 according to the invention. The smooth bottom of the spherical basic body, which serves as foot 14, is plane to a great extent. In its fringe, the foot 14 contains two ring-shaped guide rings 16. Between them, an O-ring 18, made of rubber, is stuck. Thus, the sliding of the carrying device 10 during the action of sharpening is prevented. At the upper part of the carrying device 10 there is a seat 20, into which the end section 32 of a stick-formed blade sharpener can be inserted (cf. Fig. 3). The seat 20 contains a funnel shape symmetrical towards the vertical 22 and its insertion into the surface of the carrying device 10 is about 0.3 to 0.4 inch. The lateral surfaces of the funnel-shaped seat 20 serve as installation surfaces for the lateral faces of the end section 32 of the blade sharpener 30. Their inclination towards the vertical 22 is about 15°, an optimal wedge angle for the blade 40.

[0033] Fig. 3 explains the use of the carrying device 10 as depicted in Fig. 1 during the action of sharpening. The end section 32 of a stick-formed blade sharpener 30 is inserted into the seat 20 at the top surface of the carrying device 10. A lateral surface of the end section 32 is fixed to the installation surface 24 of the seat 20. Thus, the main axis of the stick-formed blade sharpener 30 forms an angle of 10° and 20°, preferably 15°, and is fixed tightly in this position or can easily fixed in this position by the user.

[0034] For sharpening a knife, a blade 40 is vertically slided down along the whole longitude of the sharpening body 36 of the blade sharpener 30. In addition to that, the blade sharpener 30 has to be changed in its position at the carrying device 10, so that a lateral surface of the end section 32 is attached to one installation surface 24 of the seat 24, which is opposed to the first installation surface 24.

[0035] Thus, the main axis of the stick-formed blade sharpener forms an angle of 10° - 20°, especially an angle of 15° in relation to the vertical, but in opposed direction. Now, the other side of the blade sharpener is slided down along the sharpening body. This process is repeated until the blade obtains the required sharpness. Thus, the main axis of the stick-formed blade sharpener 30 forms an angle of 10° - 20°, especially an angle of 15° in relation to the vertical 22, but in opposed direction. Now, the other

side of the blade 40 is vertically slided down along the sharpening body 36. This process is repeated until the blade 40 obtains the required sharpness.

[0036] Thus, the professional sharpening of a blade is also possible for unskilled persons. In addition to that, the risk of injury caused by sliding of the blade sharpener 30 and/or the blade 40 is reduced by the carrying device 10 according to the invention. Furthermore, a handle 34 at the blade sharpener 30 contributes to a minimized risk of accident because the blade sharpener 30 can be held at its upper end.

[0037] The characteristic features of the invention as described above, in the drawings or in the claims can be important for the realization of the invention on their own or in any combination. The invention is not reduced to the examples described in this registration. It is rather possible to think of a huge variety containing the characteristic features of the invention and thus being protected as well.

Reference Numbers

[0038]

10	carrying device
12	foundation
14	foot
16	guide rings
18	O-ring
20	seat
22	vertical
24	installation surface
30	blade sharpener
32	end section
34	handle
36	sharpening body
40	blade

Claims

1. Carrying device (10) for a stick-formed blade sharpener (30), containing a basic body with a smooth foot (14), which contains at least one non-slipping contact area concerning the foundation (12) and at least one seat positioned at one surface of the basic body and corrsponding with the end section (32) of the blade sharpener (30) so that the end section (32) of the blade sharpener (30) can be put into an angle positon that is already definded.

2. Carrying device as defined in claim 1, according to which the seat (20), which corresponds with at least one end section (32) of the blade sharpener (30), contains at least one installation surface (24) where a lateral surface of the blade sharpener (30) can be fixed.

3. Carrying device as defined in claim 2, according to which at least one installation surface (24) for a lateral surface of the blade sharpener (30) forms an angle of 10° to 20° in relation to the vertical (22).

4. Carrying device as defined in claim 2, with at least two installation surfaces (24) for a lateral surface of the blade sharpener (30), which form different angles of 10° to 20° in relation to the vertical (22).

5. Carrying device as defined in the previous claims, according to which the at least one seat (20) contains a funnel shape, which is symmetrical towards a vertical axis (22).

6. Carrying device as defined in the previous claims, according to which the at least one seat (20) contains a funnel shape, which is symmetrical towards a vertical surface.

7. Carrying device as defined in claim 5 or 6, according to which the funnel foundation corresponds in size and shape with the cross-section of the end section (32) of the stick-formed blade sharpener (30).

8. Carrying device as defined in the previous claims, according to which the parts of the foot (14) contain rubber.

9. Carrying device as defined in the previous claims, according to which the foot (14) contains a fixing device, so that the carrying device (10) can be fixed at and re-fixed from the foundation (12).

10. Carrying device as defined in the previous claims, which contains of mainly injection moulding material, especially of metal casting.

11. Carrying device as defined in the previous claims, which carries some weight.

12. Blade sharpening device containing at least one carrying device (10) as described in one of the claims 1 to 11 and a stick-formed blade sharpener (30).

13. Blade sharpening device as described in claim 12, according to which the stick-formed blade sharpener (30) contains a handle (34).

Fig. 1

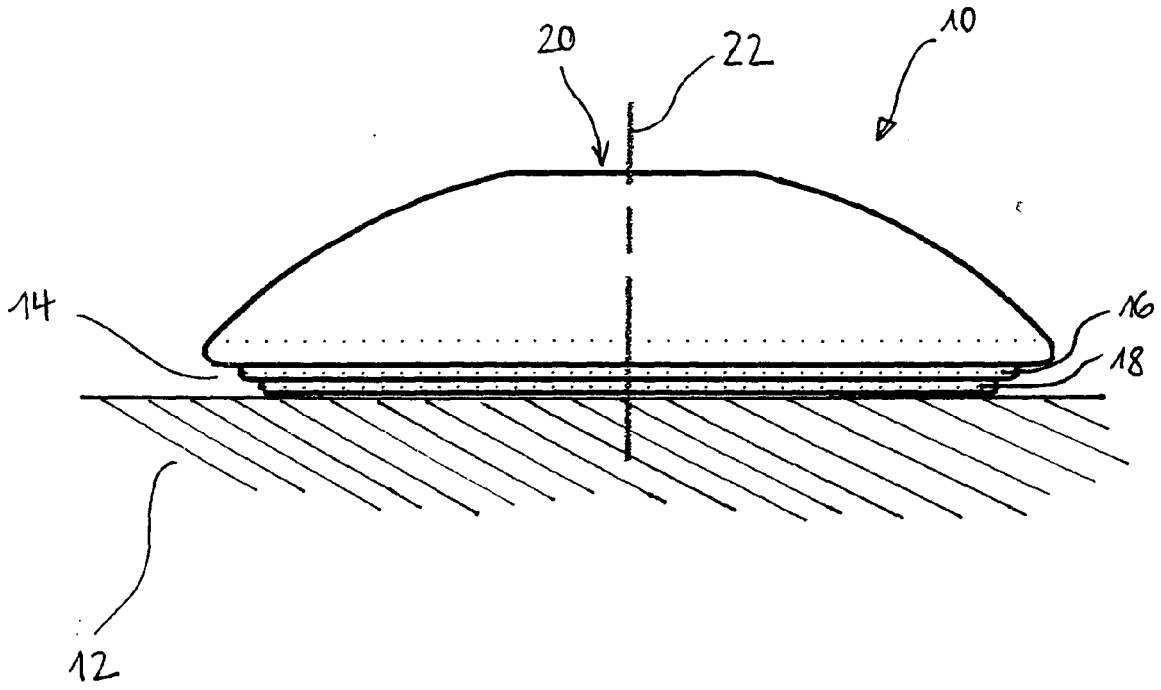


Fig. 2

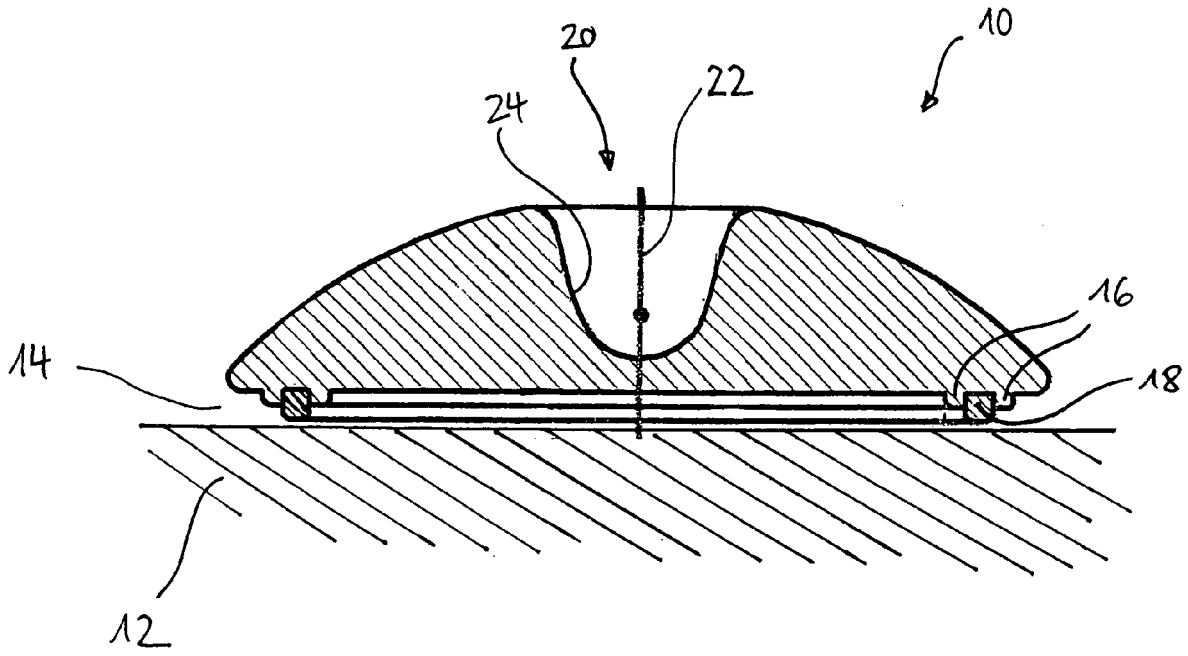
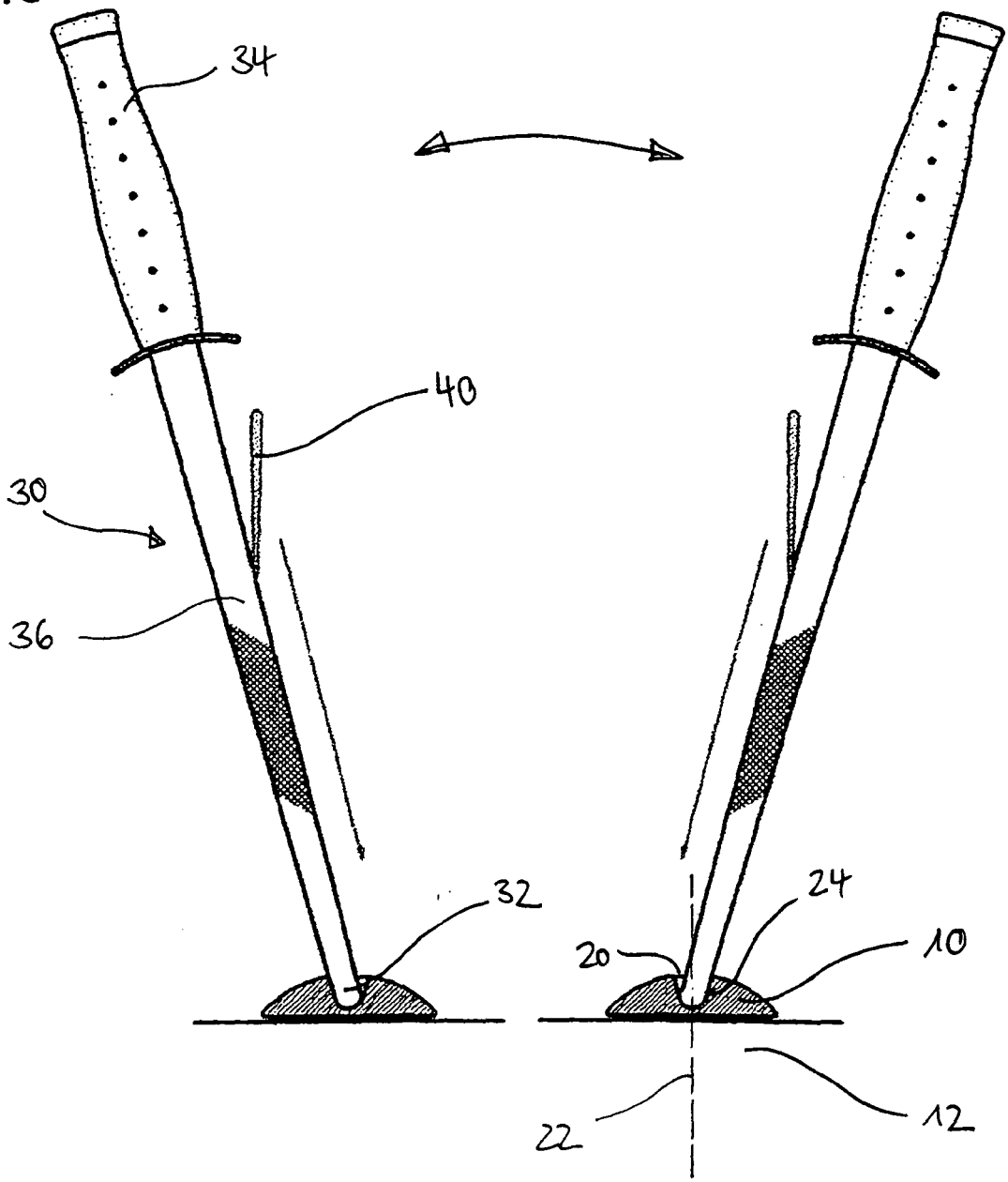


Fig.3



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EUROPEAN SEARCH REPORT

Application Number
EP 04 02 5988

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	28 November 2005	Gelder, K

CATEGORY OF CITED DOCUMENTS

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